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# WEIGHTS AND MEASURES ACT

## ORDERS IN COUNCIL

### REGULATIONS

AND

## INSTRUCTIONS TO INSPECTORS

AND

## THEIR ASSISTANTS

1898

This supersedes and cancels all former issues of these Instructions.

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# WEIGHTS AND MEASURES ACT

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1898

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**Each Inspector of Weights and Measures is required to see that each of his Assistants is supplied with a copy of this Pamphlet.**



## CHAPTER 104.

### THE WEIGHTS AND MEASURES ACT.

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## 49 VICTORIA.

### CHAPTER 104.

An Act respecting Weights and Measures.

HER Majesty, by and with the advice and consent of the A.D 1886. Senate and House of Commons of Canada, enacts as follows:—

#### SHORT TITLE.

1. This Act may be cited as "*The Weights and Measures Act.*" 42 V., c. 16, s. 1. Short title.

#### THE LAW OF WEIGHTS AND MEASURES.

##### *Uniformity of Weights and Measures.*

2. Except as herein otherwise provided, the same weights and measures shall be used throughout Canada. 42 V., c. 16, s. 3. To be the same throughout Canada.

##### *Standards of Measure and Weight.*

3. The bronze bar and the platinum weights more particularly described in the first part of the first schedule to this Act, and deposited at the Department of Inland Revenue, in the custody of the Minister of Inland Revenue, as provided in the Act passed in the thirty-sixth year of Her Majesty's reign, intituled "*An Act respecting Weights and Measures,*" shall continue to be the Dominion standards of measure and weight: Certain standards to be the Dominion standards.

2. The said bronze bar shall continue to be the Dominion standard for determining the standard yard for Canada; and the said platinum weights shall respectively continue to be the Dominion standards for determining the standard pound and the standard troy ounce for Canada. 42 V., c. 16, s. 4. Standard yard, pound and ounce, troy.

4. The two copies of the standards of measure and weight described in the second part of the first schedule to this Act and deposited as therein mentioned, shall be deemed to be Parliamentary copies of the said Dominion standards. 42 V., c. 16, s. 5. Parliamentary copies.

5. If at any time either of the Dominion standards of measure and weight is lost, or in any manner destroyed, defaced or otherwise injured, the Minister of Inland Revenue may cause the same to be restored, by reference to or adop- Renewal of Dominion standards in case of loss.

tion of either of the Parliamentary copies of that standard, or of such one of them as remains available for that purpose. 42 V., c. 16, s. 6.

Renewal of  
Parliamentary  
standards.

6. If, at any time, either of the Parliamentary copies of either of the Dominion standards is lost or in any manner destroyed, defaced or otherwise injured, the Minister of Inland Revenue may cause the same to be restored, by reference either to the corresponding Dominion standard, or to the other Parliamentary copy of that standard. 42 V., c. 16, s. 7.

Secondary or  
Departmental  
standards.

7. The departmental standards of measure and weight which, having been derived from the Dominion standards, are in use under the direction of the Minister of Inland Revenue, and are mentioned in the second schedule to this Act, and no others (save as hereinafter mentioned), shall be secondary standards of measure and weight, and shall be called departmental standards :

Renewal in  
case of loss.

2. If, at any time, any of such standards is lost or in any manner destroyed, defaced or otherwise injured, the Minister of Inland Revenue may cause the same to be restored, by reference either to one of the Dominion standards or to one of the Parliamentary copies of those standards :

Standards of  
new denomi-  
nations.

3. The Minister of Inland Revenue shall, from time to time, cause such new denominations of standards, being either equivalent to or multiples or aliquot parts of the Dominion weights and measures ascertained by this Act, as are required in addition to those mentioned in the second schedule to this Act to be made and duly verified, and such new denominations of standards, when approved by the Governor in Council, shall be departmental standards in like manner as if they were mentioned in the said schedule :

Cancellation  
of a depart-  
mental  
standard.

4. The Governor in Council may declare that a departmental standard for the time being, of any denomination, whether mentioned in the said schedule or approved by the Governor in Council, shall cease to be such standard. 42 V., c. 16, s. 8.

Local  
standards.

8. The standards of measure and weight which are lawfully in use by inspectors or deputy inspectors of weights and measures, for the purpose of verification or inspection, and all copies of the departmental standards which are compared with those standards and verified by the Minister of Inland Revenue for the purpose of being used by inspectors of weights and measures under this Act as standards for the verification or inspection of weights and measures, shall be called local standards. 42 V., c. 16, s. 9.

#### *Dominion Measures of Length.*

Standard  
yard defined.

9. The straight line or distance between the centres of the two gold plugs or pins (as mentioned in the first schedule

to this Act) in the bronze bar by this Act declared to be the Dominion standard for determining the Dominion standard yard, measured when the bar is at a temperature of sixty-one degrees and ninety-one hundredths of Fahrenheit's thermometer, and when it is supported on bronze rollers placed under it in such manner as best to avoid flexure of the bar and to facilitate its free expansion and contraction from varying temperature, shall be the legal standard measure of length and shall be called the Dominion standard yard, and shall be the only unit or standard measure of extension from which all other measures of extension, whether linear, superficial or solid, shall be ascertained. 42 V., c. 16, s. 10.

See Schedule I  
part II (2) which  
says 61.45°

**10.** One third part of the Dominion standard yard shall be a foot, and the twelfth part of such foot shall be an inch; and the rod, pole or perch in length, shall contain five such yards and a-half; and the chain shall contain twenty-two such yards, and the link shall be the one hundredth part of the chain; the furlong shall contain two hundred and twenty such yards; and the mile one thousand seven hundred and sixty such yards. 42 V., c. 16, s. 11.

Standard  
foot, inch, rod,  
chain, link,  
furlong  
and mile.

**11.** The rood of land shall contain one thousand two hundred and ten square yards, according to the Dominion standard yard; and the acre of land shall contain one hundred thousand square links,—being four thousand eight hundred and forty such square yards, or one hundred and sixty square rods, poles or perches. 42 V., c. 16, s. 12.

Standard  
rood and acre.

**12.** In the Province of Quebec, the measures of length and superficies for all lands comprised in those parts of the Province originally granted under the seigniorial tenure, shall be French measures, the ratio and proportion of which shall be to the Dominion standard measures as follows, that is to say:—

As to  
seigniorial  
lands in the  
Province of  
Quebec.

(a.) The foot—"French measure" or "Paris foot"—shall be held to contain twelve inches and seventy-nine hundredths of an inch, standard measure;

French foot.

(b.) The "arpent," when used as a measure of length, shall be one hundred and eighty French feet; and when used as a measure of superficies, shall contain thirty-two thousand four hundred square French feet; and the "perch," as a measure of length, shall contain eighteen French feet; and as a measure of superficies, three hundred and twenty-four square French feet;

Arpent.

Perch.

(c.) Provided, that the provisions of this section shall apply only to territorial measurement; and the French measures "toise" and "ell" (*aune*), shall not be used as standard measures, but the standard yard, as described in the ninth section of this Act, shall be used instead thereof. 42 V., c. 16, s. 13.

French  
measure to be  
used only for  
such lands.

*Dominion Measures of Weight and Capacity.*

Standard  
pound.

**13.** The Imperial pound, as established by the Act passed by the Parliament of the United Kingdom, in the session held in the forty-first and forty-second years of Her Majesty's reign, known as "*The Weights and Measures Act of 1878*," as represented by the platinum iridium weight mentioned in the first schedule to this Act, and hereby declared to be the Dominion standard for determining the Dominion standard pound, shall be the legal standard measure of weight and of measure, having reference to weight, and shall be called the Dominion standard pound, and shall be the only unit or standard measure of weight from which all other weights, and all measures having reference to weight, shall be ascertained. 42 V., c. 16, s. 14.

Standard  
ounce, dram  
and grain.

**14.** One-sixteenth part of the Dominion standard pound shall be an ounce, and one-sixteenth part of such ounce shall be a dram, and one seven-thousandth part of the Dominion standard pound shall be a grain :

Cental or  
cwt., and ton.

One hundred standard pounds shall be a cental or hundredweight, and twenty centals or two thousand pounds shall be a ton :

Troy ounce.

Four hundred and eighty grains shall be an ounce troy :

All other  
weights.  
avoirdupois.

All the foregoing weights, except the ounce troy, shall be deemed to be avoirdupois weights. 42 V., c. 16, s. 15.

Standard  
gallon.

**15.** The unit or standard measure of capacity, from which all other measures of capacity, as well for liquids as for dry goods shall be derived, shall be the gallon containing ten Dominion standard pounds weight of distilled water weighed in air against brass weights with the water and the air at the temperature of sixty-two degrees of Fahrenheit's thermometer, and with the barometer at thirty inches :

Quart and  
pint.

The quart shall be one-fourth part of the gallon, and the pint shall be one-eighth part of the gallon :

Peck and  
bushel.:

Two gallons shall be a peck, and eight gallons shall be a bushel. 42 V., c. 16, s. 16 ;—48-49 V., c. 64, s. 1.

Bushel of cer-  
tain articles  
determined  
by weight.

**16.** In contracts for the sale and delivery of any of the undermentioned articles, the bushel shall be determined by weighing, unless a bushel by measure is specially agreed upon—the weight equivalent to a bushel being as follows:—

- Wheat, sixty pounds ;
- Indian corn, fifty-six pounds ;
- Rye, fifty-six pounds ;
- Peas, sixty pounds ;
- Barley, forty-eight pounds ;
- Malt, thirty-six pounds ;
- Oats, thirty-four pounds ;
- Beans, sixty pounds ;
- Clover seed, sixty pounds ;

- Timothy seed, forty-eight pounds ;
- Buckwheat, forty-eight pounds ;
- Flax seed, fifty pounds ;
- Hemp seed, forty-four pounds ;
- Blue grass seed, fourteen pounds ;
- Castor beans, forty pounds ;
- Potatoes, turnips, carrots, parsnips, beets and onions, sixty pounds ;
- Bituminous coal, seventy pounds :

2. Every person who violates any provision of this section shall be liable, for a first offence; to a penalty not exceeding twenty-five dollars, and for each subsequent offence, to a penalty not exceeding fifty dollars. 48-49 V., c. 64, s. 2. Penalty for contravention.

17. In the Province of Quebec, the following shall be the standard weights for hay and straw, unless the same is sold by the ton, or unless it appears that the parties to the contract agreed to the contrary:— Standard weights of hay and straw in Quebec.

A bundle of timothy, clover or other hay with a timothy band.....	15 lbs.
A bundle of timothy, clover or other hay bound with a withe.....	16 "
A bundle of straw.....	12 "

C. S. L. C., c. 63, ss. 8 and 9.

18. All apples packed in Canada for sale by the barrel shall be packed in good and strong barrels of seasoned wood made as nearly cylindrical as may be; the staves of such barrels shall be twenty-seven inches in length from croe to croe, with heads from sixteen and one-half to seventeen inches in diameter; and such barrels shall be sufficiently hooped, with a lining hoop within the chimes, the whole well secured by nails : How apples shall be packed for sale.

2. Every person who offers or exposes apples for sale by the barrel, otherwise than in accordance with the foregoing provisions of this section, shall be liable to a penalty of twenty-five cents for each barrel of apples so offered or exposed for sale. 48-49 V., c. 64, s. 3. Penalty for contravention.

19. In using a Dominion measure of capacity the same shall not be heaped, but either shall be stricken with a round stick or roller straight and of the same diameter from end to end, or if the article sold cannot, from its size or shape, be conveniently stricken, shall be filled in all parts as nearly to the level of the brim as the size and shape of the article admits of. 42 V., c. 16, s. 18. Heaped measure forbidden

20. The table in the third schedule to this Act shall be deemed to set forth the equivalents in Dominion weights and measures of the weights and measures therein expressed in terms of the metric system ; and such table may be lawfully used for computing and expressing, in weights and Table in third schedule to be used for equivalents in metric system.

measures, weights and measures of the metric system. 42 V., c. 16, s. 19.

*Use of Dominion Weights and Measures.*

Contracts to be by standard weights and measures: all others void.

Exception as to metric system. Tolls and duties.

"Trade," what to be deemed.

Local weights, &c., unlawful.

Penalty for using other than Dominion weights and measures.

Weight to be avoirdupois;—

Except certain articles which may be sold by troy weight

Penalty for contravention

Proviso: as to metric weights or measures, or decimal divisions

As to sales of articles in vessels.

**21.** Every contract, bargain, sale or dealing made or had in Canada in respect of any work, goods, wares or merchandise, or other thing which has been or is to be done, sold, delivered, carried or agreed for by weight or measure, shall be deemed to be made and had according to one of the Dominion weights or measures ascertained by this Act, or to some multiple or part thereof, and if not so made or had, shall be void, except when made according to the metric system; and all tolls and duties charged or collected according to weight or measure shall be charged and collected according to one of the Dominion weights or measures ascertained by this Act, or to some multiple or part thereof:

2. Such contract, bargain, sale, dealing and collection of tolls and duties, as is in this section mentioned, is in this Act referred to under the term "trade":

3. The use of local or customary measures, or of heaped measures, shall not be lawful:

4. Every person who sells by any denomination of weight or measure other than one of the Dominion weights or measures, or some multiple or part thereof, and every public weigher or measurer who uses any weight or measure, or who uses, in any certificate as to the weight or measure of any article weighed or measured by him, any other than one of the Dominion weights or measures, or some multiple or part thereof, shall be liable to a penalty not exceeding twenty dollars for every such sale, weighing or certificate. 42 V., c. 16, s. 20.

**22.** All articles sold by weight shall be sold by avoirdupois weight, except that,—

Gold and silver, platinum and precious stones, and articles made thereof, may be sold by the ounce troy or by any decimal part of such ounce, and all contracts, bargains, sales and dealings in relation thereto shall be deemed to be made and had by such weight, and when so made or had shall be valid:

2. Every person who violates this section shall be liable to a penalty not exceeding twenty-five dollars for each offence. 42 V., c. 16, s. 21.

**23.** No contract or agreement shall be invalid or open to objection on the ground that the weights or measures expressed or referred to therein are weights or measures of the metric system, or on the ground that decimal sub-divisions of Dominion weights and measures, whether metric or otherwise, are used in such contract or dealing. 42 V., c. 16, s. 22.

**24.** Nothing in this Act shall prevent the sale, or subject a person to a penalty under this Act for the sale of an article

in any vessel, such vessel being included in the sale, when such vessel is not represented as containing any amount of Dominion measures, nor subject a person to a penalty under this Act for the possession of a vessel when it is shown that such vessel is not used or intended for use as a measure. 42 V., c. 16, s. 23.

*Unjust Weights, Measures and Weighing Machines.*

**25.** Every person who uses or has in his possession for use, in trade, any weight, measure, scale, balance, steelyard or weighing machine, which is false or unjust, shall incur a penalty not exceeding twenty-five dollars and not less than ten dollars, or, in the case of a subsequent offence, of fifty dollars; and any contract, bargain, sale or dealing made by the same shall be void; and the weight, measure, scale, balance, steelyard or weighing machine shall be forfeited, and shall be forthwith seized as being so forfeited. 47 V., c. 36, s. 1.

Penalty for having false or unjust weights, scales or measures  
Forfeiture.

**26.** When any fraud is wilfully committed in the using of any weight, measure, scale, balance, steelyard or weighing machine, the person committing such fraud, and every person party to the fraud, shall incur a penalty of twenty-five dollars, or in the case of a subsequent offence, of fifty dollars; and the weight, measure, scale, balance, steelyard or weighing machine shall be forfeited, and shall be forthwith seized as being so forfeited. 47 V., c. 36, s. 2.

Penalty for fraud by the use of false weights, &c.  
Forfeiture

**27.** Every person who wilfully makes or sells, or causes to be made or sold, any false or unjust weight, measure, scale, balance, steelyard or weighing machine, shall incur a penalty not exceeding fifty dollars and not less than twenty-five dollars, or, in the case of a subsequent offence, of one hundred dollars. 47 V., c. 36, s. 3.

Penalty for making or selling false weights, &c.

*Stamping and Verification of Weights and Measures.*

**28.** Every weight, except when the small size of the weight renders it impracticable, shall have the denomination of such weight stamped or engraved on the top or side thereof in legible figures and letters;

Lawful measures and weighing contrivances to be stamped.

Every measure of capacity shall have the denomination thereof stamped or engraved on the outside of such measure in legible figures and letters;

Every beam, steelyard or other weighing machine shall have marked upon some essential part of it the maximum weight which it is constructed to weigh, and also on the weights or poises used with it, their actual weight when truly adjusted, in parts or multiples of the avoirdupois pound;

A weight or measure not in conformity with this section shall not be stamped with such stamp of verification under this Act, as is herein mentioned. 42 V., c. 16, s. 27.

And no other.



Penalty for using unstamped weights or measures or weighing machines, in business.

**29.** Every trader, manufacturer, carrier, public weigher, gauger, measurer, surveyor, or other person, who uses, for any purpose of buying, selling or charging for the carriage of any goods, wares, merchandise or thing, or of measuring any land, goods, materials or other thing, for the purpose of charging for or ascertaining the amount or price to be paid, or the charge to be made therefor, any weight or measure, or weighing machine which has not been duly inspected and stamped according to this Act, is guilty of an offence against this Act, and shall, on conviction, incur a penalty not exceeding fifty dollars and not less than five dollars for each such offence; and every such unstamped weight, weighing machine or measure so used, found in his possession, shall, on being discovered by the inspector or his assistant, be forfeited and forthwith seized and broken by him, without suit or authority other than this Act:

Forfeiture, &c.

Exception as to makers or dealers in weights, measures, &c.

2. Provided that no manufacturer of or dealer in weights, measures or weighing machines, who has in his possession for sale, any weight, measure or weighing machine, shall be bound to have the same inspected and stamped according to this Act, so long as the same remains in his manufactory or warehouse; but no such weight, measure or weighing machine shall be removed from his premises, sold or taken into use for trade without being inspected and stamped:

Penalty on trader having unlawful weights, &c., in possession.

3. Every trader who is not a manufacturer of or dealer in weights, measures or weighing machines, and who has in his possession any unstamped weight, measure or weighing machine, shall incur a penalty not exceeding fifty dollars and not less than five dollars for the first offence, and for each subsequent offence a penalty of fifty dollars; and such weights, measures or weighing machines shall be forfeited, and shall be forthwith seized by the inspector or his assistant. 42 V., c. 16, s. 28;—47 V., c. 36, s. 5.

Forfeiture.

As to weights of lead or pewter.

**30.** No weight made of lead or pewter, or of any mixture thereof, shall be stamped with a stamp of verification, or used for trade, unless it is wholly and substantially cased with brass, iron or copper, and legibly stamped or marked "cased:"

Penalty for violation.

2. Every person who violates any of the provisions of this section shall incur a penalty not exceeding twenty-five dollars, and in case of a second offence fifty dollars:

Proviso: as to plugs.

3. Nothing in this section shall prevent the insertion into a weight of such a plug of lead or pewter as is *bonâ fide* necessary for the purpose of adjusting it, and of affixing thereto the stamp of verification. 42 V., c. 16, s. 29.

Penalty for forging or counterfeiting stamps used under this Act.

**31.** Every person who forges or counterfeits any stamp used for the stamping, under this Act, of any weight, balance, weighing machine or measure, or used before the commencement of this Act for the stamping of any weight, balance, weighing machine or measure under any enact-

ment repealed by this Act, or who wilfully increases or diminishes any weight or measure so stamped, or in any way alters or tampers with any balance, weighing machine or measure, which has been so stamped, so as to cause it to weigh or measure unjustly, shall incur a penalty of forty dollars for the first offence, and for each subsequent offence he shall be liable to a penalty of one hundred dollars and to imprisonment for a term of two months:

2. Every person who knowingly uses, sells, utters, disposes of, or exposes for sale, any weight, balance, weighing machine or measure, with such forged or counterfeit stamp thereon, or any weight, balance, weighing machine or measure so increased, diminished, falsified or tampered with, shall incur a penalty, for the first offence, not exceeding fifty dollars and not less than twenty-five dollars, and for each subsequent offence a penalty of one hundred dollars, and the weight, balance, weighing machine or measure shall be forfeited, and shall be forthwith seized as being so forfeited. 47 V., c. 36, s. 6.

Or for knowingly using counterfeits.

Forfeiture.

#### ADMINISTRATION.

##### *Central.*

**32.** The Minister of Inland Revenue shall have the custody of the Dominion standards of measure and weight, and of the departmental standards, and of all balances, apparatus, books, documents and things used in connection therewith or relating thereto. 42 V., c. 16, s. 31.

Minister of Inland Revenue to have custody of standards, &c

**33.** The Parliamentary copies of the Dominion standards of measure and weight, mentioned in part two of the first schedule to this Act, shall continue to be deposited as therein mentioned:

Deposit of Parliamentary standards.

2. The Minister of Inland Revenue shall cause the Parliamentary copies of the Dominion standards of measure and weight to be compared with each other once in every five years, and once in every ten years with the Dominion standards of measure and weight. 42 V., c. 16, s. 32

Periodical comparison of such standards.

**34.** Once, at least, in every five years, the Minister of Inland Revenue shall cause the departmental standards, for the time being, to be compared with the Parliamentary copies of the Dominion standards of measure and weight made and approved in pursuance of this Act, and with each other, and to be adjusted or renewed if requisite:

And of departmental standards.

2. A record shall be kept by the Minister of Inland Revenue of all standards verified or re-verified, showing full particulars of the results of such verification or re-verification. 42 V., c. 16, s. 33.

Record of verification.

**35.** The copies of the metric standards mentioned in the fourth schedule to this Act having been obtained and de-

Copies of metric standards and

their use for lawful purposes.

posited in the custody of the Minister of Inland Revenue, the Minister may cause to be compared with the said standards and verified, all metric weights and measures which are submitted to him for the purpose, and which are of such shape and construction as are, from time to time, directed under any Order in Council in that behalf, and which the Minister is satisfied are intended to be used for the purpose of science or of manufacture, or for any lawful purpose within the meaning of this Act. 42 V., c. 16, s. 34.

Comparisons, verifications, &c., how made.

**36.** All comparisons, verifications and other operations with reference to standards of length, weight and capacity, shall be conducted under the supervision of the Commissioner of Inland Revenue, and generally he shall have such powers and duties in relation thereto as are assigned to him by the Governor in Council. The Commissioner of Inland Revenue shall also conduct all such comparisons, verifications and other operations with reference to standards of measure and weight in aid of scientific researches, or otherwise, as the Minister of Inland Revenue deems expedient; and in consideration of the special qualifications and knowledge necessary for the proper discharge of such duties, the said commissioner may be paid, in addition to his salary as commissioner, such further allowance, out of any moneys voted by Parliament for the purposes of this Act, as is directed by the Governor in Council. 42 V., c. 16, s. 35.

Duty of Commissioner of Inland Revenue with respect to them, and as to standards generally. Compensation for such service.

#### *Local.*

Appointment and duties of inspectors.

And of assistants.

**37.** The Governor in Council may, from time to time, appoint one or more inspectors of weights and measures for each Province, and such number of assistants to each inspector as is, from time to time, found necessary, and may, from time to time, assign them inspection divisions; and their powers and duties shall be as defined by this Act, by the regulations made under it, and by instructions from the Minister of Inland Revenue; and the Governor in Council may assign to each inspector or assistant so appointed such remuneration or salary as is deemed expedient, not exceeding the amount voted by Parliament, and may also allow to each such inspector or assistant such further sum as will suffice to meet his actual expenses in the performance of his official duties. 42 V., c. 16, s. 36.

Remuneration.

District inspectors.

**38.** The Governor in Council may appoint any officer of the Department of Inland Revenue to the office of district inspector under this Act, and such officer shall discharge the duties assigned to him under this Act, in conjunction with and in addition to his other official duties. 42 V., c. 16, s. 37, *part.*

Oath of office.

**39.** Each inspector or assistant inspector shall, on appointment, take an oath for the faithful discharge of his duties, and

shall give a bond, in a sum fixed by the Governor in Council, for the safe custody and preservation of the standard weights and measures and other apparatus intrusted to him, for their delivery over to his successor in case of his resignation or removal from office, and for the duly accounting for all moneys collected by him. 42 V., c. 16, s. 37, *part*.

**40.** Each inspector shall be furnished by the Minister of Inland Revenue with one or more sets of standards, to be called "the local standards," carefully verified and authenticated by comparison with the departmental standards in the custody of the Minister of Inland Revenue, and with such apparatus as is requisite to enable him to perform his duties under this Act. 42 V., c. 16, s. 37, *part*.

Inspector to be provided with local standards.

**41.** No officer appointed under this Act shall be a maker or seller of weights, balances, measures or weighing machines, but, under special departmental instructions in that behalf, he may be allowed to adjust or alter any weight verified by him or submitted to him for verification, and to collect, therefor, such compensation as is authorized by the Governor in Council. 42 V., c. 16, s. 38, *part*.

Officers not to be makers or sellers of weights or measures, &c.

**42.** The "standards" and other apparatus shall be used by the inspector or assistant into whose custody they are given solely for the purpose of comparing and verifying weights, measures, balances and weighing machines used for purposes of trade. 42 V., c. 16, s. 38, *part*.

Use of standards by inspectors.

**43.** The inspector or his assistant shall perform such duties incident to the verification of weights and measures, and of beams, scales, steelyards and other weighing machines, comparing and trying the same with the standard weights and measures, and other apparatus in his possession, as are assigned to him under departmental regulations :

Duties of inspectors and assistants.

2. He shall, at all proper times, carefully examine and compare all weights and measures, and all beams, scales or other weighing machines of any kind, presented to him within his division; and when found correct and just he shall mark, stamp or brand the same in such manner as is, from time to time, directed by the Minister of Inland Revenue, — who shall furnish such stamps, brands and implements as he thinks proper for that purpose. 42 V., c. 16, s. 39.

Examination and marking of weights, &c.

**44.** Every inspector or his assistant shall, upon such days and at such places within his district as he, from time to time, appoints in pursuance of such departmental regulations as are made in that behalf—and of which days or places public notice shall be given in the manner provided by such regulations,—attend with his inspection standards and other apparatus for the purpose of inspecting all weights, balances, measures and weighing machines, and shall then

Times and places of inspection and verification.

Stamping,  
&c., when  
found correct.

and there inspect and verify, and if found correct, shall stamp and certify all weights and measures, balances and other weighing machines. 42 V., c. 16, s. 40.

Power of in-  
spectors to  
enter shops,  
&c.

**45.** The inspector or his assistant may, at all reasonable times, without notice, enter any shop, store, warehouse, stall, yard or place whatsoever, within his division, where any commodity is bought, sold, exposed or kept for sale, or where a charge is made for the carriage or conveyance thereof by weight or measure, and there examine all weights, measures, beams, scales, steelyards or other weighing machines, and compare and try the same with the local standards of weight and measure in his possession; and he shall do so from time to time, and without previous notice, so as best to insure compliance with the provisions of this Act, and the discovery and punishment of any violation thereof: and he shall attend at any reasonable time and place, and when not otherwise engaged in the performance of his duties, for the purpose of inspecting and verifying any fixed and non-portable weighing machine in his division; and he may also, subject to regulations made by the Governor in Council in that behalf, at any time when not so engaged, as aforesaid, inspect, verify, stamp and certify any weights, measures or weighing machines, at the request of the owner thereof, and at any place in his division. 42 V., c. 16, s. 41.

Without  
previous  
notice.

To inspect  
when called  
on if not  
otherwise on  
duty.

Inspection on  
request, sub-  
ject to regula-  
tions.

Penalty for  
obstructing  
inspector or  
assistant.

**46.** Every person who wilfully obstructs or impedes any inspector or assistant inspector in the performance of his duty under this Act, or under any Order in Council or departmental regulation lawfully made under it, and every person who aids or assists him in so doing, shall incur a penalty of one hundred dollars. 47 V., c. 36, s. 7.

Inspector  
to keep a  
record of in-  
spections, &c.

**47.** The inspector shall keep a book in which he shall enter minutes of all verifications made by him or his assistant, and at the time of every inspection he or his assistant shall deliver to the owner of any weight or measure, or weighing machine verified, or to the person procuring the verification, a certificate under his hand, setting forth the fact and date of such verification, and specifying the weight, measure or weighing machine inspected. 42 V., c. 16, s. 42.

Re-inspection  
at certain  
periods.

**48.** Within four months after the expiration of two years from the first verification and stamping, and within a period of two years after each subsequent verification, every weight, measure and weighing machine shall be again inspected and verified, and a new certificate of such inspection and verification obtained from the proper inspector; and the production of the certificate shall be *prima facie* evidence of the verification or stamping, or re-verification having taken place within the period prescribed by law. 42 V., c. 16, s. 43.

**49.** Every person, not being a manufacturer, dealer in or importer of weights, measures or weighing machines, who refuses to produce for inspection, when required so to do by any inspector or inspector's assistant appointed under this Act, all weights, measures and weighing machines in his possession, and used for any purpose of trade, and—

Refusing to produce weights, &c., for inspection.

Every manufacturer of, dealer in or importer of weights, measures or weighing machines, who refuses to permit the inspection, when required in the manner herein provided, of any weights, measures or weighing machines about to be removed from his premises to be used for purposes of trade, or who permits any such weights, measures or weighing machines to be so removed without having been first inspected and stamped as herein required,—

Or refusing to permit inspection.

Shall, for a first offence, incur a penalty not exceeding twenty-five dollars and not less than five dollars, and for each subsequent offence a penalty of fifty dollars :

Penalty.

Provided always, that the provisions of this section shall not be construed as imposing any penalty on a manufacturer of, dealer in, or importer of weights, measures or weighing machines in respect of any dormant scales, which cannot be properly verified until set upon a fixed foundation. 47 V., c. 36, s. 8.

Proviso: as to dormant scales.

**50.** No weight, measure or weighing machine duly stamped by any inspector, or other person hereby authorized to examine and stamp the same, shall be subject to be re-stamped, although the same is used beyond the limits of the inspection division within which it was originally stamped, but shall be considered as a lawful weight or measure or weighing machine throughout Canada, unless found defective or unjust on any subsequent periodical or other inspection—to which it remains subject, as provided by this Act—by the inspector or his assistant for the division in which it then is. 42 V., c. 16, s. 45.

As to weights and measures, &c., stamped in any division and used in another.

**51.** If any inspector or inspector's assistant stamps or marks any balance, beam, weight or measure or weighing machine, without having first duly compared and verified the same with the standard or other authorized instrument in his possession for the purpose, he shall, on conviction, incur a penalty not exceeding fifty dollars for each offence. 42 V., c. 16, s. 46.

Penalty for stamping any weight, &c., without verifying it.

**52.** Every inspector or assistant inspector, who, without authority from the Minister of Inland Revenue, knowingly stamps any balance, weight, measure or weighing machine, belonging to any person residing within the limits of any inspection division for which another inspector has been lawfully appointed, shall, on conviction, incur a penalty not exceeding five dollars for every balance, weight, measure or weighing machine so stamped. 47 V., c. 36, s. 9.

Penalty on inspector or assistant stamping out of his proper division.

*Delivery of Liquids in Casks.*

Interpretation.

**53.** For the purpose of the following sections of this Act, the expression "cask" means and includes every vessel constructed for holding liquids, and made of staves and headings bound together by hoops. 38 V., c. 36, s. 2.

How the capacity shall be ascertained in case of dispute.

**54.** The capacity of any cask shall, in all cases of dispute, be determined by the weight of rain water it holds, the water being at a temperature of sixty-two degrees of Fahrenheit's thermometer, and ten pounds of such water being reckoned as equal to one gallon; and the determination by such weighing by an inspector or deputy inspector of weights and measures, or by an officer of Inland Revenue, authorized thereto under departmental regulations, of the contents of any cask, shall be final and conclusive. 38 V., c. 36, s. 4.

Capacity of cask containing liquids subject to excise, to be marked on bung stave.

**55.** No malt liquors or any other liquids subject to excise that have been put into any cask in Canada, shall be delivered in the cask to the purchaser unless the capacity of the cask in which delivery is made is legibly marked in gallons, and parts of a gallon, on the bung stave thereof; and such marking shall be cut or branded in the wood, in characters not less than one inch and a-quarter in height; except only that such marking shall not be necessary on casks on which the quantity of liquid then contained in them has been marked or verified in compliance with excise regulations then in force 38 V., c. 36, s. 1.

Exception.

Offences.

Wrongfully marking cask.

Using falsely marked cask.

Or unmarked cask.

Penalty for such offences.

**56.** Every public gauger or other person who—

(a.) Marks or causes to be marked on any cask as its capacity, a quantity greater than such cask will hold, or—

(b.) Who uses or causes to be used, for the delivery to a purchaser of any malt liquors or any other liquid subject to excise, put into a cask in Canada, any cask so falsely marked, or—

(c.) Who, except as herein provided, delivers any such liquid put into a cask in Canada, in a cask not marked as herein required,—

Is guilty of an offence against this Act, and shall incur a penalty of ten dollars for every cask so falsely marked or so used without being first properly marked, and a penalty of double the amount for every subsequent offence. 38 V., c. 36, s. 3.

## GENERAL PROVISIONS.

Regulations by Governor in Council for certain purposes.

**57.** The Governor in Council may, from time to time, make regulations concerning any of the subjects following, that is to say:—

(a.) The guidance of the inspectors and their assistants in the performance of their duties;

(b.) The replacement and use of the standards ;

(c.) The methods of verifying local standards or weights, measures, weighing machines and balances, and of certifying such verification ;

(d.) The amount of error that may be tolerated in weights, measures, balances and weighing machines ;

(e.) The shapes, dimensions and proportions to be required in weights, weighing machines and measures, and the materials of which they may be made ;

(f.) The marking on weights and measures authorized under this Act, of their several denominations ;

(g.) The defining and specifying what weights, measures, weighing machines and balances shall or shall not be admitted to verification ;

And such regulations shall be published in the *Canada* Publication. *Gazette*. 42 V., c. 16, s. 48 ;—49 V., c. 40, s.

**58.** The Governor in Council may, from time to time, make a tariff of fees to be paid to the inspectors or their assistants for inspecting and stamping weights and measures, balances, beams and other weighing machines, under this Act ; and the Order in Council containing such tariff and regulations, and any repeal or amendment thereof, shall be published in the *Canada Gazette* ; and the said fees shall form part of the Consolidated Revenue Fund of Canada. 42 V., c. 16, s. 49.

Governor in Council may make tariff of fees.

Publication

Application of fees.

**59.** Such fees shall be paid at the time of the inspection, stamping or verification, to the inspector or his assistant, who shall affix to the certificate given by him an adhesive stamp or stamps to the amount of such fee, and shall, at the time of affixing the same, write or mark thereon, in such manner as is directed by departmental regulations, the date at which it is affixed ; and no certificate shall be valid or avail for any purpose whatsoever unless the requisite stamp or stamps have been duly affixed and remain affixed thereto and cancelled. 42 V., c. 16, s. 50.

When and how such fees shall be paid.

Unstamped certificate null.

**60.** If any person refuses to pay the inspection fees payable by him, on demand of the inspector or assistant inspector, such inspector or assistant inspector may seize sufficient of the weights, measures or weighing machines, for the inspection whereof such fees are due, to secure the same, and retain them until the fees and all expenses incurred are paid, and shall forthwith institute proceedings for the recovery thereof and costs, as provided by section sixty-three. 47 V., c. 36, s. 10.

Power to seize weights, &c., if the inspector's fees are not paid.

**61.** The Governor in Council may, from time to time, direct adhesive stamps, bearing such device as he thinks proper, to be prepared for the purposes of this Act, and may defray the cost thereof out of any unappropriated moneys forming part of the Consolidated Revenue Fund of Canada :

Adhesive stamps for use under this Act.



Device thereon.

2. The device on such adhesive stamp shall express the value thereof, that is to say, the sum at which it is to be reckoned in payment of the duty hereby imposed. 42 V., c. 16, s. 51.

Accounts under this Act.

**62.** Separate accounts shall be kept of all expenditure incurred and of all fees and duties collected and received under the authority of this Act; and a correct annual statement of the same up to the thirtieth day of June then last past, shall be laid before Parliament within the first fifteen days of the then next session thereof. 42 V., c. 16, s. 52.

PROCEDURE

Recovery of penalties and enforcement of forfeitures.

**63.** All penalties imposed by this Act, or by any regulation made under its authority, shall be recoverable, with costs, before any civil court of competent jurisdiction,—or before any justice of the peace for the district, county or place in which the offence is committed, if such penalty does not exceed fifty dollars, and before any two such justices, if it exceeds fifty dollars,—upon proof by confession, or by the oath of one credible witness; and the amount may, if not forthwith paid, be levied by execution or distress and sale of the goods and chattels of the offender, by warrant, under the hand and seal of such justice or justices,—by whom also any imprisonment to which the offender is liable may be awarded; and the provisions of the “*Act respecting summary proceedings before Justices of the Peace,*” shall, subject to the provisions of this Act, apply to all proceedings thereunder. 42 V., c. 16, s. 53, *part.*

How levied, if not forthwith paid.

Application of penalties

**64.** A moiety of every penalty so recovered shall belong to the person who sues for the same, not being an inspector or an assistant inspector, and the other moiety or, if the person suing is an officer acting in pursuance of this Act, the whole penalty, shall belong to Her Majesty. 42 V., c. 16, s. 53, *part.*

Disposal of forfeited weights, &c.

**65.** All false weights, beams, balances and weighing machines seized as forfeited under this Act, shall be delivered to the district inspector, for the district in which the offence is committed, in whose custody they shall remain, subject to the order of the Minister of Inland Revenue. 42 V., c. 16, s. 53, *part.*

Forfeited articles or money voluntarily abandoned, how to be dealt with.

**66.** If any weight, beam, balance, measure or weighing machine is voluntarily given up or abandoned by the owner thereof to any inspector or assistant inspector of weights and measures, as forfeited under this Act, or if any sum of money is voluntarily paid to any such inspector or assistant inspector, with the consent and approval of the Minister of Inland Revenue, as the amount of any penalty under this Act, such abandonment or payment shall be deemed to be

a lawful abandonment or payment; and the weight, beam, balance, measure or weighing machine so abandoned or given up may be dealt with as if forfeited under this Act, and the sum of money so paid may be dealt with as if it was a penalty recovered under this Act. 48-49 V., c. 64, s. 4.

**67.** Every person aggrieved by the use of any weight or measure or weighing machine, which has not been duly inspected and stamped according to this Act, or which is found light, deficient or otherwise unjust, may recover treble damages and treble costs. 42 V., c. 16, s. 53, *part*.

Remedy of  
person  
aggrieved by  
false weights,  
&c.

**68.** No action or prosecution shall be brought against any person for any penalty imposed by this Act, unless the same is commenced within six months after the offence is committed. 47 V., c. 36, s. 11.

Limitation of  
suits.

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## SCHEDULES.

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### FIRST SCHEDULE.

#### PART I.

#### DOMINION STANDARDS.

The following standards were constructed under the direction of the Commissioner of Inland Revenue:—

The Dominion standard for determining the length of the Dominion standard yard is a solid square bar, thirty-eight inches long and one inch square in transverse section, the bar being of bronze or gun metal (known as Baily's metal); near to each end a cylindrical hole is sunk (the distance between the centres of the two holes being thirty-six inches) to the depth of half an inch; at the bottom of each hole is inserted in a smaller hole a gold plug or pin, about one-tenth of an inch in diameter, and upon the surface of each pin are cut, a fine line transverse to the axis of the bar, and two lines at an interval of about one-hundredth of an inch parallel to the axis of the bar; the measure of length of the Dominion standard yard is given by the interval between the transverse line at one end and the transverse line at the other end, the part of each line which is employed being the point midway between the longitudinal lines; and the said points are in this Act referred to as the centres of the said gold plugs or pins, and such bar is marked "Mr. Baily's metal," "Standard Yard" "A," "Troughton and Simms, London." There are also, on the upper side of the bar, two holes for the insertion of the bulbs of suitable thermometers for the determination of the temperature.

The Dominion standard for determining the weight of the Dominion standard pound is of platinum-iridium, the form being that of a cylinder nearly 1·35 inch in height and 1·15 inch in diameter, with a groove or channel round it, the middle of which is about 0·34 inch below the top of the cylinder, for insertion of the points of the ivory fork by which it is to be lifted; the edges are carefully rounded off, and such standard pound is marked "A." The weight of this standard in terms of the Imperial standard is 6999·97694 grains when both are weighed *in vacuo* and 6999·98387 grains when both are weighed in air at the temperature of 62° of Fahrenheit's thermometer, the barometer being at 30 inches, and for which due allowance is to be made when comparing other standards.

The Dominion standard for determining the weight of the Dominion standard Troy ounce is of platinum-iridium, the form being that of a truncated cone, with a knob, nearly  $\frac{1}{16}$  of an inch in height, including the knob, the knob being nearly  $\frac{1}{4}$  inch and the base of the cone  $\frac{1}{2}$  inch in diameter respectively, and such standard Troy ounce is marked "A." The weight of this standard in terms of the Imperial standard is 479·99197 grains when both are weighed *in vacuo*, and 480·03648 grains when both are weighed in air at the temperature of 62° of Fahrenheit's thermometer, the barometer being at 30 inches, for which due allowance is to be made when comparing other standards.

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## PART II.

### PARLIAMENTARY COPIES OF DOMINION STANDARDS.

The following copies of the standards above mentioned in part one of this schedule were constructed at the same time as the above standards. They are of the same construction and form as the above standards, and they are respectively marked and deposited as follows:—

(1) One of the copies of the Dominion standard for determining the Dominion standard yard, being a bronze bar marked "Mr. Baily's metal," "Standard Yard," "B," "Troughton and Simms, London," one of the copies of the Dominion standard for determining the Dominion standard pound, marked "B," and one of the copies of the Dominion standard for determining the Dominion standard Troy ounce marked "B," have been deposited with the Speaker of the Senate. This copy of the standard yard is standard at a temperature of 62·16° of Fahrenheit's thermometer, and the weight of this copy of the standard pound, in terms of the Imperial standard, when both are weighed *in vacuo*, is 6999·98312 grains.

(2.) One of the copies of the Dominion standard for determining the Dominion standard yard, being a bronze bar marked "Mr. Baily's metal," "Standard Yard," "C," "Troughton and Simms, London," one of the copies of the Dominion

standard for determining the Dominion standard pound, marked "C," and one of the copies of the Dominion standard for determining the Dominion standard Troy ounce, marked "C," have been deposited with the Speaker of the House of Commons. This copy of the standard yard is standard at a temperature of  $61.45^{\circ}$  of Fahrenheit's thermometer, and the weight of this copy of the standard pound, in terms of the Imperial standard, when both are weighed *in vacuo*, is 6999.98367 grains. 42 V., c. 16, 1st sch.

*See sec 9,  
which says  
 $61.91^{\circ}$*

SECOND SCHEDULE.

DEPARTMENTAL STANDARDS

Measures of Length.		Measures of Capacity.	
No. of each.	Denomination of Standard.	Denomination of Standard.	
		<i>Set marked "a."</i>	
1	100 feet.	Bushel.	
1	66 feet or chain of 100 links.	Half-bushel.	
2	10 feet end measures, with bed.	Peck.	
1	6 feet end measure, with bed.	Gallon.	
1	3 feet or 1 yard.	Half-gallon.	
1	1 inch divided into 10 decimal parts, one of which is again divided into ten subdivisions of $\frac{1}{100}$ th of an inch each.	Quart.	
		Pint.	
		Half pint.	
		Gill.	
		Half-gill.	
		<i>Set marked "b."</i>	
		Bushel.	
		Half-bushel.	
		Peck.	
		Gallon.	
		Half-gallon.	
		Quart.	
		Pint.	
		Half-pint.	
		Gill.	
		Half-gill.	

## WEIGHTS.

Denomination of Standard.	Denomination of Standard.	Denomination of Standard.
Avoirdupois Weights.	Troy Bullion Weights.	Decimal Grain Weights.
<i>Set marked "a."</i>	<i>Set marked "a."</i>	<i>Set marked "a."</i>
50 pounds.	500 ounces.	1,000 grains.
30 do	300 do	600 do
20 do	200 do	300 do
10 do	100 do	200 do
5 do	50 do	100 do
3 do	30 do	60 do
2 do	20 do	30 do
1 pound.	10 do	20 do
8 ounces.	5 do	10 do
4 do	3 do	6 do
2 do	2 do	3 do
1 ounce.	1 do	2 do
8 drams.	.5 do	1 do
4 do	.3 do	.6 do
2 do	.2 do	.3 do
1 dram.	.1 do	.2 do
$\frac{1}{2}$ do	.05 do	.1 do
.5 pound.	.03 do	.06 do
.3 do	.02 do	.03 do
.2 do	.01 do	.02 do
.1 do	.005 do	.01 do
.05 do	.003 do	
.03 do	.002 do	
.02 do	.001 do	
.01 do		
.005 do		
.003 do		
.002 do		
.001 do		
<i>Set marked "b."</i>	<i>Set marked "b."</i>	<i>Set marked "b."</i>
50 pounds.	500 ounces.	1,000 grains.
30 do	300 do	600 do
20 do	200 do	300 do
10 do	100 do	200 do
5 do	50 do	100 do
3 do	30 do	60 do
2 do	20 do	30 do
1 pound.	10 do	20 do
8 ounces.	5 do	10 do
4 do	3 do	6 do
2 do	2 do	3 do
1 ounce.	1 do	2 do
8 drams.	.5 do	1 do
4 do	.3 do	.6 do
2 do	.2 do	.3 do
1 dram.	.1 do	.2 do
$\frac{1}{2}$ do	.05 do	.1 do
.5 pound.	.03 do	.06 do
.3 do	.02 do	.03 do
.2 do	.01 do	.02 do
.1 do	.005 do	.01 do
.05 do	.003 do	
.03 do	.002 do	
.02 do	.001 do	
.01 do		
.005 do		
.003 do		
.002 do		
.001 do		

## THIRD SCHEDULE.

TABLES of the Values of the principal denominations of Measures and Weights of the Metric System, expressed in terms of the Standard Measures and Weights of Canada.

## 1.—MEASURES OF LENGTH.

Metric Denominations and Values.		Equivalents expressed in terms of the Standard of Canada.		
—	Metres.	In Standard yards and decimal parts of a yard.	In feet and decimal parts of a foot.	In links and decimal parts of a link.
Miriametre .....	10000	10939 44444	32818·33333	49724·74747
Kilometre .....	1000	1093·94444	3281·83333	4972·47475
Hectometre .....	100	109·39444	328·18333	497·24747
Decametre .....	10	10·93944	32 81833	49·72475
Metre .....	1	1·09394	3·28183	4·97247
Decimetre .....	$\frac{1}{10}$	·109394	·328183	·49725
Centimetre .....	$\frac{1}{100}$	·010939	·032818	·04972
Millimetre .....	$\frac{1}{1000}$	·001094	·003282	·00497

## 2.—MEASURES OF SURFACE.

Metric Denominations and Value.		Equivalents expressed in terms of the Standard of Canada.		
—	Square Metres	In square yards and decimal parts of a square yard.	In square links and decimal parts of a square link.	
Hectare .....	100 ares.	10000.	11967·1444	247255·0511
Decare .....	10 do	1000	1196·7144	24725·5051
Are .....	1 do	100	119·6714	2472·5505
Centiare .....	$\frac{1}{100}$ do	1	1·1967	24·7255

## 3.—WEIGHTS.

Metric Denomination and Value.		Equivalents expressed in terms of the Standard of Canada.	
—	Grams.	In pounds Avoirdupois and decimal parts of a pound.	In grains and decimal parts of a grain Troy.
Millier .....	1000000	2204 62125	
Quintal .....	100000	220·46212	
Myrigramme .....	10000	22·046212	
Kilogramme .....	1000	2·204621	
Hectogramme .....	100	·220462	
Decagramme .....	10	·022046	
Gramme .....	1	·002204	15·4323487
Decigramme .....	$\frac{1}{10}$	·0002204	1·5432349
Centigramme .....	$\frac{1}{100}$	·0000220	·1543285
Milligramme .....	$\frac{1}{1000}$	0000022	·0154323

## 4.—MEASURES OF CAPACITY.

Metric Denominations and Value.			Equivalents expressed in terms of the Standard of Canada.	
—	Cubic Metres.	Litres.	In Imperial gallons and decimal parts of an Imperial gallon.	—
Kilolitre .....	1	1000	220·2443	
Hectolitre .....	$\frac{1}{100}$	100	22·0244	
Decalitre .....	$\frac{1}{1000}$	10	2·2024	
Litre .....	$\frac{1}{10000}$	1	·2202	
Decilitre .....	$\frac{1}{100000}$	$\frac{1}{10}$	·0220	
Centilitre .....	$\frac{1}{1000000}$	$\frac{1}{100}$	·0022	

42 V., c. 16, 3rd sch.

## FOURTH SCHEDULE.

## METRIC STANDARDS.

List of Metric Standards in the custody of the Inland Revenue Department.

## MEASURES OF LENGTH.

*Metre.*

The Dominion standard for determining the length of the metre is a solid square bar, forty-one and a-half inches long, and one inch square in transverse section, the bar being of bronze or gun metal (known as Baily's metal); near to each end a cylindrical hole is sunk (the distance between the centres of the two holes being one metre or thereabout) to the depth of half an inch; at the bottom of each hole is inserted in a smaller hole a gold plug or pin, about one-tenth of an inch in diameter, and upon the surface of each pin is cut a fine line transverse to the axis of the bar, and two lines at an interval of about one hundredth of an inch parallel to the axis of the bar. The measure of length of the metre is given by the interval between the transverse line at one end and the transverse line at the other end, the part of each line employed being the point midway between the longitudinal lines; and the said points are in this Act referred to as the centres of the said gold plugs or pins, and such bar is marked "Mr. Baily's metal," "Standard Metre," "Troughton & Simms, London." There are also on the upper side of the bar two holes for the insertion of the bulbs of suitable thermometers for the determination of the temperature. This standard is shorter than the French standard "Metre des archives," by  $\cdot00147$  of a millimetre at  $0^{\circ}$  Centigrade, or  $32^{\circ}$  Fahrenheit, or is standard at  $32^{\circ}16'$  Fahrenheit.

## WEIGHTS.

*Kilogramme.*

The Dominion standard for determining the weight of the Kilogramme is of bronze, the form being that of a cylinder with a knob, the cylinder having a groove cut in it at about two-thirds of its height. Its value as compared with the French Standard Kilogramme is 1000002.45 milligrammes, or 1.00000245 of a Kilogramme.

## METRIC WEIGHTS.

No. of each.	Denomination.	No. of each.	Denomination.
1	20 Kilogrammes.	1	5 Decigrammes.
1	10 do	1	2 do
1	5 do	2	1 Decigramme.
2	2 do	1	5 Centigrammes.
1	1 Kilogramme.	1	2 do
1	500 Grammes.	2	1 Centigramme.
2	200 do	1	5 Milligrammes.
1	100 do	2	2 do
1	50 do	1	1 Milligramme.
2	20 do		
1	10 do		
1	5 do		
1	2 do		
2	1 Gramme.		

42 V., c. 16, 4th sch.

OTTAWA: Printed by BROWN CHAMBERLIN, Law Printer to the Queen's Most Excellent Majesty.





# 51 VICTORIA.

## CHAP. 25.

An Act to amend the Weights and Measures Act as respects the contents of packages of salt.

[Assented to 22nd May, 1888.]

**H**ER Majesty, by and with the advice and consent of the Senate and House of Commons of Canada, enacts as follows:— Preamble.

1. Every barrel of salt packed in bulk, sold or offered for sale, shall contain two hundred and eighty pounds of salt, and every such barrel of salt, sold or offered for sale, shall have the correct gross and net weight thereof marked upon it in a permanent manner. Contents and marking of barrels of salt.

2. When bags of salt are packed in barrels, the number of bags contained in the barrel and the weight of the aggregate amount of salt shall be marked, stamped or branded on one head of the barrel As to bags of salt in barrels

3. The name or the registered trade mark of the packer of the salt, if it is packed in Canada, or the name and address of the importer, if it is packed elsewhere than in Canada, shall be marked, stamped or branded on every barrel of salt sold or offered for sale in Canada. Name to be marked on barrel.

4. Every person who neglects to comply with any provision of this Act, and every person who sells or offers for sale any salt in contravention of the foregoing provisions of this Act, shall be liable, on summary conviction, to a penalty of not less than ten dollars for each offence; but no deficiency in the weight of the salt contained in any package shall be deemed a contravention of this Act unless such deficiency exceeds five per cent., nor shall any penalty be recoverable under this Act unless proceedings for the recovery of the same are instituted within twenty days after delivery of the package of salt in respect of which it is claimed that a contravention of this Act has been committed. Penalty for contravention  
Exception.  
Limitation of time



## 52 VICTORIA.

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### CHAP. 17.

An Act to amend "The Weights and Measures Act," chapter one hundred and four of the Revised Statutes.

[Assented to 20th March, 1889.]

HER Majesty, by and with the advice and consent of the Senate and House of Commons of Canada, enacts as follows:—

Section 55 of R.S.C., c. 104 repealed; new section. Capacity of casks to be marked thereon.

1. Section fifty-five of "*The Weights and Measures Act*," chapter one hundred and four of the Revised Statutes, is hereby repealed and the following substituted therefor:—

"55. No malt liquors or any other liquids subject to excise that have been put into any cask in Canada, shall be delivered in the cask to the purchaser unless the capacity of the cask in which delivery is made, ascertained in accordance with the provisions of the next preceding section, is legibly marked in gallons, and parts of a gallon, on one head thereof; and such marking shall be cut or branded in the wood, or painted thereon in oil colors, in characters not less than one inch and one quarter in height; except only that such marking shall not be necessary on casks on which the quantity of liquid then contained in them has been marked or verified in compliance with excise regulations then in force."

Exception.

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# 61 VICTORIA.

## CHAP. 30.

### An Act further to amend the Weights and Measures Act.

[Assented to 13th June, 1898.]

HER Majesty, by and with the advice and consent of the Senate and House of Commons of Canada, enacts as follows :—

1. Auctioneers, second-hand dealers, repairers and adjusters having in their possession, for sale, repair or adjustment, any weight, measure, or weighing machine, shall be deemed to be “dealers” within the meaning of *The Weights and Measures Act* and of this Act. “Dealers” defined.

2. Section 16 of *The Weights and Measures Act* is hereby repealed, and the following is substituted therefor :— R.S.C., c. 104, s. 16 amended.

“16. In contracts for the sale and delivery of any of the undermentioned articles, the bushel shall be determined by weighing, unless a bushel by measure is specially agreed upon—the weight equivalent to a bushel being as follows :— Bushel of certain articles determined by weight.

- Wheat, sixty pounds ;
- Lime, eighty pounds ;
- Indian corn, fifty-six pounds ;
- Rye, fifty-six pounds ;
- Peas, sixty pounds ;
- Barley, forty-eight pounds ;
- Malt, thirty-six pounds ;
- Oats, thirty-four pounds ;
- Beans, sixty pounds ;
- Clover seed, sixty pounds ;
- Timothy seed, forty-eight pounds ;
- Buckwheat, forty-eight pounds ;
- Flax seed, fifty-six pounds ;
- Hemp seed, forty-four pounds ;
- Blue grass seed, fourteen pounds ;
- Castor beans, forty pounds ;
- Potatoes, turnips, carrots, parsnips and beets, sixty pounds ;
- Onions, fifty pounds ;
- Bituminous coal, seventy pounds.

Standard bag of potatoes in Quebec.

“2. In the province of Quebec when potatoes are sold or offered for sale by the bag, the bag shall contain at least eighty pounds.

Penalty for contravention.

“3. Every person who violates any provision of this section shall be liable, for a first offence, to a penalty not exceeding twenty-five dollars, and for each subsequent offence, to a penalty not exceeding fifty dollars.”

Section 44 repealed.

3. Section 44 of the said Act is hereby repealed.

New s. 48.

4. Section 48 of the said Act is hereby repealed and the following is substituted therefor :—

Re-inspection at certain periods.

“18. Within four months after the expiration of two years from the first verification and stamping, and once in two years after each subsequent verification, every weight, measure and weighing machine shall be again inspected and verified, and a new certificate of such inspection and verification obtained from the proper inspector; and the production of the certificate shall be *prima facie* evidence of the verification or stamping, or re-verification, having taken place within the period prescribed by law.

Regulations as to certain scales.

“2. The Governor in Council may, however, make regulations providing for the more frequent verification of elevator, railway, colliery and public scales, and spring balances, and may require the owners thereof to provide suitable and safe storage for such standard weights as are necessary for the proper conduct of such verification, and may establish fees therefor.”

Having weights, etc., which cannot be verified.

5. No manufacturer of or dealer in weights, measures and weighing machines, shall have in his possession for purposes of trade, any weight, measure or weighing machine except such as can, after adjustment, be admitted to verification.

Penalty.

2. Every manufacturer of or dealer in weights, measures or weighing machines who violates this section shall be liable to a penalty not exceeding ten dollars for the first offence, and a penalty not exceeding twenty dollars for each subsequent offence; and such weights, measures and weighing machines shall be seized and confiscated.

Unnecessary number of weights.

6. No trader shall use with a weighing machine a greater number of weights than is required by its certified capacity.

2. No weighing machine used for weighing or determining the weights of any of the articles mentioned in section 16 of *The Weights and Measures Act* shall be of less certified capacity than one bushel.

Penalty.

3. Every trader who violates this section shall be liable to a penalty not exceeding ten dollars for the first offence, and not exceeding twenty dollars for each subsequent offence, and to the confiscation of the weights.

7. In case of dispute as to the correctness of a weight, measure or weighing machine, if an inspector or assistant inspector is requested to inspect such weight, measure or weighing machine, the fees for such inspection shall be paid by the person against whom the decision is given. <sup>Payment of inspector's fees.</sup>

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## 62-63 VICTORIA.

### CHAP. 28.

An Act to amend the Weights and Measures Act.

[Assented to 11th August, 1899.]

HER Majesty, by and with the advice and consent of the Senate and House of Commons of Canada, enacts as follows:—

1. The section substituted for section 16 of *The Weights and Measures Act*, chapter 104 of the Revised Statutes, by section 2 of chapter 30 of the statutes of 1898, is hereby amended by substituting the word “seventy” for the word “eighty” in the sixth line. R.S.C., c. 104, s. 16 amended.

2. On and after the first day of July, one thousand nine hundred, section 18 of the *The Weights and Measures Act* shall be repealed and the following shall be substituted therefor:— New s. 18.

“18. All apples packed in Canada for sale by the barrel shall be packed either in cylindrical veneer barrels having an inside diameter of eighteen inches and one-third, and twenty-seven inches from head to head inside measure, or in good and strong barrels of seasoned wood twenty-seven inches between the heads, inside measure, and having a head diameter of seventeen inches and a middle diameter of nineteen inches, and such last-named barrels shall be sufficiently hooped, with a lining hoop within the chimes, the whole well secured with nails. How apples shall be packed for sale.”

“2. Every person who offers or exposes for sale, or who packs for exportation, apples by the barrel, otherwise than in accordance with the foregoing provisions of this section, shall be liable to a penalty of twenty-five cents for each barrel of apples so offered or exposed for sale or packed.” Penalty for contravention.”



## 63 - 64 VICTORIA.

### CHAP. 37.

#### An Act to amend the Weights and Measures Act.

[Assented to 7th July, 1900.]

HER Majesty, by and with the advice and consent of the Senate and House of Commons of Canada, enacts as follows :—

1. The section substituted by section 2 of chapter 28 of the statutes of 1899, for section 18 of *The Weights and Measures Act*, chapter 104 of the Revised Statutes, is repealed and the following is substituted therefor :—

R.S.C., c. 104.  
new s. 12.

“18. All apples packed in Canada for export for sale by the barrel in closed barrels shall be packed in good and strong barrels of seasoned wood having dimensions not less than the following, namely : twenty-six inches and one-fourth between the heads, inside measure, and a head diameter of seventeen inches and a middle diameter of eighteen inches and one-half, representing as near as possible ninety-six quarts.

How apples shall be packed for sale.

“2. When apples, pears or quinces are sold by the barrel, as a measure of capacity, such barrel shall not be of lesser dimensions than those specified in this section.

Apples, pears and quinces.

“3. Every person who offers or exposes for sale, or who packs for exportation, apples, pears or quinces by the barrel, otherwise than in accordance with the foregoing provisions of this section, shall be liable to a penalty of twenty-five cents for each barrel of apples, pears or quinces so offered or exposed for sale or packed.”

Penalty for contravention.

2. When eggs are described as sold by the standard dozen, the dozen shall mean one pound and a half.

Standard dozen of eggs.

3. Upon, or attached to, every ball of binder twine offered for sale there shall be a stamp with the name of the manufacturer or importer, stating the number of feet of twine per pound in such ball.

Balls of binder twine to be stamped.

2. Every manufacturer or importer who neglects to comply with the provisions of this section shall, upon summary conviction, be liable to a penalty of not less than twenty-five cents

Penalty for contravention.

per ball, but no deficiency in the number of feet contained in any ball shall be deemed a contravention of this section unless such deficiency exceeds five per cent of the length stated upon such stamp.

Proceedings.

3. Any proceedings under this section shall be taken within six months from the sale of any such ball.

Commence-  
ment.

4. This section shall come into force on the first day of October, one thousand nine hundred, and shall apply to all binder twine imported into, or manufactured in, Canada after that day.

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# REGULATIONS

RESPECTING

## WEIGHTS AND MEASURES.

APPROVED OF BY ORDER IN COUNCIL. DECEMBER 17<sup>TH</sup>, 1898.

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WEIGHING MACHINES THAT MAY BE ADMITTED TO VERIFICATION.

Section 1. The following balances are to be admitted\* to verification :—

Balances having equal arms, and on which the load is suspended below the fulcrums.

Balances with equal arms, and on which the load is placed above the fulcrums.

Balances commonly known as steelyards, or Roman balances, having unequal arms.

Weigh-bridges, hay scales, platform scales.

Hydrostatic balances for weighing coal.

Perfection scales.

Duplessis portable track scales.

Household scales.

Spafford improved platform counter scales.

Computing scales of the platform type.

The "Troemner ball scale."

Spring scales, of the type known as "butcher's scales."

"Suspension scales."

"Parsell Truck Scale."

The Springer Torsion Balance.

BALANCES HAVING EQUAL ARMS ON WHICH THE LOAD IS SUSPENDED BELOW THE FULCRUMS.

Sec. 2. Balances with equal arms on which the load is suspended below the fulcrums are to be admitted to verification only when :—

1. The beam shows no material difference as regards the form or magnitude of the two arms.

2. It is provided with a tongue pointing upwards or downwards from its centre, at right angles with a line joining the extreme bearings, or with some equivalent arrangement for indicating the position of the equilibrium.

3. It is in equilibrium when a line joining the extreme bearings is perfectly horizontal, and returns to that position after being put into vibration.

4. Its arms are equal within the specified limit of error.

5. The balance is sufficiently sensitive to turn by the addition or subtraction of the two thousandth part of the maximum load for original verifications, and the one thousandth part thereof for subsequent verifications.

6. No balance balls or detached parts other than the pans and connections necessary for attaching them to the beam are used for adjusting the balance.

7. The balance, as a whole, is of sufficient strength, and on a sufficiently stable base, to secure it against change of form or position under the maximum load it is to carry.

8. The beam will carry its maximum load without deflection.

9. Except in the case of fine druggists scales the maximum load which the apparatus is intended to weigh, the shop number and the maker's name are conspicuously cast, engraved or stamped on the beam.

10. The knife-edges are permanently fixed to the beam.

11. The balance indicates the same weight, whether the load is placed in the centre of the pan, or at any side or corner.

12. The knife-edges are made of hardened cast steel.

13. The bearings are made of hardened cast steel, chilled iron, agate, or other hard substance not liable to be cut by the action of the knife-edge, and sufficiently hard to resist the action of a smooth file.

#### BALANCES HAVING EQUAL ARMS ON WHICH THE LOAD IS CARRIED ABOVE THE FULCRUMS.

Sec. 3. Balances with equal arms, and on which the load is carried above the fulcrums, will be admitted to verification only when—

1. There is no material difference as to the magnitude or arrangement of the two arms.

2. The arms are of equal length within a limit of error equivalent to that tolerated in commercial weights.

3. There are no balance balls, loose counterpoises or detached parts other than the pans necessary for carrying the load weighed, and the weights used for weighing it.

4. Its parallel rods, guides, levers and pivots, by which the adjustment of the scale is affected, are so constructed that they cannot be put out of adjustment without the use of violence, which may be readily detected on inspection.

5. The knife-edges or fulcrums of each set of levers or guide rods are in the same plane.

6. The balance is sufficiently sensitive to turn by the addition or subtraction of the two thousandth part of the maximum load for original verification, and the one thousandth part thereof for subsequent verifications.

7. There is a tongue or pointer, or some equivalent arrangement for showing when the balance is in equilibrium.

8. Except in the case of fine druggists scales the maximum load which the weighing machine is intended to weigh, the shop number and the maker's name are conspicuously cast, engraved or stamped on it.

9. The knife-edges are made of hardened cast steel.

10. The bearings are made of hardened cast steel, chilled iron, agate or other hardened substance, not liable to be cut by the action of the knife-edge, and sufficiently hard to resist the action of a smooth file.

#### BALANCES COMMONLY KNOWN AS STEELYARDS OR ROMAN BALANCES

Sec. 4. Balances commonly known as *steelyards* or Roman balances, having unequal arms, are to be admitted to verification only when:—

1. There is sufficient room for oscillation, and the knife edges on which the beam oscillates are sufficiently fine to permit it to move freely.

2. The beam is sufficiently strong to carry its load without deflection.

3. The bottom of the notches by which the divisions of the long arm of the lever are indicated, and from which the weight is suspended, are in close approximation to a right line drawn through the knife-edges forming the points of suspension, and when such straight line passes near to and a little above the centre of gravity of the whole apparatus.

4. The divisions on the long arm of the lever are equal among themselves.

5. The weights used with the lever—if they are changeable or can be readily detached therefrom—are multiples or sub-multiples of the pound avoirdupois. If sub-multiples they may be decimal sub-multiples as  $\frac{1}{10}$ ,  $\frac{1}{100}$ ,  $\frac{1}{1000}$ ; or binary sub-multiples as  $\frac{1}{2}$ ,  $\frac{1}{4}$ ,  $\frac{1}{8}$  of the pound avoirdupois. All the weights must have their true weight distinctly marked upon them.

6. The maximum load which the weighing machine is intended to weigh, the shop number and the maker's name are conspicuously cast, engraved or stamped on it.

7. The knife-edges are made of hardened cast steel.

8. The bearings are made of hardened cast steel, chilled iron, agate, or other hard substance not liable to be cut by the action of the knife-edge, and sufficiently hard to resist the action of a smooth file.

#### WEIGH-BRIDGES, HAY SCALES AND PLATFORM SCALES.

Sec. 5. Weigh-bridges, hay scales and platform scales will be admitted to verification only when:—

1. The foundation or supporting base is sufficiently firm, and capable of carrying without change of level or of form or other disturbance, the maximum load for which it is to be used and when such foundation is deep enough not to be disturbed by frost. The pit is not less than five feet deep and is properly drained.

2. The platform is so arranged that any obstruction to its free movement can be easily detected.

3. All the beams, levers and other parts are of sufficient strength to carry the maximum load to which they will be respectively subjected without deflection.

4. The knife-edges are firmly and permanently fixed in the levers; have sufficient room to permit free oscillation, and are sufficiently firm.

5. The knife-edges and fulcrums of each set of levers are in the same plane.

6. The oscillations are sufficiently evident.

7. The weights used with the instrument are equal to the avoirdupois pound, or to multiples or authorized sub-multiples of the avoirdupois pound, or special weights for the barrel of flour or for the bushel of wheat, their actual weight and the weight or special quantity they are intended to indicate on the scale being plainly marked thereon.

8. The weights used as above are decimal sub-multiples, as  $\frac{1}{10}$ ,  $\frac{1}{100}$ ,  $\frac{1}{1000}$ , or binary sub-multiples of the load indicated by them.

9. There are no detached parts for the adjustment of the balance accessible, or so placed that they can be used for fraudulent weighing.

10. The apparatus weighs correctly with a maximum load, or any part thereof, placed in the centre of the platform, and with not less than fifty per cent of the maximum load placed at either end, or with not less than twenty-five per cent thereof at any one corner.

11. The maximum load which the apparatus is intended to weigh, the shop number and the maker's name are conspicuously cast, engraved or stamped on the beam.

WHEN WEIGH-BRIDGES, PLATFORM SCALES AND BALANCES WITH EQUAL AND UNEQUAL ARMS SHALL BE REJECTED.

Sec. 6. All these weighing machines will be rejected :—

1. When with a full load and truly balanced, the addition or subtraction of the two thousandth part of the load for original verification and the one thousandth part thereof for subsequent verifications, does not cause the beam to touch the upper or lower part of the arc and remain there.

2. When the shop number, the maximum capacity and the maker's name are not legibly cast, engraved or stamped on them.

3. When the knife-edges and bearings are not made of hardened cast steel, chilled iron, agate or other hard substance not sufficiently hard to resist the action of a smooth file.

4. When unprovided with four check-rods to hold the bearings in place, excepting "Union Scales," which shall have two check-rods. (When constructed on the Howe principle, check-rods are not required.)

NOTE.—*The provisions of sub-section 2 shall apply only to original verification.*

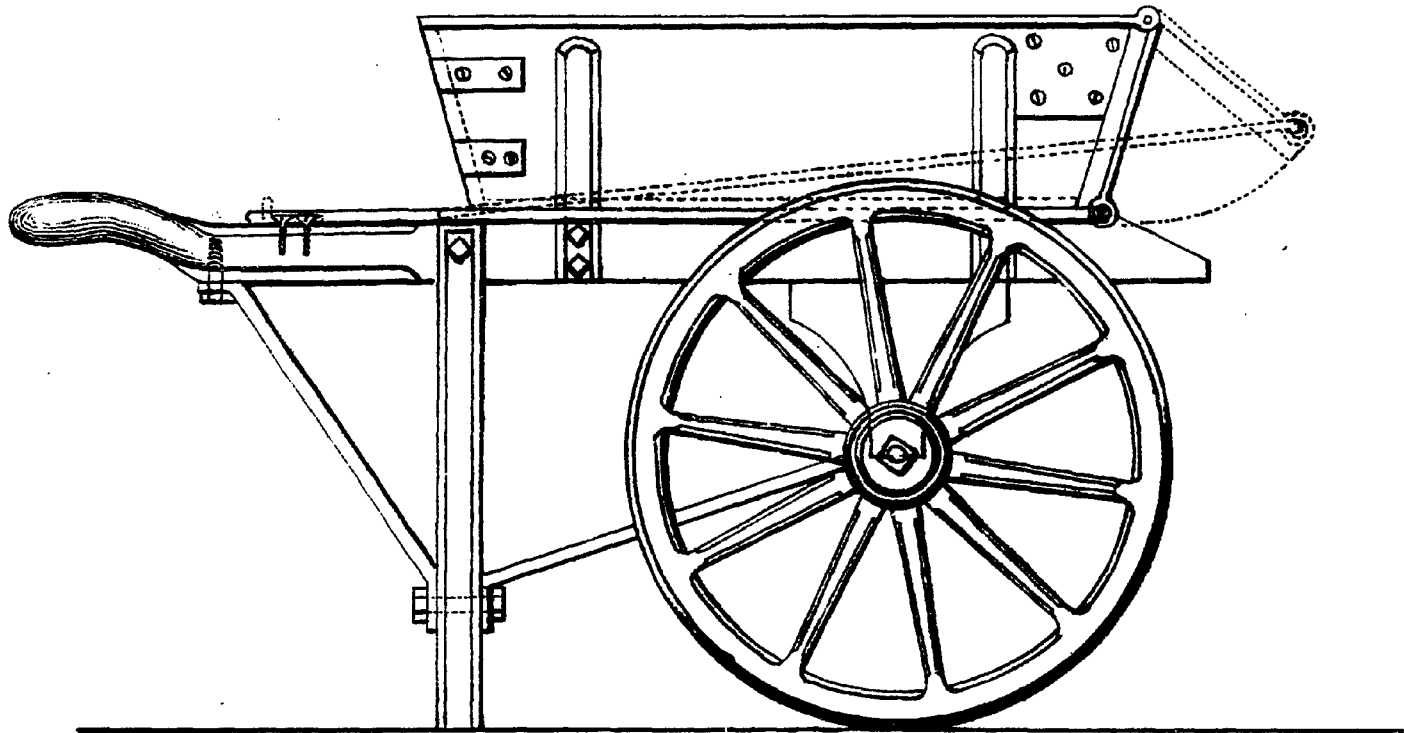
#### SPECIAL WEIGHING MACHINES.

Sec. 7. Weighing machines known as "Hydrostatic Balances," being such as are commonly used for determining the weight of coals delivered at the pit mouth, may be verified for use for such purposes, and also for weighing coals as delivered from vessels and barges, provided they give true indications within one two-hundredth part of the load.

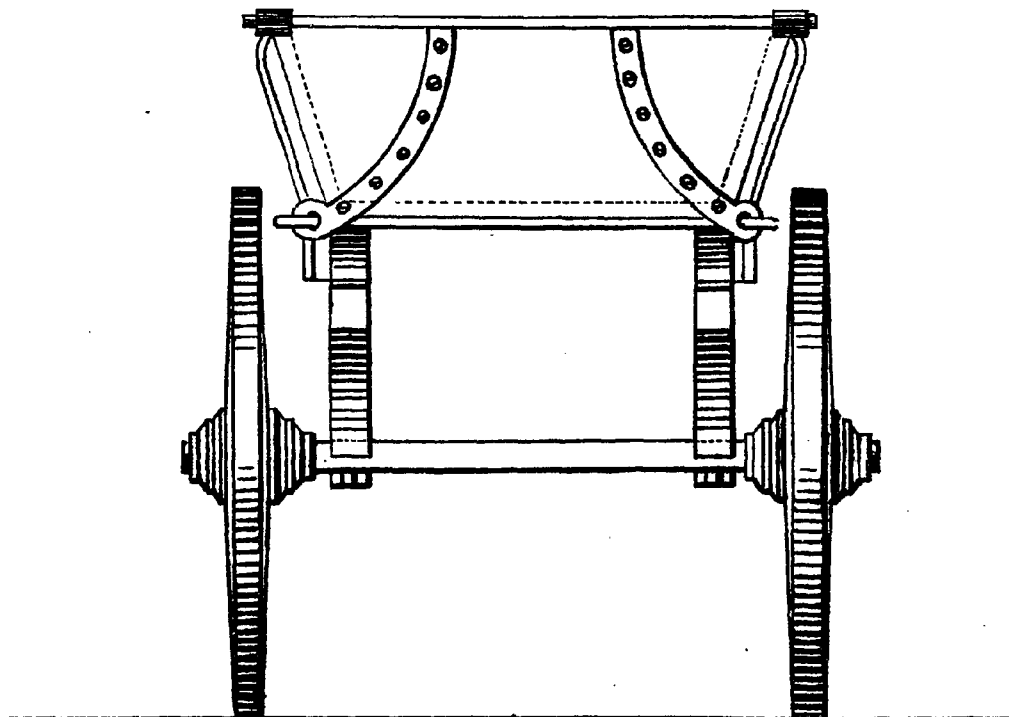
1. Weighing machines known as "Perfection Scales," if manufactured in accordance with specifications deposited in Patent Office at Ottawa, may be admitted to verification when found to weigh correctly.

2. Weighing machines known as "Duplessis Portable Track Scales," used for determining the weight of cars on railway tracks, may be admitted to verification for use for such purposes, provided they give indications within one four-hundredth part of the load.

# SALT CART



*Side View*



*End View*

*Exact size of box to hold four bushels imperial Measure.*

<i>Inside length at top</i>	<i>39 inches</i>
<i>" " " bottom</i>	<i>33 "</i>
<i>" width at top</i>	<i>27 "</i>
<i>" " " bottom</i>	<i>21 "</i>
<i>" vertical height</i>	<i>10.234 "</i>

SCALE 1 IN. = 1 FT.

3. A weighing machine known as the "Household Scale," a balance with equal arms to carry a load above the fulcrums of not more than ten (10) pounds in each pan. In its construction and verification it must in every respect comply with the requirements of sec. 3, above. The words "Household Scale" must be engraved or stamped in bold legible letters of not less than one-fourth of an inch in height, on some conspicuous part of each scale so that at a glance its classification may be known.

4. The scale known as the "Household Scale," manufactured by Mr. D. Collins, Montreal, and having unequal arms, is also admitted to verification under the same conditions.

These scales shall be used for household purposes only. Should any such scale be found in use for trade purposes of any description it shall be seized and confiscated. The fee for the verification of the above described "Household Scales" shall be ten (10) cents for each scale.

5. The "Spafford Improved Platform Scale" when it complies with the requirements of section 5.

6. Computing scales, when they comply with the requirements of sections 2, 3 or 5, but the certificates issued shall only prove their correctness as weighing machines.

7. The "Troemner Ball Scale" with its special weights.

The inspection fee shall be the same as for platform scales.

8. Spring scales, commonly known as "Butchers' Scales" or "Market Scales," where it is not possible to engrave or stamp them, the shop number, maximum load and maker's name may be painted thereon. The shop number shall also be stamped or engraved on the pan or its supports.

The tolerated error for these scales, when weighing at their full capacity, shall not exceed one ounce.

Spring scales shall be presented for verification annually; and any such scales found in use more than twelve months after the first inspection or any succeeding verification thereof shall be confiscated.

9. "Suspension Scales" when they comply with the requirements of section 5—so far as applicable.

10. "The Parsell Truck Scale" when it complies with the requirements of section 5.

11. The Springer Torsion Balance.

The regulations and fees, in so far as applicable, to be the same as for equal arm balances. Sec. 3.

#### SPECIAL MEASURING MACHINES ADMITTED TO VERIFICATION.

Sec. 8. Salt carts, each to contain four imperial bushels, constructed, as to form and dimensions, in accordance with plan or drawing of the same to be attached to weights and measures regulations, shall be admitted to verification.

2. Salt carts made in any other form or according to other dimensions than the foregoing will not be admitted to verification, and consequently their use for trade purposes will be held to be illegal.

3. The fee chargeable for verifying and stamping each salt cart shall be one dollar.

Victor Molasses Gate. Inspection fee 25c.

The Cylindrical Cloth Measure. Inspection fee 50c.

The S. F. Bowser Self-Measuring Pump —when due provision for sealing is made. Inspection fee 75c.

The C. T. Williams Improved Self-Measuring Pump. Inspection fee 50c.  
Enterprise Measuring Faucet. Inspection fee 50c.

Enterprise Self-Measuring and Priming Pump—No. 197. Inspection fee 50c.

4. Owners of Molasses and Oil Gates and Pumps which have been approved by the Department, may legally use them for trade purposes until such time as the inspecting officers of the district in which they are in use, may on their irregular visits, or their regular periodical tours, be brought into their vicinity.

SEC. 9.—*Verification and stamping of weights, measures and weighing machines on the premises of the manufacturer, adjuster or repairer, and their removal therefrom.*

1. The article shall bear the name of the maker, its capacity and consecutive shop-number whereby it may be designated for identification with the certificate of verification. These marks shall be cast, engraved or stamped. Printing or stencilling is prohibited.

2. The verification and stamping must take place before the articles are packed for removal, and at that state of completion at which they are finally adjusted by the manufacturer, adjuster or repairer, excepting weigh-bridges, hay scales or other dormant\* weighing machines which cannot be verified until finally set up.

3. It shall be the duty of all manufacturers, importers and adjusters of weights, measures or weighing machines to notify the inspector of weights and measures for the district, of the shipment and destination of all weigh-bridges, hay scales or other dormant weighing machines which cannot be inspected until finally set up.

4. When scales are sent to factories or to adjusters for repairs, they must be reinspected after such repairs are made; but fees in addition to those of the regular biennial inspection shall not be charged. Special certificates shall be given in such cases informing the owners that the regular biennial reinspections are not in any way postponed by the issue of the intermediate certificate.

5. For the first verification and stamping of weights, measures and weighing machines at the place where they are manufactured, the fees may be paid at once, or payment may be postponed for such period not exceeding three months as the Minister of Inland Revenue may authorize, sufficient security being taken for the payment thereof at the time stated in the Departmental Regulations under which the delay is granted.

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\* The term "*dormant*," shall be understood to cover only such weighing machines as weigh-bridges, hay and track scales, or such weighing machines only as require to be placed on a specially prepared foundation.

IMPORTATION OF WEIGHTS, MEASURES AND WEIGHING MACHINES.

SEC. 10.— *Weights, measures and weighing machines imported into Canada are to be dealt with as follows :—*

1. The Collector of Customs at the port where such articles are imported will notify the inspector of weights and measures for the district, of the entry for consumption of any weights, measures or weighing machines at his port, which notice shall state the number and description of such articles as are invoiced, and the names and residence of the parties to whom they are delivered.

2. So long as such articles remain in the original packages they may be removed from the custom-house or from a custom warehouse to the premises of the importer without inspection, but they shall not be taken into use for trade purposes without being first inspected and stamped.

FIRST INSPECTION OF DORMANT WEIGHING MACHINES, HAY SCALES, WEIGH-BRIDGES, &c.

Sec. 11. Owners of these scales may, after the same have been carefully set up on permanent foundations, and having in writing notified the Inspector, legally use them for trade purposes until such time as the inspecting officers of the district in which they are in use, may, on their *irregular* visits, or their regular periodical tours, be brought into their vicinity.

If it should occur, however, that any person owning one of these weighing machines should doubt its accuracy or desire its immediate inspection, he can, on application to the inspector of the district, have the same verified, on his agreeing in writing to pay all really necessary expenses attending the inspection.

LOOSE COUNTERPOISES OR THEIR EQUIVALENTS.

Sec. 12. No weighing machine having a "scoop on" or "scoop off" or similar contrivance shall be admitted to verification, and any now in use shall be so permanently fixed that the scale may be used with the scoop only, or without the scoop only.

SECOND OR SUBSEQUENT VERIFICATIONS OF WEIGHING MACHINES.

Sec. 13. No weighing machine duly inspected and stamped, shall be liable for reverification oftener than once in two years, excepting those used for elevators, railways, collieries, flouring mills (other than grist mills), cheese factories, grain warehouses, public markets, and for the weighing of coal which shall be inspected annually.

SPECIAL INSPECTION OF WEIGHTS, MEASURES AND WEIGHING MACHINES.

Sec. 14. The owner or user of a weighing machine may demand its inspection at any time by paying therefor the fees and costs incurred.



## NEW VARIETIES OF WEIGHTS, MEASURES AND WEIGHING MACHINES.

Sec. 15. No weights, measures or weighing machines other than those specified by this Order in Council shall be admitted to verification, unless a sample of the article for which admission is sought has been sent, free of charge, to the Commissioner of Standards at Ottawa, and authority for their use obtained.

## REJECTION FEES—REJECTION LABELS.

Sec. 16. 1. When weights, measures or weighing machines presented for verification are palpably incorrect, it will be the inspector's duty to inform the owner of this fact, and instruct him to have such articles adjusted ; and submitted to verification, after such adjustment has been made.

2. The unpleasantness to the owner of having to pay a rejection fee will thus, in the majority of cases, be obviated.

3. If any weight, measure or weighing machine be found incorrect and incapable of being made correct, it shall be seized and confiscated or destroyed.

4. If it be capable of being made correct, the owner or user shall be instructed to have it sent at once to the manufacturer or adjuster, and shall be warned that it must not be used until put into a state of proper repair, and the label prepared for that purpose shall be attached and sealed in such manner that the article cannot be used without destroying the label or breaking the wire fastening the seal.

5. If such rejected article be used before proper repairs are made, the inspecting officer shall proceed against the owner or user under section 25 of *The Weights and Measures Act*.

## SCHEDULES A and B.

## SEC. 17. Weights to be admitted to Verification.

SCHEDULE A—DENOMINATIONS.				SCHEDULE B—FORMS.	
DOMINION WEIGHTS.					
Avoirdupois Weights.			Troy or Bullion Weights.		
In Bronze or White Metal of equal hardness.	In Iron.	In Soft Metal Cased.	In Bronze only.		
60 lbs.	60 lbs.	60 lbs.	500	ozs.	
50 do	50 do	50 do	300	do	
30 do	30 do	30 do	200	do	
20 do	20 do	20 do	100	do	
10 do	10 do	10 do	50	do	
7 do	7 do	7 do	30	do	
5 do	5 do	5 do	20	do	
4 do	4 do	4 do	10	do	
3 do	3 do	3 do	5	do	
2 do	2 do	2 do	3	do	
1 do	1 do	1 do	2	do	
8 ozs.	8 ozs.	8 ozs.	1	do	
4 do	4 do	4 do	.5	do	
2 do	2 do	2 do	.3	do	
1 do	1 do	1 do	.2	do	
8 drs.		8 drs.	.1	do	
4 do		4 do	.05	do	
2 do		2 do	.03	do	
1 do		1 do	.02	do	
$\frac{1}{2}$ do		$\frac{1}{2}$ do	.01	do	
1000 grs.			.005	do	
600 do			.003	do	
300 do			.002	do	
200 do			.001	do	
100 do					
60 do					
30 do					
20 do					
10 do					
6 do					
3 do					
2 do					
1 do					
.6 do					
.3 do					
.2 do					
.1 do					
.06 do					
.03 do					
.02 do					
.01 do					

## SCHEDULE B—FORMS.

*Avoirdupois Weights.*

From 50 lbs. down to 1 lb., cylindrical, with knob. The same with ring.  
 Rectangular block, with ring or handle cast solid.  
 From 5 lbs. down to one-half dram. Any of the above forms; also flat discs in nests.  
 A 60 lb. weight for the bushel of wheat, of some form sufficiently distinct from the forms herein described to prevent the one being mistaken for the other.

*Grain Weights.*

From 1,000 grains down to 10 grains, cylindrical, with a small rising stem and knob.  
 Six grains and under; bent platinum or aluminum wire so bent as to represent the number of grains or decimal parts of a grain.

In every case the denomination of the weights, when of sufficient size, must be cast, engraved, or stamped on them in bold, legible numerals, of a size duly proportioned to the size of the weight.

*Troy Weights.*

From 500 ounces down to 1 ounce, truncated cone, with knob.

From 5 ounces down to .001 ounce, flat square plates.

The denomination to be engraved or stamped on the top of the knob of each weight, in as large numerals as the size of the weight will admit; and, also, on face of the smaller weights.

## IRON WEIGHTS.

1. No new iron weight shall be admitted to verification, unless provided with one soft metal plug only, which shall be sunk at least one-eighth of an inch below the surface.

2. All iron weights for platform scales, of half-pound in weight or less, shall be not less than half an inch in thickness.

3. When any iron weight is presented for verification, or when any such weight is found in use from which a soft metal plug has been lost, it shall not be adjusted or restamped until the hole in which the plug was inserted has been enlarged at the bottom, so that the expansion of the lead used for adjusting it will prevent it subsequently falling out.

4. In all iron weights the opening to receive the lead plug shall be of the uniform size of  $\frac{3}{8}$  of an inch in diameter, when possible.

### SCHEDULE C.

#### SEC. 18. Fees to be collected for Inspection of Weights.

##### DOMINION WEIGHTS.

Avoirdupois Weights.				Troy Weights.	
Denomination.	Verification Fees.			Denomination.	Veri-
	Bronze.	Iron.	Cased.		Bronze
					only.
Cts.	Cts.	Cts.	Cts.		
60 lbs .....	25	25	30	500 ozs.....	30
50 do .....	20	20	25	300 do .....	25
30 do .....	20	20	25	200 do .....	25
20 do .....	20	20	25	100 do .....	20
10 do .....	10	10	15	50 do .....	10
7 do .....	10	10	15	30 do .....	10
5 do .....	5	5	5	20 do .....	10
4 do .....	5	5	5	10 do .....	10
3 do .....	5	5	5	5 do .....	5
2 do .....	5	5	5	3 do .....	5
1 do .....	5	5	5	2 do .....	5
8 ozs.....	5	5	5	1 do .....	5
4 do .....	5	5	5	.5 .....	5
2 do .....	5	5	5	.3 .....	5
1 do .....	5	5	5	.2 .....	5
8 drams .....	5	5	5	.1 .....	5
4 do .....	5	Not Ad- mitted.	5	.05 .....	5
2 do .....	5		5	.03 .....	5
1 do .....	5		5	.02 .....	5
$\frac{1}{2}$ do .....	5		5	.01 .....	5
Grain Weights, 5c. each.					.005 .....
<i>Tolerated.</i>				.003 .....	5
				.002 .....	5
				.001 .....	5
56 lbs.....	30	30			
28 do .....	25	25			
14 do .....	20	20			

\* The fee for original verification of 50-lb. iron weights when presented in considerable quantities shall cents for each 50-lb. weight.

## SCHEDULE D.

As Amended by Order in Council dated February 12th, 1903.

See Circular G. 657.

Sec. 19. Dominion Measures of Capacity that may be admitted to Verification.

DENOMINATION.	MATERIALS.	
A.—BUSHEL.	May be made of—	
HALF-BUSHEL.		1. Bronze or Brass, cast.
PECK.		2. Hammered Sheet Brass or Copper, strengthened by rims of similar metal, and upright straps.
GALLON.		3. Sheet Iron, or in Granite Ware when of sufficient strength to retain the form of the measure under ordinary usage, either with wood or iron bottoms.
	4. Wood of any suitable quality— with iron or hardwood rim. When of wood, the edge to be sufficiently thick to receive the brand.	
B.—GALLON.	May be made of—	
HALF-GALLON.		1. Bronze or Brass, cast.
QUART.		2. Hammered Sheet Brass or Copper, with suitable rim of similar metal.
PINT.		3. Hard Pewter.
HALF-PINT.		4. Granite Ware.
GILL.		5. Stout Tin Plate.
HALF-GILL.		6. Sheet Iron.
	7. Vitrified Stone Ware.	

No measures of capacity, of which the sides or bottoms are indented, battered or knocked out of the regular form, will be admitted to verification, nor any whose bottoms are not sufficiently strong to carry the contents without changing their form, nor any on which the capacity and the maker's name are not legibly and conspicuously engraved, stamped or branded.

The form of all measures of capacity must be cylindrical or conical ; when of the latter form, they shall not be verified unless they are capable of

containing when filled the lowest parts of the neck, the respective weights of distilled water set forth as below:—

	Lbs. av.
For every gallon .....	10
“ $\frac{1}{2}$ gallon .....	5
“ quart .....	$2\frac{1}{2}$
“ pint .....	$1\frac{1}{4}$
	Grains Troy.
“ $\frac{1}{2}$ pint .....	4,375
“ gill.....	2,187
“ $\frac{1}{2}$ gill.....	1,093

to be weighed in air against brass weights at a temperature of 62° F., and with the Barometer at 30°.

## SCHEDULE E.

### Sec. 20. Fees to be collected for Inspection of Measures of Capacity.

#### DOMINION MEASURES.

DENOMINATIONS.	MATERIAL.			
	Bronze Cast.	Sheet Brass or Copper.	Hard Pewter.	Wood or partly wood & Metal, Sheet Iron, Tin Plate, Granite or Vitrified Stoneware.
	cts.	cts.	cts.	cts.
Bushel .....	0	30	.....	15
Half-bushel .....	25	25	.....	10
Peck .....	20	20	.....	5
Gallon.....	15	15	15	5
Half-gallon .....	10	10	10	5
Quart.....	5	5	5	5
Pint.....	5	5	5	5
Half-pint.....	5	5	5	5
Gill.....	5	5	5	5
Half-gill .....	5	5	5	5
Measures below half-gill.....	5		5	5

1. Multiples of a bushel shall be admitted to verification. The fee for verifying such measures shall be the same as above for the first bushel, and 15 cents for each additional bushel.

2. Decimal sub-multiples of the bushel may also be admitted to verification, and the fees for the verification thereof shall be 10 cents for the first, and 5 cents for each additional tenth of a bushel.

3. Multiples of the gallon, for liquid measures, may in future be admitted to verification. The fee for verifying such measures shall be the same as above, 5 cents being also charged for each additional gallon.

## SCHEDULE F.

Sec. 21. Fees to be charged for the Inspection of Weigh-bridges, Platform Scales, Weighing Machines, Balances and Steelyards.

BALANCES WITH EQUAL ARMS, WHETHER THE LOAD IS CARRIED ABOVE OR BELOW THE FULCRUMS.

To weigh	5 lbs. and under.....	\$0 20
"	from 6 lbs. to 50 lbs.....	0 30
"	" 51 lbs. to 100 lbs.....	0 50
"	101 lbs. and upwards.....	1 00

### STEELYARDS OR ROMAN BALANCES.

To weigh	500 lbs. and under.....	\$0 50
"	from 501 lbs. to 1,000 lbs.....	0 75
"	" 1,001 lbs. to 2,000 lbs.....	1 00
And for each additional ton	.....	0 50

### WEIGH-BRIDGES AND ALL PLATFORM SCALES, EXCEPT RAILWAY TRACK SCALES.

To weigh	250 lbs. and under.....	\$0 50
"	from 251 lbs. to 500 lbs.....	0 75
"	" 501 lbs. to 2,000 lbs.....	1 00
"	" 2,001 lbs. to 4,000 lbs.....	1 50
"	" 4,001 lbs. to 6,000 lbs.....	2 00
And for each additional ton up to ten tons.....		0 50
For each additional ton over ten tons.....		0 25

### RAILWAY TRACK SCALES.

The fee for inspecting railway track scales shall be fifty cents per ton for the first five tons, and twenty-five cents for each ton over five tons; provided always that the officials and employees of the railway company owning the scales render all reasonable assistance to the officer performing the work of inspection.

## COMPUTING AND SPRING SCALES.

To weigh 30 lbs. or under.....	\$0 50
“ from 31 lbs. to 50 lbs.....	0 75
“ “ 51 lbs. to 100 lbs.....	1 00
“ over 100 lbs.....	1 50

## ARTICLES COVERED BY INSPECTION FEES.

The inspection fee for Platform Scales, Weigh-bridges, Steelyards, Weigh Beam and Butchers' Scales constructed on the principle of Steelyards includes the scale and all the counterpoises and other parts thereto belonging.

## CARTAGE CHARGES.

Sec. 22. In all cases of inspection when an outlay is incurred for the conveyance of standards, the amount thereof shall be levied *pro rata* on the users of weighing machines so inspected.

## SCHEDULE G.

Sec. 23. Lineal Measures that may be admitted to Verification.

DENOMINATION.	MATERIAL.
10 feet measures.	These measures may be made of any suitable metal or of straight grained wood. When of wood the ends must be protected by metal tips well secured.
6 “ “	
5 “ “	
3 “ “ or yard.	
Half yard “	
2 feet “	
1 foot “	The chains of iron or steel with solid joints.
Half foot “	
Chain or riband, 100 feet.	
“ “ 50 “	
divided into feet.	The ribands may be of steel, or of metal wire, woven with other fibre.
Chain or riband, 66 “	
“ “ 33 “	
divided into links.	

Common tape lines are not to be verified.

## SCHEDULE H.

## Sec. 24. Fees to be charged for Inspection of Lineal Measures.

	Of Metal.	Of Wood.
10 feet.....	20 cts.	20 cts.
6 " .....	20	20
5 " .....	20	20
3 " or yard.....	5	5
Half yard.....	5	5
2 feet.....	5	5
1 foot.....	5	5
Half foot.....	5	5

Chain or riband, 100 feet.....\$1 50 The fees charged for the inspection  
 " " 50 " ..... 1 00 of any lineal measure shall include  
 " " 66 " ..... 1 00 the charge for the verification of  
 " " 33 " ..... 0 75 its subdivisions.

## SCHEDULE I.

## Remedy or Allowance for Error.

## Sec. 25. AVOIRDUPOIS WEIGHTS.

STANDARDS.			TRADE WEIGHTS.		
Denomination of Weights.	Actual Allowance in excess.	Actual Allowance in deficiency.	Denomination of Weights.	Actual Allowance in excess.	Actual Allowance in deficiency.
Lbs.	Grains.	Grains.	Lbs.	Grains.	Grains.
50	5'0	2'5	50	50	20
39	"	"	30	80	10
20	"	"	20	20	8
19	2'0	1'0	10	10	5
5	"	"	5	5	2
3	"	"	3	3	1
2	0'25	0'125	2	2	1
1	"	"	1	2	1
8 ozs	"	"	8 ozs.	1	1
4 "	"	"	4 "	1	1
2 "	"	"	2 "	1	0'5
1 "	0'05	0'025	1 "	1	"
8 drs.	"	"	8 drs.	0'5	"
4 "	"	"	4 "	"	"
2 "	"	"	2 "	"	"
1 "	"	"	1 "	0'25	0'25
½ "	"	"	½ "	"	"



## Sec. 26. BULLION WEIGHTS.

STANDARDS.			TRADE WEIGHTS.		
Denomination of Weights.	Actual Allowance in excess.	Actual Allowance in deficiency.	Denomination of Weights.	Actual Allowance in excess.	Actual Allowance in deficiency.
Troy oz.	Grains.	Grains.	Troy oz.	Grains.	Grains.
500	1·0	0·5	500	1·0	0·5
300	"	"	300	"	"
200	"	"	200	"	"
100	0·25	0·125	100	0·25	0·125
50	"	"	50	"	"
30	"	"	30	"	"
20	"	0·0125	20	"	"
10	0·025	"	10	0·025	0·0125
5	"	"	5	"	"
3	"	"	3	"	"
2	"	"	2	"	"
1	0·005	0·0025	1	0·005	0·0025
0·5	"	"	0·5	"	"
0·3	"	"	0·3	"	"
0·2	"	"	0·2	"	"
0·1	"	"	0·1	"	"
0·05	"	"	0·05	"	"
0·03	"	"	0·03	"	"
0·02	"	"	0·02	"	"
0·01	"	"	0·01	"	"
0·005	"	"	0·005	"	"
0·003	"	"	0·003	"	"
0·002	"	"	0·002	"	"
0·001	"	"	0·001	"	"

Sec. 27. DECIMAL GRAIN WEIGHTS.

STANDARDS.			TRADE MEASURES.		
Denomination of Measures.	Actual Allowance in excess.	Actual Allowance in deficiency.	Denomination of Measures.	Actual Allowance in excess.	Actual Allowance in deficiency.
Grains.	Grains.	Grains.	Grains.	Grains.	Grains.
4000	0·05	0·025	4000	0·05	0·025
2000	"	"	2000	"	"
1000	"	"	1000	"	"
500	0·04	0·02	500	0·04	0·02
300	"	"	300	"	"
200	"	"	200	"	"
100	"	"	100	"	"
50	0·02	0·01	50	0·02	0·01
30	"	"	30	"	"
20	"	"	20	"	"
10	"	"	10	"	"
5	0·01	0·005	5	0·01	0·005
3	"	"	3	"	"
2	"	"	2	"	"
1	"	"	1	"	"
0·6	0·005	0·0025	0·6	0·005	0·0025
0·3	"	"	0·3	"	"
0·2	"	"	0·2	"	"
0·1	"	"	0·1	"	"
0·06	0·0025	0·00125	0·06	0·0025	0·00125
0·03	"	"	0·03	"	"
0·02	"	"	0·02	"	"
0·01	"	"	0·01	"	"

Sec. 28. MEASURES OF LENGTH.

10 feet.....	Inch.	Inch.	10 feet.....	Inch.	Inch.
6 ".....	0·05	0·05	6 ".....	0·10	0·05
3 ".....	"	"	3 ".....	"	"
2 ".....	"	"	2 ".....	0·05	"
1 ".....	0·005	0·005	1 ".....	"	"
1 inch.....	"	"	1 inch.....	"	"

Sec. 29. MEASURES OF CAPACITY.

	Grains weight of water.	Grains weight of water.		In reference to these measures, the Inspector will reject them, when, upon ordinary test, the error is obvious to the eye.
Bushel.....	280	280	Bushel.....	
Half-bushel.....	140	140	Half-bushel.....	
Peck.....	70	70	Peck.....	
Gallon.....	50	50	Gallon.....	
Half-gallon.....	25	25	Half-gallon.....	
Quart.....	10	10	Quart.....	
Pint.....	10	10	Pint.....	
Half-pint.....	8	8	Half-pint.....	
Gill.....	8	8	Gill.....	
Half-gill.....	4	4	Half-gill.....	
Quarter-gill.....	2	2	Quarter-gill.....	

All former Departmental Instructions to Inspectors, and assistant Inspectors except in so far as they are embodied in the accompanying Regulations are cancelled.

## TECHNICAL INSTRUCTIONS.

### ART. I.—VERIFICATION OF BALANCES WITH EQUAL ARMS.

*The Inspecting Officer will first make himself thoroughly acquainted with the instructions given in the accompanying Order in Council.*

1. (a) Observe whether the beam, with the pans suspended to it, is in equilibrium without any load.
- (b) Place a load in each pan equal to about half the load which the balance is designated to carry, and carefully adjust the loads, so that the beam is in perfect equilibrium.
- (c) Determine by means of a plummet and string whether the pointer or tongue is vertical.
- (d) Make the balance vibrate through a considerable arc, say about 20 degrees, and observe whether it recovers itself readily, and then determine by means of the plummet, as before, whether it returns to the same position when in equilibrium.

If these tests are satisfactory, it may then be tested as follows :—

2. (a) Change the loads from one pan to the other ; observe whether the beam remains in equilibrium with the loads thus transposed.
- (b) Cause the beam to vibrate, and observe whether it returns to the same position of equilibrium as before, If it does, it complies with this § ; if it does not return to equilibrium :—
- (c) Determine by use of the grain weights how much it requires in either pan to restore equilibrium.
- (d) Make a similar test with the full load the beam is marked to carry.

If the weight added to the load in either pan, in order to restore equilibrium, is more than the two thousandth part of the maximum load for original verifications and the one thousandth part thereof for subsequent verifications, the beam must be rejected.

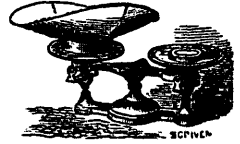
If the balance is not rejected under the preceding test, it must then be tested—

3. *With reference to its conformity with the requirements of § 6, Sec. 3 as follows :—*
  - (a) Place a load in each pan equal to the full weight which the beam is marked to carry, and adjust the loads so that the beam is in equilibrium.
  - (b) Place, with the load in the left-hand pan, the weights equal to the remedy of error allowed for weights equal to the load then in the pan, as per "*Schedule of remedy*," and observe whether the balance turns quickly and decidedly.
  - (c) Remove the *Remedy Weights* from the left to the right-hand pan, and observe whether there is a quick and decided corresponding turn of the beam.

If the beam fails to turn decidedly under these conditions in either direction it must be rejected.

4. *The Inspecting Officer will now carefully read the instructions given in Section 3 § 3 of the accompanying Order in Council.*

- (a) The scale shown in this cut having in addition to the attached weighing pans with which the scale is in equilibrium, a scoop, with a separate counterpoise, to be used with the scoop, is also to be rejected under paragraph 3 of section 3 of the Order in Council above cited.



Grocers' Trip Scale.

And Generally—

§ 3. *When a scoop for holding goods is used with any scale or balance, it must be an integral part thereof, and must have the number corresponding with the shop-number of the scale to which it belongs and of which it forms a part, stamped on it in legible figures.*

- (b) The scale represented in the last illustration is a *Roberval Balance*, and all scales of this description not in use previous to the issue of these regulations must be rejected, unless the lower bar is either in one piece, or, if in two lengths, the central pivot is so constructed that it cannot be displaced or changed without using violence.

## ART II.—FOR THE VERIFICATION OF STEELYARDS, WEIGH BEAMS AND OTHER BALANCES WITH UNEQUAL ARMS.

*The Inspecting Officer must first make himself fully acquainted with the instructions given in Section 4 of the accompanying Order in Council.*

The graduated arm of the common Steelyard usually consists of a square bar, with notches in the upper and lower angles to define the divisions. The beam has usually two points of suspension, and two tongues or pointers for indicating its equilibrium pointing in opposite directions.

One of the angles of the graduated arm is divided so as to weigh the lower denomination of weights; the other, for the higher denomination. The divisions, as also the pointers in use, will, of course, always be on the upper angle or side.

This instrument may be made to indicate weights with sufficient accuracy, but generally is very roughly made, and, as a necessary consequence, it is very unreliable. There should, therefore, be no hesitation in rejecting it when its indications are not within the tolerated remedy.

Steelyards are, however, in use which have been made in a very superior manner, and a careful and experienced weigher can obtain with them results which approximate very closely to the truth.

*The Inspecting Officer must satisfy himself, by careful examination, that the requirements of Section 4 above quoted are complied with.*

1. That the beam is in equilibrium when at zero, and that it oscillates freely.

2. *The strength of the beam will be tested as follows:—*

Suspend from the short arm of the lever the heaviest load which the beam is made to carry, and place the counterpoise at the division line representing such load.

Stretch a fine thread along the side of the lever when unloaded, and again when loaded, and observe if the beam has changed its form.

For this test of beams made to carry one or more tons, the short arm of the lever may be fastened by means of a small chain of sufficiently strong wire to some fixed object beneath it, as a beam in the floor or other suitable object of sufficient stability, and the counterpoise may then be moved to the extreme end of the long arm of the lever.

3. *The beam may be tested with reference to § 3 of the Order in Council as follows:*

Stretch a fine thread along the beam, so as to coincide as nearly as possible with the bottom of the notches or other bearing points to which the counterpoise is suspended, and extend it beyond the edge of the knife-edge on the short arm of the lever. Then note how nearly the thread coincides with the main point of suspension and the knife-edge that carries the load.

4. *With reference to § 4 Sec. 4 of the Order in Council, proceed as follows:—*

Compare the principal divisions with each other, so as to determine whether they are equal among themselves. This may be most conveniently done by means of a pair of steel bow-dividers with very fine points, taking care to place the points opposite to, but *not* in the bottom line of the divisions. The sub-divisions may be compared in the same way with the points of the dividers, so far open as to embrace several divisions.

5. *When the counterpoise, with its supports, is so attached to the long arm of the beam that it cannot be removed without breaking or cutting some part of the metal, the beam may be tested as follows, after the previous tests have been completed:—*

Suspend from the short arm of the beam a weight equal to about three-fourths of the full load the beam is made to carry; place the beam in equilibrium by means of the counterpoise, and observe whether it oscillates freely, and whether, after putting it in oscillation, it returns to a horizontal position.

Remove the load, and if the beam is not provided with a scale pan to which it is properly adjusted, some suitable means must be provided for suspending the standards from the short arm of the beam—for small beams, an ordinary scale pan will do—but whatever is used, it should be exactly balanced by a small weight used as a counterpoise on the extreme end of the long arm of the beam, or if this cannot be conveniently done, the scale pan or other appliance may be so adjusted as

to weigh the exact weight indicated by one or more integral divisions on the beam. In the latter case allowance for the weight of the scale pan, &c., must be made in every comparison. Place standards in the pan and test the accuracy of the beam by noticing whether it weighs them accurately.

6. *If the beam is made to weigh a greater weight than there are standards to represent or than can be conveniently attached to it, the test may be made as far as possible in the manner above directed, and continued in the following manner:—*

Load it with a 50 lb. standard, and note if it weighs it correctly. Add another 50 lb. standard to the load, and again note whether the additional load is truly indicated.

Measure with the dividers, as above directed, the distance between the two divisions indicating the 50 lbs. and 100 lbs., and compare the distance with the divisions indicating additional fifties along the whole length of the arm.

If the distances for the additional 50 lbs. of load are equal among themselves, the beam may be assumed to be correct.

7. *When the counterpoises can be readily removed from the beam, or when more than one counterpoise is used with it.*

*In this case the maximum weight the beam is made to carry must be legibly inscribed upon it, and—*

The actual weight in avoirdupois pounds or authorized multiple or sub-multiple thereof of each counterpoise must be marked on it, in the same manner as is required with reference to weights used with platform scales.

When the beam conforms to the regulations in the above mentioned particulars the verification of it may be proceeded with as follows:—

Verify the weight of the movable counterpoise.

Verify the weights of the additional counterpoises and see that they are equal to each other or multiples of each other, and that their weights are properly marked on them.

Place the counterpoise at zero on the graduated arm of the beam, which should then be in equilibrium. If the zero mark does not come within the range of the graduations, place the counterpoise on a division mark that indicates a pound, or some multiple of the pound, represented by the standard as 1 lb., 2 lbs., &c., then by suspending a corresponding standard to the short arm of the lever the beam should be in equilibrium.

Add to the load such additional standards as may be convenient, as 20, 30 or 50 lbs., and note whether the beam weighs the standards correctly.

*When, in addition to the counterpoise movable on the beam, there are other counterpoises, each representing a definite weight when attached to the extreme end of the graduated arm of the beam—*

Place on the short arm of the beam a load of standards (or a load of which the exact weight is known) equal to the weight represented by the smallest of the additional counterpoises, and note whether the beam is then in equilibrium.

Note whether the larger counterpoises are exact multiples of the smaller ones, and whether they are marked as weighing exact multiples of the load weighed by it.

If it is found that by the above tests the beam weighs correctly, and is in all respect in accordance with the Order in Council prescribed under the law, it may be stamped and a certificate may be issued.

It is, however, to be understood that the above expedients for *estimating* the approximate correctness of beams of this description are not intended to relieve the Inspector of the duty of testing such beams with loads of standards equal to their full capacity, when sufficient standards are available, and it is possible to use them without incurring an unreasonable cost in moving them. And the inspecting officer will bear in mind that the tests made in the manner above described can only be equivalent to tests made with full loads of standards when the utmost care and accuracy are observed in making such tests.

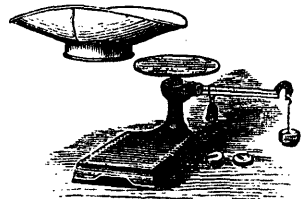
As a rule, when making tests with the beams loaded to less than their full capacity, not less than  $\frac{1}{10}$  (one-tenth) of the load should be used.

### ART. III.—THE VERIFICATION OF WEIGH BRIDGES, HAY SCALES AND PLATFORM SCALES.

*The Inspecting Officer must first make himself master of the instructions given in section 5 of the accompanying Order in Council.*

1. *The Inspector will observe that there are several varieties of portable weigh bridges and platform scales in use, which, under the regulations above cited, cannot be admitted to verification. The following may be mentioned as example :*

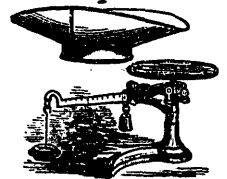
The scale represented in this cut is made to weigh on two platforms which give indications in relation to each other in proportion of one to eight. In addition to the platform, a "scoop" is provided, which may be placed on the smaller platform. A weight is provided which is to be used as an additional counterpoise as an equivalent to the weight of the "scoop."



Improved Union or Family Scale.

This additional counterpoise is of the nature of a "*movable or detached part for the adjustment of the balance.*" The scale will, therefore, be rejected under § 9 of the section of the Order in Council above cited, it being obvious that a serious error might be made either intentionally or accidentally by omitting to place the counterpoise of the scoop in its place when required.

The scale represented in this cut, when constructed with a "scoop" in addition to the attached weighing platform, and requiring an addition to the counterpoise, is liable to the same objections as are stated in (a), and will be rejected under § 9 of the section of the Order in Council above cited.



Grocers' Scales.

There are so many kinds of Platform Scales that it would be difficult to give specific instructions as to each, but the above will serve as a general guide.

When any variety not clearly covered by these instructions is presented, and as to which the Inspector has doubts, he is to apply to the Department for instructions, sending with his application such a description of the scale as will enable the Department to arrive at a proper decision.

2. When verifying a Portable Platform Scale or Weigh-Bridge, the Inspector must:

See that the maximum weight which the scale is to weigh is plainly stamped on the beam in legible letters and figures, and that the weights to be used with it are in conformity with § 8 of the section of the Order in Council above quoted.

If they are—

Verify them by the standards as directed in Sub-sections 1, 2, 3, 4 5, Section 9, with reference to other weights.

The counterpoise, movable weight attached to the graduated arm, and other weights are not to be stamped until the whole process of verification is complete.

*Great care must be exercised in the verification of weights used with platform scales and weigh-bridges. The importance of this will be seen, when it is considered that whatever error there may be in the weight, it is exaggerated in the load weighed in the proportion which the load bears to the weight. Thus, if the weight indicates a multiple of 100, an error of .01 in the weight will cause an error of 1 in the load.*

If the weights are approved, the owner must next cause the scale to be taken apart sufficiently to permit the Inspector to examine all its working parts, and the Inspector will:

Carefully examine all the beams and supports so as to ascertain whether they are of sufficient strength; whether the knife-edges for each series of levers are in the same horizontal plane, and are substantially and firmly fixed; whether there is ample room in the carrying links or other supports of the knife-edges for their oscillation; whether all the bearing surfaces are intact, and in good order, and, generally, whether the apparatus is sufficiently well made to work freely. The owner will then put it together, and

The Inspector will see that it is placed on a level platform.

Ascertain whether with the counterpoise on the end of the graduated arm, and with the movable weight at zero, the scale is in perfect equilibrium, that is:

- (1) The tongue on the graduated arm must be vertical, or in the absence of the tongue, the beam must be horizontal.
- (2) The graduated arm must vibrate freely, and when disturbed, it must return to its normal and horizontal position.

Place on the platform a standard weight equal to the minimum load which it is intended to weigh, and note:

- (1) Whether the weight of such load is correctly indicated, within the requirements of the schedule of remedy or allowance for errors.



Add to the load on the platform additional standards until its maximum load is placed on it, noting the result at several (from three to five) stages of the additions as described above.

Remove the load and test the results "backwards," noting whether the results are the same as in the previous testing, as a check.

Place as much as 25 per cent of the full load on each corner of the platform in succession, and observe whether the scale still indicates the weight on it correctly, within the limits of error tolerated ; make the same tests with a reduced load.

Place 50 per cent of the maximum load upon one end of the platform and observe results. Then change to the opposite end, and note whether the results indicated are the same in both cases.

The same process of testing will be followed when the platforms are carried on levers or beams, or combination of them equivalent to a balance with equal arms.

2. If the Inspecting Officer has not in possession a sufficient weight of standards to make the full load of the scale inspected, the following method of testing may be resorted to :—

Proceed as directed in §§ 1 and 2 of Art. II, as far as the weight of standards available will permit.

Remove the standards from the platform, and without disturbing the counterpoise or weights on the graduated arm, replace the standards by any other suitable weights or loads until the scale is again in *exact* equilibrium.

Again add the standards to the load, and observe results as before.

3. This process will be repeated until the maximum load is reached. For scales or weigh bridges to weigh from one to two thousand pounds, pig iron will be the best material wherewith to replace the standards, but any heavy materials may be used, as masses of stone or small boulders, with no loose soil or gravel adhering thereto.

When the whole process of verifying the scales has been so far completed—

Examine the movable weight carried on the graduated arm and ascertain if it corresponds with the weight. If so stamp it.

Finally :—

If the scale has the maker's consecutive number incised on any essential part of it, that number is to be used for identification in the certificate and it will not be necessary to stamp the beam. If it has no such number, the beam must be stamped. In stamping great care must be taken to avoid bending or in any way changing the form of the arm.

4. The inspection of Hay Scales, Grain Scales, and large Weigh-Bridges, such as are used by railway companies, and which are attached to fixed foundations, will be governed by instructions given in § 3. in so far as they are applicable. The following additional instructions must also be followed :—

The foundation must be carefully examined as to its strength and general fitness to carry the proposed load and the possibility of its settling out of level.

Ascertain whether the foundation is truly level.

6. If there are any apertures in the counterpoise or in the movable weight by which shot or other matter can be removed or introduced, such apertures must be closed by a soft metal plug, upon which the verification stamp is to be impressed after they have been verified.

8. The actual weight in avoirdupois pounds, or parts of a pound, is to be legibly stamped or engraved on *all* weights belonging to platform scales or weigh bridges, as well as the weight of the load they are to indicate. No weights belonging to platform scales or weigh bridges, made or sold or offered for sale after the date of these instructions, are to be admitted to verification unless their actual weight and the weight they are to represent in the load are cast or plainly incised on them.

9. Care should be exercised in testing drop-lever scales. The levers should be dropped and raised several times, and note whether with a full load the results are uniform.

10. The tariff for Suspension or Crane Scales will be the same as for Platform Scales.

#### CAPACITY OF PLATFORM SCALES.

The following table will be found useful to officers in determining the capacity of platform scales which were in use prior to the Order in Council, which requires that the capacity of platform scales should be marked on the beams :—

No. 11½	.....	400 lbs. capacity.	
“ 11	.....	600	do
“ 10½	.....	1000	do
“ 10	.....	1200	do
“ 9	.....	1500	do
“ 8	.....	2000	do
“ 7	.....	2500	do
“ 6	.....	3000	do
“ 5	.....	3500	do
“ 4	.....	4000	do
“ 1	.....	5000	do

#### ART. IV.—ORIGINAL VERIFICATION OF WEIGHTS, MEASURES AND WEIGHING MACHINES.

Inspectors and Assistant Inspectors are especially enjoined to bear in mind that the successful administration of the Weight and Measures Act and Regulations depends in a great measure upon the care bestowed on the *first* or *original* inspection of weights, measures and weighing machines. Original inspections should, therefore, in all cases be conducted with the greatest amount of care, and in every particular in strict accordance with the technical instructions given in Articles I, II, and III. In the case of new weighing machines, a mere cursory examination is of no value whatever; the Department demands of its inspecting officers a rigid and thorough inspection of material, workmanship and general construction. And when these, or new weights and measures fail in any respect to stand the tests required by the Regulations, they are at once, and invariably, to be rejected and rejection fees collected.

ART. V.—ORIGINAL VERIFICATION OF WEIGH BRIDGES, HAY SCALES, &C.

1. As the Weights and Measures contingencies have in the past been largely increased by the unprofitable trips made in the verification of isolated dormant scales and weigh bridges, the Department has decided that whilst manufacturers and importers of such articles will be held strictly responsible for due notification of the shipment of them, as specified in Sec. 10 of the Order in Council, they will not in future be held responsible for the verification of the same, and that the owners of such scales may, after the same have been carefully set up on permanent foundations, legally use them for trade purposes until such time as the inspecting officers of the District in which they are in use, may, on their *irregular* visits, or their regular periodical tours, be brought into their vicinity.

2. If it should occur, however, that any person owning one of these scales should doubt its accuracy, he can, on application to the Inspector of the District, have the same verified, on his agreeing to pay all really necessary expenses attending the verification.

2. When a dormant scale or weigh bridge has been rejected, and a second inspection is rendered necessary, the actual expenses of the second or any further visit shall be paid by the owner or user of the weighing machine, but no additional fees shall be charged.

ART. VI.—DORMANT SCALES.

9. As the Department has often been put to much inconvenience and expense by allowing ordinary dormant scales, such as are used in mills and elevators, to leave the place of manufacture or the importer's warehouse unverified, it is now decided that in future the term "*dormant*," as applied in Sec. 9 of Order in Council, shall be understood to cover only such weighing machines as weigh bridges, hay and track scales, or such weighing machines only as require timber or other material to complete their erection.

ART. VII.—IMPORTATION OF INFERIOR WEIGHING MACHINES.

1. The attention of the Department has frequently been called to the importations which are being made by hardware firms in many places of cheap, inferior classes of iron weighing machines, and to the more serious fact that in many parts of the country such weighing machines have been carelessly verified and stamped as correct by Inspectors of W. & M. and their assistants.

2. When in future such weighing machines are presented for verification, it will be the Inspector's duty in the first place to see whether the maker's name, shop number and capacity are legibly engraved or stamped on some conspicuous part of them (bearing in mind that the name, shop number and capacity must be genuine, *not fictitious*, and must be engraved or stamped, *not chalked or stencilled*), and that all the knife edges and bearings are made of steel hardened; if it is found that the regulations touching those points have been complied with, he will then carefully proceed to make the several tests specified, and in the order prescribed in Articles I, II and III, above quoted. Should the weighing machines fail in any one of the specified tests it will be his duty to immediately reject, seize and confiscate the same.

3. When weighing machines of this class are presented for re-verification, it must not be presumed that because they have at some former time been inspected and stamped they are correct, and may be re-stamped without being submitted to the regular tests; on the contrary, such stamps will count for nothing, and the weighing machines must be tested the same as if they were new, and are subject to similar risks of rejection, seizure and confiscation.

4. As it is the determination of the Department to stamp out every inferior class of weights, measures and weighing machines, it is to be hoped there will be no remissness on the part of the Inspector and Assistant Inspectors in the carrying out of all Departmental instructions to that effect.

#### ART. VIII.—WEIGHTS, MEASURES AND WEIGHING MACHINES REQUIRING ADJUSTMENT.

1. When Weights, Measures or Weighing Machines presented for verification are palpably incorrect, it would be the Inspector's duty to inform the owner of this fact, and advise him to have such articles adjusted, if adjustable; and submitted to verification, after such adjustment has been made.

2. The unpleasantness to the owner of having to pay a rejection fee will thus, in the majority of cases, be obviated.

3. When weighing machines are found to be palpably incorrect the Inspecting Officer shall by means of the wire and seal attach the label provided for rejected weighing machines to the bridles of platform scales or to one arm of even balance scales in such manner that the article cannot be used without breaking the seal or removing the label.

4. The owner shall at once be notified that repairs must be made within a reasonable time, or he will expose himself to the penalties provided in section 25 of the Act.

3. When repairs have been made the scale shall be again inspected, and the fees collected.

#### ART. IX.—THE INSPECTION OF THE WEIGHING APPARATUS USED IN POST OFFICES AND BY THE POST OFFICE DEPARTMENT.

1. If Postmasters request Inspectors of Weights and Measures or their Assistants to inspect the weighing machines or weights used by them for postal purposes, they will comply with the request.

2. When found correct the usual certificate will be issued without stamps being affixed thereto, and across the certificate, its duplicate and triplicate there will be endorsed in red ink the words "For postal use only—No fees."

#### ART. X.—THE VERIFICATION OF WEIGHTS.

1. Examine the weights carefully and see that they are in conformity with Schedule A of the accompanying Order in Council.

2. If the weighing is to be performed with the official balance, proceed as follows:—

Place the standard in the left hand pan.

Place a counterpoise in the right hand pan, which may consist of any available weights, among which should be a small tin cup with a quantity of small shot in it. This shot may be added to, or deducted from, until the balance exactly indicates zero.

Remove the standard from the left hand pan and in its place put the weight to be compared.

If the balance does not remain at zero, add grain weights to one pan or the other until it does. If they are required in the left hand pan with the compared weight, the number of grains added will show how much the weight is lighter than the standard, and will be designated by the sign — (minus). If, on the other hand, they are required in the right hand pan, the number of grains by which the standard is heavy, and will be designated by the sign + (plus).

3. By adopting the above method of verification, errors due to any difference there may be in the length of the arms of the balance will be avoided. Any balance, therefore, which is sufficiently sensitive, may be used.

4. Although the method above described is somewhat tedious, it should always be used when accuracy is aimed at, or when there is any doubt as to the accuracy of the balance. But, with good balances, such as are supplied to its officers by the Department, ordinary commercial weights undergoing verification, may be compared by direct weighing against the standards.

NOTE.—In all cases when placing weights in the pan of the balance supplied by the Department, or removing them from it, the balance must be raised from its bearings. If the traders' balance is used as suggested in the instructions for using the portable kit, it must first be verified under Article I.

#### ART. XI.—THE VERIFICATION OF WEIGHTS OF UNAUTHORIZED DENOMINATIONS.

1. It is the desire of the Department to eliminate from use in trade all weights of 14, 28 and 56 pounds, as soon as it can be done without doing injustice.

2. Inspectors are not to verify or stamp any weights of such unauthorized denominations that have been made or taken into use in trade since 1875.

#### ART. XII.—THE RE-INSPECTION OF WEIGHTS AND MEASURES KEPT IN STOCK BY DEALERS IN SUCH ARTICLES.

1. So long as weights, measures and weighing machines remain in stock *unused*, they are not liable to re-inspection; nor are they liable until two years after being taken into use except such weighing machines as are enumerated in Sec. 13 of the Order in Council which will be inspected annually.

2. When a dealer presents to an Inspector the certificate of a scale sold, the Inspector shall mark upon it the date of sale, and from the latter date the two years shall be computed.

#### ART. XIII.—MEASURES OF CAPACITY.

1. Whenever possible, wooden measures of capacity shall be branded on the edge, the side and the bottom.

2. Measures of capacity, made of tin, copper, hard pewter, bronze or brass shall be stamped with the steel stamps on the part of the measures immediately above the capacity mark.

3. Measures of capacity made of granite ware shall be provided with a lead plug on the handle to receive the impress of the steel stamp.

## ART. XIV.—CAPACITY OF CASKS.

1. The Department is informed that in some parts of the country the provisions of the Act, (Revised Statutes, Chap. 104, Sections 53, 54, 55 and 56) in regard to the delivery of liquids in casks, are not complied with.

2. Although it forms part of the Weights and Measures Act, valuable assistance in its administration can be given by the Excise staff. Inspectors will, therefore, when necessary, obtain from Collectors of Excise the addresses of brewers and others to whom the Act applies, and then duly notify such persons that the provisions of the Act will for the future be enforced.


## ART. XV.—IDENTITY OF ORIGINAL VERIFICATION MARKS.

1. Frequent inquiries have been made by Inspectors of Weights and Measures as to the course they should take in cases where measures of capacity are found on re-inspection to be too small.

2. In order to insure greater care on the part of Inspectors and their Assistants in making their inspections, the Department has decided that when measures of capacity are found on re-inspection to be incorrect owing to careless inspection, they are to be rejected, seized and removed from the premises of the party owning or using them, at the same time allowing the owner the cost of the measures so seized—less a reasonable deduction for use and wear of the same.

3. The amount so allowed will be paid by the Department and deducted from the salary of the officer by whom such measures were originally verified and stamped.

4. To enable the Department to ascertain with certainty where and by whom original inspections are made, each Inspector and Assistant Inspector will be supplied with the initial letter of his division, which letter will be used only in original verifications of measures of capacity and weighing machines,

and used with the Crown stamp, thus:— 2. The letter *B* in this example

being the initial letter of the Belleville District, the foregoing stamp would show that the article had been originally verified in the Belleville District, in the 12th month of the D series, and the books of said district would give the name of the officer by whom the verification had been made.

5. Any Inspector or Assistant Inspector of Weights and Measures who may fail to stamp all new measures verified by him with the month of the verification series, and the initial letter of his division, will, for the first offence, incur the serious displeasure of the Department, and for subsequent offences of a like nature, the risk of suspension and dismissal.

## ART. XVI.—WHERE INSPECTION SHALL TAKE PLACE.

Unless voluntarily brought to the Inspector's office, the inspection of all weights, measures and weighing machines must be made on the premises of the traders.

ART. XVI.—THE USE OF THE STEEL STAMPS, NUMERALS, INITIAL LETTERS AND COPPER BRANDS, SUPPLIED BY THE DEPARTMENT.

1. There are two sizes of steel stamps to be used on the soft metal plugs inserted in iron weights, or brass weights, on the tin and copper scoops of scales, and on pewter, copper and tin measures of capacity. The serial letter, which forms part of the stamp, designates the inspection period, which covers two years; thus the inspection period, extending from 1st January, 1898, to 1st January, 1900, is represented on the stamps by the letter L. (The smaller size of stamp is to be used on the scoops and pans of scales.)

2. There are two sizes of steel numerals, the smaller of which is to be used on brass and tin, and on the soft metal plugs inserted in iron weights, and the larger size on wooden measures of capacity, and on the wooden pillar and cross piece of platform scales. The purpose for which these numerals are used is, in both cases, to designate the month of the inspection period in which verification was made.

3. In cases of old platform scales, which have no shop number, the smaller numeral stamps may be used for stamping a number on the beam.

4. The copper brands are specially intended to be used for first or original verification of wooden measures of capacity. On re-verification such measures may be stamped with the large steel stamp provided for the convenience of officers when on inspection tours, when it frequently happens that conveniences for heating branding irons are not at hand. The larger numerals are to be used with either the brand or large steel stamp.

5. *Every* measure of capacity, if of tin or other metal, *every* weight, counterpoise and weighing machine, must be stamped with the regular verification stamp of the series, and with the small numerals to designate the month in which verification was made.

6. On the re-verification of weights and counterpoises, the previous verification stamp must in all cases be completely effaced, and the surface of the soft metal plug made perfectly smooth before applying the stamp, and care should be taken to make the impression of the stamp and numerals as distinct and legible as possible.

ART. XVII.—STANDARDS REQUIRED ON INSPECTION TOUR.

1. The standards necessary on inspection tours are a portable kit, box of weights from 20 pounds down, and as many 50 lb. iron weights as may be deemed sufficient by the Inspector of the district, also an anvil.

2. Inspectors or Assistant Inspectors are not to use their own horses and vehicles in the performance of inspection duties, unless specially authorized by the Department, but to make use of stages, railways and hired conveyances.

3. In all cases of inspection where an outlay is incurred for the conveyance of standards the amount thereof shall be levied pro-rata on the users of weighing machines so inspected. Every such charge must be specified on the certificate of verification as cartage, and stamps affixed thereto representing the amount so collected.

### ART. XVIII.—CARE OF AND RESPONSIBILITY FOR STANDARDS.

1. As the Inspector is held responsible to the Department for the safety and proper care of all standards and other apparatus placed in his charge for the use of himself and his assistants, and as portable kits are sometimes returned to the Department in an unreasonably bad condition and with many of the smaller weights lost, it is now ordered that hereafter should any portable kits be received from any division in a state of dirt and dilapidation, unwarranted by ordinary wear and tear, there will be deducted from the Inspector's salary an amount equal at least to the actual cost of the necessary repairs of the same, and should any of the small weights be lost or missing from said kits, or from any of the boxes of grain weights, the sum of fifty cents shall be charged for each and every missing weight.

2. The Inspector will, of course, keep a record of the index number of each of the portable kits entrusted to the care of his assistants, and will hold each man responsible for damage done to his kit and for all lost weights, in the same manner as the Department holds him responsible.

3. Inspectors and their assistants are not, on any pretense whatever, to allow the standards to be used for other than official purposes.

4. In cleaning the standards and other apparatus it is particularly requested that no other means are to be used than an oiled rag, chamois skin or other similar appliance. Inspectors and their assistants are specially cautioned against the use of emery paper, sand-paper, rotten stone or any like article. When oil is used for cleaning of the standards, it must be carefully wiped off to prevent its oxidizing or drying on the standards. This precaution is especially necessary with reference to standards of weight.

### ART. XIX.—DESCRIPTION OF THE PORTABLE KIT, WITH INSTRUCTIONS AS TO ITS USE.

*The Portable Kit is supplied for facilitating the inspection of Weights and Measures during the annual tour of the Inspector or his Assistant. It is also to be used when visiting any place for the purpose of ascertaining whether light weights, short measures or illegal weighing machines are used.*

*It weighs about 26 lbs. and contains all that is necessary for local inspection of Weights and Measures. Its use, however, requires both care and intelligence, and Inspectors will not be competent to use it until they fully understand the following description and instructions, which will be sufficiently clear to those who carefully study them, and, at the same time, examine the parts of the Kit referred to.*

Before unstrapping the cover of the Kit, or before attempting to open it place it firmly with its bottom side—*i. e.*, the side to which the buckles and brass rings are attached—on a strong level table or counter. Stress is laid on this direction, because if opened wrong side up, the nest of weights may be scattered about, and the smaller ones may be lost. Be very careful, also, not to move the Kit without first closing the case and buckling the straps.

When opened the Kit will be found to contain :

1. *Apparatus for weighing up to 50 lbs., consisting of :*
  - (a) Balance-beam, made to be used either as an equal or an unequal arm balance.
  - (b) Two small arms for the *equal* arm balance.



- (c) Platform of large steel pan to be used on the short end of the unequal arm balance.
- (d) Four links or hooks with V bearings. The largest one for suspending the beam to the bracket; the next in size for suspending the large steel pan or platform to the beam, and the two smaller ones for suspending the small pans to the ends of the beam.
- (e) An iron bracket or frame upon which the beam is to hang.
- (f) A nest of weights, viz. :  
 2 of 2 lbs. each.  
 1 each of 1 lb., 8 ozs., 4 ozs., 2 ozs., 1 oz., 8 drams, 4 drams, 2 drams, 1 dram, and two of  $\frac{1}{2}$  dram each.
- (g) A box containing a small balance, with its pans, standard, and a set of grain weights, consisting of :  
 6 gr., 3 gr., 2 gr., 1 gr., .6 gr., .3 gr., .2 gr., .1 gr.
2. *A folded standard yard, subdivided into feet and inches.*
3. *A gauge rod for testing legal measures of capacity.*

*Before moving any of the pieces, carefully observe how each of the pieces is disposed in the case, so as to be able to restore them to the same position after using them.*

An examination of the Kit will show that the balance-beam has four knife-edges or fulcrums.

- A central one which fits into the large link and serves to suspend it from the bracket.
- One at each end, from which the small brass pans are suspended when used as a balance with equal arms
- One at a distance from the centre equal to one-tenth of the distance between the centre and the end fulcrums.
- The links are placed on these knife-edges or fulcrums as previously described. They must be examined, so as to ascertain their proper positions, and carefully handled, so as to avoid injury to the bearings.

*When setting up the balance for use :*

- First set up the bracket by placing its end in the socket attached to the bottom of the case, and secure it there by inserting in the hole provided for that purpose the small pin attached by a chain, to the bottom of the case.
- Then take the large link and hook it into the eye at the top of the bracket.
- Next take the balance-beam and place its centre knife-edge in the last mentioned link, the fulcrum of the short arm to the right.
- If it is to be used as an equal balance beam, place one of the small hooks on the knife edges at each end of the beam, and hook one of the brass pans to each of them. *Observe that the angular ends of these hooks go on the knife edges.* It is then ready for use, and, if properly set up, will, with five pounds in each pan, turn decidedly with two grains, and as the toleration of error in com-

mercial weights, from excess to deficiency, is eight grains to five pounds, the balance will weigh with sufficient accuracy.

**NOTE.**—*When using this beam always keep the box containing the small balance in its place, so that it may serve as a rest for the right hand pan.*

If the beam is to be used as an unequal arm balance, remove the pan and hook from the right hand end of the beam.

Place the second size hook on the knife-edge next the centre.

Hook on the steel pan or platform. The balance should then be in equilibrium, but to determine whether it is so or not, steady it with the hand in a level position, and observe whether it has a decided tendency to turn one way or the other. If there is a decided tendency to turn one way or the other, it must be counteracted by the addition of counterpoise weights in the light side till it exactly balances.

To test a twenty-pound weight, place it in the large pan, and place a two-pound standard in the small one. If the weight is exact, ten grains on the large pan will turn the beam, and as the toleration of error for commercial weights from excess to deficiency is twenty-eight grains for twenty pounds, the weight can be tested within that remedy.

*⚠ The testing of weights by the unequal arm demands great care. The weight must be placed exactly in the centre of the large pan. This should be done by actual measurement. The pan must be steadied by the hand, so as to place the tongue of the beam upright, and the tendency in either direction must be carefully observed, as well as the number of grains necessary to counteract the tendency. Observe, also, that the number of grains placed in the large pan with the weight to be verified, count at their nominal value, while the number placed in the small pan must be multiplied by ten. Thus: If ten grains are required in the large pan to produce an equilibrium, the weight is ten grains light; but if it is found necessary to place five grains in the small pan, then the weight in the large pan is fifty grains too heavy.*

Although the balance is made to weigh up to fifty pounds, and will do so with sufficient accuracy, if the proper care is used, it will not be necessary, nor is it desirable, to use it for the verification of greater weights than 20 lbs. When in equilibrium with 30 lbs., in the large pan, the beam will turn very decidedly by the addition of ten grains in the large, or one grain in the small pan, in cases of emergency, therefore, 30 lbs. weights may be verified in the balance, but great care is necessary in doing so.

For the verification of fifty or thirty-pound weights, or 56 and 28 lb. weights, it will be desirable to use the trader's balance, provided he has one that can be admitted to verification under the regulations. If he has no such balance it will not be necessary to verify his heavy weights, as he could not legally use them. But if he has a suitable balance, after testing his weights of the lower denominations, such of them as are admitted to verification may be used with the verified balances for testing his weights of the higher denominations.

In testing the tolerated weights, that of 7 lbs. may be tested with the equal arms, but the 14 lb. weight must be tested with the unequal arms, and the counterpoise for it will be 1 lb. 6 oz. 6 drams and 11 grains.

The Kit also contains a brass gauge-rod for testing Dominion measures of capacity.

On reference to the accompanying Order in Council it will be observed that all Dominion measures of capacity are required to be truly cylindrical, and such measures may be tested with sufficient accuracy for ordinary trade transactions by this gauge-rod, but when extreme accuracy is required, the standard measures must be used.

Instructions as to the use of the gauge-rod are engraved on its edges. They are extremely simple, and can hardly be misunderstood.

- (a) On the side marked "diameter," measure the diameter of the vessel in two directions, crossing each other at right angles, and if there is any difference, the mean of the two is to be used.
- (b) On the side marked "depths," measure the depth of the vessel. This in large vessels should be done in several places, laying a straight edge across the rim for taking the depth near the centre. If there is any difference in the depth so taken, the mean is to be used.

*When the dimensions do not exactly correspond with the division lines on the rod the fractions of the division may be estimated with sufficient accuracy.*

If the measures are correct, the depth added to the diameter, as shown by the gauge-rod, will be :

For a $\frac{1}{2}$ gill.....	10
“ gill.....	20
“ $\frac{1}{2}$ pint.....	30
“ pint.....	40
“ quart.....	50
“ $\frac{1}{2}$ gallon.....	60
“ gallon.....	70
“ peck.....	80
“ $\frac{1}{2}$ bushel.....	90
“ bushel.....	100

The other instrument contained in the Kit is the standard yard of brass. This is sub-divided into feet, inches and tenths of an inch. Its use does not require any special instructions.

#### ART. XX.—CIRCULAR TO TRADERS, &C.

Traders, manufacturers and owners of weights, measures and weighing machines generally, are specially requested to read carefully the following instructions and act accordingly:—

1. The Weights and Measures Act provides for a regular biennial inspection of all weights and measures used for trade purposes, as well as for *irregular* inspections of the same, which may be made at any time when deemed necessary by the Inspector, and it also imposes a heavy penalty on any trader or other person who wilfully obstructs or impedes an Inspector or Assistant Inspector in the performance of his duty under said Act, or who refuses to produce the whole of his weights and measures for inspection when called upon to do so by an Inspecting Officer.

2. Every trader, manufacturer and owner of weights, measures and weighing machines, when paying moneys to Inspectors or Assistant Inspectors

tors of Weights and Measures for verification fees, is entitled to, and is specially requested to demand from the officer who makes the inspection, an official certificate ("Form O. 6," with the words "Original, for the Trader," printed at the head thereof) properly filled out and stamped, and also at same time to carefully ascertain whether or not the stamps attached to such certificate represent *exactly*, in value, the amount of cash paid. Traders are requested to bear in mind that certificates of verification are of no value whatever unless stamps covering the full amount of fees charged are attached.

3. Owners or holders of these official certificates are specially requested to keep them carefully for two years, and in order to secure their safe keeping it would be advisable to placard them in their places of business in the manner in which ordinary license certificates are done; for it must be distinctly understood that all traders who are unable to produce their *properly stamped* certificates, when asked to do so by an Inspector or Assistant Inspector, may, in all probability, have to pay over again their verification fees.

## GENERAL INSTRUCTIONS.

### ART. I.—STAMPS.

1. Supply of Stamps,—Adhesive stamps will be supplied by the Department on requisition being made by the Inspector of Weights and Measures, who will be careful to make requisition sufficiently in advance to ensure having at all time a supply on hand to meet the demands of his Division.

2. Requisition for Stamps are to be made on form No. 27a, and receipts on form No. 27b, which will be forwarded with the Stamps.

3. The requisitions on form No. 27a, as well as the receipts, are to be forwarded to this Department in small buff Envelope (e 13).

4. The Stamps for Weights and Measures inspection are of the following denominations:

	Value	5 cents.	Value	50 cents.	to amend
G. 522	"	10 "		75 "	
W.&M.	"	15 "	\$1	00 "	1 <sup>8</sup> / <sub>16</sub> 2
to amend	"	20 "		1 50 "	B
page 38.	"	30 "		2 00 "	page 29.

When the Department the Inspector is immediately to count them, and if they are found to be in accordance with the form of receipt accompanying the parcel, he is to sign, date and return the receipt by the next mail, and enter the stamps on the debit side of the account hereinafter mentioned; if they are not correct he must immediately advise the Department of the error and enter the exact number received by him to the debit of his stamps account. A separate account of each denomination of stamps is to be kept by each Inspector of Weights and Measures by way of debit and credit, in book O. 4, stating on the Dr. side the number received, and on the Cr. side the number issued.

An Assistant Inspector will observe the same rules on receiving stamps from the Inspector of his Division.

## ART. II.—THE ISSUE OF CERTIFICATES AND AFFIXING STAMPS THERETO.

1. In original inspections a certificate must be issued for each weighing machine, such certificate to include the weights belonging to the scale to which it refers. It is usual for manufacturers of scales to designate them by a progressive number. When this is done, and when such number is engraved or impressed upon an essential part of the apparatus, no other stamp will be necessary, as the progressive number can then be inserted in the certificate, with the name of the maker, and will be a sufficient identification.

2. A separate certificate will also be issued for any number of weights or measures or weighing machines when verified for manufacturers or dealers, or when demanded by the owner; but when verified for traders, who use the weights, measures and weighing machines, after they are verified, a number of them may be included in the same certificate. Care must always be taken, however, that no more are grouped together than can be represented by stamps for which there is room on the space set apart for them. Separate certificates will also be issued to traders for Computing and Spring Scales.

3. It is not necessary to apply a stamp for each article. But the total value of the stamps attached to the certificate must exactly represent the inspection and cartage fees chargeable on the articles covered by the certificate. This being kept in view, the largest available stamps are to be used.

4. After filling up a certificate of inspection, and after the fees of such inspection have been paid, an adhesive stamp or stamps representing the amount chargeable for such inspection and cartage fees, will be securely fixed by the Inspector or Assistant Inspector on each certificate of verification, Form O. 6; the certificates will then be delivered to the parties owning the weights, measures or weighing machines. The stamps must be used in the regular sequence of their numbers and so accounted for on all forms where entries of stamps are made.

5. Inspectors or Assistant Inspectors of Weights and Measures, immediately after affixing the stamps to the certificates of inspection shall cancel them by means of a punch provided for that purpose.

## ART. III.—FORWARDING CERTIFICATES TO DEPARTMENT AND INSPECTOR.

1. Inspectors are required to forward to the Department daily in Envelope E. 7, duplicate certificates (O. 6.) of all verifications of weights and measures made at head quarters, and semi-weekly the duplicates of all certificates issued by their assistants. This is required in order that the work done in the District may be carefully checked, and the charges compared with the tariff of fees.

2. Assistant Inspectors are required to forward their duplicate certificates to the Inspector weekly, or as often as they represent the value of fifty dollars, using large Envelope E. 9.

3. To enable the checking officer in the Department to do his work intelligently it will be necessary to have all certificates fully endorsed, such endorsement must give the maker's name, shop number and maximum capacity of weighing machines—especially those of a capacity of over 6,000 lbs.—and name the material of which measures of length and capacity are made.

4. Inspecting Officers failing to charge the full tariff of fees on a certificate of inspection shall send stamps equal to the amount of undercharge, deposit

their value to the credit of the Receiver General, and account for the same in the monthly stamp return (O. 5).

5. Envelopes E. 7 for Inspectors, and large E. 9 for Assistants, for the transmission of duplicate certificates O. 6, have been prepared and can be had on requisition. Large packages should be tied.

#### ART. IV.—MONTHLY RETURN OF STAMPS.

1. Form O. 5.—On the last day of each month, or as soon after as it is possible to assemble the returns of Assistant Inspectors, the Inspector of Weights and Measures is required to forward to the Department in large blue envelope, E. 6, a copy of this form duly filled out and endorsed. The face of the form must be an exact copy of the account with the Department in Book O. 4, for the month just closed.

2. Form O. 5 will show the quantities of stamps received from the Department, their consecutive numbers and their values; it will also show the quantities, number and value of stamps issued by the Inspector from his office, as well as quantities, numbers and value of stamps issued by each of his assistants. After deducting the quantities and value of stamps issued by the Inspector and his Assistants from the total quantities and value of stamps received from the Department, the balance, quantities and value only—not numbers—will be carried forward to the next month.

3. The Inspector will not show on Form O. 5 the quantities, numbers and values of stamps issued to his Assistants, but will keep a distinct account with each in Book O. 4b, in which he will enter quantities, consecutive numbers, and values of stamps issued to each; and also in detail the stamps issued by each Assistant, which details will be entered from Assistant Inspectors' monthly returns.

4. The back of the form must show the aggregate of the returns of work done by the Inspector and his assistants for the same period, the value of which, as per schedule of fees, must correspond with the collections and remittances returned on the face of the form.

5. Each Assistant Inspector is required keep a similar account in book O. 4c, and to make return to his Inspector on form O. 5, in the same manner as described above. This must be done three days prior to the last day of the month.

#### ART. V.—THE DEPOSIT OF COLLECTIONS.

1. The Inspector will deposit his collections in the Bank of Montreal or such other bank as may be designated by the Department. He will take the money to the bank with a specification thereof stating it to be on account of Weights and Measures Inspection, and make a requisition for a draft in favor of the Receiver General.

2. Attached to the draft which will be given by the bank to the depositor, will be a bank receipt in triplicate (form K 26); one copy of the receipt called the "original," will be filed in the Inspector's office for reference; the draft and the remaining copies of the receipt must be immediately forwarded to this Department in small blue envelope (e. 3).

3. Deposits are to be made weekly, or as often as the amount collected reaches fifty dollars.

4. The collections of each month are to be kept distinct, and on the first day of each month a draft is to be transmitted for a sum, however small, which will exactly close the transactions of the previous month.

5. Except when post office money orders are used for remittances, each draft is to represent the collection of a certain day or days.

6. No portion of the money collected is to be expended by the Inspector or Assistant Inspector, or applied by him to any purpose whatever; the payment of his salary and authorized contingencies being otherwise provided for.

7. In divisions where no bank is available, and where there is a money order post office, the remittances may be made by a P.O. order in favor of the Commissioner of Inland Revenue; but, in such cases, the depositor will take care that all his remittances, except that to close the month, are in even amounts of 10, 20, 40, 50, 60, 80, or 100 dollars.

8. If the Inspector is prevented by duties of inspection from making his weekly deposits at the usual place, he will for this purpose take advantage of any money order office on his line of travel.

9. The commission charged for money orders will be repaid to the depositor by this Department, and must not be deducted from the amount of the deposit.

10. With each remittance an Advice Note (O. 18) is to be forwarded in the same envelope (e. 3), and its No. is to be entered opposite the remittance on the Cr. side of the Cash-book; the number of the Advice Note is to be written on the Receipt or P. O. Order to which it refers. The Advice Notes are to be used in the regular sequence of their numbers, and the officers using them must be careful not to lose or destroy any of the numbers. Should one be accidentally wasted, it is to be forwarded with the succeeding one.

#### ART. VI.—DEFERRED PAYMENT OF INSPECTION FEES.

1. When any manufacturer desires to defer payment of inspection fees accrued on weights, measures or weighing machines inspected at the manufactory under sections 18, 19 and 20, of the accompanying Order in Council, it may be granted from the date of verification to the end of the then current quarter,—that is, to the 30th September, the 31st December, the 31st March, or the 30th June, as the case may be, provided always that, if required, he furnish sufficient security, as per Order in Council aforesaid.

2. The book (Form O. 1<sup>st</sup>), is to be kept as a pass-book between the Inspector and the manufacturer (a book for each manufacturer). The Inspector will enter in the proper columns the date, the number of each certificate, and the amount of fees accrued thereon, and obtain the signature or initials of the manufacturer or his agent in the column appropriated to that purpose opposite each item.

3. The particulars of each verification, for which credit is granted, must be entered in the monthly return in red ink, and in the return for the month ending each quarter the total amount of such fees for the whole quarter is to be added in and remitted in the usual manner.

4. The Inspector will be held strictly responsible for the safe keeping of the pass-book and for the collection of the fees at the proper time, and should the person to whom credit is given refuse or fail to pay at the end of the quarter, in accordance with these regulations, all credit to such person is to be discontinued until settlement is made, and until written authority is received from the Department to renew it.

## ART. VII.—DRAWING SALARIES.

1. A Departmental Cheque for the aggregate salaries of each division will be transmitted monthly to the Inspector or other Chief Officer.

2. The cheque, when covering the salary of more than one officer, is to be deposited to the credit of the Inspector in the bank at which the business of the office is transacted.

3. The Inspector in each Division will be furnished by the Department with a cheque book for salaries, and with a pro-forma pay-list. The latter will show the name of each officer, his annual salary, his gross monthly salary, the amount of the deduction for superannuation, and his net monthly salary, and will also give the date at which it takes effect.

4. When any change takes place in the staff of the office, or in the salaries of the staff, a new pro-forma pay list will be issued from the Department to supersede the one previously in use.

5. A book of blank forms of pay-lists (Form No. 8) will be furnished to each office, and the Inspector will fill up the pay-list in accordance with the pro-forma above alluded to. The pay-lists are numbered consecutively and must be used in sequence. If one be spoiled it must be sent to the Department.

6. A cheque is to be issued by the Inspector from the Pay-List Cheque Book in favor of each person on the pay-list, and the signatures of the officers to the pay-list must be obtained at the time that the cheques are handed to them, *but not before*.

7. To prevent the delay which might arise from sending the pay-list to officers residing at a distance from the head-quarters of the division, a form of receipt (No. 13b.) is provided which the Inspector will transmit to the officer with his cheque, and which the officer will immediately sign and return to the Inspector.

8. The Inspector will attach these receipts to the upper left hand corner of the pay-list and mail it to the Department at as early a date as possible.

## ART. VIII.—CORRESPONDENCE.

You will in future govern yourself by the following instructions in carrying on your official correspondence :

1. Official letters are to be written on foolscap paper, leaving a convenient margin—*i. e.*, about one-third—at the left hand side.

2. When the letter does not extend beyond one page only half a sheet is to be used. If the letter cannot be written on one page leaving the required margin a second half sheet is to be used.

3. For convenience in using the press copying book, cut sheets are issued, WHICH ARE TO BE WRITTEN ON ONLY ON ONE SIDE.

4. Each letter is to relate to ONE SUBJECT ONLY, and must contain as full and complete information on that subject as possible.

5. Each paragraph is to be numbered.

6. If there are any inclosures they must be described, or designated by letter, in the margin, thus : "Inclosure A." The transmission of unnecessary inclosures is to be avoided.

7. All official letters are to be folded in four folds and forwarded in official envelopes, which are supplied to all officers, and they are to be used as per instructions in Article X.



8. Reports on official references are to be written on the folds of the official backing where there is room. It will be observed that these folds are numbered 1, 2, 3, 4. The report is to commence on the first vacant space and to be continued on each fold in regular sequence. The inside of the backing—which will be considered as No. 5—may be written on if necessary.

9. When there is not sufficient space on the backing, a separate half sheet of foolscap is to be used, and in such case no part of the report will be written on the backing; but generally, if the report is concisely written and all useless or formal verbiage avoided, there will be ample room.

10. As many officers retain Departmental references long after there is any necessity therefor they are now informed that all such documents **MUST BE RETURNED TO THE DEPARTMENT** as soon as instructions contained thereon are noted and action taken endorsed thereon by the officer to whom sent.

The reference book (K. 51) is to be used for the purpose of recording all such instructions, &c.

11. No document attached to a reference must be removed, but the reference must be returned entire.

12. In official correspondence and in reports the most concise and explicit terms should be used; formal and unnecessary quotations from previous letters, repetitions and mere speculative opinions, unsupported by evidence, are to be avoided, and in making statements the exact facts are to be rigidly adhered to, as the writer will be held accountable for the accuracy of the information he furnishes.

13. All official correspondence must be addressed to the “**COMMISSIONER OF INLAND REVENUE.**” It is *not necessary*, nor is it desirable, to use the name of the officer who may happen to be in charge of the Department for the time being, nor the name of the officer or clerk to whose branch the letter or memorandum may be supposed to refer.

14. Copying presses and books are only supplied to the principal offices. When they are not supplied, the officers must keep manuscript copies of their correspondence.

15. Officers forwarding packages or parcels to the Department will please see that the nature of the contents is marked upon the outside of the package as returned W. & M. Stamps, Steel Dies, Diaries, &c. All such packages must be addressed to the **COMMISSIONER OF INLAND REVENUE, OTTAWA.** For this purpose an Official Label (Form No. 9) is provided, which can be had on application to the Department.

#### ART. IX.—PROCURING SUPPLIES.

1. Requisitions for stationery, forms and supplies of any kind are to be made on the printed forms issued for that purpose, and are not to be included in letters.

2. A separate requisition on Form No. 2 is required for articles to be supplied from the Government Stationery Office, viz., such goods as are usually found in a stationer's shop. Any article or form bearing the Department imprint is not to be classed as stationery.

3. When the articles asked for require the special sanction of the Commissioner a letter of explanation may be desirable, and in such cases, both the letter and requisition must be sent through the District Inspector. When a requisition has been so forwarded the local number thereof should be referred to in the next requisition.

4. Requisitions for furniture must *in all cases* be accompanied by a letter, and forwarded as above.

5. Applications for fuel should be made by letter to the District Inspector not later than 15th August in each year, stating the kind of fuel required, with an estimate of quantity. No fuel is to be purchased without such authority.

6. Requisitions should clearly state the quantities of the articles required, (*which, in the case of forms, should correspond with the usual packages, as indicated by the labels thereon and quoted in margin of Official list*) and correctly quote the index letter, number and description of each form as given in the official list of forms. Requisitions should state whether *long* or *short* forms are required, if they are issued in two sizes.

7. In asking for envelopes the small *e* is used to indicate those of letter or note size, and the capital *E* those of larger size. The colour should be stated.

8. Many of the principal books are made in various sizes to suit the requirements of the service, therefore requisition for such books should state the number of pages or folios required, as per margin of list.

9. Requisitions for supplies for the use of out-offices should name the out-office to which it is to be sent. Receipts for such supplies should not be signed until acknowledged by the officer receiving them.

10. In asking for cheque books, the number of cheques required for use in one year should be stated.

11. Requisitions for STATIONERY *must be specific* in describing the details of articles required, for instance :—

*a.* PENS.—Name the pen and give the maker's name and No.

*b.* BLANK BOOKS.—Give size of page, number of leaves or pages, and describe ruling and binding required.

*c.* EL STIC BANDS —Describe these as per labels on the boxes, giving maker's name, sizes and quantity in box.

*d.* Be equally particular in describing the sizes and kind of PAPER required, ruled or plain, cut or uncut.

*e.* ENVELOPES.—Size, kind and quantity in hundreds or parts of hundreds.

*f.* LEAD PENCILS.—Maker's name and grade No. or letters; also size and colour of leads for automatic pencils.

*g.* The same care must be taken in describing all other articles asked for.

*h.* The Stationery Office does not send ink and mucilage by mail; these may be purchased on Contingent Account.

*i.* Requisitions lacking in any of the necessary details will be returned for correction, and in this case the *same requisition* must be returned corrected, unless a duplicate is asked for. A requisition or receipt returned for correction or explanation should be treated as correspondence, and the reply written separately, not on the form, and mailed in *e. 2*. See Circular G. 335, following.

*j.* Requisitions are liable to rejection for excessive quantities, too frequent demands, fancy or costly items.

*k.* In asking for non-perishable or long wearing articles, such as knives, inkstands, pencil cases, &c., former supplies must be accounted for.

*l.* It should be borne in mind that the Stationery Office is closed during the last week of the months of June and December of each year.

12. There are two forms of requisition book issued by the Department.

13. Form No. 2 for requisitions on the Clerk of Supplies and on the Department of Public Printing and Stationery, to be mailed in small blue envelope *e. 6*. Receipt Form No. 2 *b*.

14. Form No. 27 *a.* for requisitions on Stamp Clerk, to be mailed in small buff envelope *e.* 13. Receipt Form No. 27 *b.*

15. THE CLERK OF SUPPLIES furnishes the following items :—Official Books and Forms as indexed in official list, Departmental Circulars, Reports and Pamphlets, Copies of Acts of Parliament, Official-headed paper and pads, and all Departmental printed forms not included in the Official list ; Dating Stamps, Pads, &c., and repairs to the same.

16. The Government Stationery Office issues supplies subject to the following conditions :—

*a.* The Secretary of State is authorized to prepare a list of all articles to be kept in stock and furnished to the Departments upon ordinary requisitions, such list to be subject to the final revision and approval of the Governor in Council.

*b.* So soon as such list has been so settled and approved, and printed and distributed to the several Departments, all ordinary requisitions upon the Stationery Office shall be issued for those articles only that are therein enumerated.

*c.* No article shall be added to such list thereafter, except upon the reports of the Secretary of State, approved by the Governor in Council.

*d.* No plain paper or envelopes, such as are used for ordinary correspondence, shall be asked for by any ordinary requisitions, or issued upon the same for private use of the employees in any Department, except in the case of Deputy Heads.

*e.* No paper or envelopes for correspondence bearing relief stamp, cameo, or embossed work or devices, either lithographed or engraved, shall be kept in stock or supplied, except for the use of Ministers or Deputy Ministers, the Governor General's Secretary, the Speakers and Members of the two Houses of Parliament, and the Judges of the Supreme and Exchequer Courts, the Clerk and Law Clerk of the Senate, the Clerk and Law Clerk of the House of Commons, and the Librarians of Parliament.

*f.* No pocket knives or pocket books shall be kept in stock or supplied to any Department except upon special requisitions, stating the names and employment of the persons for whose use they are to be procured.

*g.* No despatch boxes or brief bags shall be issued for the use of the members of any Government Commission.

*h.* All requisitions issued under rules *e.* and *f.*, or for articles not on the general list (and therefore not procurable upon ordinary requisitions) shall be signed by the Deputy Minister and approved and initialled by the Minister of the Department or the Clerk and Speaker of each House of Parliament.

17 *a.* THE STAMP CLERK issues the following supplies :—Weights and Measures, Gas and Electric Light Inspection Stamps ; Apparatus, Instruments of Precision with accompanying Table Books, Meter Seals, Instruments, Tools, Brands, Steel Punches, Letters and Numerals for W. & M. Service ; Chemical and Mechanical Supplies, including Standard Candles.

*b.* On receipt of stamps, a receipt on the forms provided for such purpose must be immediately forwarded to the Department, in envelope *e.* 13.

19. The items asked for should be arranged in alphabetical order, as per list, with all index letters and numbers, whether of books, forms or stationery, *in the first column*, and only one item should be placed on a line. This can best be done by filling the stub first, and re-arranging the items when filling the requisition. Numbered forms should be asked for in decimal quantities, 5, 10 and multiples thereof.

20. The service for which forms are required should be distinctly stated on the requisition—whether for Excise, Electric Light, Cullers, W. & M., gas or other service.

21. The requisitions must be numbered consecutively, *not in duplicate*, but the respective Forms No. 2 and No. 27a must bear a separate series of consecutive numbers.

22. All books, pads and forms requiring to be made to order, should be asked for at least one month before they are needed. All requisitions for such forms should be accompanied by sample sheets of the forms required, and, in case of books, the binding should be described and an impression of the lettering required on the back or side should be sent.

23. Receipts for supplies must be promptly returned to the Department as soon as the full contents of them can be acknowledged; but in case of delay or non-receipt of any article, the Department should be notified by memo., and the receipt should not be signed till the full acknowledgment can be given, when the date of receipt of delayed articles should be stated. In acknowledging numbered forms the numbers should be quoted.

24. Inspectors and Assistant Inspectors will consult their own interests by taking care to enter the titles of all new forms that may be issued from time to time on the blank pages provided for that purpose in the List of Forms as soon as the forms are received, or their titles published.

27. Parcels should be opened as soon as received and the items checked thus ✓ in fourth column on stub of requisition book, and on receipt form, before signing receipt, and the date should be given on receipt of delayed items.

28. Strict attention to details is necessary in making requisition, so that in case of the temporary absence of the clerk in charge, they may be dealt with by a person less familiar with that work.

#### ART. X.—THE USE OF BOOKS AND FORMS.

The index numbers of books are printed in heavy type.

##### O. 1.—*Day Book, Cash Book and Register.*

In this book will be entered, by the Inspector, the information required by the respective headings, viz.: (1) The number of Certificate, 'O. 6,' (2) date, (3) name, (4) trade and (5) address of the person presenting weights, measures, &c., for verification, in columns 6 to 12, the number of the articles presented, each under its proper denomination, using column 12 for irregular weights and measures not provided for in the previous columns, but still admitted to verification under Art. XI Technical Instructions.

The following columns constitute the Cash Accounts, viz.: (13) Stamps, (14) collection, (15) penalties, (16) total collections; the credit side of this account being contained in columns 17 to 31.

The verified articles will be entered as usual in black ink and the rejected in red ink, so that at a glance one may be distinguished from the other.

The heading of column 22 explains its use.

O. 1b. is a portable copy of the above book to be used by the Inspector or his Assistants while on a tour of inspection. Two copies of this book should be used alternately, one copy to be returned to the head office promptly at the close of each month and the entries therein transferred to the office book O. 1.

O. 3.—*Notice of Customs Entry.*

This is a form supplied by this Department for the use of Collectors of Customs to enable them to notify the Inspector of Weights and Measures for the district of the importation of weights, measures or weighing machines.

Requisition for this form should be made through the Inspector of Weights and Measures for the district.

O. 4a. Inspector's Stamp Account with Department.

O. 4b. do do do Assistant. } *Always issued*

O. 4c. Assistant's do do Inspector. } *in pairs.*

A copy of this book is to be kept by each of the Assistant Inspectors ; the Inspector will keep one (O. 4a) for his stamp account with the Department and one (O. 4) in account with each of his assistants separately. In the first he will enter the contents of each parcel of stamps received from the Department, by their number, each denomination under its respective heading, with quantities and values correctly stated, and the total carried into the column for that purpose. This must always be done immediately on receipt of the stamps from Department, and the receipt must be marked "*Entered*" before signing. (See Regulations, under Art. 1.)

(a) In the lower part of the form the Inspector will make daily entries of stamps issued on certificates by himself, being particularly careful to enter the numbers correctly, giving the first and last number, quantity and value of stamps of each kind used that day, with the total value for the day. If there be only one stamp of a kind to enter, write the number in the column headed "first number," leaving the next column blank. Numbers must not be repeated. At the end of the month he will first rule off the account and add up the total quantities and values of his own issues, and then transfer the total of each of his assistants for the month, adding the whole together and carrying up the result into the line "By stamps as detailed below," after which damaged stamps returned, if any, may be entered and a balance struck to be carried forward to the next account. This mode of entering deposits or remittances will be evident from the face of the form and the sample sheet attached. The total remittance for the month must always equal the total collections for the same period, leaving no cash balance to carry forward.

(b) The individual accounts of the Assistant Inspectors, O. 4c, and of the Inspector with his assistants, in O. 4b, will be kept in the same manner as above, and each assistant will render to his Inspector on the first day of each month, and the Inspector will render to the Department, on Form O. 5, an exact copy of the month's account in this book.

The books O. 4b and O. 4c are inseparable, and should not be asked for or used separately. The same remark applies to the books O. 15, O. 16.

O. 5.—*Monthly Return.*

See Art. IV ; also instructions on back of the form.

O. 6.—*Certificates of Verification.*

These are printed in English and French, and carry their instructions on the face of them.

Form O. 6b. *Printed in red, is used for certificates after repairs.*

O. 7.—*Statement of Progressive Inspection.*

This form is intended for the use of Assistant Inspectors, and is to be filled in by them in accordance with the heading thereof. This form is to be sent

to the Inspector with the Assistant's Return of work performed by him during the month, and is to be forwarded to Department by the Inspector with duplicates of inspection O. 6, retaining a copy thereof.

Inspectors shall also be required to send a copy of this form for the work of inspection performed by them.

O. 8.—*Inspector's Advice of Supplies.*

A list of the articles and quantities required by an Assistant Inspector, as per Departmental instructions, may be sent to the Inspector on an ordinary memo. slip, in envelope e. 9, and on the issue of the items asked for, the Inspector will send his "*Advice of Supplies*" O. 8, to be signed and returned by the Assistant on receipt of the goods.

In case of delay, the Inspector is to be advised by memo. and the receipt held over until a full acknowledgment can be given.

At the request of the Inspector, the Assistant Inspector's address being given, supplies will be sent direct from Department to avoid re-mailing.

O. 9.—*Memo. of Cartage.*

This form is to be attached to the Contingent Account. On the debit side it will show the number of each certificate containing charges for cartage and the amount collected thereon.

On the credit side the names of the persons to whom payments were made for cartage and the amounts so paid.

O. 10.—*Itinerary.*

This is a detailed account of travelling expenses and places visited on a tour of inspection, and is to accompany the contingent account, "Form No. 11."

O. 11.—*Register of Seizures.*

O. 11a.—*Report of do*

O. 11b.—*Proceeds of do*

In Book O. 11, all transactions under the head of Seizures, are to be entered and a report of each seizure separately is to be made to the Department on Form O. 11a. Form O. 11b is to be used when the proceeds of penalties imposed, or of the sale of articles seized, are to be accounted for, as provided for at the foot of Monthly Return O. 5.

O. 12.—Is a form for the use of the District Inspector on inspection of the books of a Weights and Measures Office.

O. 13.—*Receipts on Contingent Account.*

Inspectors and Assistant Inspectors of Weights and Measures will obtain receipts in triplicate for every expenditure on account of contingencies, not excepting hotel bills, cartage, assistance, &c., which they will attach to their Contingent Accounts. These receipt forms are supplied, so that in cases where accounts are not rendered, the Inspector or Assistant may fill out the form and obtain the signature of the party to whom the payment is made.

The stub must show a correct copy of each voucher, the second and third being marked respectively, "Duplicate of No. ....," "Triplicate of No. ....," omitting the details.

Where accounts are rendered, they should be receipted in the usual manner.

(a.) The Contingent Accounts of Inspectors will be made out on Form No. 11; those of Assistants on Form 11b, with a Bill of contingencies No 11c.,

in triplicate, to which copies of all vouchers, whether on Form O. 13 or otherwise, are to be attached, one copy to be filed in the Inspector's office, and two copies to be sent by him to the District Inspector, one of which, when approved, he will forward to the Department.

O. 14.—This is a report on the standard instruments in a Weights and Measures Office to be made by the Inspector on the 30th June in each year or on demand of the Department.

Form O. 14 is also to be used by District Inspectors of Inland Revenue for their report, annual or otherwise, on standards stored or in use in other than Weights and Measures Offices.

O. 15.—*Assistant Inspector's Advice of Remittance.*

An Assistant Inspector, at the time of forwarding one or more duplicates of certificates to the Inspector of his District, will remit by Post Office Order or Bank Draft, the amount of fees collected on the certificates forwarded. This amount, together with the amount of seizures, &c., must be sent with one of these Advice Notes—(Form O. 15).

(a.) The Inspector will return a receipt for the amount remitted, which the Assistant will attach to the corresponding stub of the Advice Note. The number of the Advice Note is to be written on the Draft Receipt or Post Office Order to which it refers.

O. 16.—*Inspector's Receipt for Remittance.*

An Inspector, on the receipt of the remittance of collections and Advice Note from an Assistant, will at once acknowledge their receipt on Form O. 16; at the same time he will attach the Advice Note to the corresponding stub in the Receipt Book. These Forms, O. 15 and O. 16, must be used in pairs; the one must not be asked for or used without the other.

O. 17.—*Notice to Traders in English and French.*

This is a notice to traders (on a post card) requiring them to produce for inspection all the weights, measures and weighing machines in their possession.

O. 18.—*Advice Note of Remittance to Department.*

The number of this Advice Note is to be written on the receipt or post office order to which it refers. These Advice Notes are to be used in the regular sequence of their numbers, and the officer using them must be careful not to lose or destroy any of the numbers. Should one be accidentally wasted, it is to be forwarded with the succeeding one.

O. 19.—This is a pass book, supplied by the Department to manufacturers of weights, measures and weighing machines, for use under Schedule E, sec. 3, of the accompanying Order in Council.

O. 20a. Manufacturer's }  
O. 20b. Inspector's } Notice of Shipment of Uninspected Articles.

The former of these books is to be used only for weigh bridges, dormant scales and repaired weighing machines.

The second is still to be used as per instructions on the label, and may also be used for goods reported by Customs Officers on Form O. 3.

O. 21.—*Monthly Diaries.*

The instructions for the use of these books are contained therein.

O. 22.—*Revenue Statement required by the Auditor General.*

This statement is to be mailed monthly, in duplicate, by the Inspector.

*General Forms used in all branches of the Inland Revenue Service.*

**No. 1.—List of Forms—Pamphlet.**

By reference to the table of contents of the above pamphlet, Weights and Measures Inspectors will find on pages 7, 15, 28, 29 and 34, all that relates to this service, the various items of which are detailed below.

Particular attention should be paid to the foregoing instructions so far as they relate to the use of the following books and forms, viz. :—

**No. 2.—Requisition for Books, Forms and Stationery, and No. 2*b*, receipts for the same. See also further instructions at the foot of these forms.**

**No. 8.—Monthly Pay Lists.**

In the use of this, as in all numbered forms, every number must be accounted for.

**No. 9.—A label for sending diaries or any other parcels to Department. A supply of these should be asked for whenever required.**

**No. 11.—Contingent Account, 11*b*.—Subsidiary Contingent Account for Assistant Inspectors, 11*c*.—Bill of Contingencies, long and short forms.**

The use of these forms is fully explained on the back of No. 11. See also Article XIII, sections 2 and 3.

**No. 13.—Acknowledgment of Official Cheques, to be mailed in envelopes e. 3.**

**No. 13*b*.—Acknowledgment of Cheques for Salary, for officers too distant to sign the Pay List “No. 8.”**

**No. 17.—Inventory of Furniture.**

Annual return to be made in July of each year, not to include instruments, &c., accounted for on Form “O. 14.”

**No. 27*a*.—Requisitions for stamps, instruments, tools, brands, steel punches, letters, numerals and chemical supplies. 27*b*. receipts for the same. See Art. IX, section 17 of these instructions.**

Particular care should be taken that the proper envelopes are used as per instructions in mailing the above forms. The large blue E. 6 is to be used for all forms where other envelopes are not specified.

A. 21 is a bond to be given by Weights and Measures officers on appointment and to be renewed when necessary in consequence of death or insolvency of sureties.

On page 15, of the List of Forms, is a list of official envelopes, of which the following are applicable to the Weights and Measures Service :—

**E. 2 and e. 2.—Large and small white envelopes for correspondence with Department.**

**e. 3.—Small blue, for Advice Note “O. 18,” Bank Receipt or Post Office Order; also for Forms Nos. 13 and 13*b*.**

**E. 6.—Large blue, for all papers and returns except those for which special envelopes are provided.**

**e. 6.—Small blue, to Clerk of Supplies, for mailing Forms No. 2 and 2*b*.**

**E. 7.—Large manilla, for mailing duplicates of O. 6. to Department.**

**E. 8 and e. 8.—Large and small manilla, for all papers and communications addressed to the District Inspectors.**



E 9 and e. 9.—Large and small amber, for papers, &c., addressed to Inspector of Weights and Measures by his assistants or by the District Inspector of Inland Revenue; a larger size is provided for mailing Form O. 6.

E. 11 and e. 11.—Large and small buff, for papers sent by the Inspector to his assistants.

E. 12 and e. 12.—For papers delivered or mailed, on weights and measures business, to the general public.

e. 13.—Small buff envelope for Forms No. 27 *a.* and *b.* to Stamp Clerk.

E. 14.—For mailing Pay Lists to Department. *Amber foolscap.*

G. 1.—Exhibit of sureties. This return should be made to Department in July of each year. It is also required whenever any change of sureties is made by reason of death or insolvency. Also, on the transfer of an officer from one division to another, a copy of this exhibit should be sent to the Chief Officer of the division or service into which he is removed.

K. 26 is a book of triplicate receipts and drafts supplied to banks receiving deposits on account of any branch of the Inland Revenue Service.

The Collector of Inland Revenue is the proper person to supply this book to the bank when required.

K. 36.—Expenditure Cash Book, for the more systematic keeping of the expenses account, usually kept in a blank petty cash book.

K 51.—Reference Book for correspondence, in which all communications to and from the Department are to be recorded.

K. 69.—Record of Sureties.

In this book the Inspector will keep a record of the sureties furnished by him and his assistants, giving the amount of each, and recording any change that may occur, such as the death or insolvency of the bondsmen, the renewals of the bonds, the transfer of an officer to another division, &c.

The schedule of Weights and Measures Forms on page 28 of the List of Forms, is subject to occasional changes. The index Nos. and titles of new Forms should be inserted on the blank page opposite, as soon as known.

#### ART. XI.—SEIZURES.

1. When a seizure is made, the Inspector must immediately forward to the Department a report of it upon the form O. 11a provided for that purpose, *accompanied by his written report*, both of which must be forwarded in an E. 2 envelope, and if it is a case calling for prosecution, he must at the same time, or as soon after as possible, furnish a statement of the evidence available for this purpose, giving the names of witnesses and a concise statement of what each can prove.

#### ART. XII.—ANNUAL REPORT ON STANDARDS.

As Inspectors of Weights and Measures have heretofore failed to comply with instructions in respect of filling out and returning to the Department Form O. 14, they are hereby informed that they are, at the end of the fiscal year, required to promptly and carefully fill out and forward to the Department a copy of said Form. Any inspector whose copy fails to reach the Department on or before July 10th will be liable to incur the penalty of suspension.

## ART. XIII.—RELATING TO EXPENDITURE.

1. Vouchers must be produced for every expenditure for which they can be obtained, using Form O. 13 when accounts are not rendered on the usual business forms. Hotel bills must show the number of days' board in each case and the rate per day. The particulars of items for which receipts cannot be procured are to be neatly written on foolscap paper.

2. At the end of each month (or oftener if necessary) a statement of expenses incurred is to be prepared on Form 11, on which each separate voucher is to be entered, consecutively numbered, the amount of each placed in the appropriate columns as per respective headings, and extended into the "total" column. All the vouchers, with the Itinerary O. 10, will be attached to the *inside* of the "Contingent Account," at the upper left hand corner, the whole neatly folded and *endorsed*, and forwarded to the District Inspector of Inland Revenue, who, after examination and approval, will mail it to the Department.

3. The individual expenditure accounts of subordinate officers of Weights and Measures are to be made on the subsidiary Form No 11b, and attached to Form No. 11. Also the itinerary accounts on Form O. 10 are to be so attached. Copies of vouchers taken on Form O. 13 should accompany the above papers. Accounts for articles purchased should show the Departmental authority for such purchases in all cases.

4. Official cheques to cover "Contingencies" are to be acknowledged on Form No. 13, and mailed in envelope *e. 3*.

5. Inspectors will advance to subordinate officers such sum of money as will meet their necessary outlay on Government account, to prevent their using their private funds for this purpose. Receipts will be taken for these amounts, and kept on file by the Inspector.

6. Subordinate officers residing at the headquarters of a district, or whose business requires their presence there at frequent intervals, will present their accounts on Form No. 11b. to the Inspector in person, *and will receipt their accounts at the time they receive payment.*

7. Other subordinate officers will send to the Inspector by mail their statement of expenditure attached to Form No. 11b. Any vouchers which they have obtained, for payments made by them, must also be attached to the form, but the officer will, before mailing the account, write his name across the face of each of these vouchers as evidence that the Inspector obtained possession of them through him. If the Inspector approves of the account he will send the officer the amount by cheque or registered letter (whichever is more convenient to both parties).

8. Receipts are never to be taken, either for salaries or contingencies, until the money represented by them is paid.

9. When a long tour of inspection is about to be undertaken, during which the officer so engaged would have difficulty in communicating with his superior officer, the Inspector may ask for a special advance if the sum in his hands is not sufficient.

## ART. XIV.—CLOSING CONTINGENT ACCOUNTS AT END OF FISCAL YEAR.

1. Inspectors are instructed to forward the last account for the year to the District Inspector early enough for it to be examined and to reach the Department *not later than the 28th of June.* If the account is less in amount than the

advance made to him, he must deposit the difference to the credit of the Receiver General and obtain a separate draft for it, which he will mail to the Department at the same time that the account is sent to the District Inspector. If the last account for the year exceeds the advance, a cheque for the difference will be issued. Thus the account for contingencies will be closed at the end of each year.

#### ART. XV.—OFFICE HOURS.

1. Office hours for Inspectors and Assistant Inspectors of Weights and Measures, whose duties are for the time being confined to office work, are from 9 a.m. to 5 p.m., with an allowance of one hour for dinner or lunch.

2. To officers, while engaged in the performance of outside work, the working hours are from 8 a.m. to 6 p.m. in summer, and from 9 a.m. to 5 p.m. in winter, with an allowance of one hour for dinner.

3. Inspectors are instructed to suspend assistants who persistently ignore the above regulation.

4. A badge is supplied by the Department, to be worn inside the coat while on duty, to enable an officer to show his official authority in case of dispute.

#### ART. XVI.—LEAVE OF ABSENCE.

1. The Civil Service Act provides that leave of Absence, not exceeding three weeks in each year, may be granted by the head of the Department to each employee, and that it shall be taken at such time as the Head or Deputy Head of the Department may determine.

2. All applications for leave must therefore be addressed to the Commissioner, and must be sent through the superior officer of the employees making them. The Inspector's application for leave should be forwarded through the District Inspector of Inland Revenue.

3. As the Inspector of the District is responsible for the proper performance of the work, it is required that applications shall have his approval before being granted. He should, when approving of an application, state what arrangements he proposes for the performance of the applicant's duties during his absence, and, in case of disapproval, should state his reason therefor.

4. The three weeks above mentioned is the only leave that can be legally granted without an Order in Council, but in case of great emergency (the illness of relatives for instance), the Inspector may grant a short leave pending the Department's approval of an application, but in such cases they will report to the Department the circumstances that induced them to do so.

5. Inspectors of Weights and Measures should arrange for the leave of absence of their assistants so as to interfere as little as possible with the inspection work of the division.

6. In the case of application for leave of absence the attention of the Inspectors, &c., is called to the following extract of Treasury Board Minute, approved by Council on the 27th November, 1891 :—

“That in all cases in which application is made for leave of absence to any Government employee, whether on account of ill health or otherwise, there be given for the information of the Treasury Board, the reasons

why such leave is asked for, and whether the absence of such employee will necessitate the employment of additional assistance in order to carry on the work of the Department, and generally such information as will enable the Treasury Board to determine whether the leave asked for should be given, and if so, on what terms; and, further that, in cases of ill health, the following additional information be given, viz.: The usual medical certificate, together with full particulars as to the nature and cause of the illness, and whether the same is due to neglect or to irregular habits on the part of the employee recommended for such leave."

#### USEFUL INFORMATION.—THE ROBerval BALANCE.

*The following memorandum on the Roberval Balance and ordinary equal arm balances are reprinted from the Third Report of the Commissioner of Inland Revenue on Weights and Measures, 1876, and should be carefully read by Inspectors and their assistants, as the principles which affect the accuracy of balances generally are therein explained.*

I have at this moment on my table a scale in very common use; one of a description much eulogised as the very thing for small traders of limited means, as being very cheap, and as weighing with sufficient accuracy for all practical purposes. The degree of reliance that can be placed on these recommendations may be estimated by the fact that, with a common screwdriver, this scale can, in one minute, be so altered that it will weigh either light or heavy to the extent of one ounce in the pound, according as the weights are placed on one side or the other of the pan; or if the weights are placed in the centre, it is capable of weighing with sufficient accuracy, while, without any load it is in perfect equilibrium. The scale can, with almost as little trouble, be restored to comparative accuracy.

It must, I admit, be evident that such a weighing machine as this is more dangerous to the public than light weights or short measures. It would require an expert in such matters to detect the fraud, and it is not difficult to see how, when used for selling, the weights would be placed on one side of the pan, and when used for buying their position would be reversed; or how quickly the scale would be restored to adjustment when the Inspector's visit appears as a near probability.

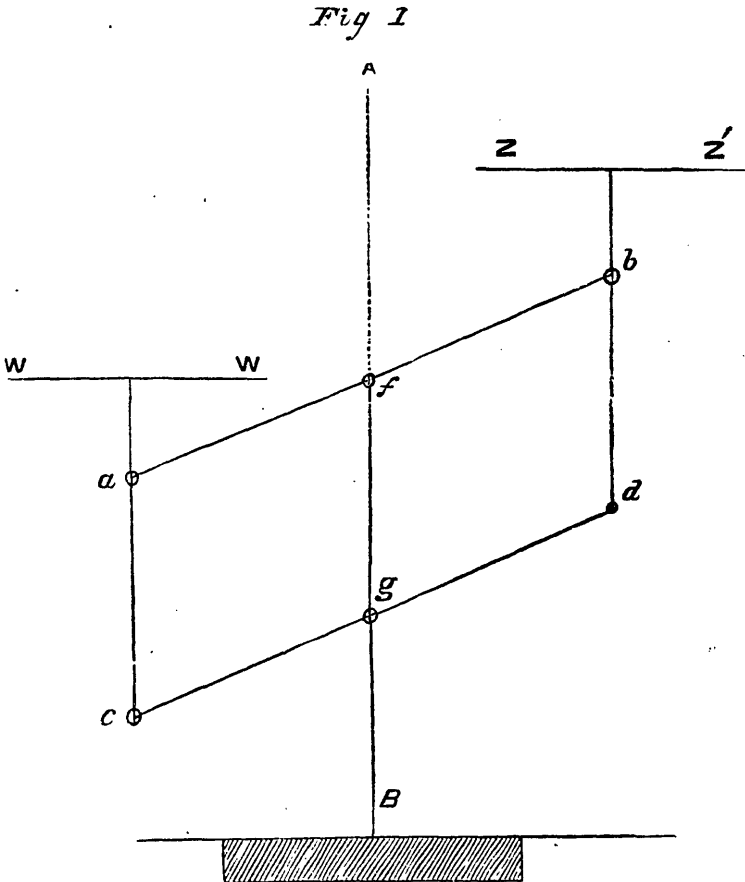
*Reprinted from the Fourth Report of the Commissioner of Inland Revenue on Weights and Measures, 1877.*

## APPENDIX K.

MEMORANDUM in relation to the "Roberval Balance," and the possibility of fraudulent weighing with it when out of adjustment.

In my third report I directed attention to a description of a scale in very common use, and originally known as the "Roberval Balance." I pointed out that, as commonly made, it could be easily distorted so as to produce false weighing either in excess or deficiency at the will of the person using it.

The principle of this balance is shown in the following diagram:—



The accuracy of the balance depends on the bars  $ab$ ,  $cd$ ,  $ac$ , and  $bd$ , forming a true parallelogram, that is  $ab$  must be equal to  $cd$ , and  $ac$  to  $bd$ . The bar  $ab$  is suspended on a knife-edge fulcrum at  $f$  as in an ordinary equal arm balance, while the lower side of the parallelogram  $cd$  is pivoted at its exact centre upon a pivot  $g$ , which must be in a vertical line  $AB$  drawn through  $f$ , and the distance between  $f$  and  $g$  must be exactly equal to  $ac$  or  $bd$ .

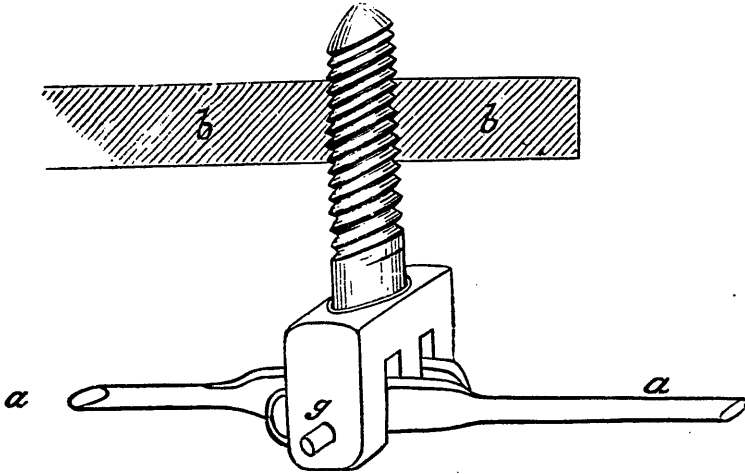
When the arrangement above described is accurately worked out, the oscillation of the parallelogram on the fulcrum at  $f$  will always produce a truly

vertical movement of the sides  $ac$  and  $bd$ , and whether the load in the pan is placed at  $Z$  or  $Z'$ , it will during the oscillation move through the same vertical space, and will therefore produce the same effect on the weight in the other pan, whether placed at  $W$  or  $W'$ .

It is obviously essential to the reliability of such a balance that it be so constructed that under ordinary usage the equality and adjustment of the several parts shall be maintained, and that there shall be no ready means for distorting them.

Manufacturers of this description of scale find it convenient to make the bar  $cd$ , in two parts, each equal to one-half the length of  $ab$ , each half being pivoted at  $g$ . In order that the balance may work accurately, the pivot at  $g$  must be in the same straight line as the pivots  $c$  and  $d$ . It is therefore necessary that the pivot  $g$  should be placed at the true distance from  $f$ , and that the construction be such as to prevent the possibility of changing the relative position of  $g$  and  $f$  without using so much violence as would be likely to attract the notice of the Inspector, and as would prevent the rectification of the error except by a partial reconstruction of the balance.

Usually these balances are so constructed as to offer no security against being tampered with. The pivot at  $g$  is sometimes carried in a stud, screwed

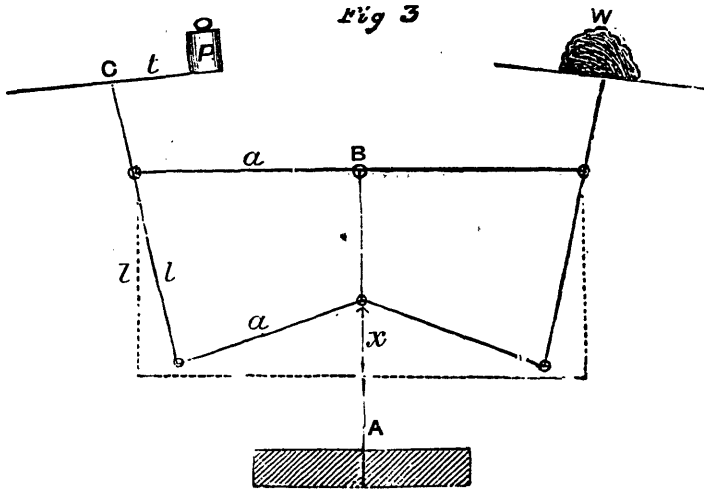


into the main frame of the balance as shown in the figure, where  $b b$  is the frame of the scale and  $a a$  the lower side of the parallelogram, so that by removing the pivot  $g$ , which is only a piece of small steel wire, the stud can be screwed farther in or the reverse. I have seen one balance in which this change can be carried so far as to make a difference of ten per cent in the weighing, the change from one position to the other being the work of a few minutes.

But generally the pivot  $g$  is carried by a slender wrought iron bar inserted in the casting. This bar is from three to five inches long, and by the application of a very moderate degree of force it can be bent in either direction to an extent sufficient to produce a very material effect on the balance. This mode of construction is apparently intended to facilitate the adjustment of the position of the pivot during the construction of the balance.



The following is Professor Cherriman's formula :—



Let  $P$  be the weight and  $W$  the load ; then in general, that one of the two which is the nearer horizontally to the central vertical axis  $AB$  will be the greater. In the particular case where the distance  $x$  through which the pivot has been displaced is very small, suppose  $W$  to be at the centre of its scale, and  $P$  to be placed at a distance  $t$  from  $C$  the centre of its platform inwards the central axis, the approximate error is given by the formula

$$\frac{P - W}{P} = \frac{t x}{a l}$$

where  $a$   $l$  are the horizontal and vertical arms.

Putting  $a=53$ ,  $l=36$ ,  $x=3$ ,  $t=20$ , the error comes out

$$\frac{20 \times 3}{53 \times 34} = \frac{60}{1802} \text{ or nearly } \frac{1}{30} \text{ of } P.$$

Hence if the value of  $P$  is 30 lbs, the error would be one pound in deficiency.

If  $P$  were placed at the same distance  $t$  to the left of  $C$ , the same expression would apply for  $\frac{W - P}{P}$  and the error would then be in excess.

*Reprinted from the Fifth Report of the Commissioner of Inland Revenue on Weights and Measures, 1878.*

STANDARDS DEPARTMENT,  
BOARD OF TRADE, S. W.,  
8th March, 1878.

DEAR MR. BRUNEL,—We have to thank you for your valuable memorandum (Appendix K, 4th Report, page 77) on the Roberval Balance containing Professor Cherriman's mathematical consideration and formula.

This is a balance in which we are much interested, as complaints have been made here of its use.



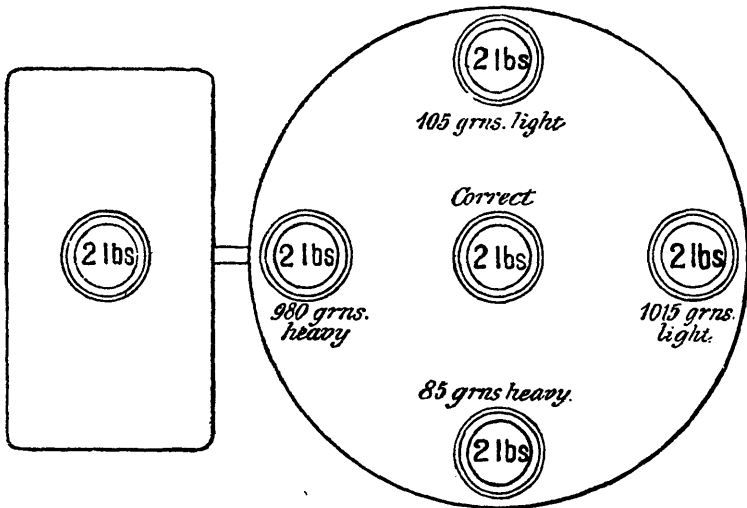
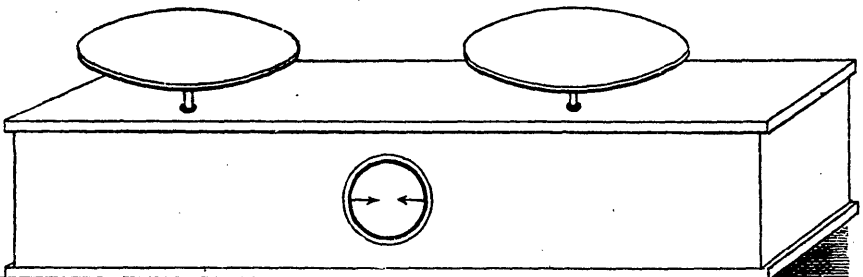
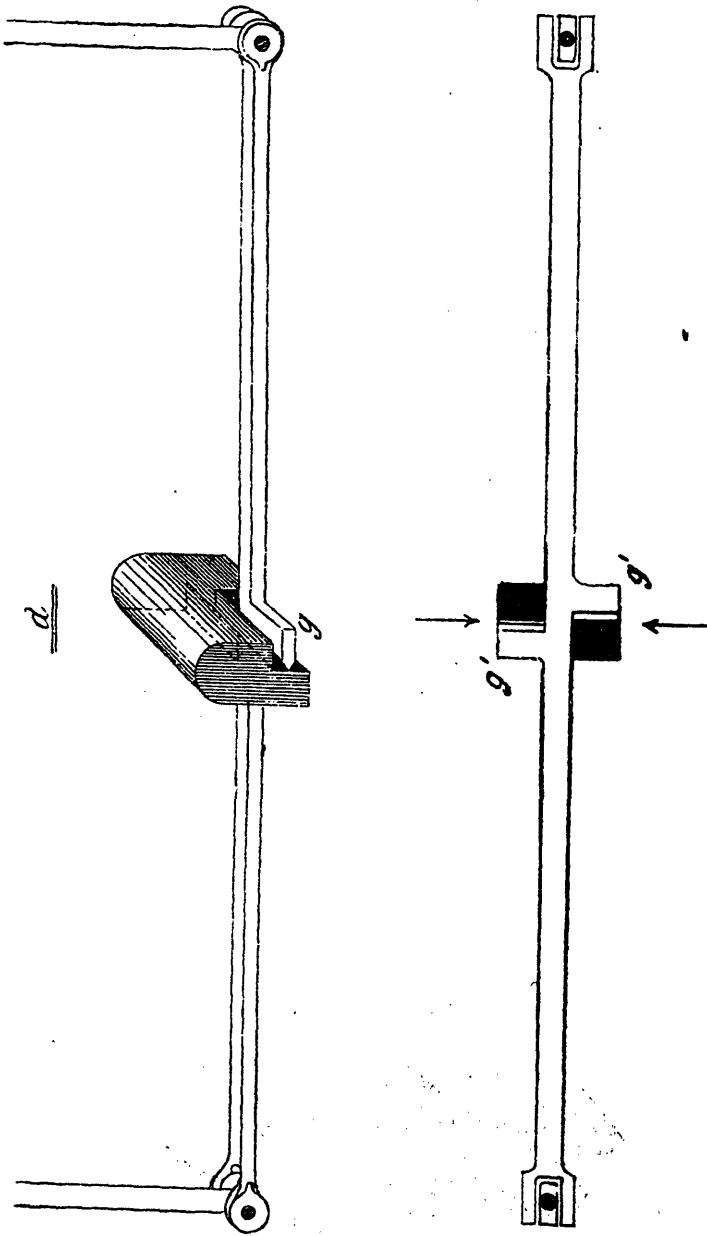
*Diagram 2.***IMITATION OF ROBERVAL BALANCE***with double jointed levers.***CHEESEMONGERS SCALE***with Earthenware pan.**Load placed respectively at each of the five places marked.***FRENCH TOBACCONIST'S SCALE***The right pan is nearly one grain heavy but the position of the weights in the pan does not affect the balance.*

Diagram 3.



*Rigid lever locked at  $g'$  and bearing at  $\rightarrow \leftarrow$*

The Roberval Balance proper appears to me, however, to be so excellent a weighing instrument that I am anxious to save its good name.

The Roberval Balance as stamped and used in France does not, as far as we can ascertain, possess the jointed lever shown as *a, g, a* in the engraving, page 78 of your report, but it possesses a single lever or rigid frame so locked at its centre or fulcrum that any displacement of the balance is difficult. (See inclosed sketch *d.*) See Diagram No. 2.

Imitations of the Roberval Balance, as shown in the figure 154 (See Diagram No. 1) now inclosed, are largely used in this country. In event of any change in our law here, it is possible their use would be prohibited eventually, as it is possible to alter such imitations by substituting for the jointed lever *a, g, a*, the single rigid lever locked as shown at *d.* (See Diagram No. 2.)

Medhurst, of London, and Pfitzer, of Berlin, have improved on these imitations of the Roberval Balance.

A good Roberval counter scale is now selling in London at a low price, 15 shillings, but it is not so convenient a form as the counter scale 154.

I remain, faithfully yours,

(Signed) H. J. CHANEY.

The following is the diagram reprinted from the Fourth Report and referred to in Mr. Chaney's letter. The diagrams included by Mr. Chaney are also given herewith.

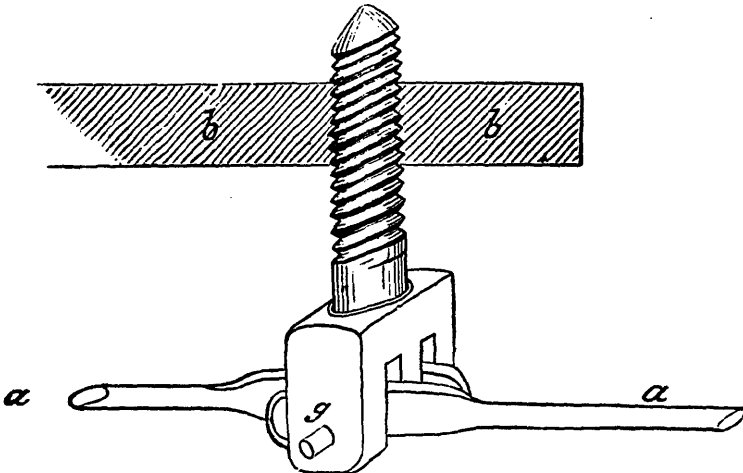
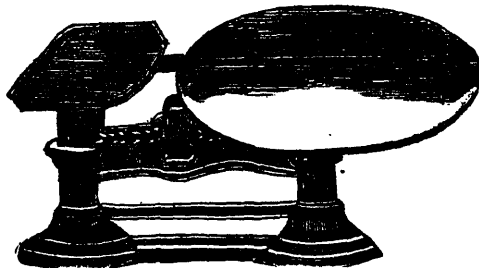


DIAGRAM No. 1.



No. 154, Counter Weighing Machine.

## THE EQUAL ARM BALANCE.

The accompanying diagram will explain in a popular manner the principles on which a weighing beam, whose fulcrums are not in a straight line, may be applied to fraudulent weighing.

The heavy lines  $a B c$  show the skeleton form of the beam. It is of the nature of a bent lever, which, it is necessary to bear in mind, will always be used under a *force* or load, acting in a truly vertical direction,  $a W, c L$ .

This being the case, the true lengths of the arms of the lever are  $Ba' Bc'$  and so long as  $B a$  is equal to  $B c$ , and the points  $a c$  are in a horizontal plane and the loads  $W L$  suspended therefrom equal to each other, the beam will be in equilibrium.

But let the beam be moved into position  $x B y$ . It is now evident from an inspection of the diagram that, practically, and in so far as it is affected by a vertical force, the arm of the lever  $B a$  has been lengthened by the distance  $a' x$ , while the opposite arm has been shortened by a distance equal to  $c' w$ .

The lever has now, for practical purposes, unequal arms, and assuming that  $a$  has been loaded to bring it into the position  $x B y$ , a greater load will be necessary at  $y$ —now the end of the short arm of the lever—to turn the beam than is carried at  $x$ , the end of the long arm.

These conditions will be reversed when the load at  $y$  has been made sufficient to turn the beam to the position  $e B d$ .

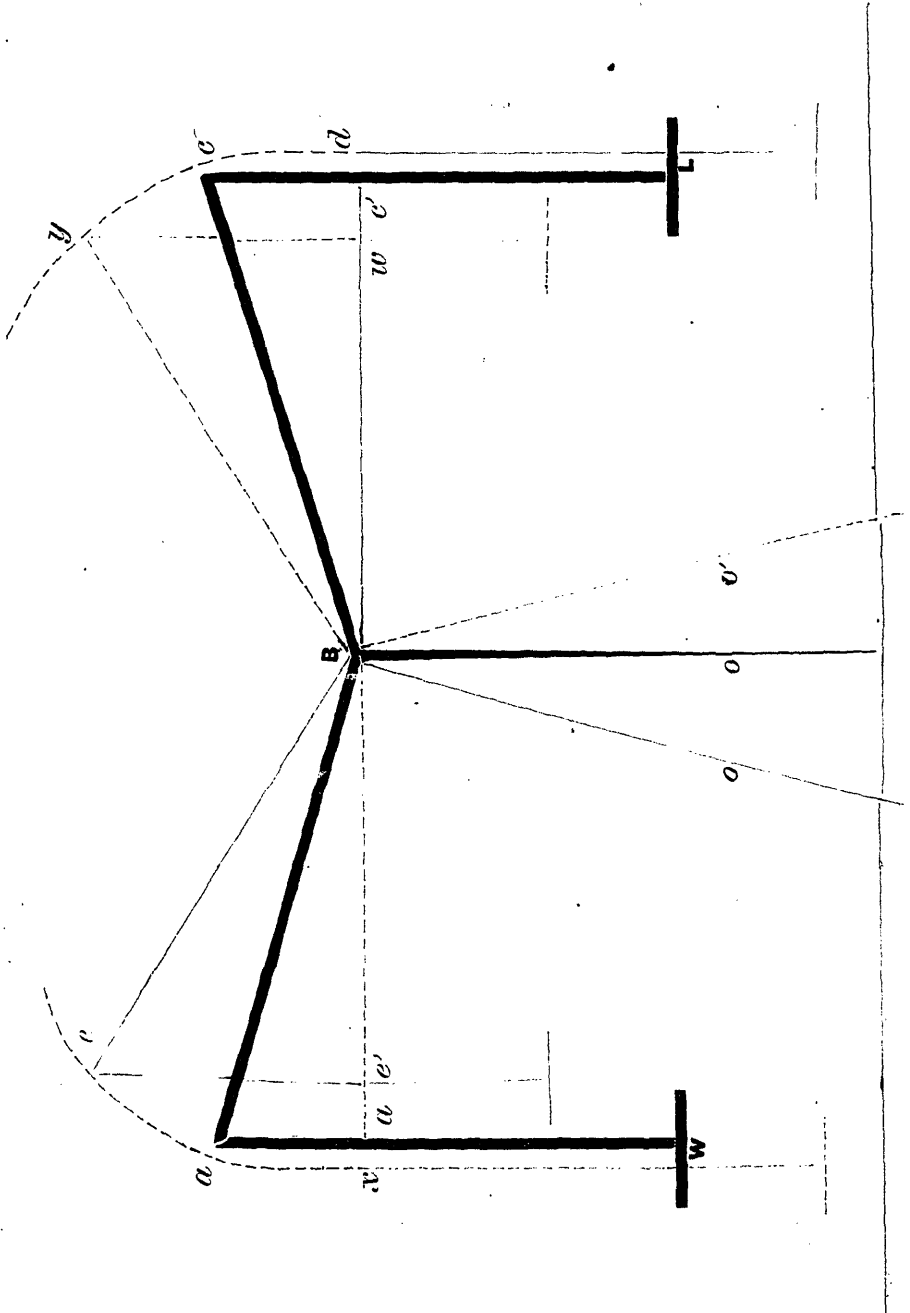
This description of balance is used for fraudulent weighing in the following manner:—

The weight is placed in the pan  $W$  suspended on  $a$ , which at once brings the beam into the position  $x B y$ . The article to be weighed is then placed in the pan  $L$ , now suspended from  $y$ , and a greater quantity is thrown in than truly represents the weight  $W$  suspended at  $x$ ; the beam then, slowly at first, but with increasing velocity, reverses its position and assumes that indicated by  $e B d$ . The operator then removes part of the article being weighed—which is now suspended on the long arm of the lever—until by touching the opposite pan we find that the weight  $W$  has *nearly* regained its power to turn the scale, but takes care to stop before it has fully regained it. The purchaser sees that the weight kicks the beam, and is well satisfied though he has been wronged in proportion to the difference in the distances between  $B d$  and  $B e'$ .

The diagram is drawn in exaggerated proportions, in order that the eye may the more readily discern the effect of the malformation of the balance.

From the above description it will be evident that such a beam as we have been considering could not fulfil the conditions laid down in section A of the Order in Council, if tested in relation thereto by the regulations in Article 1.

This condition could be tested by a straight line applied to the fulcrum of the beam, but in practice this is a difficult test to apply, and the "*behavior*" of the beam under the conditions imposed by the circular is believed to have a greater practical value, and, besides, it tests other essential qualities at the same time.



The following NOTES and FORMULÆ will be found useful to Weights and Measures Inspectors :—

Capacity of the old French <i>Minot</i> . . . . .	2380·053	cubic inches.
do	Imperial bushel . . . . .	2218·192 do
do	Winchester bushel . . . . .	2150·420 do
do	Imperial gallon . . . . .	277·274 do
do	Wine do . . . . .	231 do

A cubic foot of distilled water, or 62° Fahrenheit, weighs 62·321 lbs.

7000	grains = 1 lb. avoirdupois.
437·5	do = 1 oz. do
27·34375	do = 1 dram do

To find the area of a circle. Multiply the square of a diameter by ·7854.

To find contents of a cylindrical vessel. Find the area of the circle as above, and multiply same by depth of the vessel.

To find the depth of a cylindrical vessel when its diameter and capacity are given. Find the area of the circle, by which divide the number of cubic inches in the given capacity, and the quotient will be the depth required.

*Example*—What is the depth of a cylindrical vessel of three bushels capacity, whose diameter is 18 inches ?

$18^2 = 324 \times \cdot 7854 = 254\cdot 4696$ , the cubic inches in three bushels = 6654·576, which divided by area, 254·4696, will give 26·150, the depth required.

To find solid contents of a frustrum of a cone.

**RULE I.**—Multiply the top and bottom diameters together, to their product add the sum of the squares of the top and bottom diameters. Multiply the product by the height of the frustrum and the last product by ·2518, which will give the solid contents.

*Example*—What is the capacity of a conical vessel whose top diameter is  $3\frac{3}{4}$  inches, bottom diameter  $5\frac{1}{2}$  inches, and depth  $7\frac{1}{4}$  inches ?

3·75	3·75	5·25
5·25	3·75	5·25
<hr/>	<hr/>	<hr/>
19·6875	14·0625	27·5625
14·0625		
27·5625		
<hr/>		
61·3125		
7·25		
<hr/>		
444·515625		
·2618		
<hr/>		
116·37419		
<hr/> <hr/>		

116·37419 cubic inches.

**RULE II.**—Add together the squares of the two diameters and the product of the two diameters, multiply the sum by  $\frac{1}{8}$  the perpendicular height and this product by ·7854.

*Prismoidal Formula.*

To find the capacity of a prismoidal vessel, such as the salt cart, for instance:—

Multiply together the two top diameters, the two bottom diameters and the sum of the top and bottom diameters; add the products and multiply by  $\frac{1}{6}$  of the depth and the proper factor.

*Factors, Square Solids.*

Inches to gallons  $\times$  by  $\cdot 003606$ .

do to bushels  $\times$  by  $\cdot 000451$ .

*Round Solids.*

Inches to gallons multiply by  $\cdot 002832$ .

do to bushels do  $\cdot 000354$ .

*Example*—The salt cart.

The two top diameters  $39 \times 27 = 1053$

do bottom do  $33 \times 21 = 693$

The sum of top and bottom diameters  $72 \times 48 = 3456$

5202

Multiplied by vertical height 10·234

$\frac{1}{6}$  | 53237·268

8872·878

Multiplied by proper factor  $\cdot 000451$

Bushels 4·001667978

OUNCES REDUCED TO FRACTIONAL (DECIMAL)  
PARTS OF A POUND.

$\frac{1}{4}$	oz.	=	.015625	lbs.
$\frac{1}{2}$	"	=	.03125	"
$\frac{3}{4}$	"	=	.046875	"
1	"	=	.0525	"
2	"	=	.1250	"
3	"	=	.1875	"
4	"	=	.2500	"
5	"	=	.3125	"
6	"	=	.3750	"
7	"	=	.4375	"
8	"	=	.5000	"
9	"	=	.5625	"
10	"	=	.6250	"
11	"	=	.6875	"
12	"	=	.7500	"
13	"	=	.8125	"
14	"	=	.8750	"
15	"	=	.9375	"
16	"	=	1.0000	"

**W. & M.**

Amend  
**G. 522**  
500

INLAND REVENUE, CANADA,

June 24th, 1899.

**ERRATUM.**

On page 62 of G. 522, "Weights and Measures Act" and "Orders in Council," in "ounces reduced to fractional (decimal) parts of a pound," opposite one ounce read  $\cdot 0625$  instead of  $\cdot 0525$ .



The following are the Districts for the Inspection of Weights and Measures, as determined by Order in Council :- .

## PROVINCE OF ONTARIO.

### BELLEVILLE.

To comprise the cities of Belleville and Kingston, and the Counties of Durham, Hastings, Northumberland, Peterborough, Prince Edward, Victoria, provisional county of Haliburton, Dundas, Frontenac, Glengarry, Leeds and Grenville, Lennox and Addington and Stormont.

### HAMILTON.

To comprise the City of Hamilton, and the Counties of Haldimand, Halton, Lincoln, Waterloo, Welland, Wellington and Wentworth.

### OTTAWA.

To comprise the City of Ottawa, and Counties of Carleton, Lanark, Prescott, Renfrew and Russell, and the Districts of Nipissing, Parry Sound and Algoma, in the Province of Ontario, and the Counties of Ottawa and Pontiac including the City of Hull in the Province of Quebec.

### TORONTO.

To comprise the City of Toronto and the Counties of Dufferin, Ontario, Peel, York, Grey and Simcoe, and the District of Muskoka.

### WINDSOR.

To comprise the City of London and the Counties of Bruce, Essex, Huron, Kent, Lambton, Perth, Brant, Elgin, Middlesex, Norfolk and Oxford.

## PROVINCE OF QUEBEC.

### MONTREAL.

To comprise the City of Montreal and the Counties of Argenteuil, Bagot, Beauharnois, Chambly, Chateauguay, Hochelaga, Huntingdon, Jacques Cartier, Laprairie, Laval, Napierville, Rouville, Soulanges, St. Hyacinthe, St. Johns, Terrebonne, Two Mountains, Vaudreuil, Vercheres, the Town of Sherbrooke and the Counties of Arthabaska, Brome, Compton, Drummond, Iberville, Missisquoi, Richmond, Shefford, Stanstead and Wolfe.

## QUEBEC.

To comprise the City of Quebec and the Counties of Beauce, Bellechasse, Bonaventure, Charlevoix, Chicoutimi, Dorchester, Gaspé, Kamouraska, Labrador and Magdalen Islands, Levis, L'Islet, Lotbinière, Megantic, Montmagny, Montmorency, Portneuf, Quebec, Rimouski, Saguenay and Temiscouata.

## THREE RIVERS.

To comprise the City of Three Rivers and the Counties of Berthier, Champlain, Joliette, L'Assomption, Maskinonge, Montcalm, Nicolet, Richelieu, St. Maurice and Yamaska.

## PROVINCE OF NEW BRUNSWICK.

## ST. JOHN.

To comprise the whole of the territory of the Province of New Brunswick.

## PROVINCE OF NOVA SCOTIA.

## HALIFAX.

To comprise the City of Halifax, the Town of Yarmouth, and the Counties of Halifax, Hants, Kings, Lunenburg, Annapolis, Digby, Queens, Shelburne and Yarmouth.

## PICTOU.

To comprise the Counties of Antigonish, Colchester, Cumberland, Guysborough and Pictou.

## CAPE BRETON.

To comprise the whole of the Island of Cape Breton.

## PROVINCE OF PRINCE EDWARD ISLAND.

## CHARLOTTETOWN.

To comprise the whole of the Island of Prince Edward.

## PROVINCE OF MANITOBA.

## WINNIPEG

To comprise the Cities of Winnipeg and Brandon and the territory bounded on the east by the Pic River and on the west by the 106th meridian.

**NORTH-WEST TERRITORIES.****CALGARY.**

To comprise the territory bounded on the east by the 106th meridian, westward to the eastern boundary of the Province of British Columbia.

**PROVINCE OF BRITISH COLUMBIA.****VICTORIA.**

To comprise the whole of the Province of British Columbia.

(Sgd.) E. MIALL,  
*Commissioner of Standards.*

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