

H. S. HOUGHTON.  
 Stop-Motion for Drawing-Frames.

No. 198,112.

Patented Dec. 11, 1877.

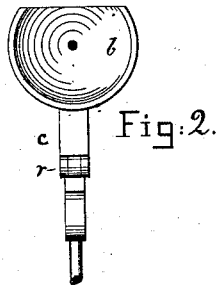
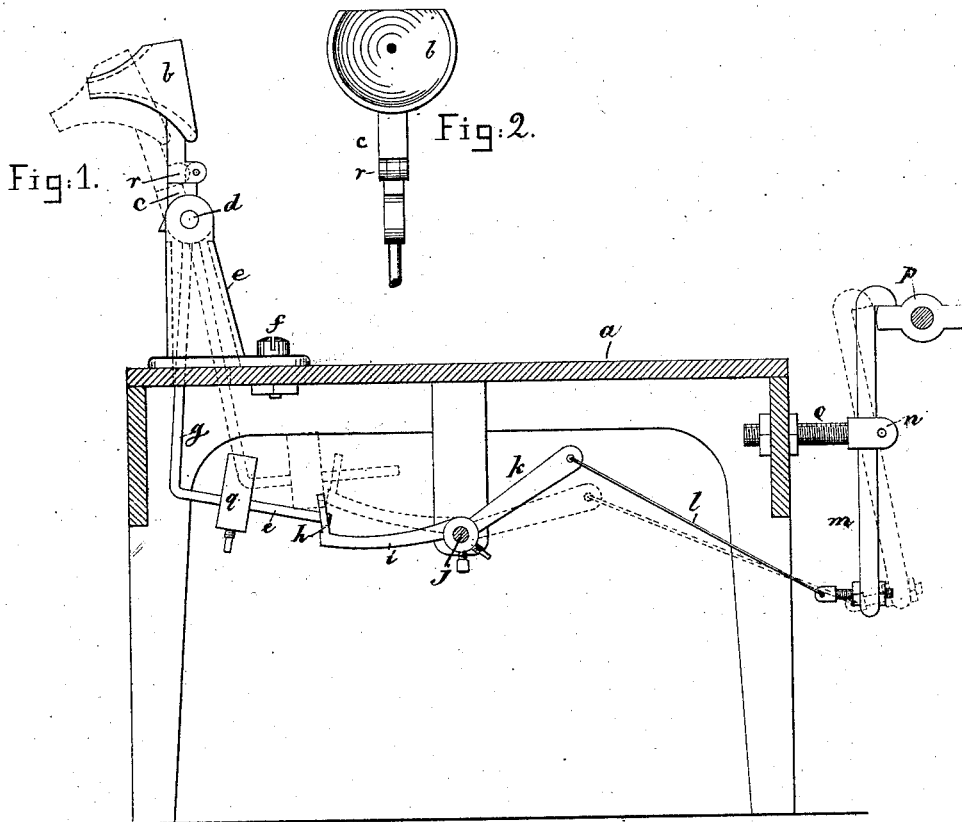
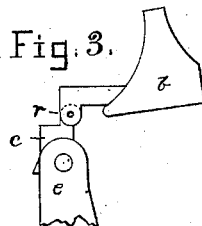


Fig. 3.



Witnesses.  
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*S. C. Perkins.*

Inventor.  
*Henry S. Houghton*  
 by *Ernest S. Morgan* Attys

# UNITED STATES PATENT OFFICE.

HENRY S. HOUGHTON, OF SMITHVILLE, MASSACHUSETTS.

## IMPROVEMENT IN STOP-MOTIONS FOR DRAWING-FRAMES.

Specification forming part of Letters Patent No. **198,112**, dated December 11, 1877; application filed August 21, 1877.

*To all whom it may concern:*

Be it known that I, HENRY S. HOUGHTON, of Smithville, in the county of Worcester and State of Massachusetts, have invented an Improved Stop-Motion for Drawing-Frames, of which the following is a specification:

This invention relates to stopping mechanism for drawing-frames and railway-heads, to stop the same when the sliver breaks or becomes too small.

In most drawing-frames commonly used prior to my invention the connecting devices between the trumpet and the usual "stop-wheel," or equivalent, have been located above the top plate or roller-beam of the machine, and just below the rollers.

In this my present invention, and in another application filed concurrently with it, I have arranged such devices below the roller-beam, where they are not liable to be clogged with waste or with broken slivers.

In other drawing-frames, as heretofore made, a catch and stop-wheel, or equivalent, have been employed for each trumpet; but in this application, as well as in the other one herein referred to, I employ but one catch and stop-wheel for each frame, no matter how many trumpets are employed thereon.

In this invention the lower end of the arm of the trumpet-lever is extended below the top plate or roller-beam of the drawing-frame, upon which the usual rollers and roller-stands rest, and is then connected with the movable catch operated upon by the stop-wheel through suitable connecting means—shown in this instance as a rock-shaft having arms and a link or chain.

Figure 1 represents, in side elevation, the frame being in section, sufficient portion of a drawing-frame to illustrate a practical embodiment of this invention; Fig. 2, a view of the trumpet detached, and Fig. 3 a view of the trumpet turned back at its joint.

The frame-work of the drawing-frame, made in any usual form, has a top plate or roller-beam, *a*, above which will be arranged the usual drawing-rollers, while in front of the trumpet will be placed other compacting-rollers, all in the usual manner, such rollers being too well known to be herein described.

The trumpet *b* is placed at the top of a

trumpet-arm, *c*, pivoted at *d* to the trumpet-stand *e*, attached to the top plate or roller-beam *a* by a screw, *f*. The lower longer end of the trumpet-carrying arm is extended below the top plate or roller-beam, is bent forward, as at *e*, and, in this instance, the extreme end of such arm enters a slot in a piece, *h*, forming part of an arm, *i*, projecting from a rock-shaft, *j*, there being one such arm and slotted piece for each trumpet. This rock-shaft has projecting from it an arm, *k*, connected by a wire, rod, or chain, *l*, with a catch or equivalent, *m*, pivoted at *n* on, preferably, an adjustable stud, *o*, such catch being so pivoted and operated from such rock-shaft as to be moved, so as to remain out of the range of, or so as to be engaged by, a stop-wheel, *p*, or equivalent device, of any usual belt-shifting mechanism used in connection with drawing-frames.

The portion *g* of the arm is provided with an adjustable weight, *q*, so placed thereon as to throw the trumpet into the position shown in full lines when the sliver breaks or becomes too small to hold the trumpet forward, as in dotted lines.

When the sliver is passing through the trumpet, and the frame is working properly, the parts will be as in the position denoted by dotted lines; but if the sliver breaks or becomes too small, then the weight comes into operation and moves the parts into the position shown in dotted lines, in which position the catch will come into the range of the stop-wheel, and the machine will be stopped in the usual way.

The end of the arm *i* might enter a slotted piece or looped portion connected with the arm *g*. This would be the converse of and the obvious equivalent of the connection before described.

The connecting devices between the arm *g* and the stopping devices are of a very simple and efficient form, and they may be somewhat modified without departing from the invention.

The upper or shorter portion of the trumpet-arm is divided or jointed, as at *r*, so that it may be turned back, (see Fig. 3,) so as to carry the delivery end of the trumpet far enough away from the rollers in front of it to permit the operator to handle it freely when thread-

ing it, drawing through a knot, or piercing a sliver.

The upper portion of the trumpet may be cut away, if desired, to permit the operator to insert her fingers farther into the trumpet when threading to facilitate that operation.

I claim—

1. The roller-beam, the trumpet, its arm *c*, pivoted at *d*, to turn only in an arc of a vertical circle intersecting the axes of the rollers substantially at right angles, and, extended below the roller-beam, the adjustable weight *g*, carried by the arm, to turn the trumpet, as described, and a catch, in combination with connecting mechanism between the catch and arm *c*, to operate the catch to stop the drawing-frame, substantially as described.

2. The trumpet and its pivoted arm *c*, provided with a joint, *r*, to permit the trumpet to be turned back, substantially as and for the purpose described.

3. A trumpet and its pivoted carrying-arm *c*, extended below the top plate, in combination with arms *i k* and mechanism, substantially as described, for stopping the frame when the sliver is imperfect, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HENRY S. HOUGHTON.

Witnesses:

G. W. GREGORY,  
S. B. KIDDER.