

(No Model.)

J. H. WOMERSLEY & J. P. CRAIGHEAD.
VALVE.

No. 537,593.

Patented Apr. 16, 1895.

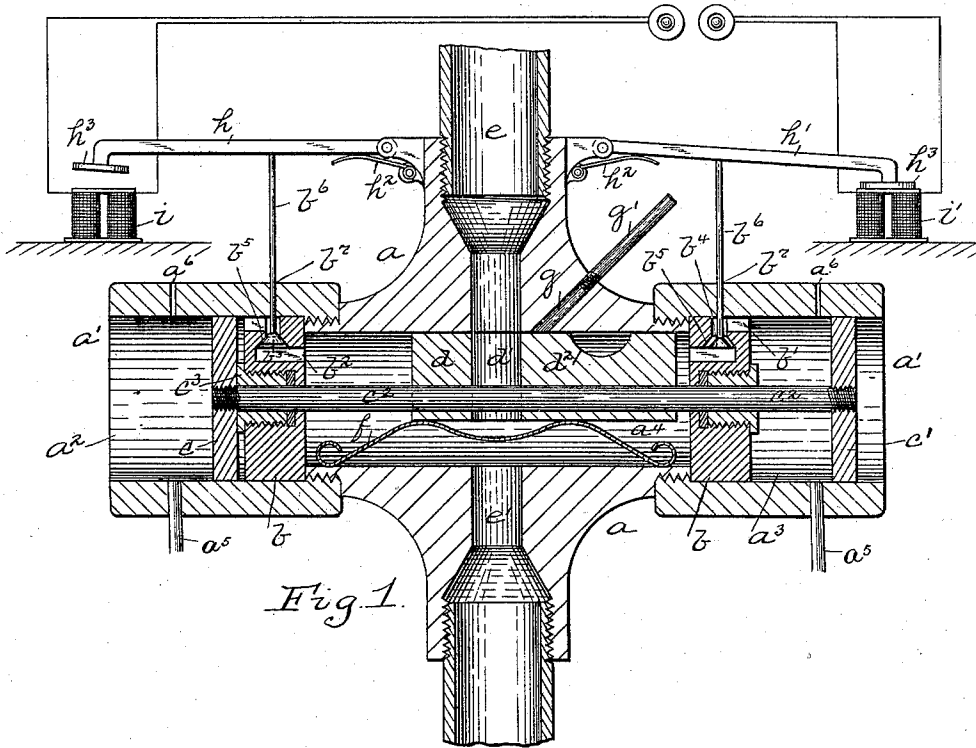
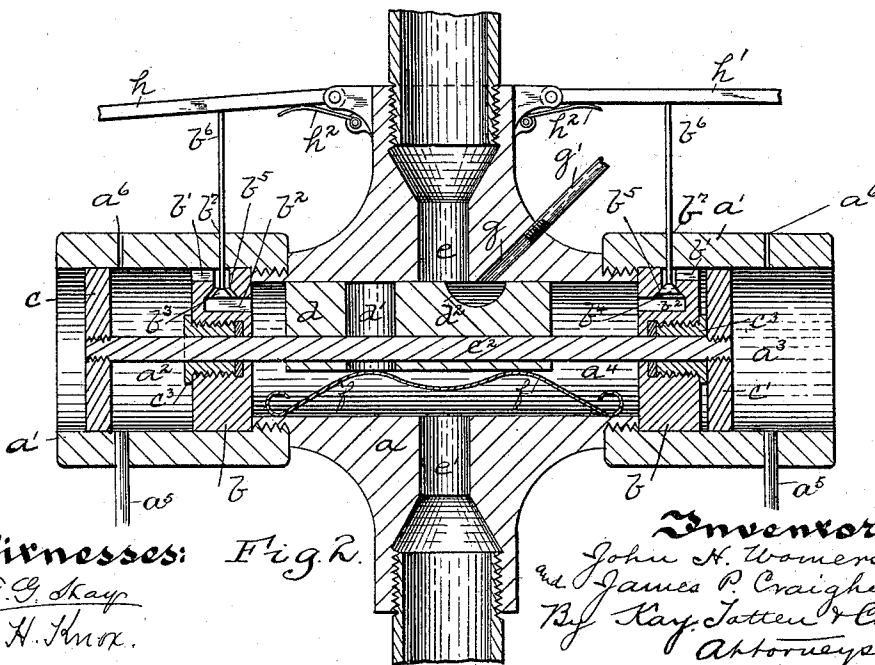


Fig. 1.



Witnesses: Fig. 2.
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UNITED STATES PATENT OFFICE

JOHN H. WOMERSLEY AND JAMES P. CRAIGHEAD, OF PITTSBURG, PENN-
SYLVANIA.

VALVE.

SPECIFICATION forming part of Letters Patent No. 537,593, dated April 16, 1895.

Application filed February 23, 1894. Serial No. 501,125. (No model.)

To all whom it may concern:

Be it known that we, JOHN H. WOMERSLEY and JAMES P. CRAIGHEAD, residents of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Valves; and we do hereby declare the following to be a full, clear, and exact description thereof.

Our invention relates to valves, and more particularly to valves for shutting off the water supply in buildings.

The object of our invention is to provide a simple form of valve which may be operated at a point distant from its location by means of an electric connection, so that by pressing an electric button at any part of the building the valve, which is usually located in the cellar of the building, may be opened or closed as desired.

Our invention comprises certain details of construction, all of which will be fully hereinafter set forth and claimed.

To enable others skilled in the art to make and use our invention, we will describe the same more fully, referring to the accompanying drawings, in which—

Figure 1 is a vertical section thereof showing the valve open. Fig. 2 is a like view showing the valve closed.

Like letters indicate like parts in each of the figures.

The shell or casing is composed of the central section *a* to which are secured by watertight joints the end sections *a'*. These end sections *a'* form the piston chambers *a² a³* and are separated from the central section *a* by the walls *b*. The piston chambers *a² a³* communicate with the valve chamber *a⁴* by means of the passages *b' b²* in the walls *b*. These passages *b' b²* are controlled by the puppet valves *b³ b⁴* which fit in the seats *b⁵* and which have the stems *b⁶* passing up through openings *b⁷* in the end sections *a'*. Within the piston chambers *a² a³* are the pistons *c c'* connected by the piston rod *c²* which passes through suitable stuffing-boxes *c³* in the walls *b*. The said piston-chambers *a² a³* are provided with the outlets *a⁵* and the air inlets *a⁶*.

Secured to the piston rod *c²* is the slide valve *d*, said slide valve having the passage way *d'* and the groove *d²*. When the valve is open

said passage *d'* will be in coincidence with the outlet *e* of the central section *a*, so that water entering the supply port *e'* will pass up through said passage *d'* to the outlet *e*, whence it passes to the different points of consumption. In order to assist in holding the slide valve *d* in position the spring *f* is interposed between the lower face of said valve and the bottom of the valve chamber *a⁴*. The central section *a* is further provided with the escape port *g* leading to the waste pipe *g'*.

Pivoted to the central section *a* are the levers *h h'*, said levers being held normally in an elevated position by the springs *h²*. The outer ends *h³* of said levers are composed of magnetizable material. Electro-magnets *i i'* are arranged at the outer ends of said levers in such position that when the current is turned on said electro-magnets will attract the ends *h³* of said levers *h h'* and lower same.

In Fig. 1 the ports of our improved valve are in the positions occupied by them when the water is turned on. In this case the water entering the supply port *e'* will fill the valve chamber *a⁴* and hold the puppet valves *b³ b⁴* in their seats *b⁵*. Besides the water will be free to pass up through the passage *d'* to the outlet *e*, whence it may be carried by a system of pipes to different parts of the building. If it is desired, however, to shut off the supply of water to the building it is simply necessary to touch a button at some point in the building, which, by the necessary connections, forms a circuit and causes the electro-magnet *i* to attract the end of the lever *h*. As the lever *h* is drawn down it comes in contact with the stem of the puppet valve *b³* beneath said lever and acts to unseat said valve. The passage *b'* is thus opened and the water is allowed to pass into the piston chamber *a²*. With the piston *c* in the position shown in Fig. 1, the water will force said piston to the position shown in Fig. 2. This will bring the slide valve *d* to the position shown in Fig. 2, thus shutting off the supply of water to the building and bringing the groove *d²* to such position as to connect the outlet *e* with the escape port *g* leading to the waste pipe *g'*. In this way all the water in the pipes passes off through said waste pipe.

If it is desired to turn on the water again

another button is pressed, causing the electro-magnet *i* to attract the lever *h'* and lower same, together with the puppet valve *b'* under said lever, whereupon the water will pass
 5 through the passage *b'* and carry the piston back to the position shown in Fig. 1, when the water is again free to flow into the outlet *e*. The outlets *a'* allow for the escape of the water from the piston chambers *a'*.

10 We do not confine the scope of our invention to its use as a water valve, as it may be employed for other fluids.

What we claim as our invention, and desire to secure by Letters Patent, is—

15 1. The combination of a box or casing having inlet and outlet ports, a valve-chamber, and piston-chambers at each end thereof, walls separating said valve chamber from said piston chambers, said walls having passages
 20 connecting said chambers a slide-valve in said valve chamber; pistons connected to said slide-valve, valves controlling said passages between said valve-chamber and said piston-chambers, and electrically operated levers
 25 adapted to unseat said last named valves, substantially as set forth.

2. The combination of a box or casing having inlet and outlet ports, a valve-chamber
 30 walls separating said valve chamber from said

piston chambers, said walls having passages connecting said chambers a slide-valve in said valve-chamber, pistons connected to said slide-valve, puppet valves controlling said passages between said valve-chamber and
 35 said piston-chambers, and an electrically operated lever in the path of said puppet-valves, substantially as set forth.

3. The combination of a box or casing having inlet and outlet ports, a valve chamber
 40 and piston-chambers at each end thereof, walls separating said valve chamber from said piston chambers, said walls having passages connecting said chambers a slide-valve in
 45 said valve-chamber, pistons connected to said slide-valve, puppet valves controlling said passages between said valve-chamber and said piston-chambers, levers pivoted to said
 50 box or casing in line with said puppet valves, springs for holding said levers in position, and electro-magnets adapted to lower said levers, substantially as set forth.

In testimony whereof we, the said JOHN H. WOMERSLEY and JAMES P. CRAIGHEAD, have hereunto set our hands.

JOHN H. WOMERSLEY.
 JAMES P. CRAIGHEAD.

Witnesses:

ROBT. D. TOTTEN,
 J. N. COOKE.