(No Model.)

L. F. G. BOECKELMANN.

WINDOW SHUTTER.

No. 301,429. Patented July 1, 1884.

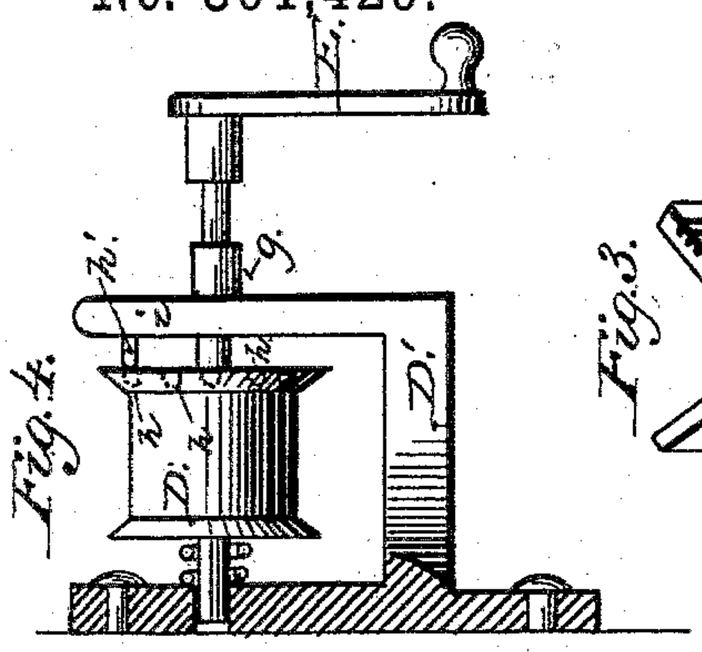

Fig. 4.

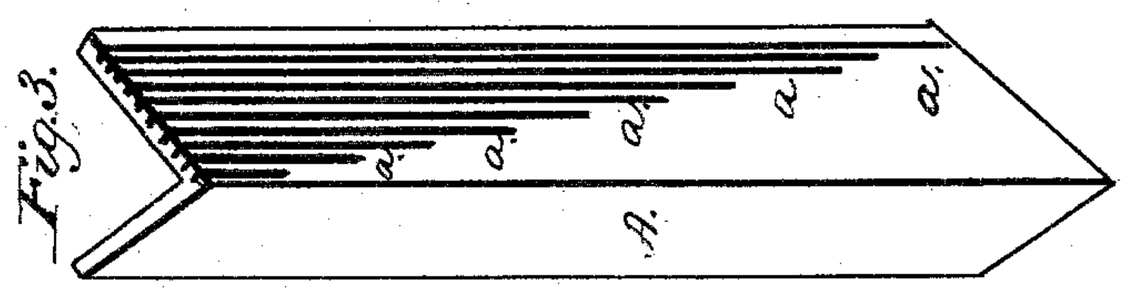

Fig. 3.

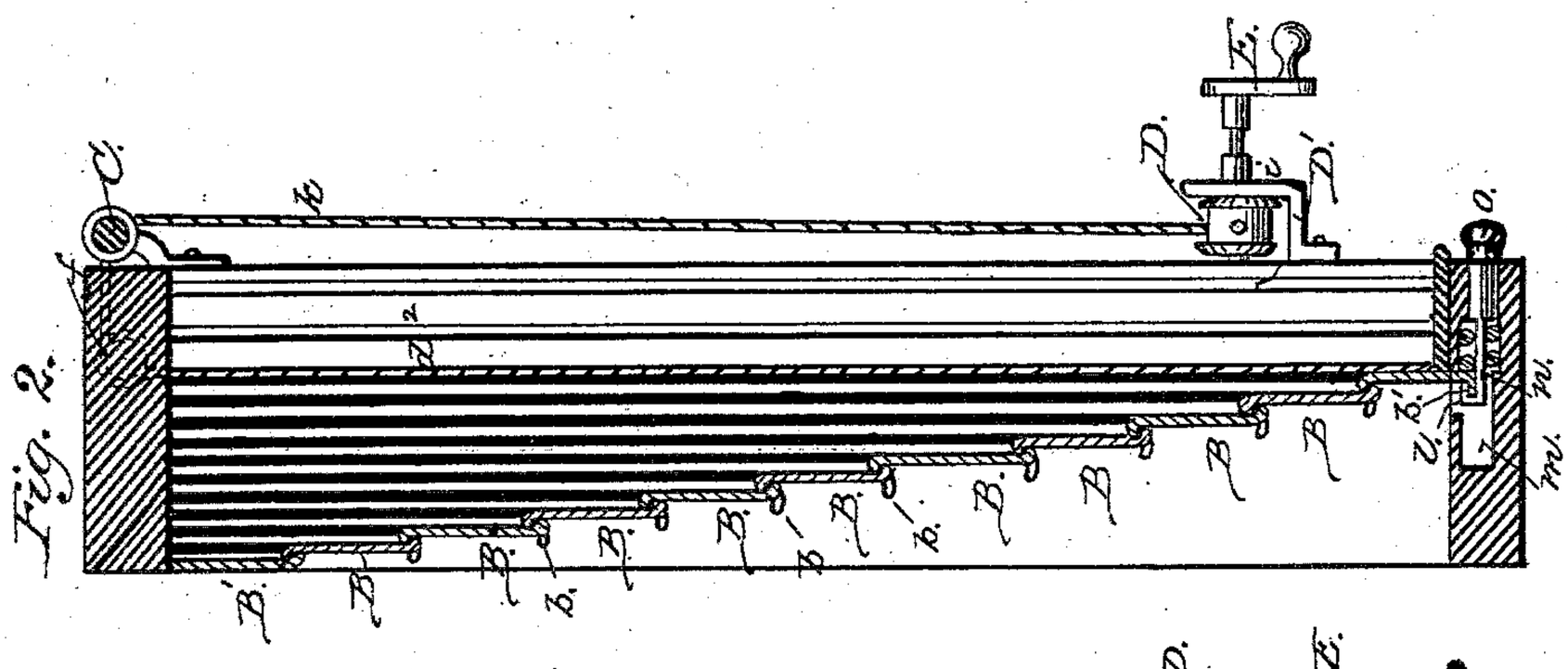

Fig. 2.

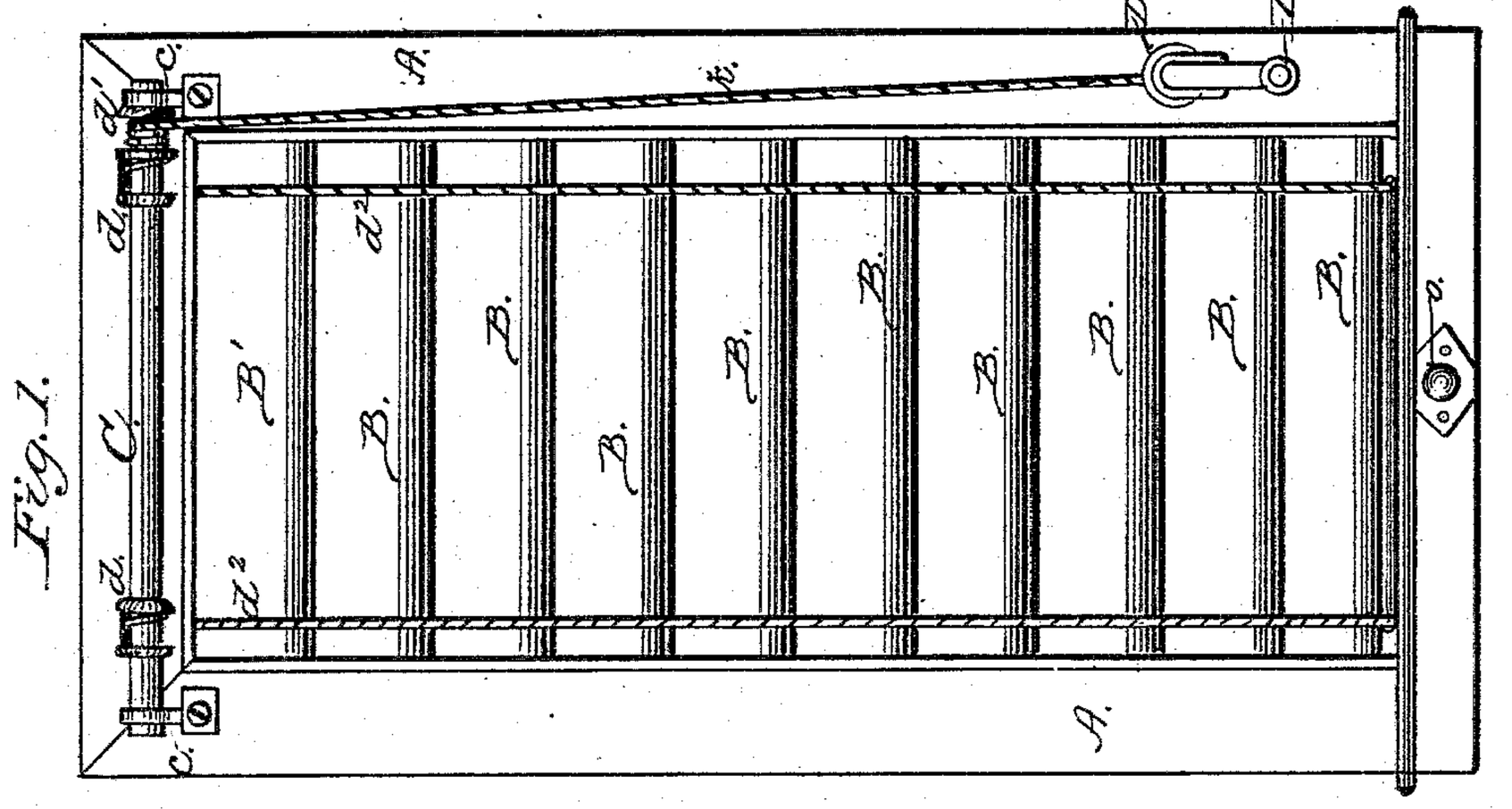

Fig. 1.

Witnesses:
C. Fred. Koller.
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Inventor:
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By Parker & Sweet Jr.
Atty.

UNITED STATES PATENT OFFICE.

LUDWIG F. G. BOECKELMANN, OF DAVENPORT, IOWA, ASSIGNOR OF ONE-HALF TO ALBERT MIEKLEY, OF SAME PLACE.

WINDOW-SHUTTER.

SPECIFICATION forming part of Letters Patent No. 301,429, dated July 1, 1884.

Application filed April 10, 1884. (No model.)

To all whom it may concern:

Be it known that I, LUDWIG F. G. BOECKELMANN, a citizen of the United States, residing at Davenport, in the county of Scott and State of Iowa, have invented certain new and useful Improvements in Window-Shutters; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention has relation to metallic shutters; and it consists in the construction and arrangement of parts, as will be hereinafter described, and particularly pointed out in the claim.

In the accompanying drawings, Figure 1 represents a rear elevation of my improvements; Fig. 2, a vertical longitudinal section thereof, and Figs. 3 and 4 detail sectional views.

Similar letters of reference indicate like parts in the several figures.

In carrying out my invention, which is designed more particularly to be applied to the ordinary door and window frames, I provide the outer exposed surfaces of the sides, top, and sills of said frames with right-angled metallic shields A, the shields upon the sides of the frames being provided with a series of narrow slits or grooves, *a*, arranged vertically side by side, and each successive slit or groove increasing in length from the top to the bottom of the frame, as fully shown in Fig. 3.

Within the grooves *a* are adapted to freely slide the ends of the metallic plates B, with the exception of the front upper plate, B′, which is rigidly secured within the first slot, which is of the same depth as the said plates B. All of the said plates B are of the same size and shape, and provided upon each lower corner with an outwardly-projecting lug, *b*, as shown, so that when the lower plate is raised the lugs *b* upon the same strike the lugs *b* of next plate above, and serve to raise the same, and so on, each succeeding plate being raised by the lugs of the one beneath until all are brought into position side by side behind the upper stationary plate, B′. The bottom and top of each plate B are bent over in reverse directions, so that the lapped or bent portion of the top of one plate laps over into the bent portion of the bottom of the plate above when all of the said plates are let down to close the frame, thereby providing a close and tight joint between each plate, as fully shown in Fig. 2.

Upon the inside upper frame of the window or door is provided a roller, C, which is journaled in the side brackets, *c*, and provided with three fixed spools, *d d* and *d′*, as shown.

Upon two of the spools, *d d*, are secured the one ends of cords or chains d^2, the opposite or lower ends of which are secured to rings or eyes *e* on the inside lower corners of the bottom plate, the said cords or chains d^2 running over small friction-rollers *f*, one on each side of the frame at the top.

Upon the side of the frame of the door or window, upon the interior, is provided a spool, D, having a rigid axle, *g*, the outer end of which is made square for the reception of the wrench or crank E, said axle being journaled in a bracket, D′, secured to the frame.

Upon the outer face of the spool D is provided a series of small circular holes, *h*, while upon the inner face of the upwardly-projecting arm *i* of the bracket D′ is provided a pin, *h′*, which is adapted to engage with the holes in the face of said spool to hold it at any desired point. The lower end of a cord or chain, *k*, is secured to the periphery of said spool D, while the upper end of the cord or chain is secured to the fixed spool *d′* upon the roller C. When the plates B are down in a closed position, the cords or chains d^2 are drawn off the spools *d d*, and the cord or chain *k* is wound around the spool *d′*; but the operation of raising the said plates B by means of the crank E draws the cord or chain *k* from the spool *d′* onto the spool D, and winds the cords or chains d^2 d^2 upon the spools *d d* of the roller C.

In the center of the sill of the window or door is provided a slot, *l*, which connects with a recess, *m*, arranged at right angles thereto, as shown in Fig. 2. Within said recess *m* is secured a spring-plate, *n*, which is provided with

a push knob or lever, *o*. Upon the bottom of the lower plate B, and at the center of the same, are arranged two right-angled lugs, *b'*, which are adapted to project down into the slot *l* and catch under the edge of the spring-plate *n*, to lock the sections in place when they are lowered to close the door or window. By pressing upon the push knob or lever *o* the said lugs *b'* are released from contact with the fastening-plate *n*.

I am aware of Patents No. 140,839, of July 15, 1873, No. 129,435, of July 16, 1872, and English Patent No. 3,193 of 1863, and I do not claim such construction as is shown in any of them.

Having thus described my invention, what I claim as new and useful is—

The combination, with the grooved shields A, of the stationary plate B' and the sliding plates B, having interlocking flanges, the friction-rollers *f*, pulleys C, the cord *k*, the spool D and crank, and the push-knob *o*, all arranged to operate substantially in the manner specified.

In testimony whereof I affix my signature in presence of two witnesses.

LUDWIG F. G. BOECKELMANN.

Witnesses:

A. JACKSON HIRSCHL,

E. HUGO SCHMIDT.