

(No Model.)

E. L. STEELE.

REGISTER FOR PAPER BOX MACHINES, &c.

No. 375,781.

Patented Jan. 3, 1888.

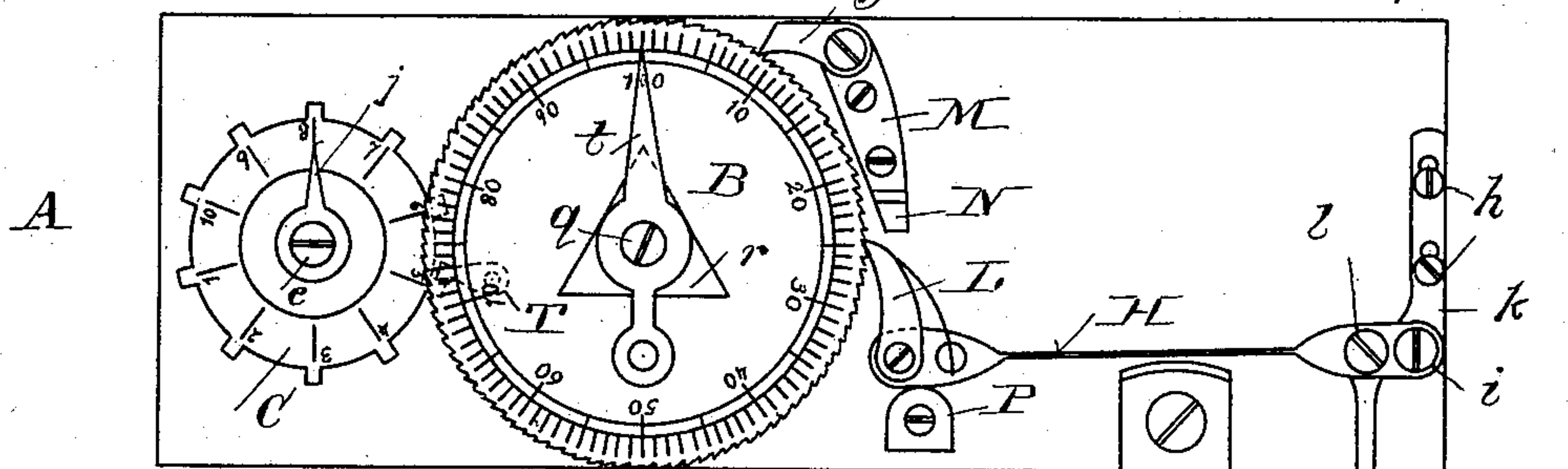


Fig. 1.

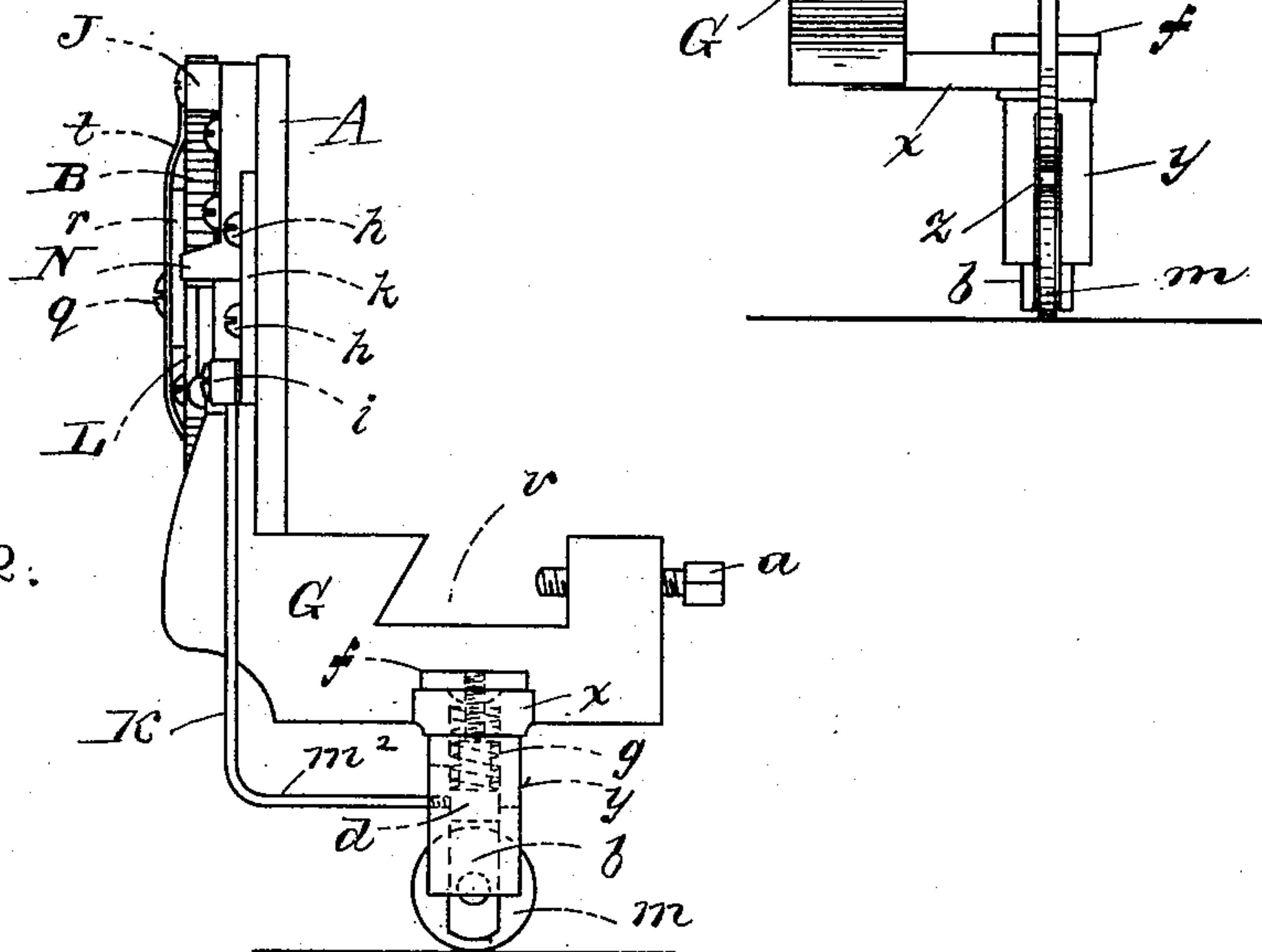


Fig. 2.

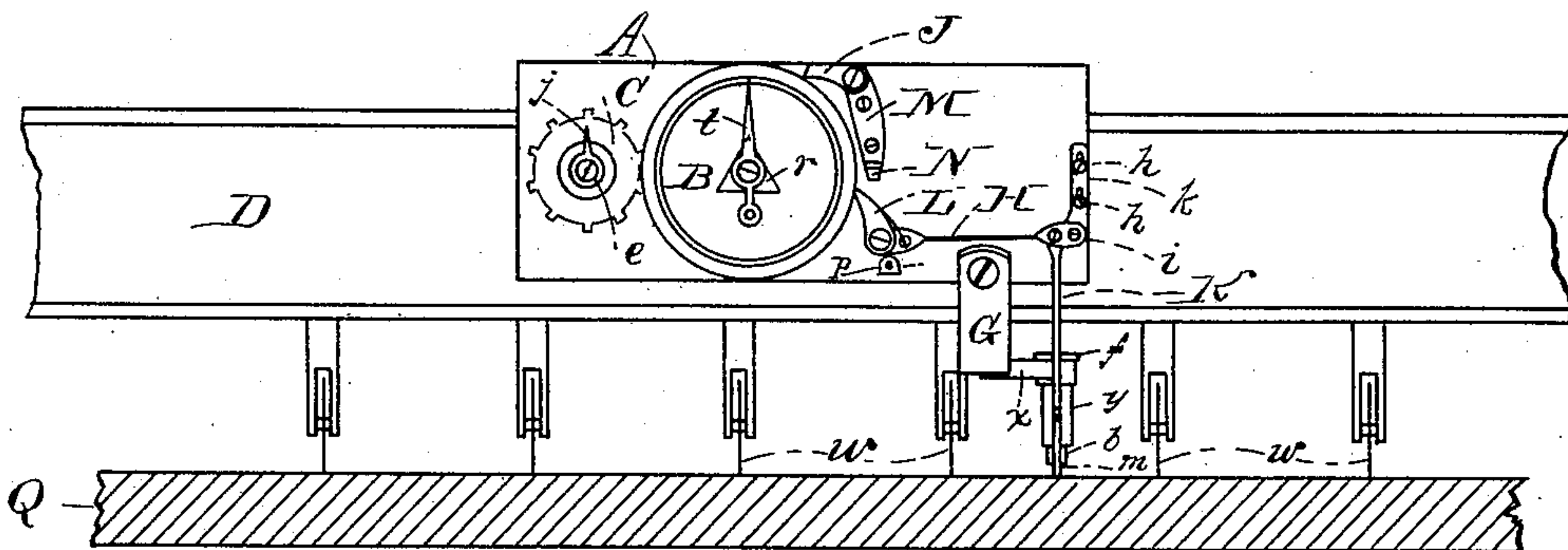


Fig. 3.

Witnesses:

Robt W. Matthews
F. H. Eldridge.

Inventor:

Albert L. Steele
per C. A. Shawler,
Attys.

UNITED STATES PATENT OFFICE.

ELBERT L. STEELE, OF NASHUA, NEW HAMPSHIRE, ASSIGNOR TO HIMSELF
AND WILLIAM H. CAMPBELL, OF SAME PLACE.

REGISTER FOR PAPER-BOX MACHINES, &c.

SPECIFICATION forming part of Letters Patent No. 375,781, dated January 3, 1888.

Application filed August 5, 1887. Serial No. 246,178. (No model.)

To all whom it may concern:

Be it known that I, ELBERT L. STEELE, of Nashua, in the county of Hillsborough, State of New Hampshire, have invented a certain
5 new and useful Improvement in Registers for Paper-Box Machines, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to
10 make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a front elevation of my improved register detached; Fig. 2, an end elevation of
15 the same, and Fig. 3 a front elevation of the register attached to the cutter-wheel bar of a scoring-machine.

Like letters of reference indicate corresponding parts in the different figures of the draw-
20 ings.

My invention relates to means for automatically registering the number of sheets of paper or board used in the manufacture of boxes as
25 the sheets pass through the scoring and cutting machines.

Much waste of stock is frequently occasioned in box-factories by cutting too great a number of strips to make the quantity of boxes desired of a certain size, and as it necessitates a loss
30 of time to count the strips the number required for a certain quantity of boxes is usually roughly estimated.

My improvement is designed to obviate these and other objections; and to that end I make
35 use of means which will be readily understood by all conversant with such matters from the following explanation.

In the drawings, A represents the body of the register, B C the indicating-dials, and D
40 the cutter-wheel bar of the scoring-machine.

The body A of the register consists of a rectangular metallic plate, to the lower edge and near one end of which is secured a backwardly-projecting clamping-bar, G, provided with a
45 slot, *v*, of a shape suitable to receive the lower edge of the cutter-wheel bar D, to which it is secured by the set-screw *a*. The bar G has a laterally-projecting arm, *x*, (see Figs. 1 and 3,) provided at its outer end with a downwardly-
50 projecting tube, *y*, having a vertical slot, *z*.

A rod, *b*, which is disposed within the tube *y*, has a wheel, *m*, (see Fig. 2,) journaled in its lower end, and is provided with a shoulder, *d*, the upper portion of said rod being reduced to pass through an opening in the arm *x* and
55 screw-threaded to receive a nut, *f*, by which it can be adjusted in said tube. A coiled spring, *g*, is disposed around the upper portion of the rod *b*, between the shoulder *d* and arm *x*. A flat longitudinally-arranged steel
60 spring, H, is pivoted at *i* to the lower end of a vertically-adjustable plate, *k*, secured to the body A by set-screws *h*, the inner end of said spring resting on a stop, P, secured to said
65 body. A downwardly-projecting bar, K, provided with a horizontally-arranged arm, *m*², has its upper end pivoted at *l* to the spring H, its arm passing through the slot *z* in the tube
70 *y* and being secured to the rod *b* below the spring *g*.

The dial B is a circular disk provided on its periphery with one hundred teeth, its face being marked into spaces to correspond with said
75 teeth, and the spaces numbered from one to one hundred consecutively. The dial is centrally journaled in a stub-shaft (not shown) which projects from the face of the body A, in such a position that a spring-pawl, L, which is pivoted on the inner end of the spring H, will
80 engage the teeth of said disk. A triangular metallic washer, *r*, and an indicating-hand, *t*, are disposed on said stub shaft and secured thereto by a screw, *q*, the ends of the hand and corners of the washer being bent against
85 the face of the dial (see Fig. 2) to produce sufficient friction to prevent said dial from being accidentally revolved.

The dial C is circular, and is provided on its circumference with ten teeth equidistant from each other and numbered on the surface
90 of the dial from one to ten consecutively. This dial is journaled on a stub-shaft (not shown) on the body A, having an indicator or hand, *j*, disposed thereon and secured by the screw *e*, the position of the dial C being such that
95 when revolved its teeth will pass under the edge of the dial B and engage a stud, T, secured to the inner face thereof, (see Fig. 1,) thereby causing the dial C to be revolved one point for
100 each complete revolution of the dial B. A

gravitating retaining-pawl, J, is pivoted to the upper end of a plate, M, secured to the plate E, being so arranged as to engage the teeth of the dial B and prevent it from being turned backward. The lower end of the plate M is extended downward to form a stop, N, for the pawl L and prevent it from carrying forward the dial B more than one space at a time.

In the use of my improvement the register is attached to the cutter-wheel bar D of a scoring-machine by means of its clamp G and screw *a* in such manner that its wheel *m* rests on the feed bed or cylinder Q of the machine between two of the cutter-wheels *w*. As the paper-board or other material used in constructing the boxes is fed to the wheels *w* it passes under the wheel *m*, elevating said wheel and causing the bar K to be forced upward, thereby moving the spring H and turning the dial B one point from right to left by means of its pawl L, in a manner which will be readily obvious without a more explicit description. The arm H is in the form of a spring, in order to compensate for the different thicknesses of board passed under the wheel and prevent the indicator from being moved more than one notch at a time. It will readily be seen that when the dial B has made one complete revolution the stud T will engage a tooth of the dial C and move said dial one space from left to right, thus registering the number of sheets in hundreds that have passed under the wheel *m*. The coiled spring *g* forces the wheel *m* down against the bed Q as soon as it has passed each sheet of paper or board. The tension of said spring may be regulated by means of the nut *f*, or by moving the adjustable plate *k*, which will raise or lower the rod K and change the pressure of the bar *b* against said spring.

It will be obvious that the stops P N prevent the pawl L from moving the dial B more than one tooth at a time.

I do not confine myself to the use of both the nut *f* and adjustable plate *k* for regulating the

tension on the spring *g*, as either may be used and the other omitted; neither do I confine myself to the use of the pawl J, as it may be entirely omitted, if preferred; nor to using only two dials B C, as another dial may be attached to the plate E and operated by a stud on the dial C, to register the tens of thousands, if desired; nor to using the register with paper-box machinery, as it is adapted for other analogous purposes.

Having thus explained my invention, what I claim is—

1. A register of the character described, comprising a body, A, provided with the clamping-bar G, having the arm *x*, the tube *y*, attached to said arm and having the slot *z*, the sliding bar *b* in said tube, the wheel *m*, journaled at the lower end in said bar, the spring *g*, nut *f*, rod K, pivoted arm H, pawl L, stop P, dial B, and hand *t*, substantially as described.

2. In a device of the character described, the combination of the body A, the plate *k*, adjustably secured to said body, the spring H, pivoted to said plate and provided with the spring-pawl L, a vertically-sliding bar, *b*, provided with a wheel at its lower end, a support for said bar, a rod, K, pivoted to said spring and engaging said bar, and a toothed dial actuated by said spring-pawl, substantially as described.

3. In a device of the character described, the body A, having the stops N P, the toothed dial B, journaled on said body and provided with the stud T, and the dial C, in combination with the adjustable plate *k*, spring H, having the pawl L, clamp G, having the arm *x* and slotted tube *y*, the bar *b*, disposed in said tube and provided with the wheel *m*, spring *g*, and nut *f*, and the rod K, secured to said bar and pivoted to the spring H, substantially as described.

ELBERT L. STEELE.

Witnesses:

RUFUS FITZGERALD,
EDWARD S. CUTTER.