Implements of Husbandry.

The Food Steamer and Engine.

In a recent number we gave a somewhat lengthy description of the construction and uses of the Food Steamer, and of its great utility, especially on stock farms. Our illustration on that occasion showed merely an exterior view of the implement, as it ap-

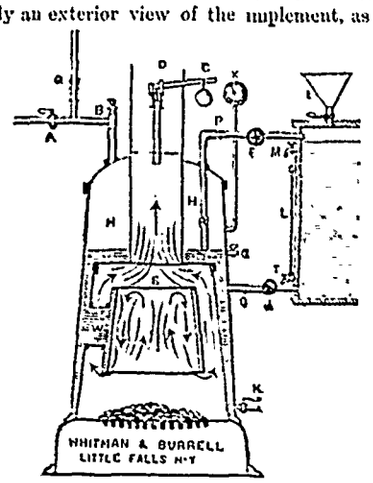

Fig. 1.

pears when ready for use. Since then we have given more attention to this most important article, and in the present number we furnish, through the kindness of Messrs. Whitman & Burrell, New York, an interior sectional view of the boiler which illustrates it well, in all its details.

When the tank or barrel is filled with water, the faucet I and dry-cock M are closed, thus rendering the tank perfectly air-tight. The faucets F and J are then opened, and water will pass into the boiler up to the bottom of pipe R, which supplies the tank with air or steam until water comes up over the end of it. The tank being air-tight, no more water can pass into the boiler until the water is evaporated below the end of pipe R, when the steam rushing through, forces the water into the boiler, thus keeping it always at a uniform height. The agitation of the water is so violent that no scales adhere to the sides of the boiler, and by simply blowing off every day they are kept bright and clean.

Through the kindness of the same gentlemen we also illustrate in this number another very important use to which the "Steamer" may be applied, viz.: that of driving a steam engine of from 2 to 8 horse power, which may now be had in connection with it. These engines are very simple in construction, made of but few parts, all accessible, and have no joints in the frame. The base, cylinder, frame and arms are

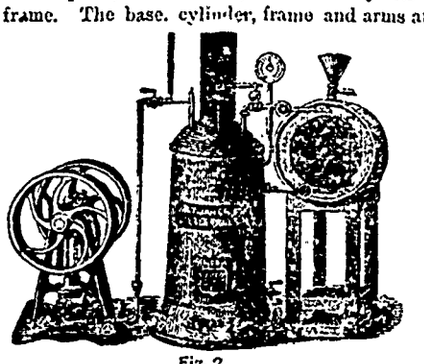

Fig. 2.

likewise all cast in one piece, thus rendering it impossible to get "out of true." When these engines, moreover, are properly adjusted to the "Steamer," the arrangement is such that no boiler pump is required, thus saving the engine from pumping against pressure. When we think in how many different ways such an implement could be applied on the farm—such as chopping, straw-cutting, threshing, wood-cutting, &c., &c., it becomes a question worthy of consideration, whether it would not prove, on the whole, a more profitable investment than a portable engine got up in the regular way.

The Chopping Mill.

Closely allied to the "Steamer" is the "Chopper," the one being almost a necessary aid to the other; for although various kinds of feed may advantageously be chopped without being steamed, or steamed without being chopped, still all practicable experience goes to prove that the advantages are appreciably greater where the same feed has undergone the processes of both chopping and steaming. Animals treated to such food thrive better and faster, while their manure is very considerably better than that produced from feeding on the raw material in its natural state; for just in proportion to the richness of the food is the strength of the manure; this is one of the reasons why "poudrette" is one of the best of manures.

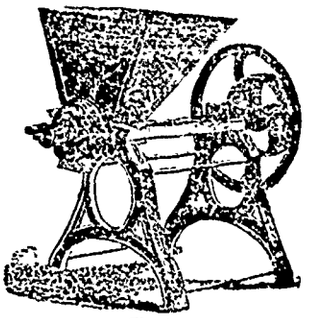

Fig. 1.

Now, that feed is enriched by chopping and steaming, is undoubted, from the fact that there is a saving of both quantity and time from its use, *i. e.*, a certain quantity of food thus prepared will afford more nourishment, and afford it in less time than a similar quantity of the raw material.

The choppers of the present period are generally constructed on one of two principles, viz.: either with millstone grinder, or with fluted or serrated metal ones of different speeds; the latter are now coming into more general favor from their greater durability.

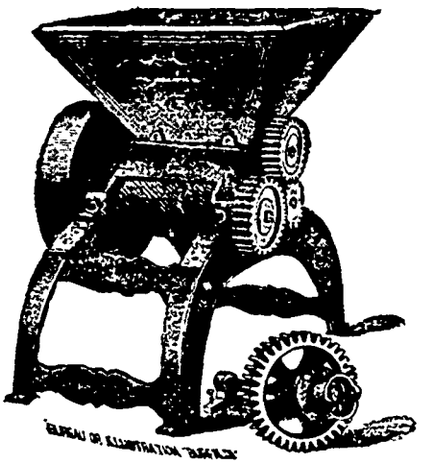

Fig. 2.

The accompanying cuts illustrate two different styles now much used, all got up on the same general principle, viz.: with iron fluted rollers. The grain is fed to two of such rollers, driven at different speeds, and grinding against each other, the feed being regulated by a thumb-screw, and the fineness of the meal being also regulated by set-screws to suit the operator.

Figure 1 represents the mill mounted on a substantial iron frame, strongly braced, which obviates any vibration whilst at work. Figure 2 shows the same working principle on a wooden frame, which is by some much preferred on account of its cheapness. The iron rollers in all these machines are calculated to last for a long time, and when worn dull they can be re-cut at small cost. The machines are also fitted with fly-wheels, and may be driven either by belts or rods as may be desired, and they are capable of cutting or crushing from 20 to 30 bushels per hour, according to the power used.

Canadian Implements at United States Shows.

At the third International Industrial Exhibition, which opened this year, at Buffalo, on the 1st and closed on the 25th Oct., and which proved so highly successful in every respect, the number of Canadian entries in the above class was comparatively small. This, we may remark, has hitherto been the case at nearly all public exhibitions on the other side, and it is probably accounted for by the fact that since a great many if not most of our mechanical improvements and novelties are thought to originate amongst our cousins, it would therefore be quite futile for us, with our borrowed or copied articles, to attempt competition with them.

Now this is an exceedingly erroneous idea. All other things being equal, we believe the inventive and general mechanical genius of Canada is fully equal to that of the United States, and further, that there is no branch of industry fully developed within our borders, which, in its productions, will suffer from a fair, open comparison with its fellows beyond the lines. The great success which attended even the small display of Canadian implements the other day furnishes both an illustration and a proof of this position, and we hope that while it will go far in correcting the false impression which appears to prevail with reference to Yankee and Canadian enterprise, it will also encourage our manufacturers and others to make greater and still greater innovations upon American show grounds.

The International Exhibition at Buffalo is opened to the whole continent, and most of the leading industries of the U States are very largely represented there. The general principle upon which the show is conducted, and awards are made may be gathered from the following extracts from the "Rules and Regulations."

1st. As to the Judges.

"It is provided that judges in each class shall be wholly disinterested, and shall be composed of men eminent for their skill in the Arts, and particularly in reference to the class of articles assigned to them."

2nd. As to the Premiums.

"*Rule* VIII. The premium list will be published, and all awards shall be for *the first degree of merit*. No second class awards or decisions will be made or reported in any case."

3rd. As to the strictness of Impartiality.

"*Rule* XIII. A Competitor for a premium must not be present during the examination of his machine or product by the judges, except at their request."

It will be seen from Rule viii. above that whilst there may be fifty or even a hundred articles of the same class present on exhibition, one and only one is selected by skilled, disinterested and impartial judges, as superior to all others, and it therefore gets the medal for the *first degree of merit*.

The premiums, moreover, at this exhibition are not money-prizes, but simple medals—showing that there is nothing but the name and the honor to meet the exhibitor's expense in shipping and transhipping his goods.

Putting these considerations alongside another fact, viz., the proof of satisfactory judging, afforded by the increased display at these exhibitions every successive year, we may safely conclude that the "International" is pretty free from wire-pulling and that articles sent there for exhibition are judged purely and solely on their merits.

The only entries this year from Canada in the department of Agricultural Implements were

John Watson, Ayr, 1 Straw Cutter; 1 Root Cutter; 1 Chopping Mill.

David Maxwell, Paris, 1 Straw Cutter; 1 Root Cutter.

Of these Mr. Watson was successful in taking medals for his Straw Cutter and Root Cutter. A like result might possibly also have attended his Chopping Mill but it was entered too late for competiton.