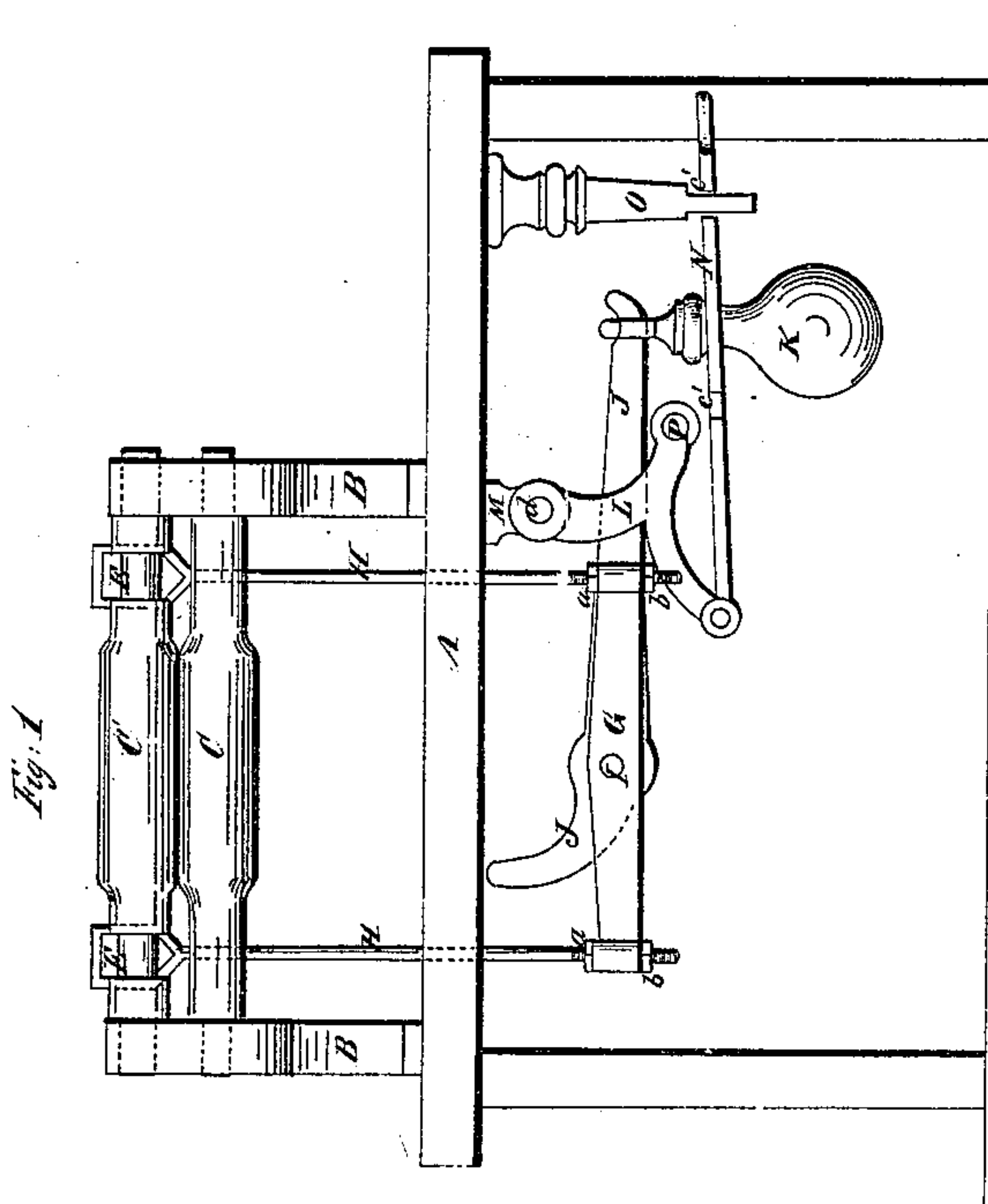
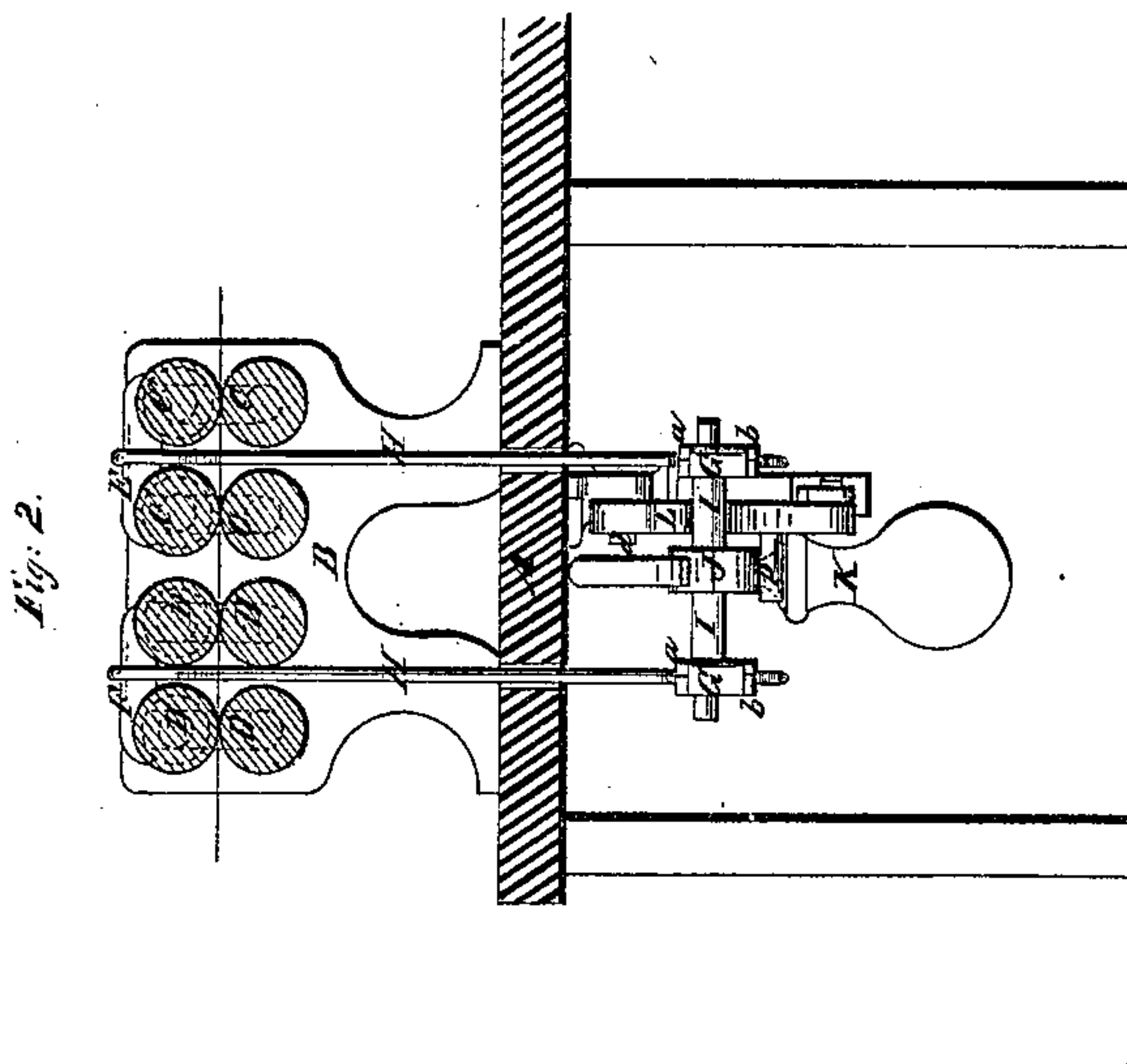


N. E. Hale.

Drawing and Evening.

N^o 26,031.

Patented Nov. 8, 1859.



Witnesses:

C. F. Emerson
Oliver Dodge

Inventor,

N. E. Hale

UNITED STATES PATENT OFFICE.

NOAH E. HALE, OF NASHUA, NEW HAMPSHIRE.

APPLYING PRESSURE TO TOP ROLLS OF DRAWING MACHINERY.

Specification forming part of Letters Patent No. 26,031, dated November 8, 1859; Reissued February 3, 1863, No. 1,391.

To all whom it may concern:

Be it known that I, NOAH E. HALE, of Nashua, in the county of Hillsboro and State of New Hampshire, have invented a new and improved method of applying pressure to the top rolls of drawing machinery employed in the manufacture of cotton or other fibrous materials; 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, in which—

Figure 1 is a front view of a set of drawing rollers with my invention applied. Fig. 2 is a transverse section of the same.

Similar letters of reference indicate corresponding parts in both figures.

To enable others skilled in the art to make and use my invention, I will describe its construction and operation.

A, represents the top piece of the frame, and B, B, the stands erected thereon to contain or constitute the bearings for the front and back drawing rollers C, C, C', C', and D, D, D', D'.

E, E, and F, F, are saddles such as are commonly employed, resting as usual on the top rolls C, C', and D', D', one at each end of the front rolls C, C', and one at each end of the back rolls D, D'.

G, G, are two parallel horizontal bars, one suspended by two stirrup rods H, H, from the two front saddles E, E, and the other by two similar rods from the two back saddles F, F, the said rods passing through slots or holes near the ends of said bars, and said bars being confined to said rods by nuts a, a, b, b, fitting to screw threads on the rods above and below the bars. At the middle of the length of the parallel bars G, G, a hole is bored in each to receive one of the two journals provided at the ends of a short shaft I, which carries a lever J, one end of which is bent upward so that its point may bear under the top piece A, and the other end of which has suspended upon it a weight K. This weight, it will be readily understood, will, by its action through the lever J, the bars G, G, and stirrup rods H, H, press equally upon the saddles at both ends

of the rolls and serve to apply the necessary pressure to all the rolls. If the said lever is placed midway between the two bars G, G, the weight will press equally upon the front and back rolls, but it is so fitted to the shaft I, as to be capable of being moved thereon nearer to or farther from the front rolls to give them a greater or less proportion of the weight as may be desired.

To provide for the relief of the saddles from the pressure of the weight K, and the taking out of the top rolls, I arrange, by the side of the lever J, a bellcrank lever L, to work on a fulcrum pin d, in a small hanger M, suspended below the top piece A; and to one arm of this lever I attach a rod N, having notches c, c', to engage with a hanger O, and to the other arm of said lever I attach a pin P, which is situated below the lever J. When the weight is desired to operate upon the saddles, the rod N is placed in such a position that its notch c, engages with the hanger O, as shown in Fig. 1; but when it is desired to relieve the saddles of the weight, the rod N, is drawn out till the notch c', engages with the hanger; and by this change of position of the rod, the bell-crank is moved in such a manner that the pin P, comes into operation on the lever J, near the weight, and raises the weighted end thereof, and thus brings the other end down out of contact with the top piece A, and so relieves the bars G, G, and stirrup rods H, H, from the action of the weight and permits the saddles to be taken out of the stirrups at the upper ends of the rods H H, and thus permits the removal of the top rolls. The lever J and its appendages consisting of the bell-crank lever and notched rod might be applied in the manner I have described in combination with but one of the bars G, G, but in that case the front and back rollers will require to be weighted separately. The one weight however in the latter case operates on both of its respective roll as in the first described method of applying the lever J.

I do not claim, broadly, the adjustment of drawing rollers by weights, nor the release of the rolls from the weight by lifting the

latter; nor do I claim any part or feature of the device represented in the patent of S. P. Spence, June 29, 1858; but

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

The arrangement and combination of the drawing rolls C', D', straps H attached at

the ends of said rolls, adjustable bars G, lever J, weight K, rod N, bell-crank lever 10 L, and hanger O, as and for the purpose herein shown and described.

NOAH E. HALE.

Witnesses:

E. P. EMERSON,
OLIVER DODGE.