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.

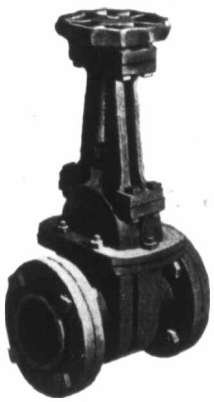

FIG. 2.
FLANGED END OUTSIDE SCREW AND YOKE GATE VALVE.

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.