

A. I. EARLE.

Stop-Motion for Drawing Frames.

No. 138,868.

Patented May 13, 1873.

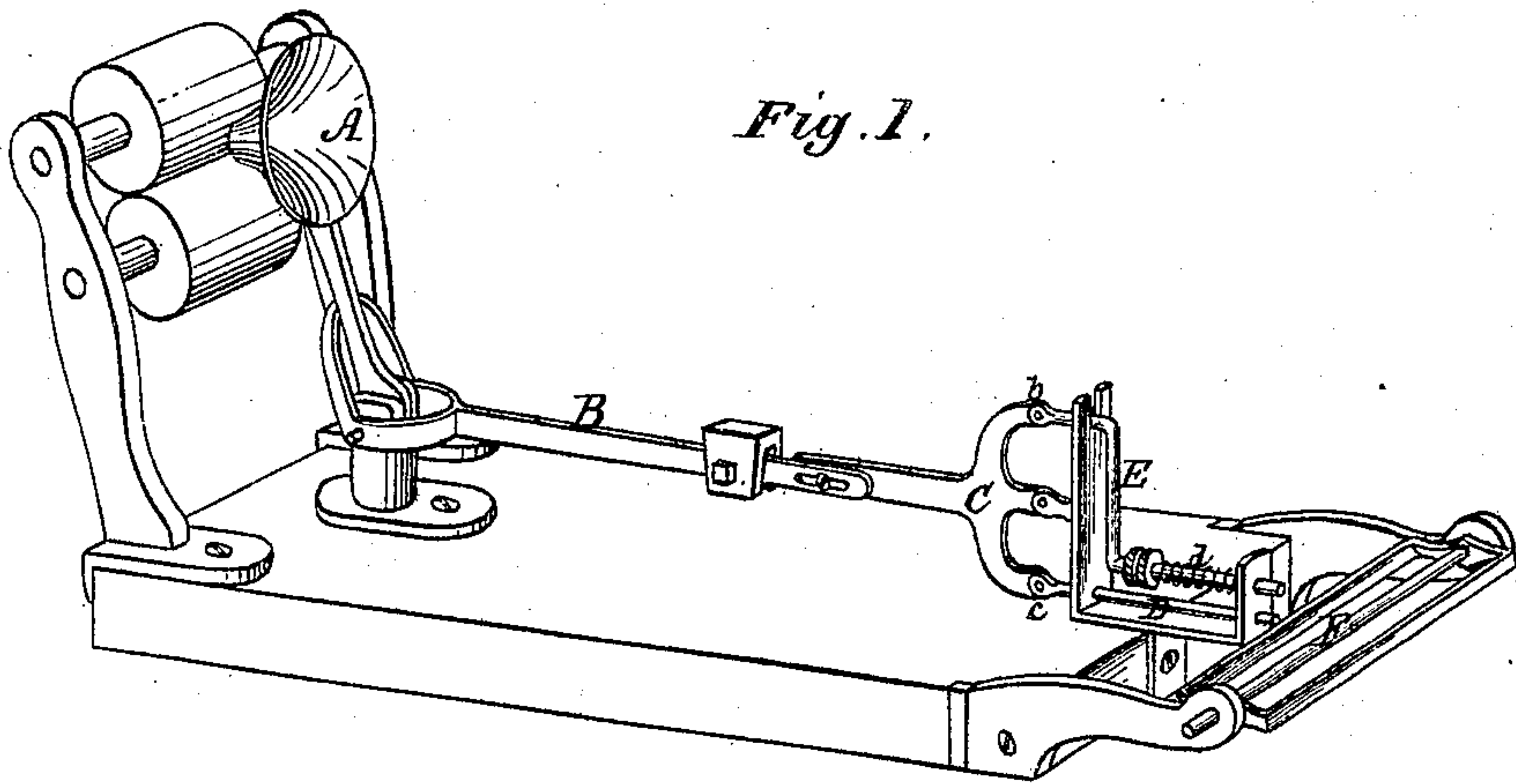


Fig. 1.

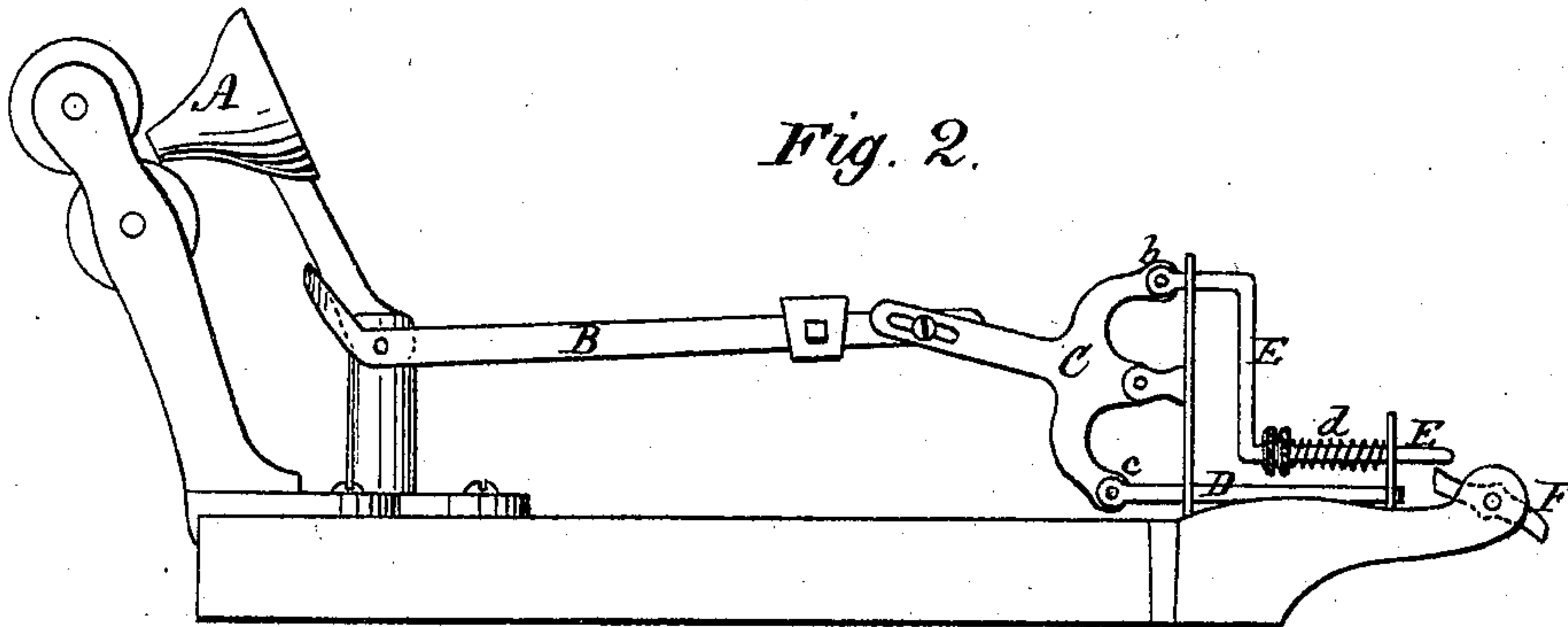


Fig. 2.

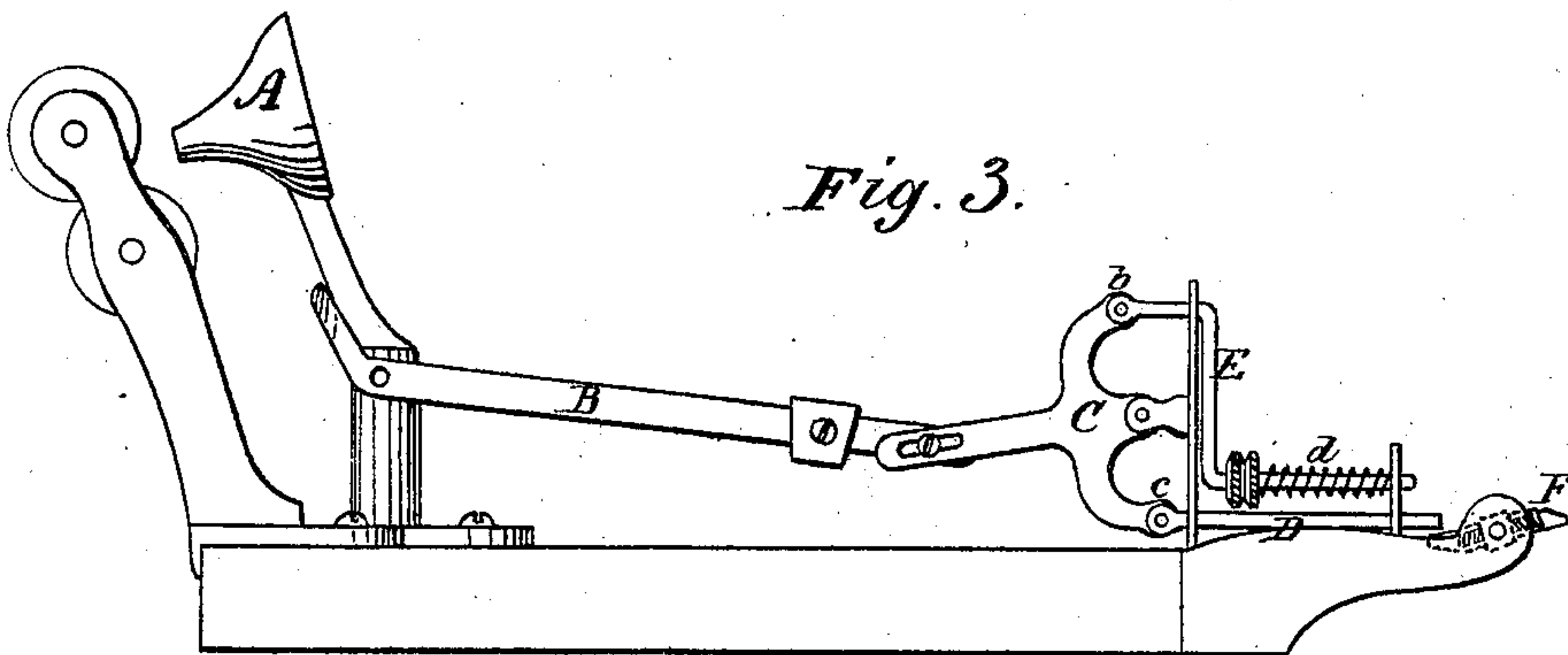


Fig. 3.

Witnesses.  
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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN STOP-MOTIONS FOR DRAWING-FRAMES, &c.

Specification forming part of Letters Patent No. **138,868**, dated May 13, 1873; application filed April 22, 1873.

*To all whom it may concern:*

Be it known that I, ANTHONY I. EARLE, of Valley Falls, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Stop-Motions for Drawing-Frames, &c.

My invention relates to that class of stop-motions which rely for operation upon that undue backward or forward movement of the trumpet, which occurs on the breakage of the slivers, or the reception in the trumpet of an objectionable "bunch;" and consists in the combination of the trumpet with a novel system of levers and bolts, whereby the latter may be promptly placed in locking contact with a revolving member in the machine, which controls the shipping mechanism, whenever the trumpet is permitted to fall back, or whenever it is subjected to any undue forward movement; and I do hereby declare that the following specification, taken in connection with the accompanying drawing forming a part thereof, is a true and clear description of my invention.

Referring to the drawing, Figure 1 represents, in perspective, one of my stop-motions with the trumpet in proper running position. Fig. 2 represents the same in side elevation, with the trumpet thrown forward as if by a bunch. Fig. 3 represents the same with the trumpet fallen back, as if the slivers had been broken.

A, in both figures, denotes the trumpet. It is mounted on a vibrating arm, which is pivoted at its base to a proper standard, and is capable of freely swinging to and from the bite of the delivery or condensing rolls. The several slivers are led from the drawing-rolls, through the trumpet to the condensing-rolls, in the usual manner. B denotes the trumpet-lever. It is usually provided with a weight, adjustable longitudinally thereon, and is pivoted to the standard which supports the trumpet-arm. The lower portion of the trumpet-arm is embraced loosely by a portion of the trumpet-lever, and is arranged to engage therewith, so that a forward movement of the trumpet will raise the weighted end of the lever, and also so that a backward movement of the trumpet will permit the weighted end of the lever to fall. C denotes a bolt-operating lever,

to one end of which the end of the trumpet-lever is attached by a slotted connection. It is secured at its opposite end to a vertical standard by means of a pin-joint, and is provided with an upwardly-projecting arm, *b*, and a downwardly-projecting arm, *c*. D denotes the breakage-bolt. It is fitted to bearings in suitable standards, and is secured by a pin-joint in the arm *c* of the lever C. E denotes the bunch-bolt. It is partially parallel with the bolt C, but it is also bent upwardly, and passes through the standard to the arm *b* of the lever C, to which it is hinged. The lower longitudinal portion of this bolt is embraced by an expansive spiral spring, *d*, and an adjustable nut is fitted on the bolt, so that the spring may be made, in a manner well known, to exercise any desired degree of pressure of which it may be capable. F denotes a wheel, which is to be connected with the belt-shipper or a clutch, in a manner well known.

The operation of my stop-motion is as follows: The trumpet, being arranged to receive and condense a certain number of slivers, is so set that the forward strain of the slivers and their friction on the interior of the trumpet will maintain it in a position substantially as shown in Fig. 1, whereby the weighted end of the trumpet-lever will be kept properly elevated, and both bolts so far withdrawn as to be free from contact with the wheel F. On the breakage of a single sliver, the trumpet will fail to be kept in proper position, and on falling back the bolt D will be thrown forward, and the machine stopped.

Of course, there is the same result when an absolute break occurs. When a small light bunch enters the trumpet, the latter will, of course, be carried forward toward the condensing or delivery rolls. In making this forward movement, the trumpet-lever has not only to be lifted, but the spring on the bolt E has also to be gradually overcome, and by this gradually increasing resistance the light bunches will be drawn out without stopping the machine. If an objectionable bunch enters the trumpet, it will not only raise the lever, but overcome the spring, and throw forward the bunch-bolt, and thereby stop the machine. The operator, by experience and practice, can soon determine what kind of bunches can be

drawn out successfully without injury, and then so set the spring that it will present the degree of resistance essential for the purpose.

The spring *d* may be of sufficient length to assist the trumpet-lever in its downward movement; or it can be made so short that, when the trumpet is in proper operative position, it can exercise no backward force on the bolt.

In order to secure a nice and accurate adjustment, the wheel *F* may be provided with a right-and-left-hand screw, and two head-blocks, fitted to engage with the bolts, whereby, on turning the screw, both blocks may be evenly advanced or withdrawn radially from

or toward the axis of the wheel, as illustrated in Fig. 3.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

The bolts *E* and *D*, the bolt-lever *C*, trumpet-lever *B*, and trumpet, in combination and arranged with relation to the belt-shipping or clutch-operating device of a drawing-frame, substantially as described.

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Witnesses:

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