W. R. HANDY.

STOP MECHANISM FOR DRAWING FRAMES.

No. 183,844. Patented Oct. 31, 1876.

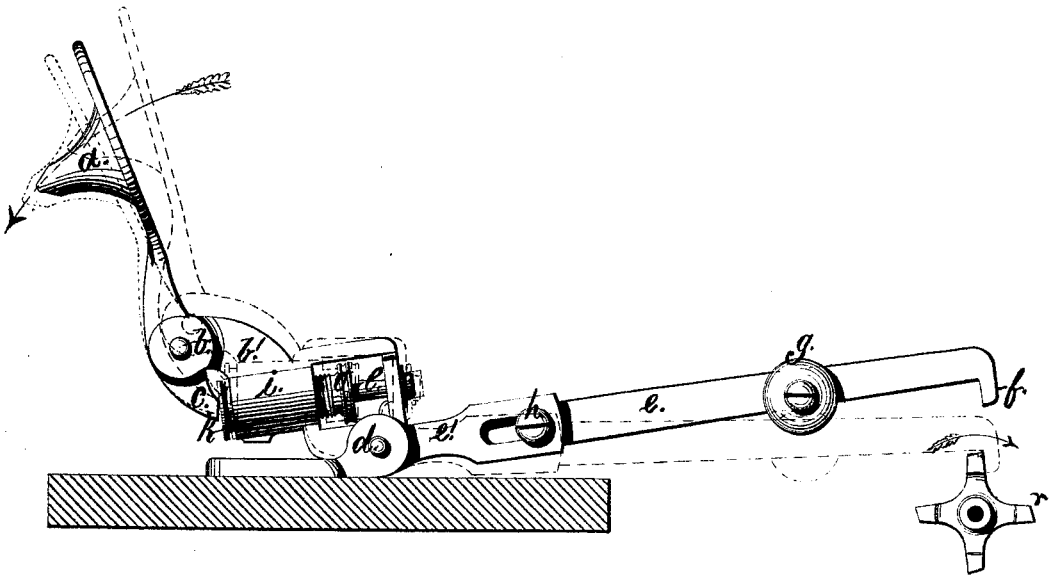

Fig. 1.

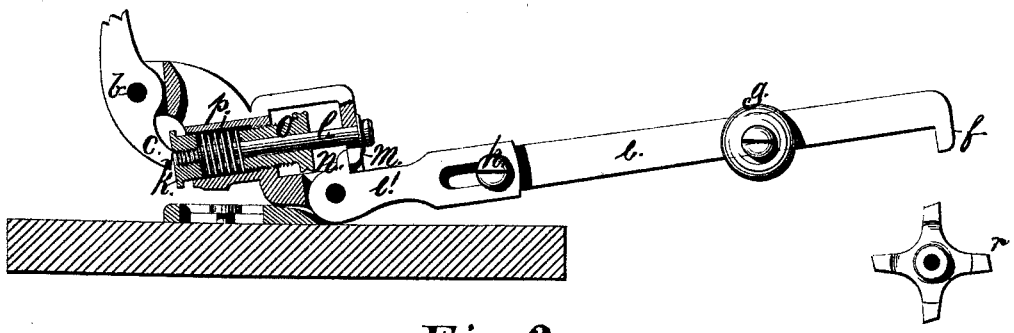

Fig. 2.

WITNESSES.

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WILLIAM R. HANDY, OF PROVIDENCE, RHODE ISLAND.

IMPROVEMENT IN STOP MECHANISMS FOR DRAWING-FRAMES.

Specification forming part of Letters Patent No. **183,844**, dated October 31, 1876; application filed February 14, 1876.

To all whom it may concern:

Be it known that I, WILLIAM R. HANDY, of the city and county of Providence, State of Rhode Island, have invented certain new and useful Improvements in Stop Mechanism for Drawing-Frames; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

Figure 1 is a side view of my improved detecter stop-motion, showing in solid lines the position when the sliver of proper weight is passing through the trumpet, the position of the parts when the sliver breaks is indicated in broken lines, and the position of the parts when the trumpet chokes is indicated by dotted lines. Fig. 2 is a sectional view of the adjustable spring attachment against which the heel of the trumpet-lever presses, and thus causes the stopping of the machine when the trumpet chokes.

My invention relates to that class of mechanism used in drawing-frames and railway heads or eveners, known as "detecter stop-motions," by which the machine is automatically stopped when the sliver breaks, or is delivered lighter or heavier than a given standard, and also when the sliver contains a bunch, or the trumpet becomes choked.

In the drawings, *a* is the trumpet, through which the sliver passes in the direction of the arrow. *b* is the fulcrum on which the trumpet-lever is hinged. *c* is the heel of the trumpet-lever. *b'* is the frame to which the trumpet-lever is hinged, and this whole frame is also hinged at *d*. *e* is the adjustable balance and stop lever, provided at its end with the projection *f*, which interferes either with the revolving gear or an oscillating or vibrating plate, provided with a slot, as the case may be, this stop-motion being applicable to either kind of drawing-frames. *g* is the adjustable weight, by which the friction of the sliver is balanced to the desired weight of sliver. *h* is a screw, by which the lever *e* is secured and its length adjusted. *e'* is a hinged arm, provided with a slot and the toe *n*. *l* is a rod, provided at one end with the piston *k*, and at the other end with a toe, *m*, against which the toe *n* on the lever *e* rests. *p* is a spring, resting against the piston *k* and the follower *o*, by which the tension of the spring can be accurately adjusted, as the follower *o* is provided with a screw-thread screwing into the cylinder *i*, and also with a thumb-piece, so that the tension of the spring can be readily adjusted. *r* is a revolving gear, such gears being commonly used, although there are some frames in which a vibrating plate or bar is used. In either case, when the stop-lever *e* descends, as is shown in broken lines in Fig. 1, the toe *f* will stop the revolving gear *r*, or will enter the slot in the vibrating plate or bar.

The operation of this detecter stop mechanism when the sliver breaks is in all respects like the old trumpet provided with a long lever and adjustable weight; but the peculiar arrangement by which the heel of the trumpet-lever presses against the piston *k*, and thus allows the long end of the trumpet-lever to descend when the sliver is too heavy, or when a bunch is passing through the trumpet, or when the trumpet chokes, is of great advantage in drawing-frames, and particularly so when arranged as shown in the drawing, so that the tension of the resisting-spring can be readily adjusted by reason of the thumb-piece on the screw or follower *o* being accessible at all times, and not like the ordinary adjustments on such mechanism, which are hid below the drawing-frame table.

The operation of this detecter stop-motion is as follows: When the sliver of proper weight is passing through the trumpet *a*, the lever *e* is raised, and the whole apparatus is in the position shown in solid lines in Fig. 1. Now, when the sliver breaks, the weight *g* overcomes the resistance of the sliver passing through the trumpet, and the toe *f* engages with the revolving gear, thus stopping the same, and, by the usual mechanism, stopping the frame.

The action of the trumpet on the sliver is, to some extent, intended to act as an evener, and allow only slivers of a certain weight to pass. When, however, bunches enter the trumpet, the machine must be stopped if they cannot draw out sufficient to pass through the trumpet. A certain amount of resistance is, therefore, required, and the resistance must

be accurately adjusted so as to prevent roller lap or bad work.

By the arrangement of the adjustable follower any required resistance can be obtained, and the strain upon the sliver can be regulated so nicely that a perfectly uniform sliver must be produced.

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

1. The combination, with the trumpet *a*, provided with the heel *c*, and frame *b*, provided with the cylinder *i* of the piston *k*, spring *p*, and rod *l*, arranged to operate the stop-lever, substantially as and for the purpose described.

2. The hinge-arm *e'*, provided with the toe *n*, in combination with the rod *l*, provided with the toe *m*, and a spring acting upon said rod, the whole operated by the trumpet-lever, substantially as and for the purpose described.

3. The combination, with the rod *l*, piston *k*, and cylinder *i*, of the follower *o*, provided with a thumb-piece, and arranged to regulate the resistance to the heel of the trumpet-lever, substantially as and for the purpose set forth.

WILLIAM R. HANDY.

In presence of—
JOSEPH A. MILLER,
HORACE F. HORTON.