

W. W. BYAM.
BLIND-SLAT ADJUSTER.

No. 171,096.

Patented Dec. 14, 1875.

Fig. 1.

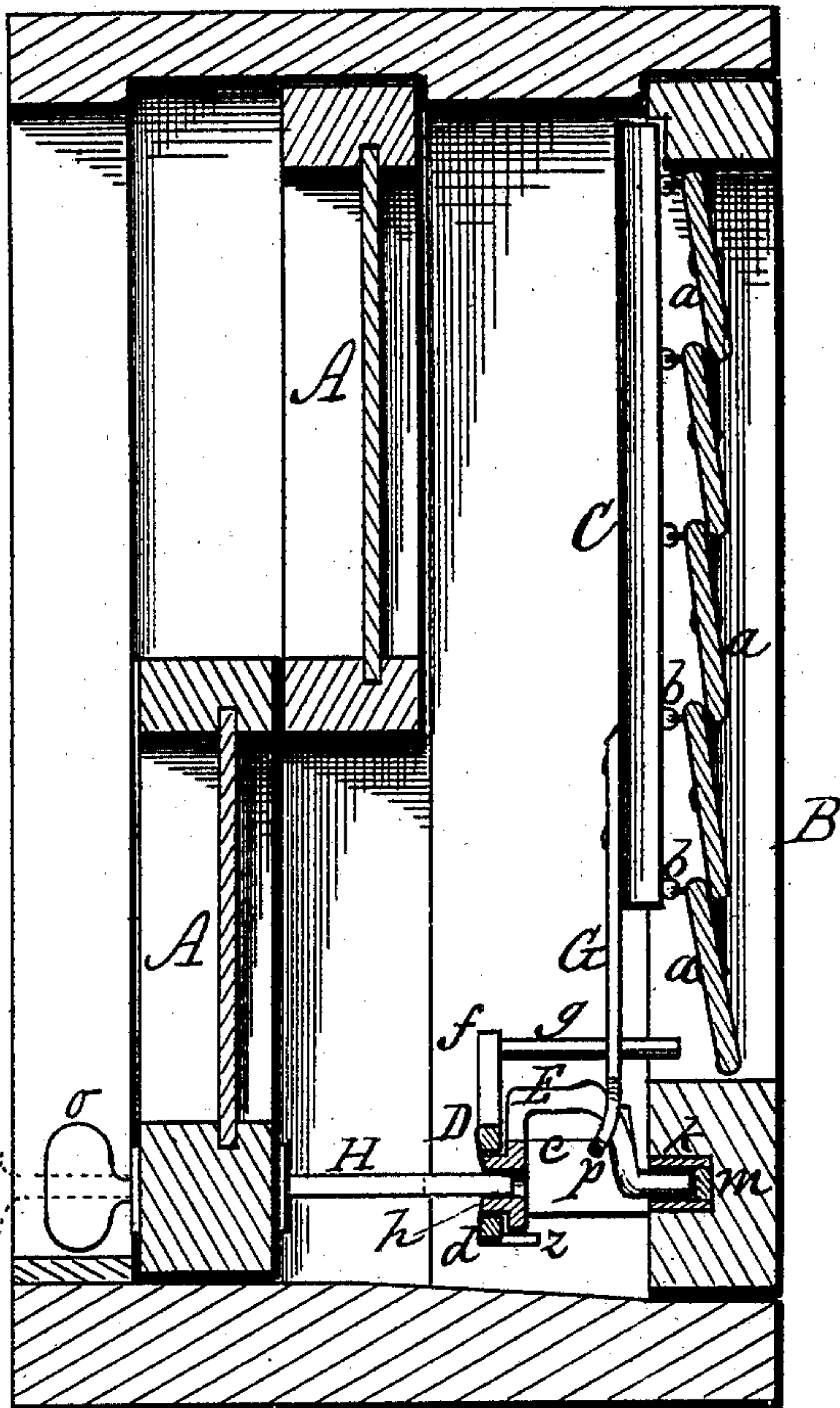


Fig. 5.

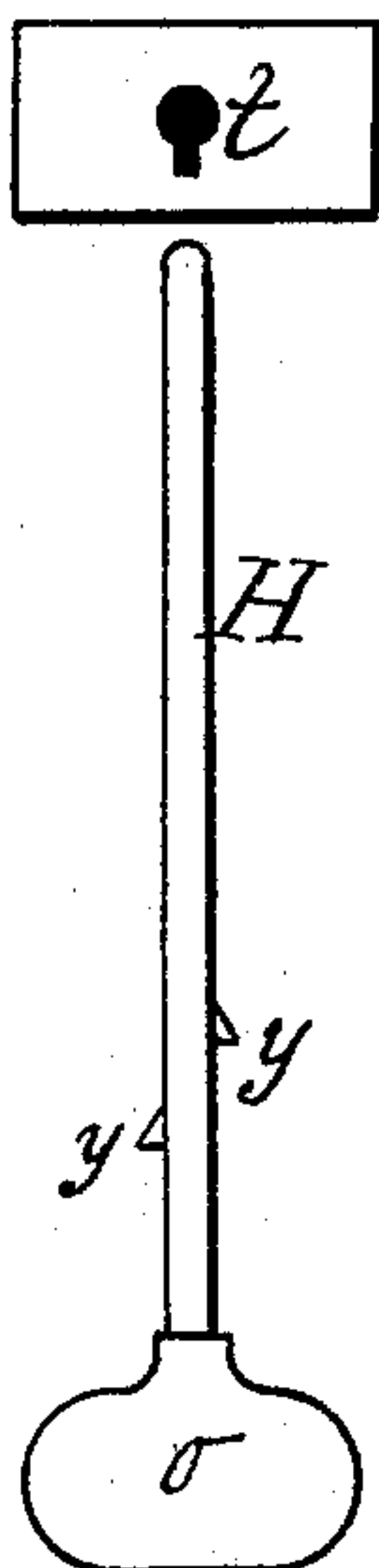


Fig. 2.

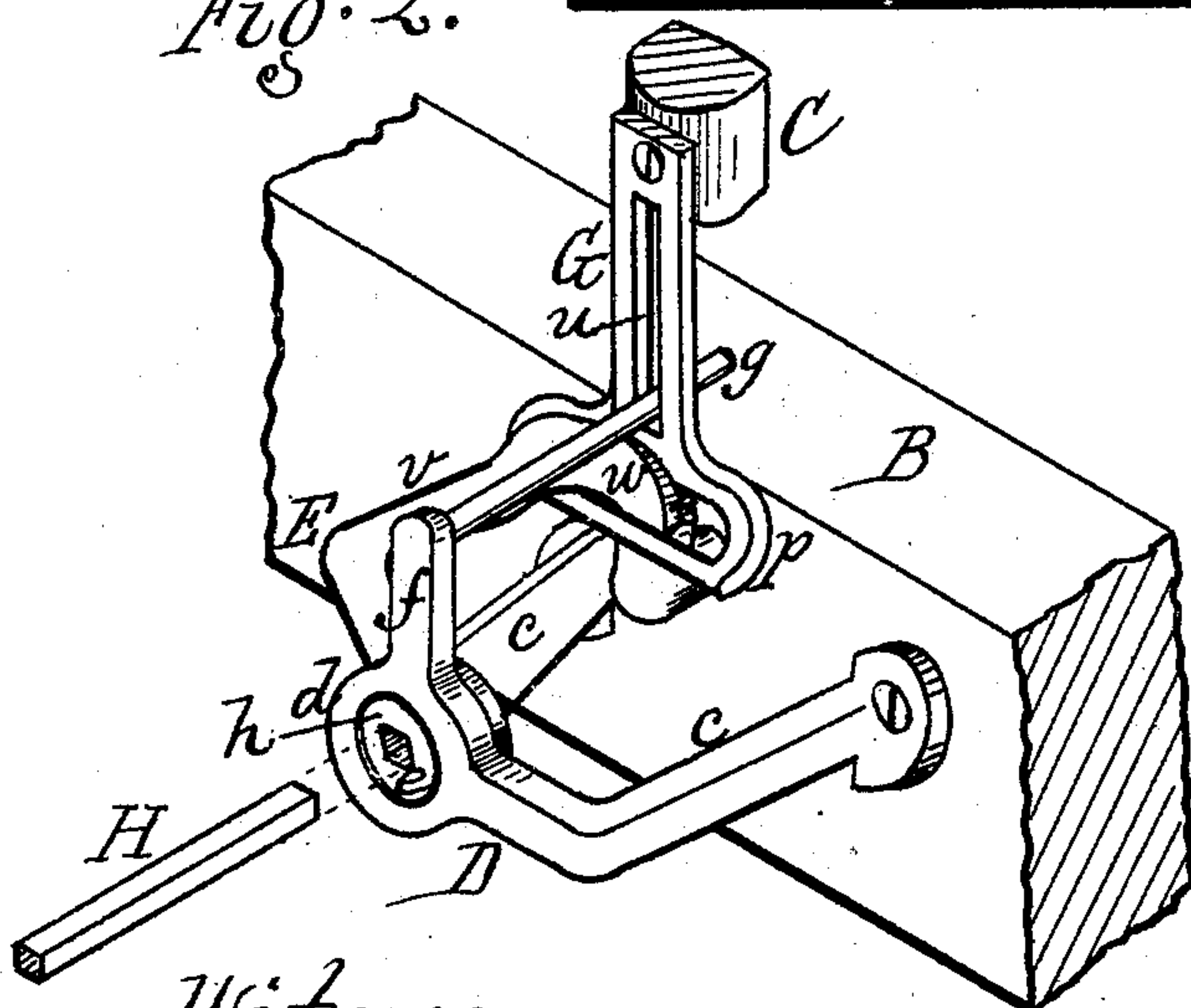


Fig. 3.

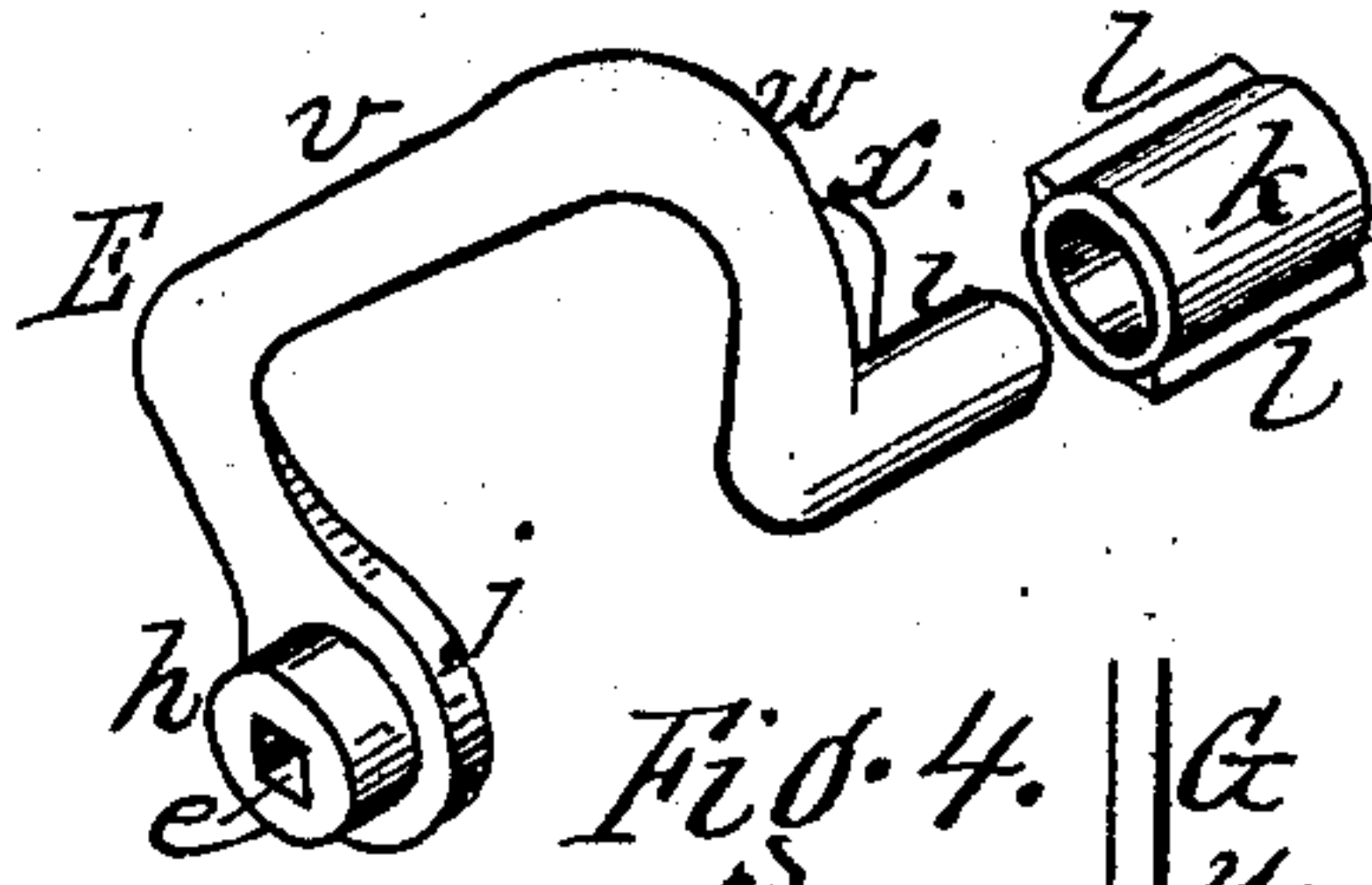
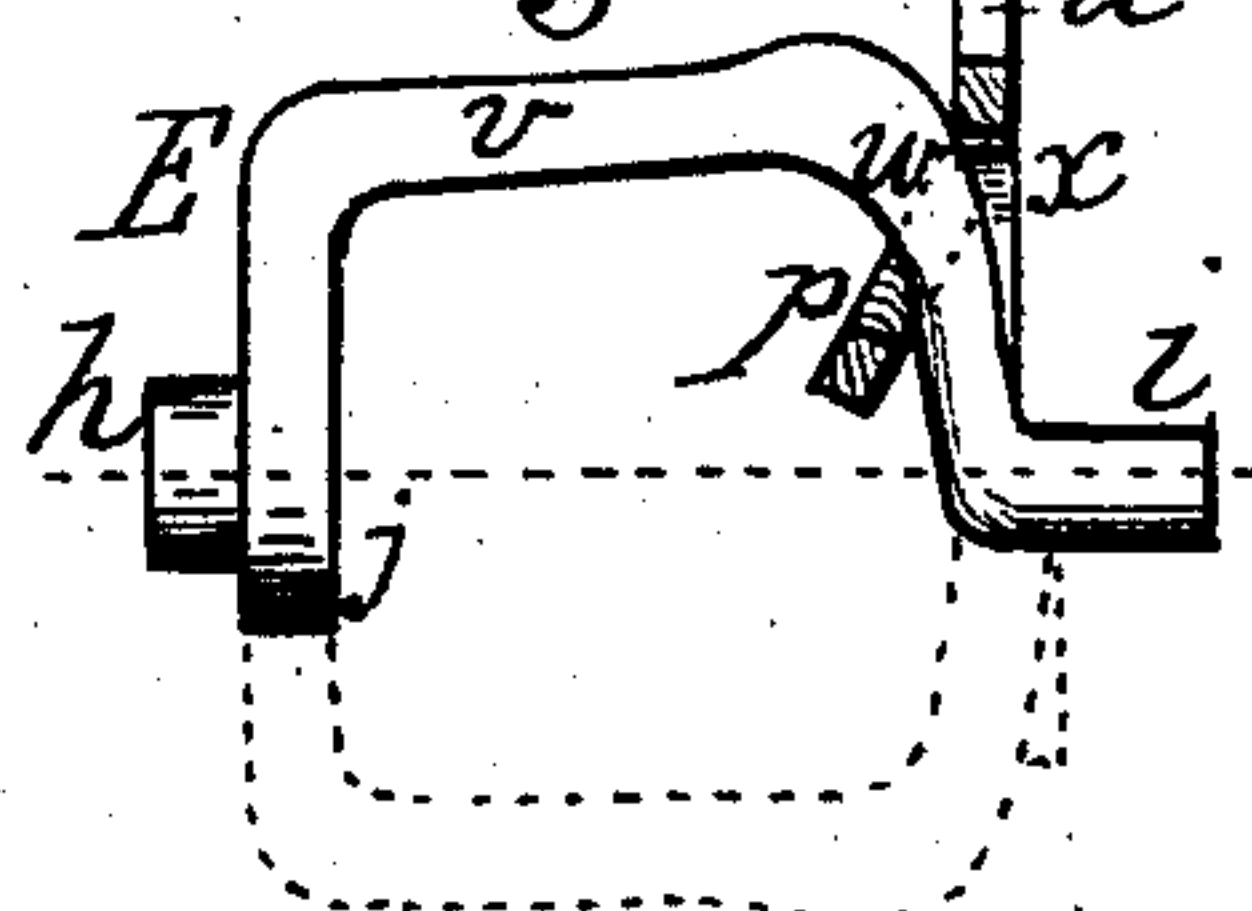


Fig. 4.



Witnesses.
E. B. Scott.
Jacob Spahn

Inventor.
Wm. W. Byam,
per R. F. Osmond,
Atty.

UNITED STATES PATENT OFFICE.

WILLIAM W. BYAM, OF ROCHESTER, NEW YORK, ASSIGNOR OF ONE-HALF HIS RIGHT TO EBER C. BYAM, OF FORT DODGE, IOWA.

IMPROVEMENT IN BLIND-SLAT ADJUSTERS.

Specification forming part of Letters Patent No. 171,096, dated December 14, 1875; application filed October 18, 1875.

To all whom it may concern:

Be it known that I, WILLIAM W. BYAM, of the city of Rochester, in the county of Monroe and State of New York, have invented a certain new and useful Improvement in Devices for Operating the Slats of Window-Blinds; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical section of a window, showing my improvement applied thereto. Fig. 2 is a perspective view of the fixture which is attached to the blind. Figs. 3 and 4 are detail views, showing the cam. Fig. 5 is a view of the movable shaft and key-hole.

My improvement relates to devices for operating the slats of window-blinds from the inside, with the window closed.

The invention consists of a fixture of peculiar construction attached to the blind, and operated by a removable rod passing through the rail of the sash, as hereinafter more fully described and definitely claimed.

A A represent the ordinary sashes of a window. B is the blind. The slats *a a* of the blind are attached in the ordinary manner, and are operated by the usual rod C, which is connected with the slats by hook-and-eye joints *b b*. If desired, the wooden journals at the ends of the slats may be incased in metallic thimbles, and these thimbles may rest in metallic boxes sunken in the casing. This will prevent swelling and shrinking of the wooden journals. D is a frame or fixture, made of cast-iron, and attached to the lower rail of the blind by legs *c c*, so as to stand off from the rail. It has a central disk, *d*, with a round hole to receive the hub of the cam, and also a standard, *f*, provided with a guide-rod, *g*, which extends inward to form a guide to the stirrup, as shown. E is the cam. It is simply a loop or scroll of cast-iron, in crank form, and has two journals or bearings, *h i*, situated in the same axial line. The front journal *h* forms the hub, which rests in the disk *d*, while the rear journal *i* is a stem which enters a socket formed in the blind-rail. This socket

is formed by boring into the rail with a bit, and then inserting an open-ended metallic thimble, *k*, which forms the box, and is prevented from turning by two wings, *l l*. A packing, *m*, of rubber is inserted into the thimble, against which the end of the journal *i* rests, and the effect is to bear the cam outward, so that its flange *j* will strike the rear of the disk *d*, and thereby retain the cam in any position to which it may be turned by the friction produced. G is a connecting-rod attached to the bottom of the slat-rod C, and having at its lower end an open stirrup or cross-head, *p*, which embraces the cam, as shown. The stirrup is of such length as to allow the turning of the cam a half-revolution up and down, and this movement, in opposite direction, is sufficient to open and close the blind-slats. The connecting-rod also has a longitudinal slot, *u*, which embraces the guide-rod *g*, thus serving to keep the rod in a true vertical position at all times in moving up and down. The cam is constructed with a crank portion, *v*, which throws the stirrup up and down to open and close the slats. It also has a spiral length, *w*, on the back side, similar to a screw-thread, which moves the stirrup forward and backward, in the line of motion of the slats, to produce the necessary turning motion, and prevent binding of the stirrup caused by the throw of the slats. In the closing of the slats this spiral has the special effect of pressing the slats back to place, so as to make them bear tightly against each other to close the joints, and prevent looseness and rattling. Furthermore, the cam on the back side has an eccentric, *x*, which rests under the upper half of the stirrup, and at the end of the upward-turning movement presses the stirrup and connecting-rod up, so as to more effectually tighten the slats, and prevent looseness between the slat-rod and slats. When fully thrown up or down the cam strikes stops *c z*, and stands on the dead-point, or balanced, so that the slats cannot be accidentally moved from the fully opened or closed position. The friction of the cam, caused by the rubber packing, before described, will cause the slats to be held secure in any position between the

fully-opened or fully-closed position. To facilitate the easy working of the stirrup over the cam, the crank portion *v* is made slightly inclined or descending from the outer to the inner ends, as shown in Fig. 2. *H* is a square rod or shaft, which passes through the lower rail of the sash, and strikes into a square socket, *e*, of the hub *h* of the cam. To enable this shaft to center itself the face of the disk *d* and hub *h* is made concave, as shown in Fig.

1. At its outer end the shaft *H* has a thumb-piece, *o*, and intermediately it has two bits or lugs, *y y*. This shaft passes through a key-hole, *t*, formed in an escutcheon of the sash, and in passing in or out the shaft must be turned so as to admit the bits *y y* in the slot of the key-hole. These bits prevent accidental detachment of the shaft, or its removal by children; but, at the same time, the shaft can be pressed in or drawn out sufficiently to engage its end with, or disengage it from, the socket *e*. When engaged, as shown by black lines in Fig. 1, the blind-slats can be operated, as before described. When disengaged, as indicated by dotted lines, the sash can be raised and lowered by using the shafts *H H* as hand-holds, the movement then being entirely independent of the blind. One of the shafts *H* is used with each section of the blind, so that two shafts are connected with the sash. In case the blinds are doubled, or

divided half way up, the lower slat-rod *C* is connected with the upper one, across the bars or rails of the blinds, by a coupling-strap, which is attached to the contiguous ends of the two rods by screws, or otherwise, so that both can act by one movement.

This fixture, above described, can be made entirely of cast-iron, and is, therefore, cheap and easily applied.

What I claim as new is—

1. The device consisting of the frame *D*, with the guide-rod *g'*, cam *C*, connecting-rod *G*, with stirrup *p*, and the movable shaft *H*, the whole combined to operate in the manner and for the purpose specified.

2. The cam *E*, constructed with the journals *h i*, crank portion *v*, spiral *w*, and eccentric *x*, in the manner and for the purpose specified.

3. The combination, with the cam *E* and frame *D*, of the box *k*, and rubber packing *m* for producing friction upon the cam in its turning movement, in the manner and for the purpose specified.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

WILLIAM W. BYAM.

Witnesses:

R. F. OSGOOD,
E. B. SCOTT.