

J. CAPRON.
SLIDING DOOR.

No. 100,373.

Patented Mar. 1, 1870.

Fig. 1.

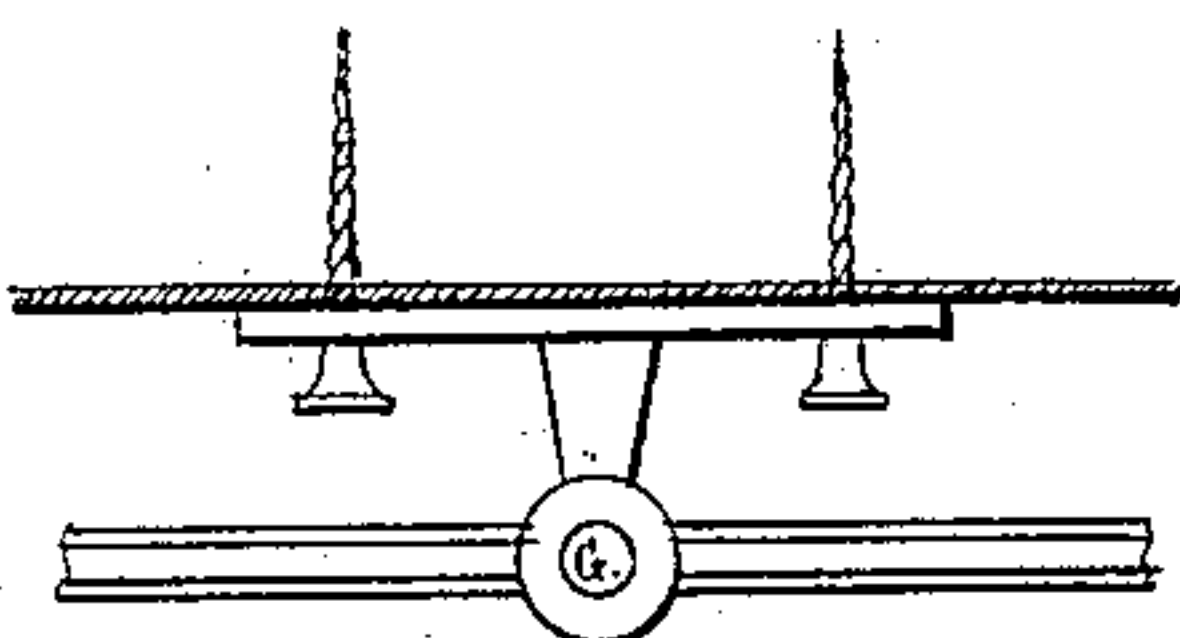
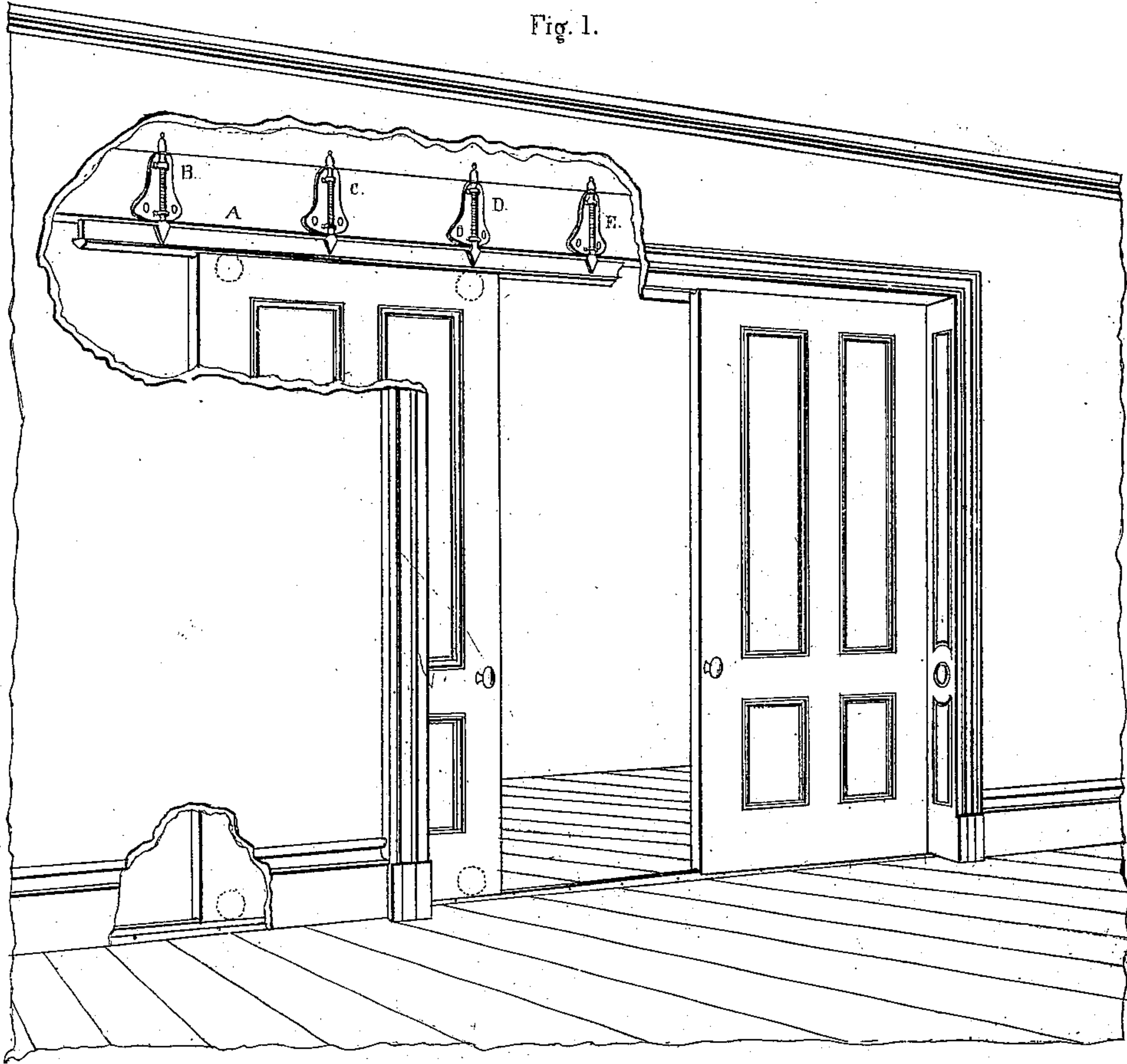


Fig. 4.

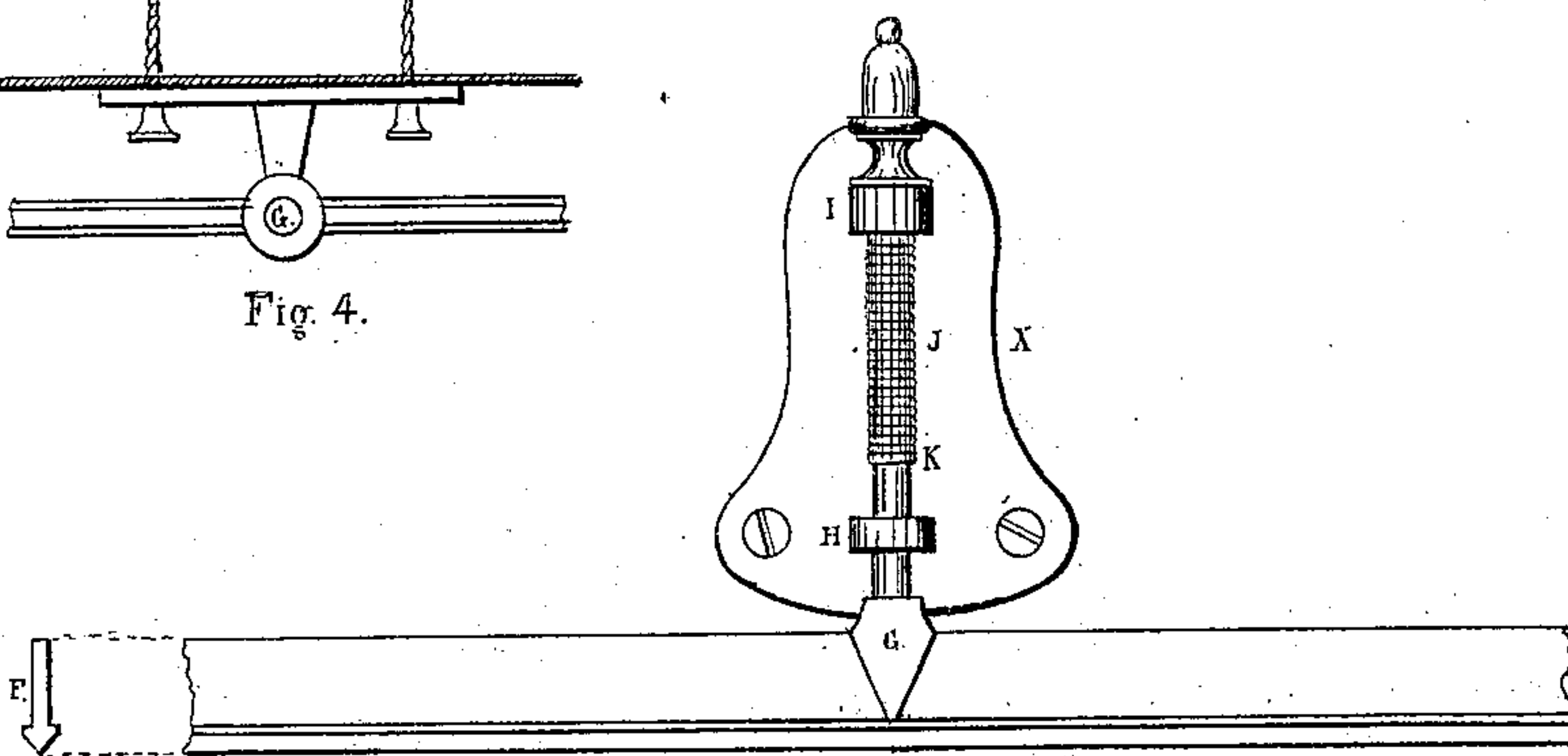


Fig. 2.

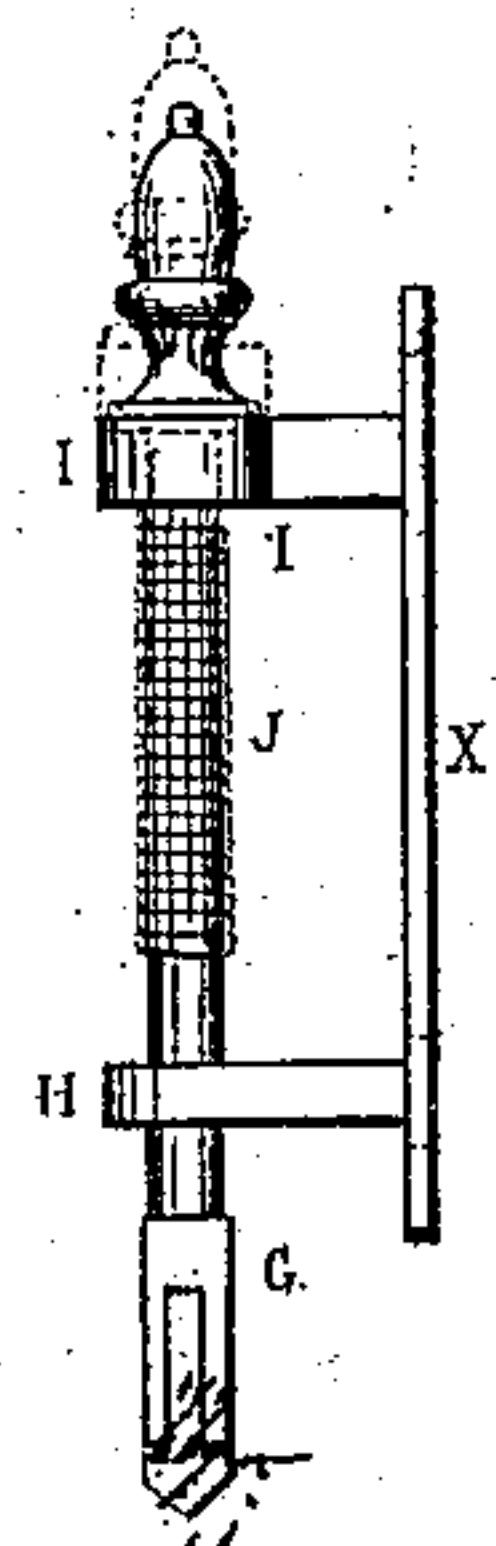


Fig. 3.

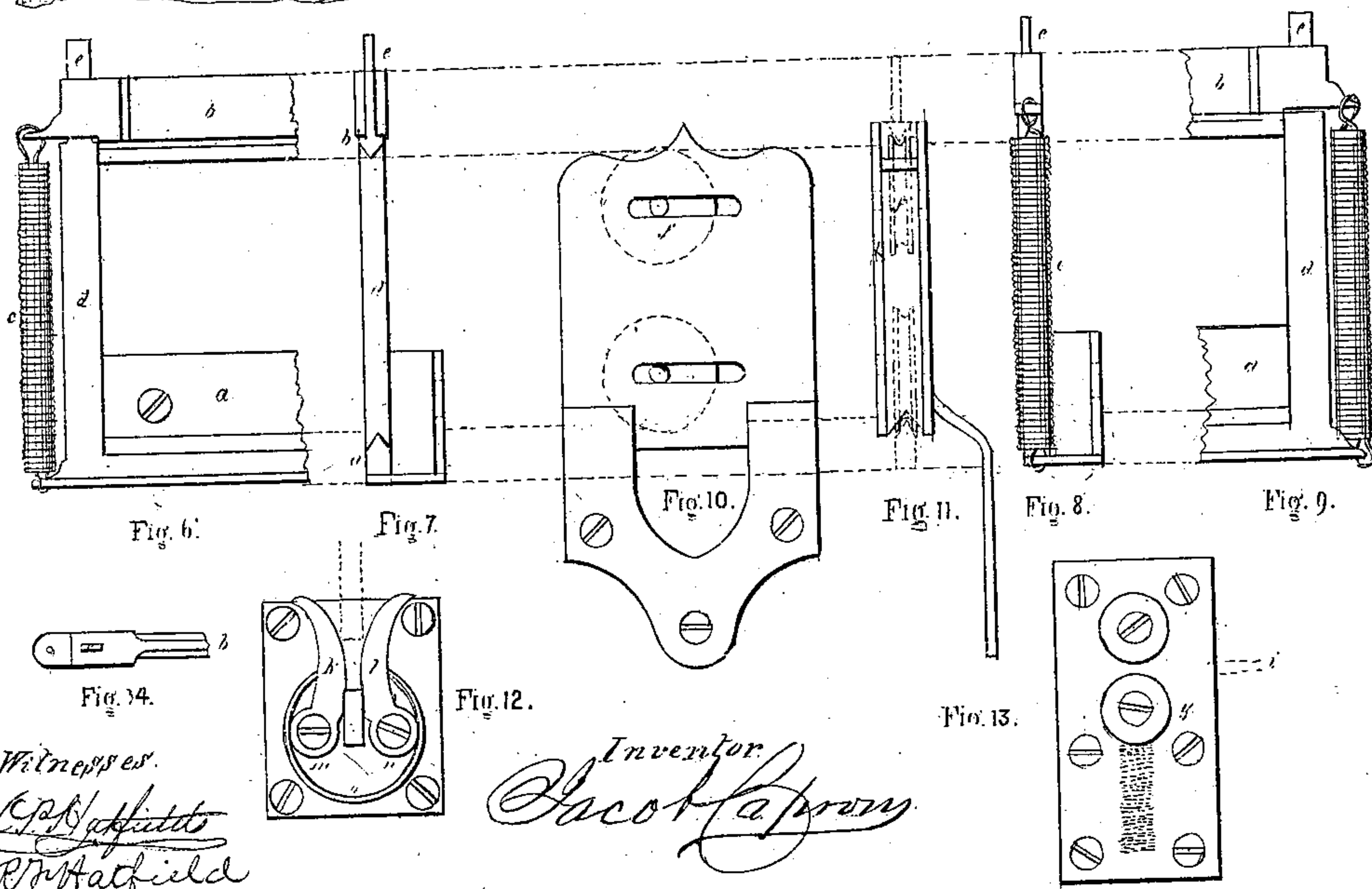
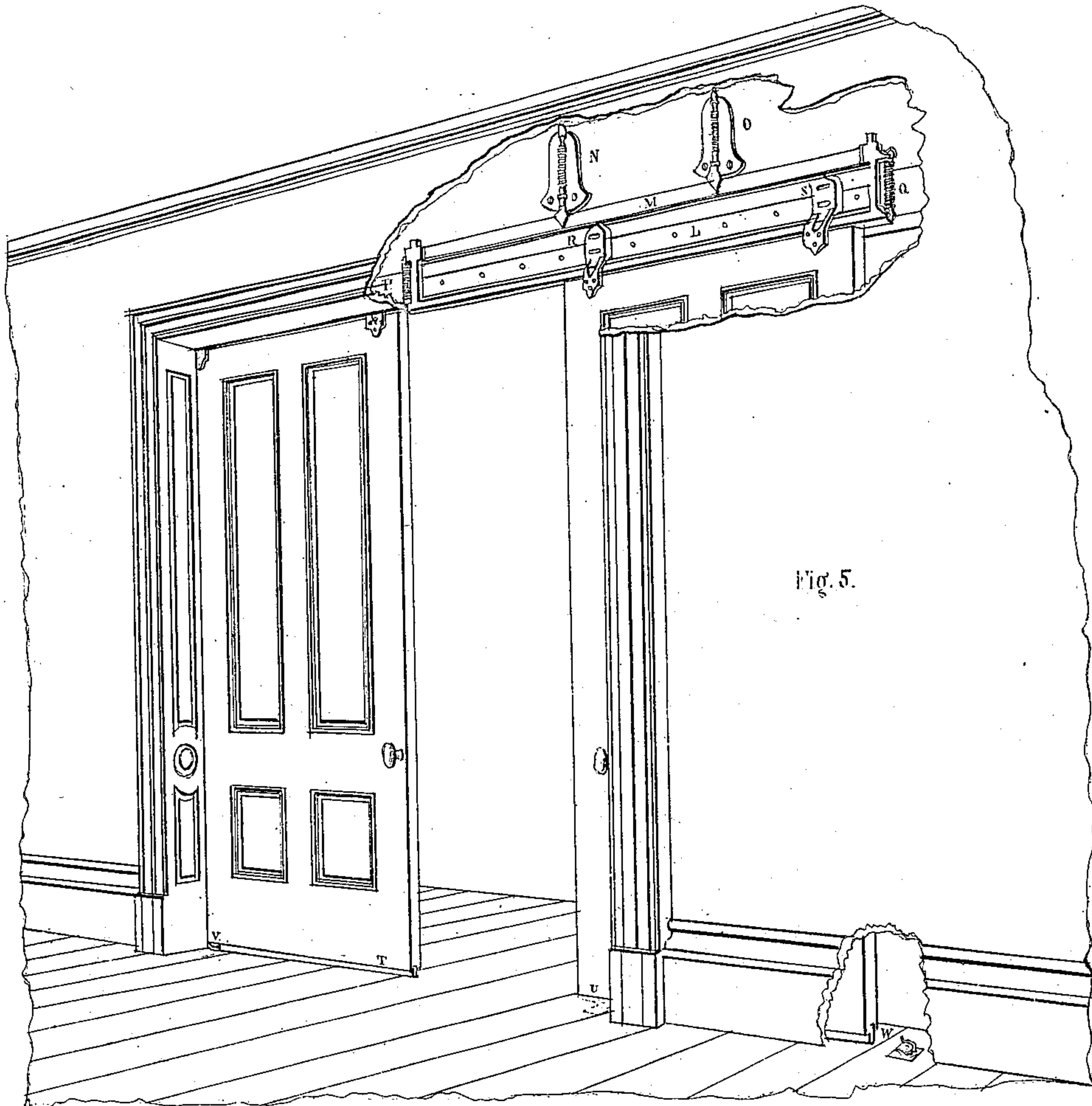
Witnesses.
O. P. Hatfield
R. W. Hatfield

Inventor
J. Capron

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C. R. Hatfield
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United States Patent Office.

JACOB CAPRON, OF NEW YORK, N. Y.

Letters Patent No. 100,373, dated March 1, 1870.

IMPROVEMENT IN SLIDING DOORS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, JACOB CAPRON, of the city of New York, in the county and State of New York, have invented certain Improvements in Sliding-Door Apparatus; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and the letters of reference marked thereon.

The nature of my invention consists in providing two sets of sheaves, and two sets of ways or guides, upon which the sheave-pulleys run, and while one of said ways is fixed rigid and stationary, the other I so govern with springs as to insure its constant pressure against the sheave-pulleys, which are guided by it, and, at the same time, by this means secure an elasticity in the working of the door which prevents jarring and undue friction, the main object being to prevent the sheave-pulley from jumping the track, guide, or way, and to keep the door in a steady horizontal course, in whatsoever way the power may be applied to move it.

It also consists of a spring-bar or way, of construction to be hereinafter more fully described, arranged to press upon sheaves placed within or upon the door.

In the accompanying drawings the several parts and the working of my apparatus are described.

In Figure 1 is represented a pair of doors with ordinary sheaves and ways at the bottom, and with my duplicate or additional sheaves and spring-ways at the top, as at A, the way sustained in its position by the brackets B, C, D, and E.

The construction of this way and brackets is shown more at large by Figures 2, 3, and 4, fig. 2 being a front elevation, fig. 3 a side elevation, and fig. 4 a plan of said bracket and way.

The way is constructed in a manner to secure stiffness, as shown by the section at F, fig. 2, which form I prefer, and is, moreover, provided with spindles or rods, firmly secured to the top, as at G, figs. 2, 3, and 4, and playing freely through perforations in the arms H and I of said bracket, but being pressed down by the action of the spring J, which acts against a shoulder in the spindle at K, fig. 2, and against the upper arm I of the bracket, the latter being secured with screws to a beam provided to receive it.

These spindles and brackets, being placed at frequent intervals in the length of the way, secure the object above referred to.

In Figure 5 is represented a pair of doors, which is hung upon sheaves and ways to run at the top.

In this case, I secure the way in a permanent fixed position, in the ordinary manner, as at L, and provide my additional way above the said fixed way, as at M, said additional way being governed as to its position by the spring, spindles, and brackets above described,

as at N and O, and also by terminal springs at either end, as at P and Q.

The sheaves, in this case, I make with double pulleys, as at R and S.

Moreover, to keep the door in its proper vertical position, I provide a flange in the bottom thereof, to run between two spring-rollers, and to be received at the back end of the way into a spring clasp, as at T, U, V, and W, fig. 5.

The construction of these several parts is shown more at large in Figures 6, 7, 8, 9, 10, 11, 12, 13, and 14.

Figs. 6 and 9 are front elevations, fig. 7 is a section, fig. 8 is an end elevation, and fig. 14 is a plan of the ways.

a is the fixed way, and

b is the spring-way.

c is the spring which holds the spring-way down at the ends thereof, and

d is the post, terminating at top in a tenon or guide, *e*, upon which the spring-way plays by means of a perforation in the ends thereof, all as shown.

Figs. 10 and 11 represent the construction of the sheave, which is provided with an additional pulley, *f*, as shown. Fig. 10 is a front elevation, and fig. 11 is a section of said sheave.

The sheave described moves in slotted ways, as clearly shown in fig. 10.

Fig. 13 represents a plan of the spring-rollers located at U and V, fig. 5.

The roller *g* is provided with a spring, *h*, which keeps it up against the flange *i*, said roller having a movable axle, which plays in a slot in the plate *j*, the spring being concealed beneath said plate.

Fig. 12 represents the spring-catch, which is located at W, fig. 5. It consists of two dogs, *k* and *l*, which are loosely centered at *m* and *n*, and pressed together by the spring *o*. By means of these dogs the flange on the bottom of the door is caught and held, and the door maintained in its vertical position, thus preventing the warping of the door.

I also propose to apply this apparatus to shutters, sashes, and all similar articles to which it may be applied with advantage.

I do not claim, broadly, supporting the door between ways by springs, or as shown in the patent of Prud'homme and Leprohon, nor do I claim the slotted bearings of the sheaves; but

Having thus fully described my invention,

What I claim, and desire to secure by Letters Patent of the United States, is—

1. A device for supporting sliding doors, shutters, and sashes, consisting of brackets attached to the top of the door, provided with a double system of sheaves,

one set of which runs on a fixed rail and the other rolls in contact with a rail or way pressed upon them by springs from above, substantially as set forth.

2. In combination with such a system of ways, the spring-rollers and spring-catch, either or both, operating as described, in connection with the flange *i*, all constructed as set forth and shown.

3. The rail or way shown at *A*, with suitable brackets and springs, when the rail operates in connection with sheaves fixed in or upon the door above, and with

similar sheaves rolling upon a rail below, all as set forth.

4. The peculiar construction of the bracket, with its arms *H* and *I*, spring *J*, and shoulder-spindle *K*, and rail, all made and operating with the door, as shown and described.

JACOB CAPRON.

Witnesses:

R. F. HATFIELD,
O. P. HATFIELD.