(No Model.)

A. H. HULL.

SHUTTER WORKER.

No. 474,831. Patented May 17, 1892.

Fig. 1

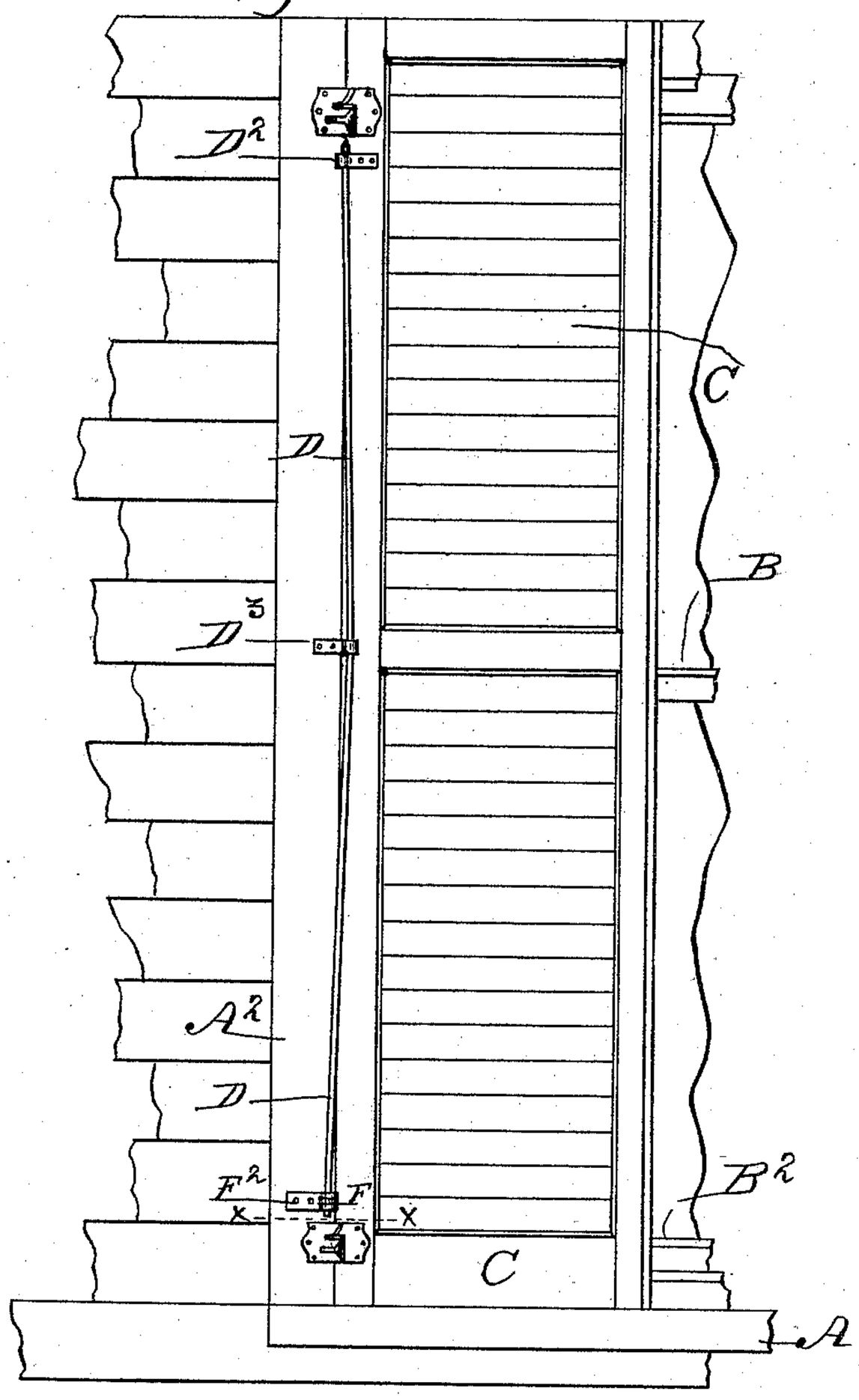


Fig. 2

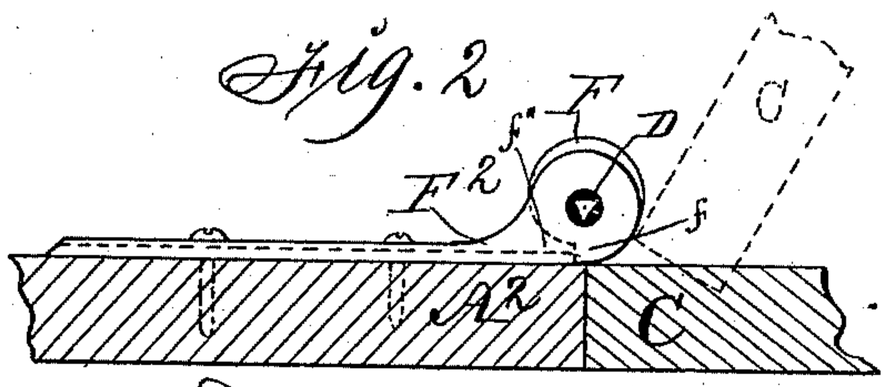
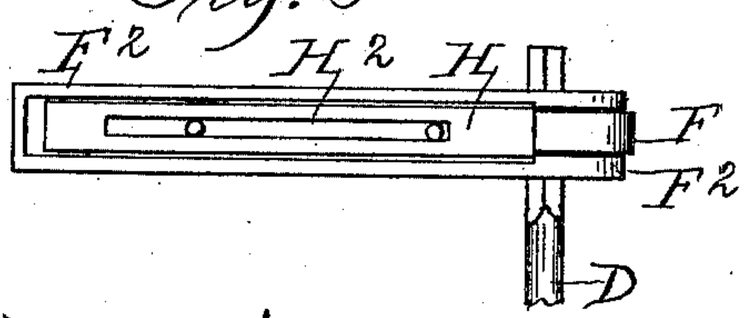


Fig. 3



Witnesses.
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R. H. Orwig.

Inventor: Abijah H. Hull,
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UNITED STATES PATENT OFFICE.

ABIJAH H. HULL, OF ODEBOLT, IOWA.

SHUTTER-WORKER.

SPECIFICATION forming part of Letters Patent No. 474,831, dated May 17, 1892.

Application filed August 5, 1891. Serial No. 401,768. (No model.)

To all whom it may concern:

Be it known that I, ABIJAH H. HULL, a citizen of the United States of America, and a resident of Odebolt, in the county of Sac and State of Iowa, have invented an Improved Shutter-Operating Device, of which the following is a specification.

My invention relates to that class of shutter-openers described in my application, Serial No. 385,973, filed in the United States Patent Office March 23, 1891.

My invention consists in the combination, with a hinged shutter-blind, of a spring-rod, a stop to engage the spring-rod, and a clip to engage the stop, as hereinafter set forth, pointed out in the claim, and illustrated in the accompanying drawings, in which—

Figure 1 is an outside view of a hinged shutter-blind closed and with my shutter-operating mechanism applied thereto as required for practical use. Fig. 2 is an enlarged sectional view looking upward from the line *x x* in Fig. 1. Fig. 3 is an enlarged rear face view of my clip and stop device for securing the shutter-actuating spring to the outside face-casing of the window.

Referring to the drawings, A designates the stool, and A^2 the window-casing, which may vary in size and style, as desired.

B and B^2 designate the upper and lower window-sashes, respectively, which are secured in the window-frame in the ordinary way.

C represents a shutter-blind secured to the casing A^2 of the window-frame by means of common automatically-locking hinges which lock when the shutter-blind is open.

D designates a steel spring-rod, which is preferably circular in cross-section and has angular end portions. One end of the spring-rod D, preferably the upper, is secured in an angular opening in a clip D^2, which is fixed to the shutter-blind. The central portion of said rod is confined in a circular opening in and supported by a clip D^3, which is fixed to the casing A^2. The other or lower end of said rod is confined in a circular opening in a clip F^2, which is fixed to the casing A^2. A dish-shaped stop F, having an angular central opening, is placed on the end of the spring-rod D and is mounted in the bifurcated end portion of the clip F^2. This opening in the stop F, through which the spring-rod D passes, is large enough to allow said rod to move freely endwise therethrough, as required, to allow the shutter-blind to drop into the automatically-locking hinge.

The clip F^2 is provided with a shoulder f'' to engage a projection f on the stop F, which shoulder f'' limits the rotation of said stop F in one direction. It is provided that the projection f of the stop F will cease to be engaged by the shoulder f'' of the clip F^2 just before the shutter-blind drops into the notches in the automatically-locking hinge. A metal plate H, having a central slot H^2, is adjustably connected to the rear face of the clip F^2 by means of the screw that fastened the clip F^2 to the casing. This screw passes through the clip F^2 and also through the slot H^2, and when sent home presses the clip F^2 down upon the metal plate H, holding the two parts fixed in the desired position. The metal plate is to take the place of the shoulder on the clip F to engage the projection f on the stop F at different positions when it is desired to increase or decrease the tension on the spring-rod D to operate large or small shutter-blinds with equal facility. It is therefore obvious that the metal plate H may be omitted.

In the practical operation of my invention when the shutter-blind is entirely open the spring-rod D has no power stored therein to effect any movement of the shutter-blind whatever, the projection f on the stop F will be free from engagement with the shoulder f'' on the clip F^2, and the spring-rod D will be free to move longitudinally through the opening in the stop F, so that the shutter-blind may be lifted, as required, to unlock the interlocking hinges preparatory to closing the shutter-blind. Swinging the shutter-blind inward toward the window rotates the spring-rod D and the stop F, bringing the projection f on the cam F into engagement with the shoulder f'' on the clip F^2, attached to the window-casing. This engagement of the stop F with the clip F^2 prevents the further rotation of the lower end of the spring-rod D in that same direction; but the further rotation of the shutter-blind continues to rotate the upper end of the spring-rod D, causing force

to be stored up in the spring-rod by the closing of the shutter-blind.

It is perfectly obvious from the foregoing description of the disposition of the spring-rod, stop, and clips that the normal resilience of the spring-rod will open the shutter-blind when the closing and retaining influence is relaxed.

I claim as my invention—

In a shutter-operating device, the combination, with a hinged shutter-blind, of a spring-rod one end of which is secured to the shutter-blind and the other end is confined in a clip that is secured to the window-casing, and a stop placed on the end of the spring-rod to engage a shoulder on the clip, to operate in the manner set forth, for the purposes stated.

ABIJAH H. HULL.

Witnesses:
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