C. A. Potter,

Shutter Worker.

No. 109661. Patented Nov. 29. 1870.

FIG 1.

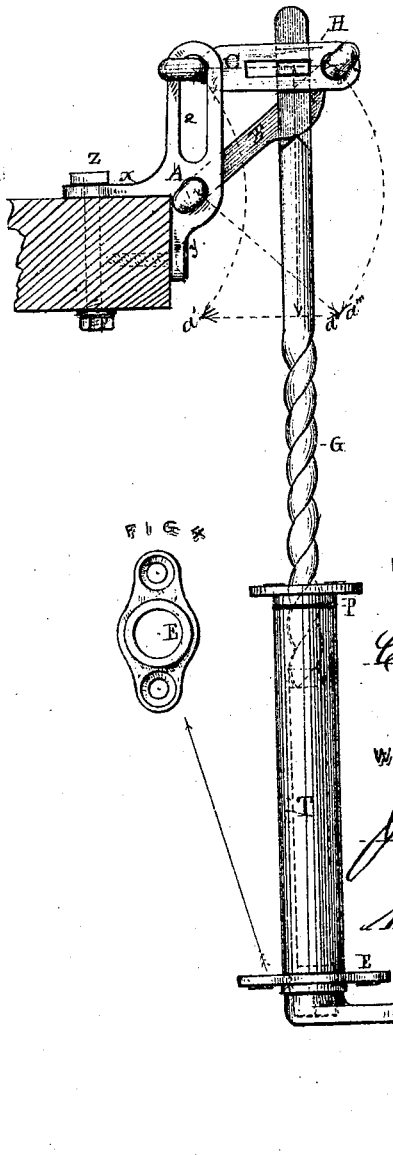


FIG 3.

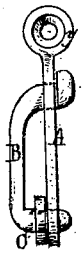


FIG 2.

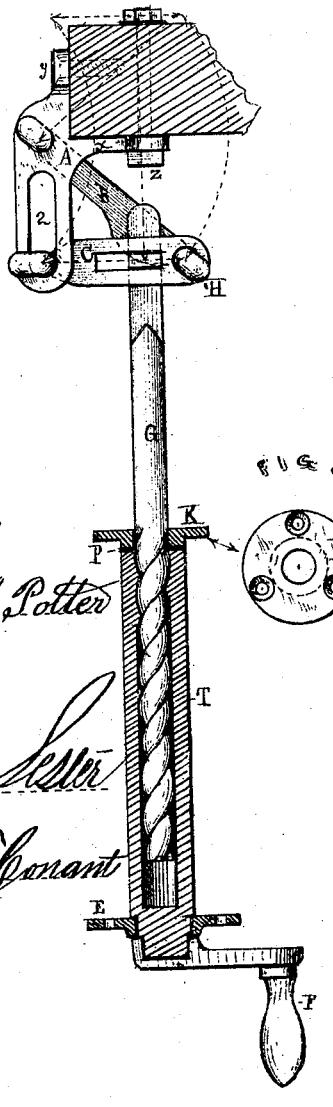
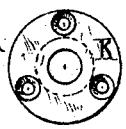


FIG 4.

FIG 5.



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CHARLES A. POTTER, OF PROVIDENCE, RHODE ISLAND.

Letters Patent No. 109,661, dated November 29, 1870; antedated November 19, 1870.

IMPROVEMENT IN SHUTTER-WORKERS.

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

I, CHARLES A. POTTER, of the city and county of Providence, State of Rhode Island, have invented a new and improved Blind and Shutter-Adjuster, of which the following is a specification.

I am aware that much time has been employed in the endeavor to make some mechanical contrivance by which a blind or shutter can be opened or closed from the inside of a room without raising the window, but those invented heretofore have never come into general use by reason of the cost of constructing and applying them.

The great utility of any invention which would accomplish the result required, and at the same time be so made as to be inexpensive, readily suggests itself.

The danger of children and aged persons falling from the window in attempting to close blinds and shutters, as at present fastened, is very great, especially when the wind is blowing upon the shutters.

The nature of my invention for opening or shutting a blind is a combination of levers so acting upon each other as to turn the object attached to one of them half-way round when a force is applied to the other, carrying it either backward or forward.

Said levers are the fixed lever A, to which the blind or shutter is fastened, the fulcrum-bar B, and the lever C, to which the power is applied, and having at one end a stud or hook which works into a slot in lever A.

In the accompanying drawing—

Figure 1 shows the position of my adjuster when the blind is closed, the parts A, B, and C of the adjuster, the manner of attaching the blind to the arm or lever, and the manner of applying the force to the adjuster by means of a spindle, G, with a screw on one end working in a tubular nut, T. The course of the levers is also indicated by the dotted lines and arrows.

Figure 2 shows the position of the adjuster when the blind is opened, and also the various parts, and the course which the levers travel in closing the blind or shutter.

Figure 3, a front or edge view of the adjuster.

Figure 4, the metallic socket, within which works the head of the nut, keeping it in place.

Figure 5, the washer, within which works the spindle, keeping it in place while traveling backward and forward.

The parts of my invention are the arm or lever A, with two projections at one end, at right angles to each other, X and Y, so made as to clasp the two sides of the blind or shutter.

Through one of the projections a hole is made, through which and through the blind a bolt is inserted, as an easy mode of attaching them, as at Z.

The arm or lever A has a small round hole near the angle of the projections, 1, and an elongated hole, 2, running nearly the remaining length of the arm. Thus are made the surfaces upon which act one of the other levers, as hereinafter described.

An arm or lever, B, a little curved, with a hook at each end, and near one end a broad, flattened surface, forming a rest for the spindle or rod transmitting the power which acts upon the lever next described, and is more fully shown hereafter.

An arm or lever, C, similar to A, save that there are no projections, and to the other end of the arm there is attached a hook.

The holes through the arm are similarly shaped to those of A, the small round one, 3, serving for the insertion of the hook on the end of B, near the flattened surface, and the other, 4, for the insertion of and working therein of the tooth of the spindle.

The three parts of my invention are made of malcable iron, this being tougher than cast-iron, and are molded complete and ready to put together after a little filing. They are put together thus:

Holding the lever C in one hand, with the hook up, and taking B in the other hand, with the hook up, bring the hook nearest the flattened surface to the under side of and to the small hole in the arm or lever C, and insert it by raising the arm until the hook enters the hole, then holding the two arms one above the other, so that the hooks will be exactly in line. Take the lever A in the other hand, and insert the hook of B in the small hole of A, and the hook of C in the large hole of A, raising the levers as before until the hooks enter the holes, then let them come back to their position.

My little device is then in working order.

I use hooks for holding the levers together, both from their small expense as well as the ease with which they are put together.

To put my adjuster in operation, we must bore a hole of proper size through the side of the building, in the proper place, and from the inside we insert the tubular nut T, within which two threads of a screw have been cast, and over the end of this nut we place the socket E, and then attach to the end of the tubular nut the crank F; from the outside of the building we insert the spindle G, upon one end of which a thread, fitting into that of the nut, has been cast, into the tubular nut and through the washer K.

To the blind or shutter we now attach our little device by the projections or ears X and Y, either by screws or by putting a bolt and screws through one of the ears and the blind or shutter, or in some other way securely fastening the lever A to the blind; then place the blind in position, closed, and bring the tooth H of the spindle into the slot or hole in lever C.

Now my adjuster is in working order, and ready to do its work of opening or closing the blind.

We now turn the crank upon the inside of the building, turning it from left toward the right; this turns the tubular nut in the same direction, and draws the spindle into the same and toward us; the spindle acting upon the lever or arm C draws that toward us, and being pulled back, the hook thereof slides in the elongated opening in A, pulling the arm A in the same direction until all the arms are in a position, one above the other, which brings the blind half-way open, or rather the arm A, to which the blind is securely attached, has so moved as to cause the rim of the blind to describe a quarter-circle.

A continued turning of the crank exerts a like and continued force upon C, and causes the hook now turned by the curved end of the slot in A, marked 2, to retravel that cavity, and draws the arm or lever A around; another quarter-circle is described by the rim of the blind, which is now thrown back against the side of the house.

The opening in A must be of just the right dimensions for the proper working of the head or hook of the arm C.

The office of the arm B is to keep the other two levers or arms in proper position and just at the right distance apart, but so fitted by its hooks in the small holes in A and C as to allow those levers to work freely and easily about these hooks.

The blind or shutter now being open, we make one turn of the crank, and the threads of the screw and nut are brought closely together, and the friction holds them tightly and secures the blind against the winds.

Referring to the drawing, the arm A travels the line toward *a'*, the lever C the line toward *a''*, and the lever or worm B takes the direction of the line toward *a'''*.

We now desire to close the blind or shutter. We turn the crank from right toward the left, and the repeated revolutions of the tubular nut T of course operate as before upon the spindle G, this time turning it out and forward, and the spindle pushing the arm C, carrying it forward; and the hook traveling the slot in A carries the arm A around till all the arms are in position, one above the other; a continued force applied to C, carrying it forward, causes the hook to work upon the other side of the slot, and carries the arm A around till the arms A and C are at right angles to each other, and the arm B extending from the extremities of the arms, forming, as it were, the hypothenuse of the angle formed by the arms A and C.

The blind being closed, we make another turn of the crank, and the same is closed securely, as before, so that it cannot easily be pulled open from the outside.

Claim.

What I claim as my invention, and desire to secure by Letters Patent, is—

The fixed lever A, the fulcrum-bar B with a hook or stud at each end, and the lever C, all combined as set forth, and for the purpose of working a blind or shutter.

CHARLES A. POTTER.

Witnesses:

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HENRY T. CONANT.