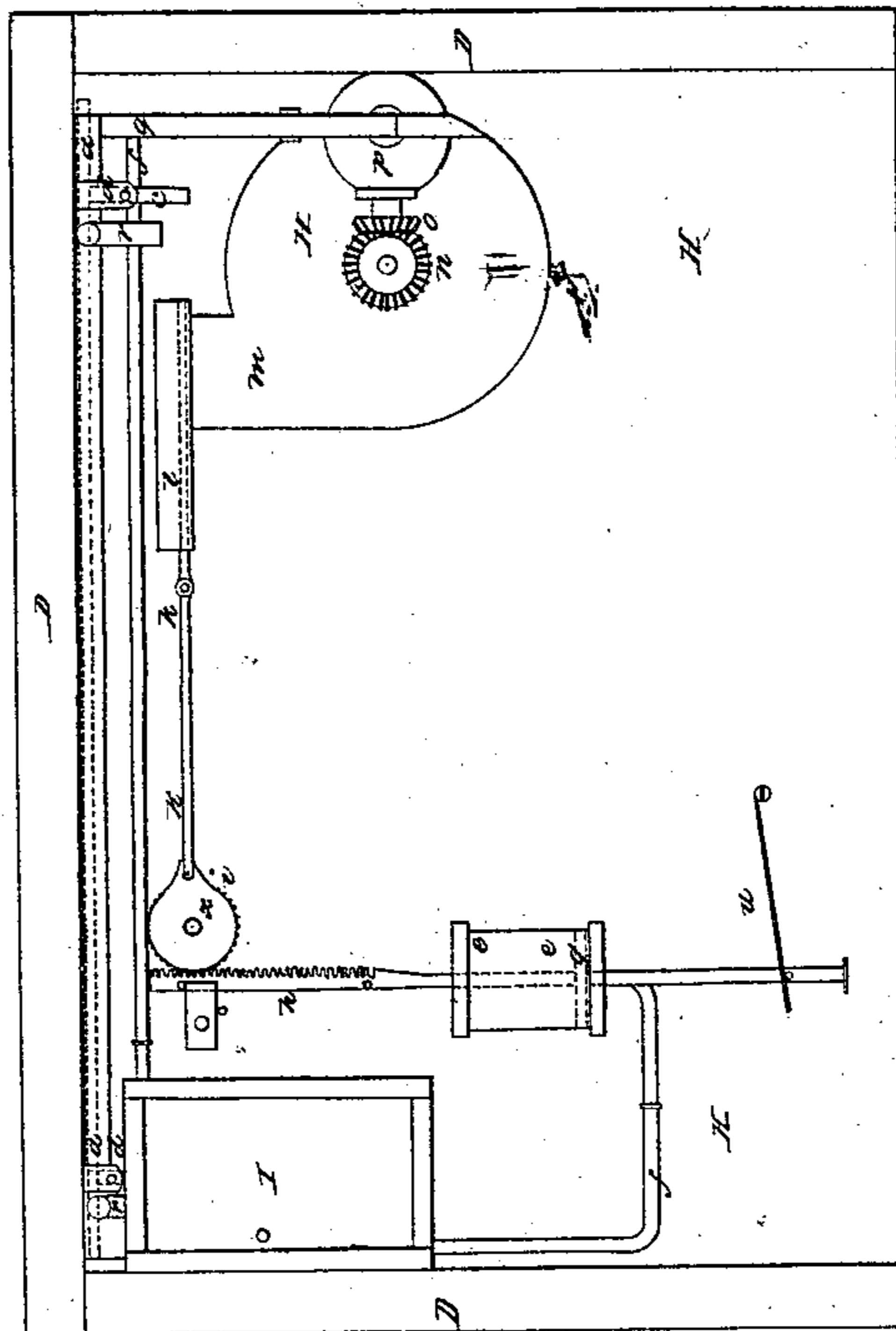
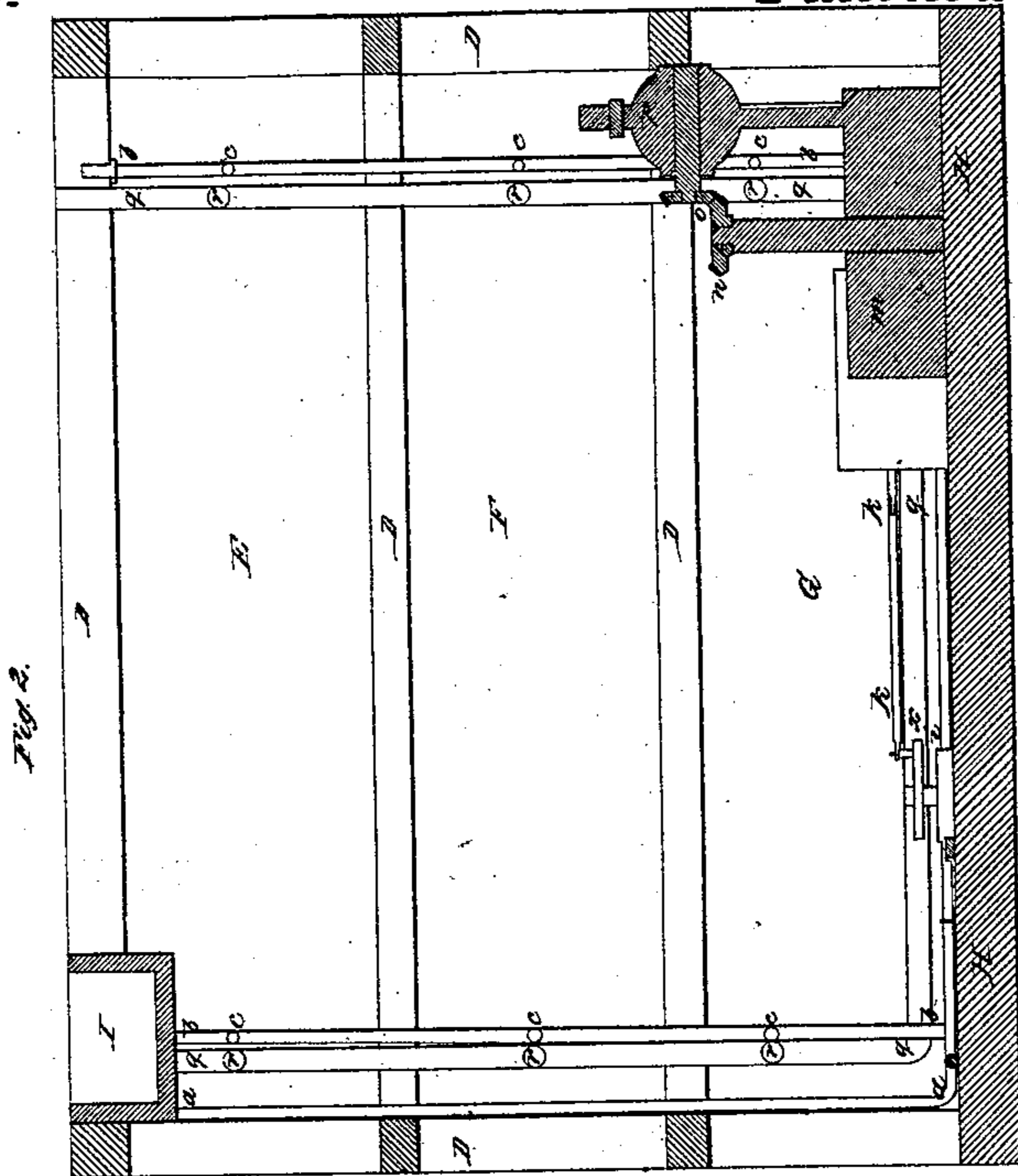


S. H. Wilder,
Fire Engine

N^o 25,358.

Patented Sep. 6, 1859.



Witnesses.
E. Lincoln.
Albert Brown.

Inventor.
S. H. Wilder.

UNITED STATES PATENT OFFICE.

S. H. WILDER, OF GRINNELL, IOWA.

FIRE-EXTINGUISHER.

Specification of Letters Patent No. 25,358, dated September 6, 1859.

To all whom it may concern:

Be it known that I, S. H. WILDER, of Grinnell, in the county of Poweshiek and State of Iowa, have invented a new and useful
5 Method of Starting Water-Wheels or other Motive Powers and afterward stopping the same, my improvement being applicable to the ordinary uses to which such motive powers are applied, but especially so to the
10 bringing them into action instantaneously from distant points from which the same would otherwise be inaccessible, for the purpose of driving force-pumps for extinguishing fires, and that the following description, taken in connection with the accompanying
15 drawings, forms a full and exact specification of the same.

The figures of the accompanying plate of drawings, represent my improvements as applied to the water wheel of a factory, for the purpose of extinguishing fires.

Figure 1 is a plan of my improved apparatus, Fig. 2 is a longitudinal vertical section of the same taken in the plane of the line
25 A, B, Fig. 1, and Fig. 3, is a detail view which will hereinafter be referred to and explained.

It is well known that force pumps driven by water or other power have long been used
30 for extinguishing fires in factories and villages, but the arrangement of means by which any person discovering a fire in any place to which the invention has been extended is enabled to bring the force pump into immediate instantaneous action, thus
35 securing all the promptness and efficiency of the large and expensive reservoirs which have heretofore been the only means known of accomplishing the same result is believed
40 by me to be new and useful and to entitle me to Letters Patent.

My improvements are represented as being applied to a skeleton factory building with the roof and second and third story floors removed and the frame work on their sides only is shown.

D, D, D, D, represent the frame work of the building which is divided into three stories E, F, and C, the lower story only
50 having a floor H, H. A small reservoir I is located in the upper part of the building, and from its bottom issues a tube *a, a, a, a*, which passes as shown in Figs. 1 and 2 (par-

tially by dotted lines) to the lower story of the building and thence along the floor to a
55 point sufficiently near the cylinder *e e*, to be accessible by all the shafts *b, b, b, b*.

Tube *f, f*, runs parallel with *a, a*, from the point where it reaches the floor to cylinder
60 *e, e*, into which it issues. Tubes *a, a, a, a, f, f*, are connected by short crosstubes *d, d, d, d*, which are placed at suitable points to be directly communicated with my shafts *b, b, b, b*, and are provided with valves or stop-cocks attached to the lower ends of shafts
65 *b, b*, by turning either of which by means of the short handles *c c c c*, projecting horizontally into each story a communication is established between reservoir I and cylinder
70 *e, e*, through tubes *a, a, a, a*, and *f, f*. This cylinder is provided with a piston *g* shown in Fig. 2 by dotted lines. The pressure thus established moves piston *g* and with it rack bar *h*, and gear wheel with which it engages.
75 The length of the stroke of this piston is gauged so as to turn gear wheel *i* and its connections, half a revolution and no more and through the medium of the connecting rod *k k* attached to an eccentric pin in blank wheel *x*, at one end and at the other end to
80 the sliding gate of flume *m*, opens the gate admits the water through said flume from the pond or reservoir to the water wheel, causing the same to be turned and with it the force pump *p*, connected therewith by
85 bevel gears *n, o*. This pump forces water through distributing pipes *q q q q*, carried to such parts of the building as to furnish water wherever it may be needed through
90 hydrant joints *v, v, v, v*, to which hose are to be always attached.

The connection between wheel *x* and gear wheel *i* is established by means of a loose dog *s* attached to the underside of the former and engaging with two steps in opposite
95 sides of the latter. This permits the gear wheel *i* to move backward loosely upon its shaft without turning wheel *x* but in its forward motion wheel *x* is made to turn with it half a revolution. After the gate
100 has been opened, the pressure may be removed from piston *g*, by closing crosstube *a* when the piston will be returned to its first position by the action of a spring or weight the water escaping from the cylinder
105 through a small opening left for that pur-

pose which may be insufficient to prevent the filling of the cylinder.

When the fire has been extinguished its communication between reservoir I and
5 cylinders *e, e*, may be reestablished by opening of the valve or stop cock in one of the crosstubes, when piston *g* will be forced out by the pressure from reservoir I and gear wheel *i* and wheel *x* will be moved
10 through another semi revolution, closing the gate of flume *m* and stopping the wheel.

Having thus described my invention I will proceed to state my claim as follows.

I do not confine myself to the precise form
15 position nor arrangement of parts above described as those can all be varied without changing the essential nature of my invention, neither do I wish to claim the use of hydrostatic pressure when used to operate
20 a float for the purpose of giving an alarm of fire and releasing a weight to drive the pump for a short time but.

What I do claim as my invention and de-

sire to have secured to me by Letters Patent is—

25 1. The arrangement essentially as above described of a reservoir or other means of producing pressure, combined with a system of tubes, crosstubes, and valveshafts with valves or stopcocks arranged as described, when
30 used as a means of operating upon a cylinder and piston or water wheel, for the purpose of starting and afterward stopping the wheel or engine, without the intervention of any person than the one who discovers
35 the fire.

2. I also claim the use of gear wheel *i* rack bar *h*, and blank wheel *x* or their equivalents arranged to move the gate of a water wheel out and in alternately by a repetition
40 of the same motion.

S. H. WILDER.

Witnesses:

ESRA LINCOLN,
ALBERT BROWN.