

Canada Foundry Company Limited

WATERWORKS SUPPLY DEPARTMENT.

Bulletin No. 4.

GATE VALVES AND FIRE HYDRANTS.

Our standard valves are of the double faced solid wedge plug type having a straightway passage the full diameter of the connecting pipe which is the simplest and strongest design for general purposes. The smallest number of working parts are required and the least resistance is offered to the passage of the fluid.

They are made in all sizes from 2 inch upward for any pressure desired. The materials used are of the highest grade and the workmanship is unsurpassed.

The gate or plug is in one piece made wedge-shaped or tapering, heavily braced or ribbed and closes vertically between two inclined seats or surfaces in the body. To ensure perfect alignment with the spindle or stem, the plug is guided by ribs or splines in the body which engage with grooves in the edges of the plug to prevent it from turning, coming in contact with the seats, or chattering when opening or closing. These ribs are of unequal width to prevent the plug from being inserted wrongly after removal for repairs or otherwise.

The plug is double faced and either end of the valves may be used for inlet or outlet as desired.

The shell is made in two pieces, the body and the cap, put together with screw or with bolted flange joint.

The ends of the valves may have flange, screw, hub, or spigot connections, or any combination of these. Screw ends are recessed to prevent the pipe from bottoming, and American standard pipe threads are used unless otherwise ordered.

With reference to the main spindle, valves are of two kinds, viz., **inside screw** or stationary spindle, and **outside screw and yoke** and rising spindle.

In the inside screw valves (Fig. 1) the spindle revolves but does not rise, being held vertically by a

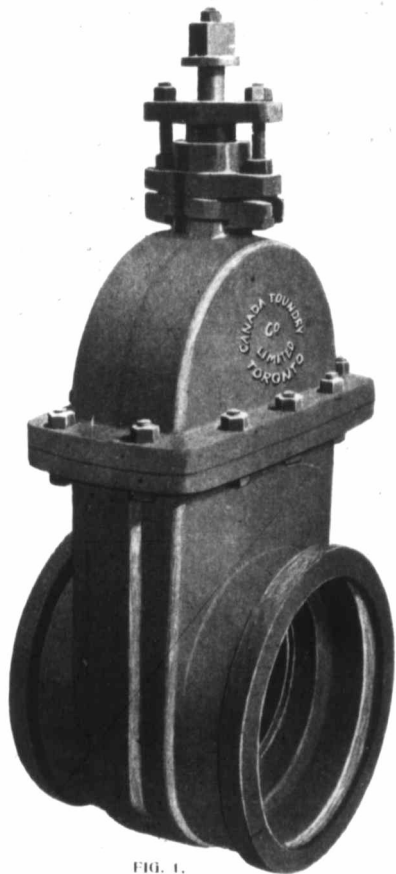


FIG. 1.
BRONZE MOUNTED HUB END GATE VALVE.

thrust collar. The plug rises and falls on the spindle, its upper portion being threaded to form a nut for the screw on the lower end of the spindle.

The thrust collar is held between two immovable metal faces, thus avoiding any tendency to cramp the spindle in the stuffing box. The operating screw of these valves is entirely inside the valve body and cap.

In the outside screw and yoke valves (Fig. 2) the upper end of the spindle is threaded and the spindle is operated by a revolving nut held vertically in the yoke and turned by the handwheel which is fastened to it. The spindle rises without revolving and the plug, being fastened to the lower end, rises with it. The operating screw of these valves is entirely outside the body, where it can be inspected and oiled. The wheel is stationary, vertically and the rising spindle forms an indicator requiring no intermediate mechanism, as the projection of the spindle through the yoke nut shows the number of inches the plug has risen.

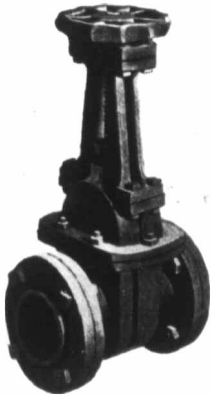


FIG. 2.
FLANGED END OUTSIDE
SCREW AND YOKE
GATE VALVE.

In both inside and outside screw valves sufficient play is allowed in the connection between the spindle and plug to allow the plug to seat truly without cramping the spindle.

All outside screw valves with bronze seats have our improved self packing feature, which permits the stuffing box to be repacked when the valve is open and under pressure.

The seats of our water valves are made of bronze and are dovetailed into the body at right angles to the taper faces of the plug, making a perfectly tight joint. These seat rings will not become loose after repeated expansion and contraction, and are the most satisfactory seats on the market.

The faces of the plug are formed of bronze dovetailed into grooves in the plug itself, and the faces are accurately finished by special machinery to the exact taper of the seats.

The spindles are of specially tough bronze of large diameter and are made true to size with most approved form of thread.

The stuffing boxes are large and deep, and are of the screw packing nut, or of the driving gland and bolt follower types as adapted to different sizes of valves.

Any of our valves can be furnished with handwheel or nut, or with gearing, as desired.

Unless otherwise ordered all bell and spigot end water valves, both plain and geared, and all hydrants will turn to the **LEFT** to open.

For use in filling long lines of pipe, or in equalizing the pressure on both sides of a valve before opening, we equip the larger sizes with a by-pass of proper size which engages with the body on each side of the plug. The by-pass has inside or outside screw to match the main valve.

Before leaving the works all valves are tested, both open and closed, under a pressure sufficient to insure their tightness under all working conditions.

Several views of typical valves are shown in these pages. Various other combinations of the several parts, however, may be made to suit conditions.

When ordering it is necessary that the following information be given :

Size.

Whether screwed, flanged, bell or spigot ends.

Whether to turn to the right or to the left to open.

Pounds per square inch pressure or head under which the valves are to work.

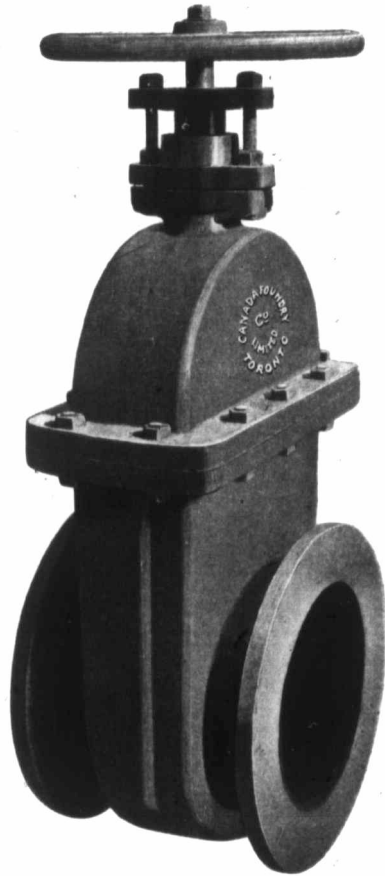
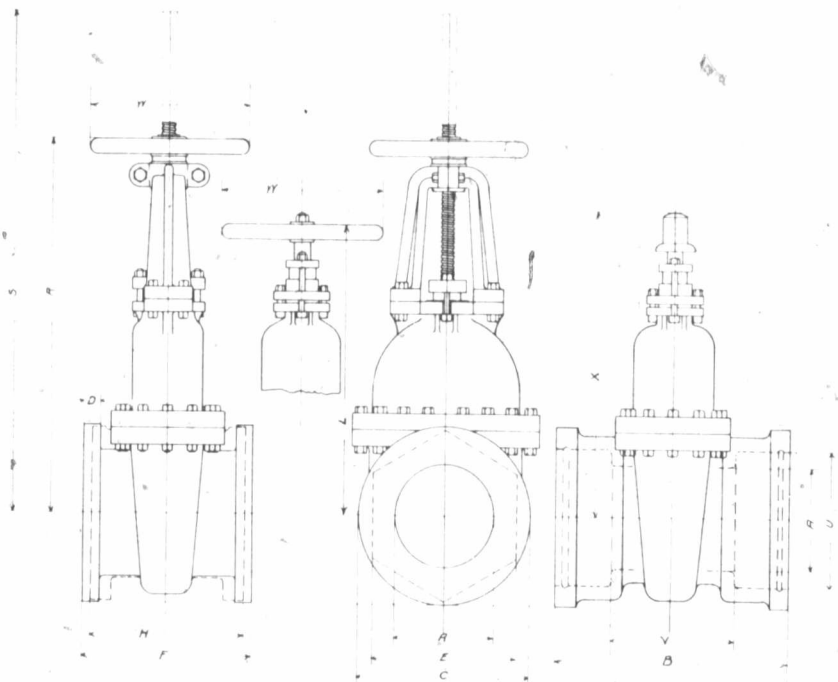


FIG. 15.
BRONZE MOUNTED, FLANGED END GATE VALVE,
WITH HANDWHEEL.

4 4 Gate Valves and Fire Hydrants.

Unless otherwise ordered all bell and spigot valves will have nut on spindle, as in Fig. 1, for wrench. All others will have handwheel, as in Fig. 2 and Fig. 15.

When ordering flanged end valves with the flanges drilled, if not drilled to our template give diameter of bolt circle, size and number of holes, and state whether stem (or centre) line passes through top bolt hole or between two top bolt holes.



DIMENSION DRAWING, GATE VALVES.

**DIMENSIONS OF IRON BODY, BRONZE MOUNTED, DOUBLE GATE VALVES
FOR WATER.**

TESTED TO 300 LBS. PRESSURE PER SQUARE INCH.

TABLE No. 1.

	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.
A—Size of valve, in inches	2½	3	3½	4	4½	5	6	7	8	10	12	14	16	18	20	24
B—Face to face of hubs		11		10½		11½	11		11¾	11¾	15¼		15½	18	19¼	22½
C—Diam. of flanges	7	7½	8½	9	9¼	10	11	12½	13½	16	19	21	23½	25	27½	32
D—Thickness of flanges	¾	¾	¾	1¼	¾	¾	¾	¾	1	1	1¼	1¼		1¼	1¼	
E—Size of hex., screwed ends ..	4¾	5	5½	6	6¾	7½	8¾	10½	11½	13¾						
F—Face to face of flanged ends ..	6¾	7¾	8	8¾	10	10¼	10¾	11¼	11¾	13¼	14¾	15¾	16	17	17½	
H—Face to face of screwed ends ..	6½	7¾	8¾	8¾	9½	9¾	11	11¼	11½	13¼						
I. Ht. to hand wheel from centre of port, screwed ..	10¼	11½	13¼	15¾	16	18¾	21½	28	31	36						
R Ht. of hand wheel from centre of O. S. Y. valve ..	14¼	15½	17¾	20		23¾	27¾	28	34¾	40						
S—Ht. of spindle from centre of O. S. Y. valve when open	17½	19	22	25¼		30	35	36	44	51						
U—Inside diam. of hubs		4½		5½		5½	7¾		9¾	12	14¾	16¼	18½	21¼	22½	27¼
V—End to end of pipe		4¾		4½		5¾	7		7	7¾	7½	8¼	9	9	11	13½
W—Diam. of wheel	5	6	6½	8½	8½	10	11	12	13½	15¼	17½	17½	20	22	24	24
X Ht. of valve from port to top of nut, hub ends ..		12	13½	16¾	16½	19½	22¾	24	25½	32	36½	37	42	49	51	59

HORIZONTAL SWING CHECK VALVES.

These valves (Fig. 3) are made with iron bodies, bronze mounted, and are heavy, substantial and first class in every way. Ready access is given to the gate in all sizes by removing the cover or hand hole plates. Sizes above 10 inches are made with secondary or relief gate in order to to lessen the work on the pump when operating at slow speed. In all sizes the gates are faced with leather, or rubber if specially ordered.

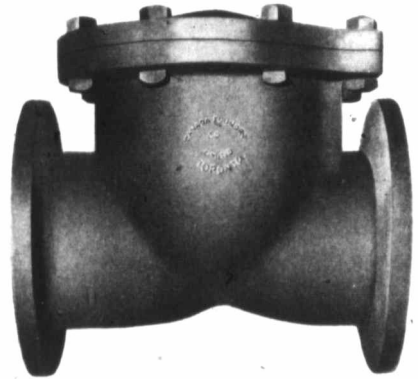
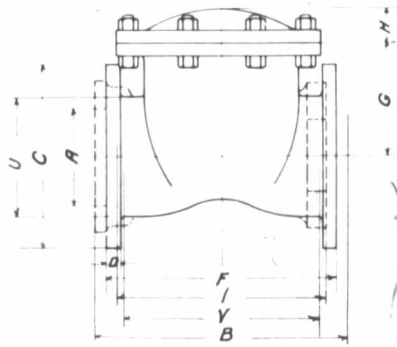


FIG. 3.
FLANGED END HORIZONTAL SWING CHECK VALVE.



DIMENSIONS OF IRON BODY, BRONZE MOUNTED, HORIZONTAL SWING CHECK VALVES.

TABLE No. 2.

	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.
A—Size of valve	3	3½	4	5	6	7	8	10	12	14	16
B—End to end of hubs	11¼		13½	15¾	16		19¼	21	27	28½	30½
C—Diameter of flanges	7	8½	9	10	11	12	13	16	18	21	23
D—Thickness of flanges	¾	¾	¾	¾	1	1	1	1	1	1½	1½
F—Face to face of flanges	9	9¼	12	13¾	14¼	16	17½	21½	24½	26	31
G—Centre of valve to bottom of cover	13	5½	5¼	5½	7		8¼	10½	11½	12½	13¼
H—Height of cover of valve	1½	1½	1½	1½	1½		2½	2½	3	3½	3½
I—End to end of screwed valves	10¼	10	10½	13	13¾						
U—Inside diameter of faucet	1¼		5½	7	7¼		10¼	12	14½	16½	18¼
V—Length hub valve between pipe ends	6¼		7½	9¼	10		13½	17	19	21½	20½

VERTICAL FOOT VALVES.



FIG. 4.

VERTICAL FOOT VALVE, 10 INCHES AND SMALLER.

Sizes above ten inches are fitted with hand holes, making the gates accessible at any time without breaking the connection.

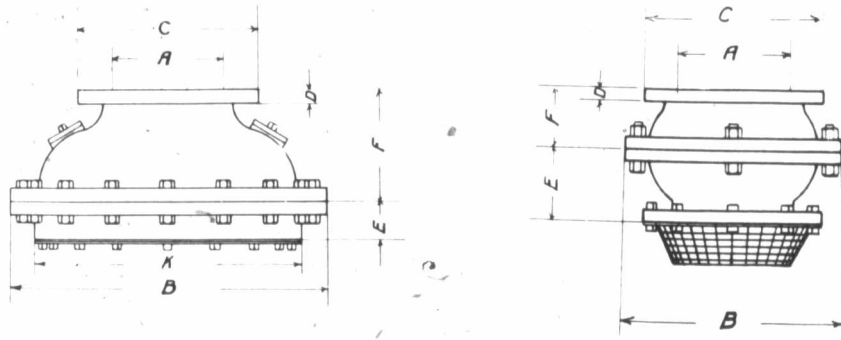
The area of valve openings in all sizes averages from ten to twenty per cent. more than the area of connecting pipe.

All foot valves are fitted with screen.



FIG. 6.

TOP VIEW OF VERTICAL FOOT VALVE, 10 INCHES AND LARGER, SHOWING NEST OF GATES.



DIMENSION DRAWING, FOOT VALVES.

DIMENSIONS OF IRON BODY, BRONZE MOUNTED, FOOT OR CHECK VALVES,
RUBBER FACED GATES, WITH SCREEN.

TABLE No. 3.

	In.	In.	In.	In.	In.	In.	In.	In.
A—Size of valve.....	4	6	8	10	12	14	16	18
B—Diameter over all.....	11 $\frac{1}{4}$	16 $\frac{1}{4}$	18 $\frac{1}{4}$	23 $\frac{1}{2}$	26 $\frac{1}{2}$	33 $\frac{1}{4}$	35 $\frac{1}{4}$	37
C—Diameter of flanges.....	9	11	13	16	18 $\frac{1}{4}$	21	23 $\frac{1}{2}$	25
D—Thickness of flanges.....	1 $\frac{1}{8}$	3 $\frac{1}{4}$	5 $\frac{1}{8}$	1 $\frac{1}{8}$	1	1 $\frac{1}{8}$	1 $\frac{1}{4}$	1 $\frac{1}{4}$
E—Height of valve plate.....	4 $\frac{1}{4}$	6 $\frac{1}{4}$	6 $\frac{1}{4}$	3 $\frac{1}{2}$	3 $\frac{1}{2}$	4	5	4 $\frac{1}{4}$
F—Height of body casting.....	1	5	5 $\frac{1}{4}$	7	7	10	12 $\frac{1}{4}$	8 $\frac{1}{4}$
K—Diameter of screen flange.....	9	12	14	19 $\frac{1}{2}$	23 $\frac{1}{4}$	30	31 $\frac{1}{4}$	33
Shipping weight, in pounds.....	70	168	206	340	410	725	821	

INDICATOR GATE VALVES.

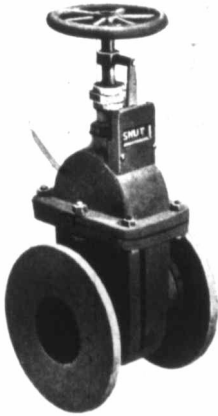


FIG. 7.
FLANGED END, BRONZE,
MOUNTED, INDICATOR
GATE VALVE.

Our Indicator Valves, as shown in Fig. 7, are made in all sizes up to and including 24 inches and are suitable for use wherever an indicator is desired. The indicator has no parts which can be disarranged or tampered with and is especially adapted to fire protection valves used in connection with automatic sprinkler systems, in mills, factories, and public buildings. It is recommended by the fire underwriters for this purpose.

A metal slide, driven by a thread on the spindle, rises and falls with the plug and by exposing the words **OPEN** and **SHUT** at a window in a plate fastened to the valve cap shows plainly whether the valve is open or closed.

Unless otherwise specified the indicator is made to read from the side of the valve, as shown in the cut. If so ordered it can be made to read from the end of the valve, at right angles to the position shown.

All our indicators are made to allow free access to the stuffing box, and valves equipped with indicators require slightly greater height from center of port to top of wheel or operating nut. Other general dimensions are same as in table No. 1, page 3.

INDICATOR POSTS FOR FIRE PROTECTION VALVES.

Our indicator post (Fig. 8) consists of a post of handsome design about 3 feet high, connected with the valve by a cast iron pipe or casing, and provided with a nut and extension rod for operating the valve from the top.

This post shows plainly whether the valve is open or closed, and is intended to be used with fire protection valves in street mains, factory and mill yards, grounds of public buildings, etc. It is specified by the fire underwriters for this purpose, and prevents all delay and mistakes in finding and operating the valve.

The general construction of the indicator is similar to that used with indicator gate valves, and it is easily seen at a glance whether the valve is open or closed. This post can be used with any size or make of valve, and we furnish it complete with valve or separate for use with existing valves.

The size and shape of the operating or rod nut is made to conform to the standard of the system in which the valves are to be used.

In ordering, give size and kind of valve, distance from ground to bottom of pipe, number of turns to open and whether valve turns to **RIGHT** or **LEFT** to open.



FIG. 8.
INDICATOR
POST.

"TORONTO" HYDRANT.

This hydrant (Figs. 9 and 10) is of the conical valve type and is of cast iron with bronze mountings and leather faced valves.

The inlet or water supply is controlled by a cone shaped valve with solid, oak-tanned leather facings, thoroughly hammered and pressed, then turned on its own centres to fixed gauge, and consequently interchangeable.

This valve is operated from the top of the hydrant post by a bronze nut and short spindle with a threaded bronze link at its lower end, engaging with an iron extension rod which is secured to the valve as shown in the sectional drawing, Fig. 10.

The waste valve is positively automatic, being attached to the valve rod so that when the main valve is open the waste must be closed, and when the main valve is closed the waste is open, allowing the waste water to escape from the stand pipe.

All our hydrants of the "Toronto" type are fitted with an outside casing or frost case, which makes a telescopic joint with the body or post of the hydrant. Below the ground line it serves to form a dead-air chamber around the body, affording great security against freezing and making the hydrant especially adapted for service in cold climates.

The outside case has an end play or vertical motion of several inches and accommodates itself to the upheavals of the ground by frost, thus preventing any injury to the hydrant proper or foot bend.

In this type of hydrant we wish to draw special attention to the case with which all the working parts may be removed for repair or examination without disturbing the ground or foot pipe.

The valve seat is directly attached to the hydrant barrel or post and this in turn is screwed into the foot pipe. The outside casing being entirely independent, the main portion, including the waste valve, may be removed at will.

These hydrants are made specially heavy and are recommended, owing to their solidity of construction, where severe conditions exist.

The posts are of handsome design. The nozzles are of bronze with male hose threads and have iron nozzle caps and chains. The stuffing box is of bronze with screw packing nut. The operating or rod nut, and nuts for the nozzle caps, are made to fit the same wrench, and these, together with the hose nozzle thread gauge, are made to conform to the standard of the system in which the hydrants are to be used.

We furnish these hydrants with bell, flange, screw, or spigot ends, and can provide any of them with steamer nozzle if required.



FIG. 9.

"TORONTO" HYDRANT
TWO-WAY, WITH
FRONT CASE AND
FOOT PIPE.

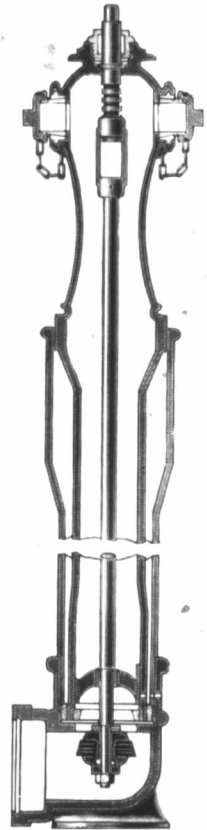


FIG. 10.

SECTIONAL VIEW
"TORONTO" HYDRANT.

Our "Toronto" hydrant is superior to others in design, workmanship, material, interchangeability and strength of parts. It is easy of operation under any customary pressure and free from water hammer. Has a perfect drip. Is durable, generally reliable, and costs less for repairs than any other make of hydrant.

LEFT

Unless otherwise ordered all hydrants **TURN TO THE RIGHT TO OPEN.**

These hydrants are made either "two-way," "three-way" or "four-way," with or without independent gates.

"LUDLOW PATTERN" HYDRANT.

This hydrant (Figs 11 and 12) is of the straight way gate type, and, in general with the rest of the goods manufactured by us, is strong, durable and made of first class material. In common with our "Toronto" hydrant we make the "Ludlow" for screw, bell or flange connections, with or without steamer nozzle, and for two, three or four hose connections.

It is made of cast iron with bronze mountings and seat rings, and special rubber faced gates.

The water passages are large, and ample allowance has been made for the space occupied by the plug, so that the loss by friction is reduced to a minimum.

The drip outlet is automatic in its operation, and is operated by the direct action of the gate without intermediate mechanism.

Under ordinary conditions our "Ludlow" hydrant is complete without a frost case, or outer jacket, and unless specially ordered none will be provided.

NOTE.—When ordering hydrants give number and size of hose connections, depth of trench, size of foot pipe, whether to open *right* or *left*, inside diameter of barrel, and size and style of nozzle threads.

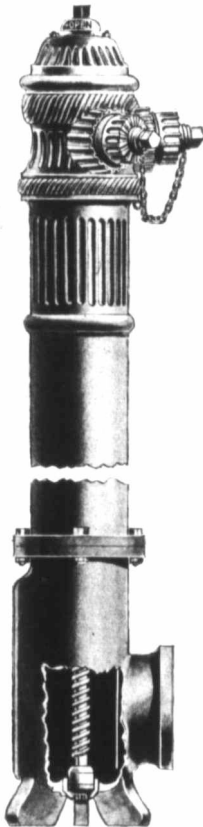


FIG. 11.
"LUDLOW" HYDRANT.
TWO-WAY.

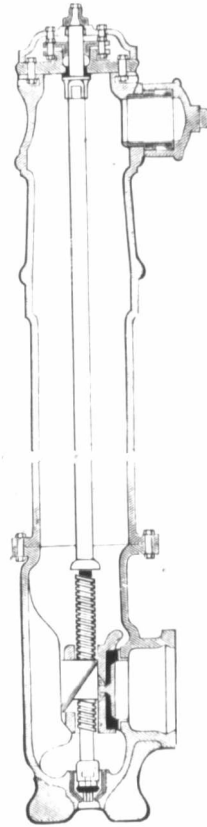


FIG. 12.
SECTIONAL VIEW
"LUDLOW" HYDRANT.

HYDRANT WITH CRANE ATTACHMENT.

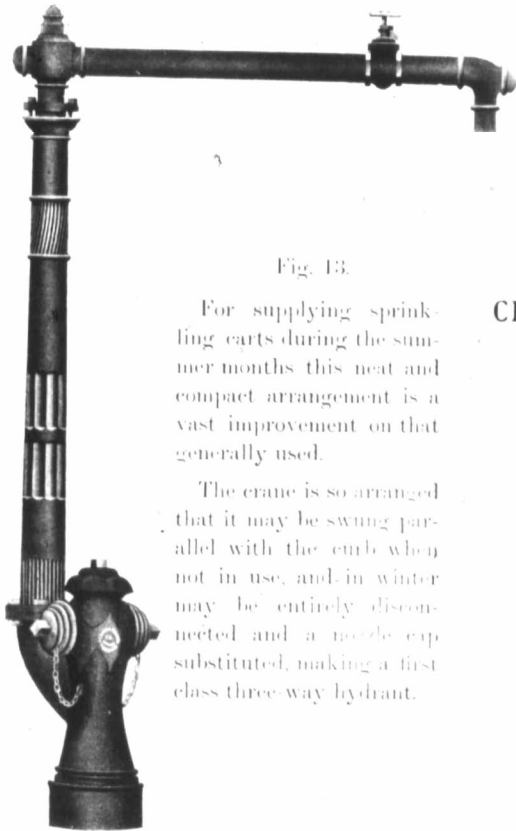


FIG. 13.
HYDRANT WITH
CRANE ATTACHMENT.

For supplying sprinkling carts during the summer months this neat and compact arrangement is a vast improvement on that generally used.

The crane is so arranged that it may be swung parallel with the curb when not in use, and in winter may be entirely disconnected and a nozzle cap substituted, making a first class three-way hydrant.

PRINCIPAL OFFICES AND WORKS:

TORONTO.

CRANE POST WITH SHUT-OFF VALVE.

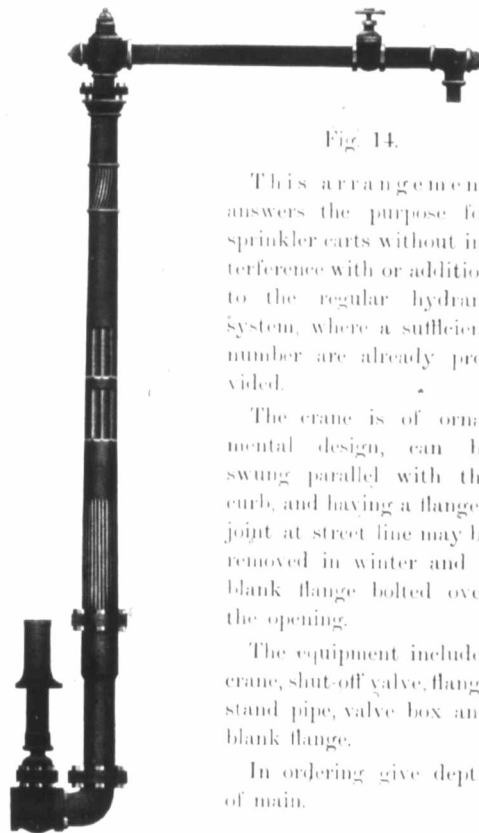


FIG. 14.
CRANE POST
WITH
SHUT-OFF VALVE.

Fig. 14.

This arrangement answers the purpose for sprinkler carts without interference with or addition to the regular hydrant system, where a sufficient number are already provided.

The crane is of ornamental design, can be swung parallel with the curb, and having a flanged joint at street line may be removed in winter and a blank flange bolted over the opening.

The equipment includes crane, shut-off valve, flange stand pipe, valve box and blank flange.

In ordering give depth of main.