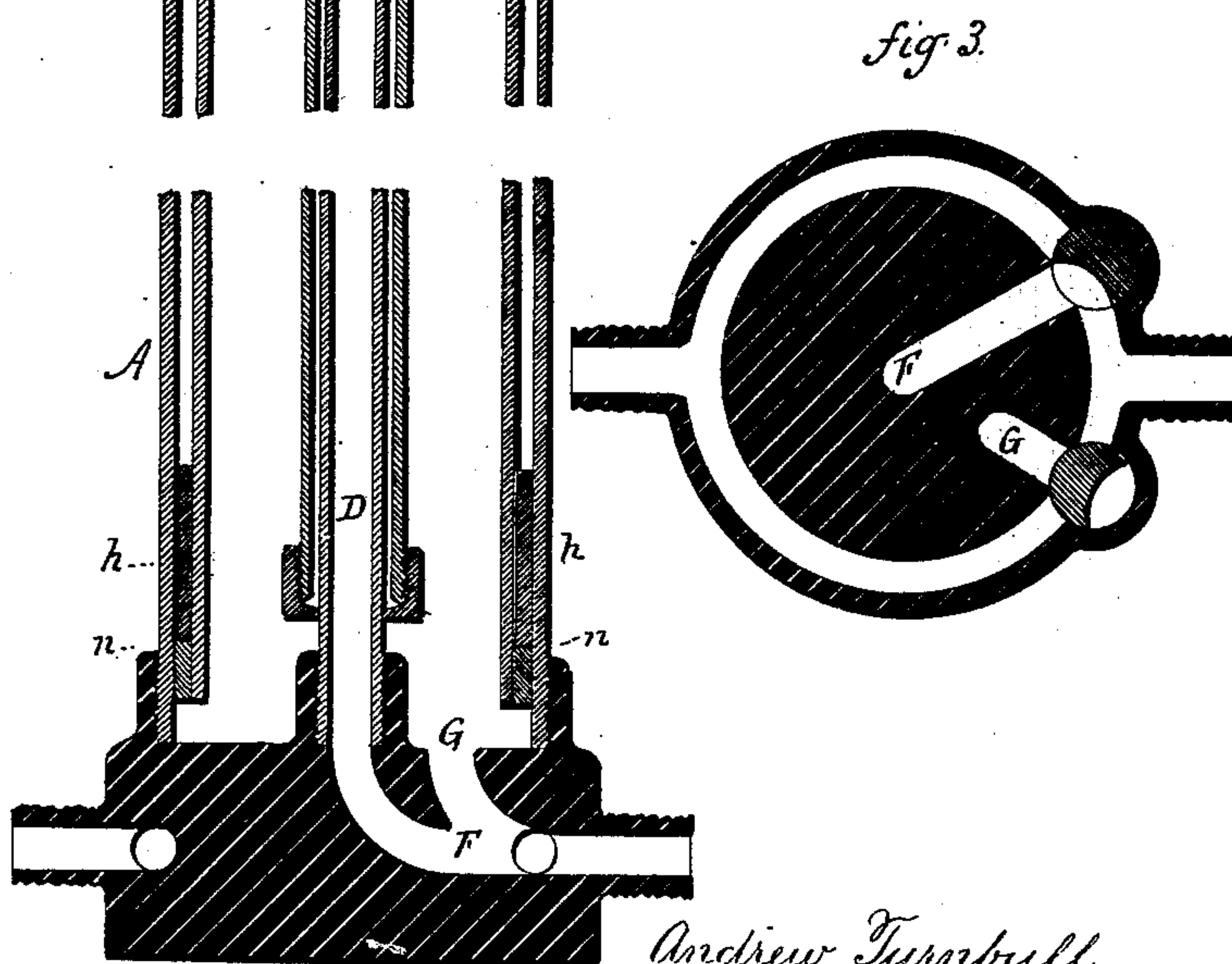
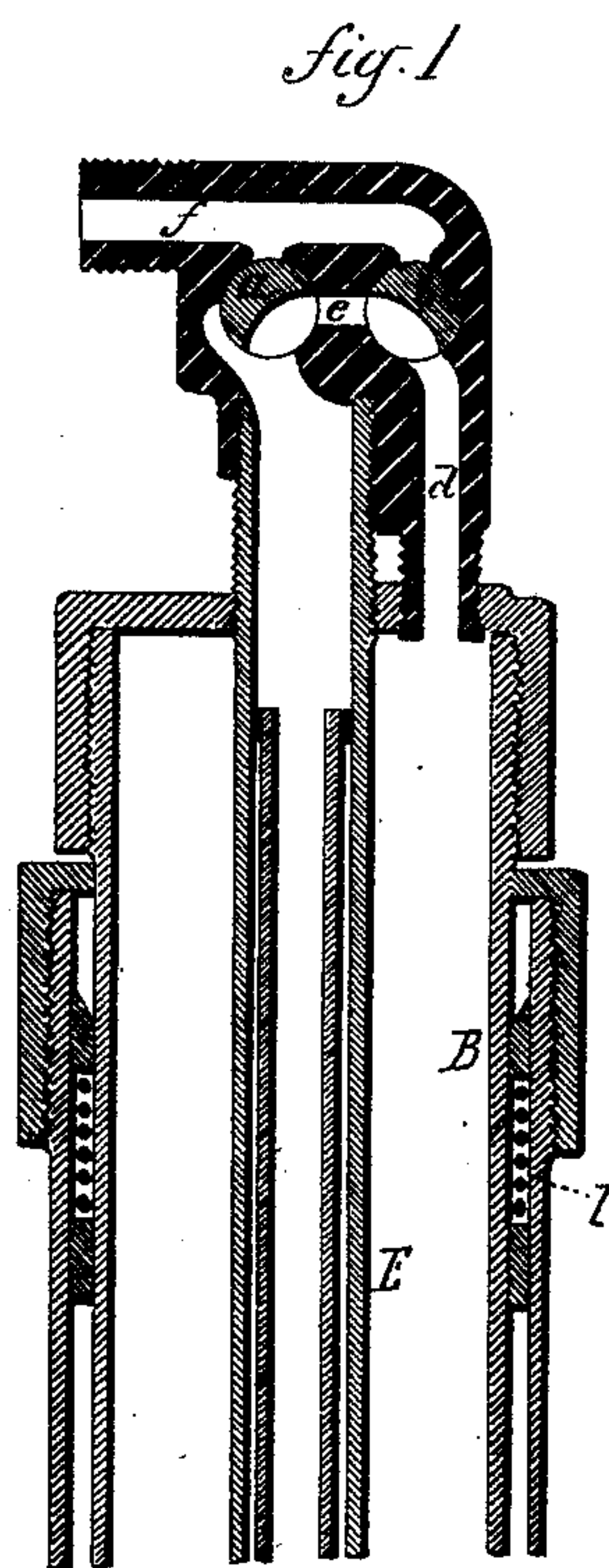
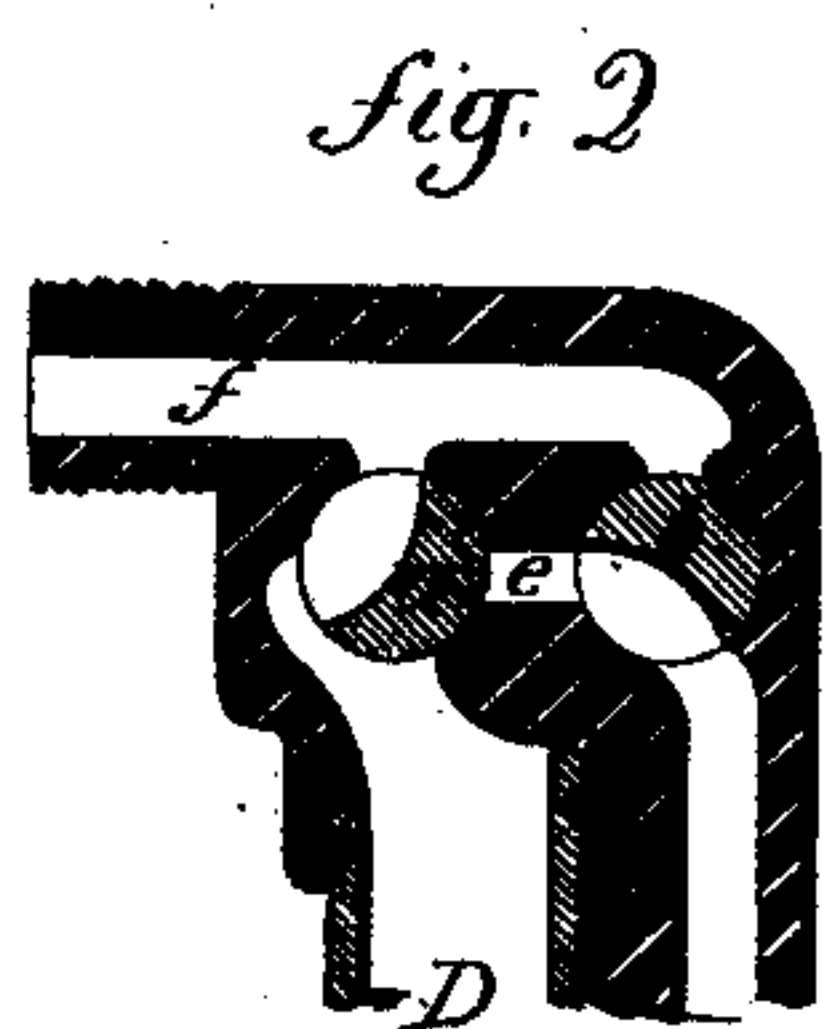


A. TURNBULL.
Hydraulic Fire-Escape.

No. 218,341.

Patented Aug. 5, 1879.



Witnesses.

J. H. Chinnery
Clara Broughton

Andrew Turnbull
By Atty. *Inventor.*
Wm. S. Earle

UNITED STATES PATENT OFFICE.

ANDREW TURNBULL, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR OF ONE-HALF HIS RIGHT TO JOHN GÉRARD, OF SAME PLACE.

IMPROVEMENT IN HYDRAULIC FIRE-ESCAPES.

Specification forming part of Letters Patent No. **218,341**, dated August 5, 1879; application filed March 17, 1877.

To all whom it may concern:

Be it known that I, ANDREW TURNBULL, of New Britain, in the county of Hartford and State of Connecticut, have invented a new Improvement in Fire-Escapes; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a vertical central section; Fig. 2, the same, showing the operation of the valves; and in Fig. 3, a transverse section of the base.

This invention relates to an improvement in the fire apparatus for which Letters Patent were granted to John Gérard and this applicant May 16, 1876.

The apparatus consists, essentially, of a vertical telescopic column, from the top of which water may be discharged. The means for carrying the water to the top of the column was through a hose outside the column.

The object of this invention is to improve this part of the apparatus; and it consists in combining, with a column consisting of two or more sections arranged telescopically for vertical extension, an internal telescopic tube, leading from the base to the top, for carrying the water, and with valves for turning the water in different directions, as more fully hereinafter described.

The column, as here represented, consists of two sections, A B, one within the other, and the one made fast to a base, C, and so that the other part may be raised to extend or contract the height of the column, as occasion may require.

Within this column, and of considerably less diameter, is a tube, D, fixed in the base, and another section, E, working telescopically on the section D, this second part made fast in the top of the second part, B, of the column.

Into the interior of the tube D a supply-passage, F, leads, and to which the supply-hose is attached. The extension of the column correspondingly extends the internal tube. At the top of the internal tube is a valve arrangement, consisting of two rotary valves, *a b*, the internal tube leading directly to the one *a*, and from the other, *b*, a passage, *d*, returns to the column outside the internal tube.

As shown in Fig. 1, the two valves are turned to connect the tube D with the space within the column outside the tube, through the valves and intermediate passage *e*, and the passage *d*. In this condition the water forced inward and upward through the tube D passes into the space within the column outside the tube, and by its pressure extends the column.

When the requisite extension is attained, then the valve *a* may be turned to cut off the passage *e*, and thus stop the flow of water until it be required to discharge the water, as in case of fire. Then the valve *a* will be turned, as seen in Fig. 2, to open from the column D into the exit *f*; and if at any time it be required to lower the column, then the passages from the tube to the exit and to the passage *e* will both be closed, and a passage opened from the column to the exit *f* by turning the water accordingly. Thus the flexible conductor in our original patent is avoided, and a conductor made entirely within the column.

The valve arrangement at the bottom is preferably made double, as seen in Fig. 3, so that connection can be made through the tube to the column, or it may be made through an independent direct passage, G.

In order to prevent a shock when the rising column comes to a bearing, an elastic material, *h*, is arranged around the inner cylinder upon a collar or shoulder, *n*, on the inner section. This elastic material will strike against a stop when the column has reached its height and form a cushion for such stopping, which will prevent the concussion that would otherwise occur. This may be arranged at the bottom of the inner section, as shown, or at the top, where it is shown as a spiral spring, *l*, it only being essential to this invention that there be an elastic cushion to arrest the extension of the column.

I claim—

In a fire apparatus consisting, essentially, of a telescopic column, the combination therewith of a telescopic internal tube of less diameter than the interior of the column, combined with a valve mechanism, substantially as described, for governing the direction of discharge.

ANDREW TURNBULL.

Witnesses:

JOHN E. EARLE,
CLARA BROUGHTON.