I. N. EDGERLY.

STOP-MOTION FOR DRAWING FRAMES.

No. 181,059. Patented Aug. 15, 1876.

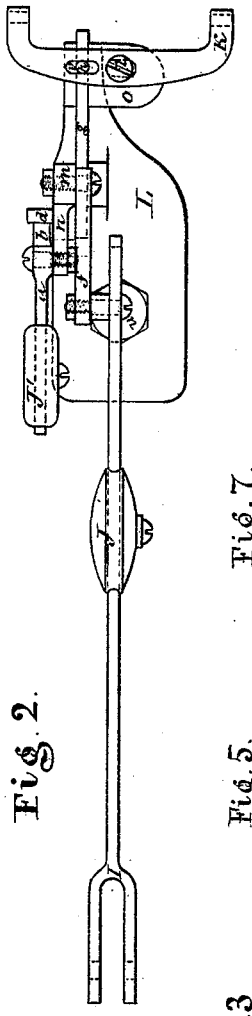

Fig. 2.

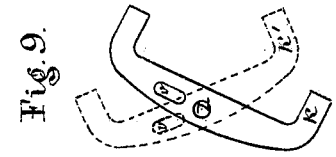

Fig. 9.

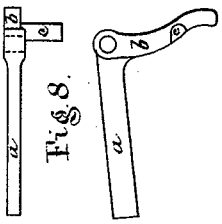

Fig. 7. Fig. 8.

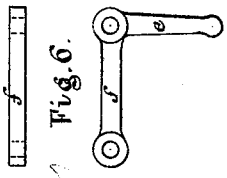

Fig. 5. Fig. 6.

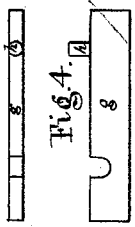

Fig. 3. Fig. 4.

Fig. 1.

Witnesses.
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ISAAC N. EDGERLY, OF GROSVENORDALE, CONNECTICUT.

IMPROVEMENT IN STOP-MOTIONS FOR DRAWING-FRAMES.

Specification forming part of Letters Patent No. **181,059**, dated August 15, 1876; application filed March 20, 1876.

To all whom it may concern:

Be it known that I, ISAAC N. EDGERLY, of Grosvenordale, in the town of Thompson, county of Windham, and State of Connecticut, have invented a new and useful Improvement in Stop-Motion for Drawing-Frames, fully set forth in the following specification, reference being had to the accompanying drawings, making part of this specification, and to the letters of reference marked thereon.

Until within a few years the stop-motions of drawing-frames were operated by a "guide" to each "boss," having a trumpet or other shaped sliver-guide at the upper end, and a catch at the lower end, with a pivot between the trumpet and catch. These are placed between the sliver-cans and back rolls. Near the lower or catch part of the guides are revolving bars *p*, driven by gears from the drawing-rolls. The slivers drawing through the guides hold the catches clear of the revolving bars *p*; but when a sliver breaks or a can gives out, the friction of a sliver no longer holding the trumpet part up, a catch drops, so as to catch and hold the revolving bars *p*, which are connected with a shipper operating the belt for stopping the machine. As the art progressed, and competition became stronger, it was found that greater evenness was desirable in the work of drawing-frames. After doubling, or other combination of slivers of the different cans, at the drawing-rolls, the sliver was formerly run through an unyielding trumpet near the calender or delivering rolls; so there was no way of telling whether the sliver was greater or less than wanted as it passed to the delivery-rolls.

In 1872 a patent was granted to Hayden for a combination by which, whether the sliver was too large or too small, in passing through the trumpet at the delivery side, it stopped the machine. This was found to be a useful invention, but not perfect; and since the patent of Hayden, above referred to, Messrs. Earle, Sweet, and Dawson have obtained patents for contrivances resulting from their endeavors to make improvements in this kind of stop-motion.

The object of my invention is to produce one that shall be economical, work lightly and directly; be so it can be varied, and be more sensitive and ready in its action upon the revolving bars or stop-wheel *p* than any other known.

Having described the nature and objects of my invention, I will now describe its construction and operation.

Figure 1 is a side elevation of my stop-motion on the table of a drawing-frame, showing also the trumpet and delivery calender-rolls, and the revolving bars or stop-wheel *p* at the rear side of the machine. Fig. 2 is a plan of my stop-motion. Figs. 3, 4, 5, 6, 7, 8, and 9 are details.

In Fig. 1, S is the top of a drawing-frame table. *t t'* are the calender-rolls which convey the sliver to the delivery-can. *r* is the trumpet-stand, fixed to the table S. *q* is the trumpet, having a wide mouth, narrowing to a very small hole near the calender-rolls, on going through which the sliver is very much condensed. I is a lever, which connects the trumpet with the parts of the stop-motion at the rear side of the machine. The head end of this lever has a fork long enough to embrace the trumpet-stem and allow of the trumpet being thrown back far enough, not only for its play in operating the stop, but so as to give free access for clearing the calender-rolls when needful. The pin *x* secures the trumpet *q* and lever I to the trumpet-stand *r*, but so the trumpet and lever can turn freely upon the pin *x*. *q'* is the part of the trumpet-stem extended to bear against the under side of lever I directly. *p* is the stop-wheel, made as they have been for over twenty years, and is supported by stands from the back side of the table S, and made usually of two bars secured to a revolving shaft, which is driven by gears from the bottom or fluted rolls of a drawing-frame.

L is a stand, secured to the top of the table by a bolt, *u*, in a slot, so as to admit of its being moved to and from the stop-wheel *p* for adjustment. The parts *n* and *m* are cast upon the stand L, for supporting the bell-cranks *f e* and *a b*, which are pivoted to them for guiding the sliding bar *g*. The bell-crank *a b* is prevented from going too far by a stop, *d*, on the stand L. The contact or lock bar K is pivoted to the stand L at *z*. The part *o* of the stand L is slotted to admit of varying the dis-

tance between the axis *z* and pin *h*, for reasons which will be referred to. The bar K has a slot, *v*, to receive the pin *h* of the slide *g*, which slot is made near the pivoting part *z* of the bar K, and by the relative positions of *h* and *z* the limit of motion of the contact-arms of the bar K can be increased or diminished, and thus the sensitiveness of the stop-motion can be governed. If the arms *f* and *e* are equal, and the pin is at one-fourth the distance from the pivot *z* to the end of the bar K, the motion of the ends of the bar K will be three times as great as the ends of the arms of the bell-crank *f e* in the same time, and as this bar K is in a horizontal and convenient position, its length can be increased or diminished without difficulty. The adjustable weights J J′ are for aids in controlling the sensitiveness of the stop-motion. Though not desirable to have the machine constantly stopping, you do want the stop to occur very soon when the sliver is much increased or diminished, and this is accomplished as above described.

I will now describe its operation: When the desired size of sliver is running through the trumpet *q* the bar K will remain in the position indicated by Figs. 1 and 2, the friction of the sliver in the trumpet holding the lever, &c., in the positions there indicated. If the sliver becomes too large the trumpet will be drawn toward the calender-rolls, raising the lever I and the weights J J′, and the arm *e* will draw the sliding bar *g*, and the pin *h*, which works in the slot *v* of the bar K, will cause the slotted arm of the bar K to recede from the stop-wheel, and cause the other contact end to advance so as to be in the position indicated by dotted lines in Fig. 9, and to come into the path of the revolving bars or stop-wheel *p*, and cause the shipper to move the belt onto the loose pulley in the usual way. When the sliver is too small it will no longer hold up the trumpet, which will fall back, and the long arm of the lever I will drop, causing the arm *e* to move the slide *g*, with its pin *h*, toward the stop-wheel *p*, and the bar K will be in the position indicated by the solid lines in Fig. 9. The bell-crank *a b* is for throwing the bar K into the position shown in Figs. 1 and 2, after it has been operated on by too large a sliver, by means of an arm, *c*, on the bell-crank, which moves the slide *g* and the bar K.

Having described its construction and operation, what I claim as my invention, and desire to secure by Letters Patent, is—

1. The bar K, provided with slot *v*, trumpet-lever I, weight J, and trumpet *q q′*, stand L, with slotted extension *o*, slide *g*, having pin *h*, bell crank *f e*, and pivot *z*, in combination with the belt-shipping or clutch mechanism of a drawing-frame, as and for the purposes described.

2. In combination with the bar K, provided with slot *v*, trumpet-lever I, weight J, and trumpet *q q′*, stand L, with slotted extension *o* and strap *d*, slide *g*, with pin *h*, bell-crank *f e*, and pivot *z*, the bell-crank *a b*, having an arm, *c*, and weight J′, as and for the purposes described.

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Witnesses:

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