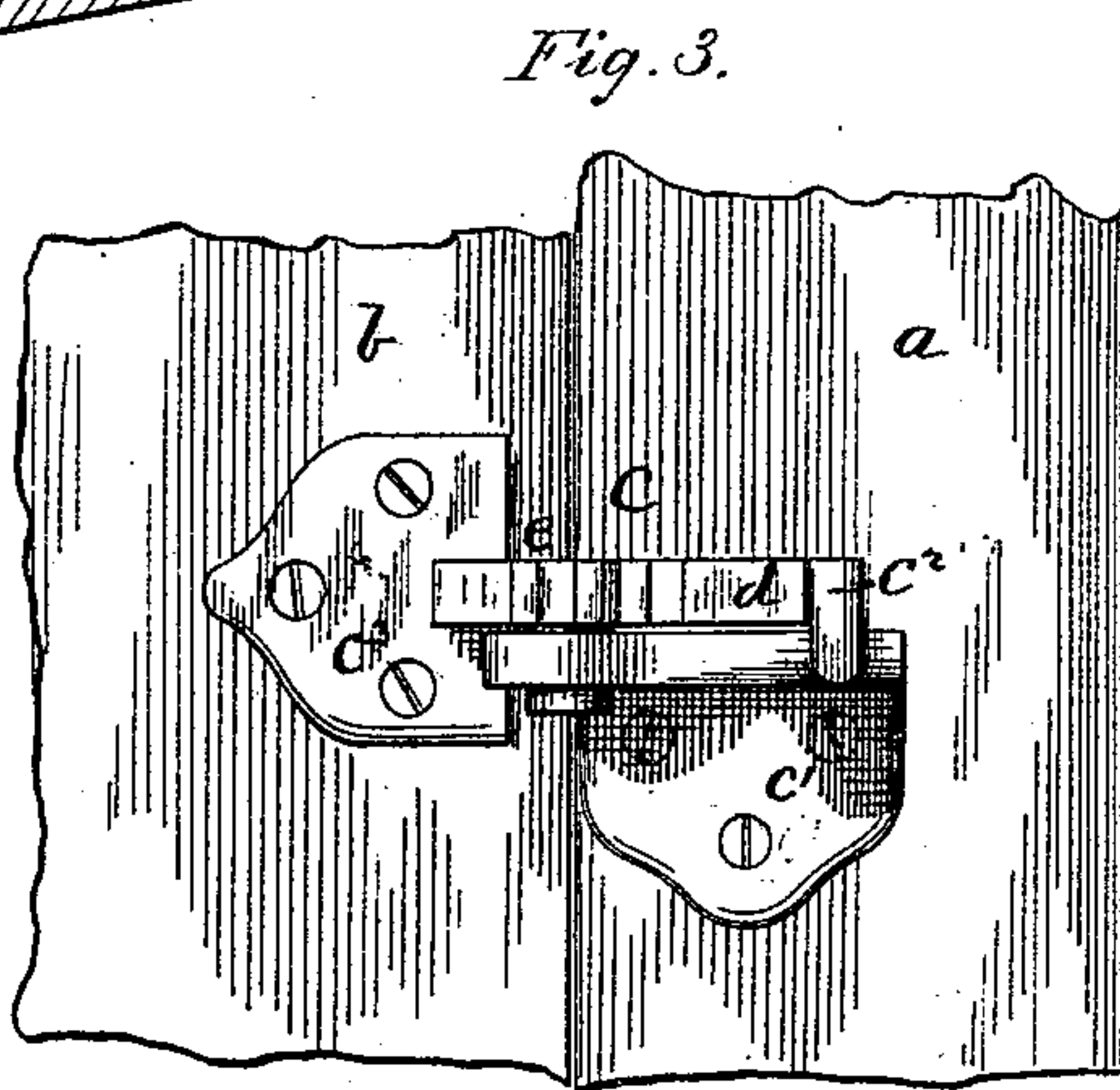
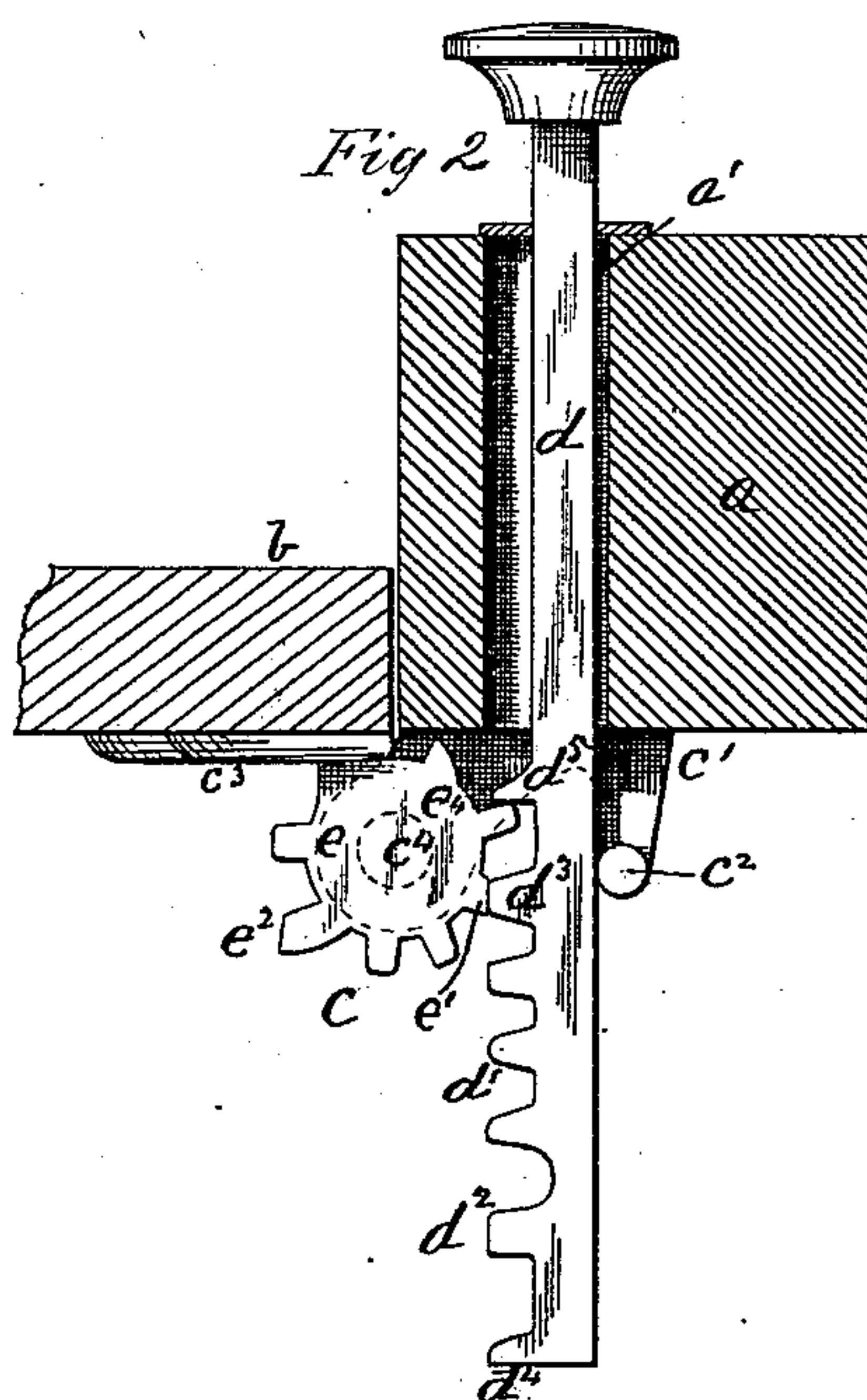
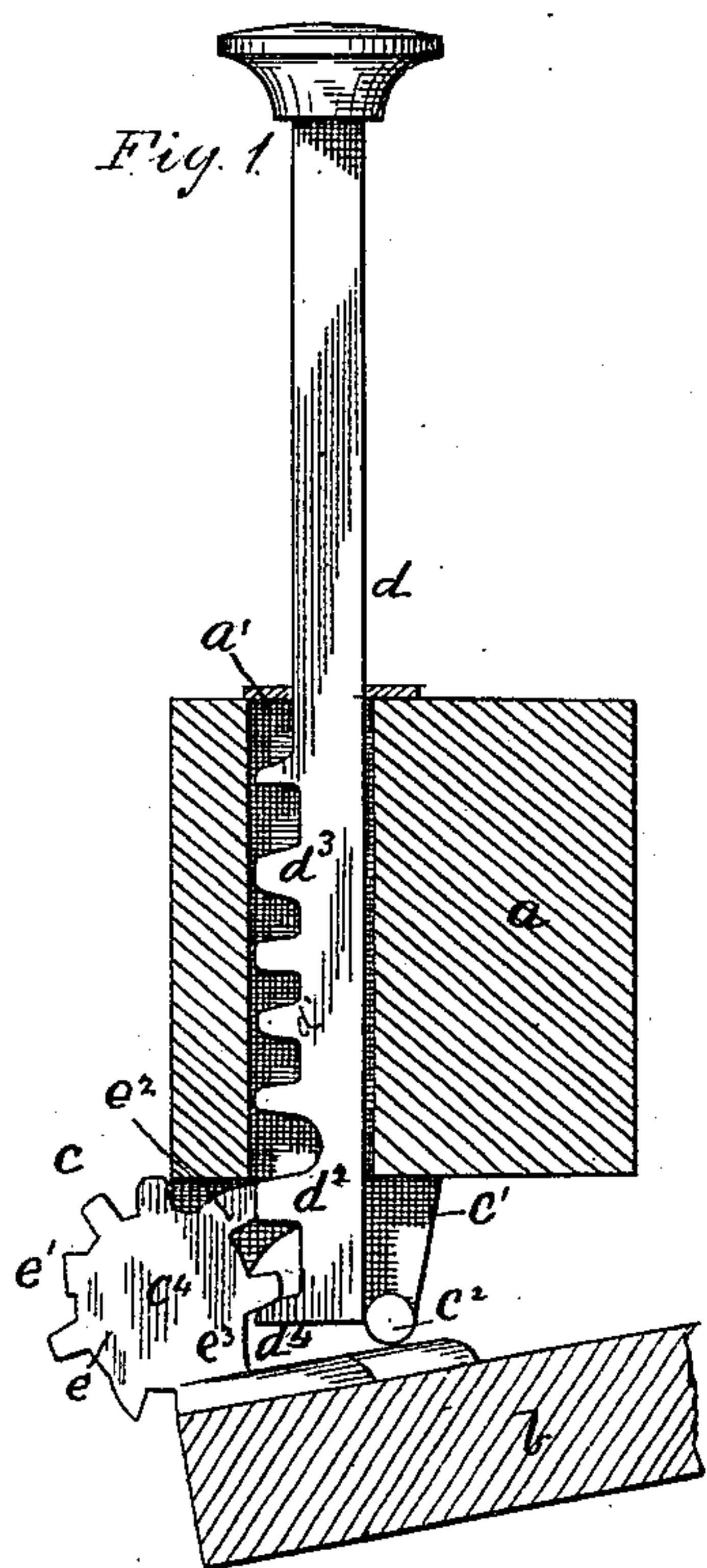


L. J. LANPHERE.
Shutter Worker.

No. 230,026.

Patented July 13, 1880.



Witnesses:

F. D. Thomson
J. B. Helderby.

Lydia J. Lanphere ^{Inventor!}
By R. B. V. A. Lacey, attorneys

UNITED STATES PATENT OFFICE.

LYDIA J. LANPHERE, OF WATERLOO, IOWA.

SHUTTER-WORKER.

SPECIFICATION forming part of Letters Patent No. 230,026, dated July 13, 1880.

Application filed January 5, 1880.

To all whom it may concern:

Be it known that I, LYDIA J. LANPHERE, of Waterloo, in the county of Black Hawk and State of Iowa, have invented certain new and
5 useful Improvements in Shutter-Workers; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it pertains to make and use the
10 same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention has for its object to furnish a simple, cheap, and durable shutter-worker.

15 I will first describe my invention, and then specifically point it out in the claim.

In the drawings, Figures 1 and 2 are horizontal sections of a window frame and shutter with my invention attached thereto, showing
20 the shutter open and closed. Fig. 3 is a front view of a portion of a window frame and shutter with my invention applied thereto.

a is the window-casing. *b* is the shutter, and *c* represents the lower hinge of the shutter.

25 The upper hinge may be of any ordinary form. The invention is applied only to the lower hinge.

The casing *a* has a horizontal mortise, *a'*, in which is placed a sliding bar, *d*, on the outer
30 end of which is formed a rack, *d'*. The rack *d'* has the cog *d²* next the last at its outer end formed with a flat top or end, as shown, and has the cog *d³* next the last at its inner end similarly formed. The end cogs of the rack
35 have a slightly wider space between them and the cogs *d²* *d³* than is between the other cogs thereon. The object of this is to permit the flat-top cogs to pass onto the top of corresponding cogs on the pinion of this hinge, here-
40 inafter described.

The lower leaf, *c'*, of the hinge has a projection and guide-pin, *c²*, arranged so that the back of the bar *d* will bear against it. This pin is employed so that less accuracy need be
45 observed in forming the mortise *a'*. The bar can be supported by the side of the mortise;

but this would require great nicety in forming said mortise with reference to the hinge. The use of the pin *c²* obviates this exactness in construction.

On the knuckle *c⁴* of the leaf *c³* I form a pin-
ion, *e*, which is engaged by the rack *d'* on the rack-bar *d*. On opposite sides of the pinion I form two flat-top cogs, *e'* *e²*, so arranged that they will engage on the tops of the cogs *d²* *d³*, 55 as hereinafter explained.

I have shown the pintle of the hinges *c* attached to the leaf *c³*; but this is done for convenience. The pintle may be put on the leaf *c'* and a hole formed through the pinion *e* to 60 rest over it.

The operation of the device is very simple. In Fig. 1 the shutter is open and locked by having the teeth *d²* and *e²* with their ends abutting and the end stop-cog, *d⁴*, of the rack-bar 65 pressed against the cog *e³* of the pinion. Push the bar *d* from the position in Fig. 1 to the position shown in Fig. 2. The cog *d²* will be thrown off the cog *e²*, and the rack will engage the pinion and turn it, closing the shutter and 70 bringing the end of the cog *d³* to abut against the end of the pinion-cog *e'* and the stop-cog *d⁵* against the side of the cog *e⁴*, thereby locking the shutter.

Having described my invention, what I claim 75 is—

The combination, with the hinge of a window-shutter and the frame *a*, of the pinion *e*, fixed to the leaf *c³*, and having the cogs *e'* *e²*, formed with flat ends and arranged as de- 80 scribed, and the rack-bar *d*, having the rack *d'* with the flat-top cogs *d²* *d³* at its ends, and the stop-cogs *d⁴* *d⁵*, arranged to operate substantially as and for the purposes set forth.

In testimony that I claim the foregoing as 85 my own I affix my signature in presence of two witnesses.

LYDIA J. LANPHERE.

Witnesses:

J. B. HOLDERLY,
PERRY GRINE.