

S. S. Stone.

N<sup>o</sup> 43932 Collar Machine.

Patented Aug 23, 1864.

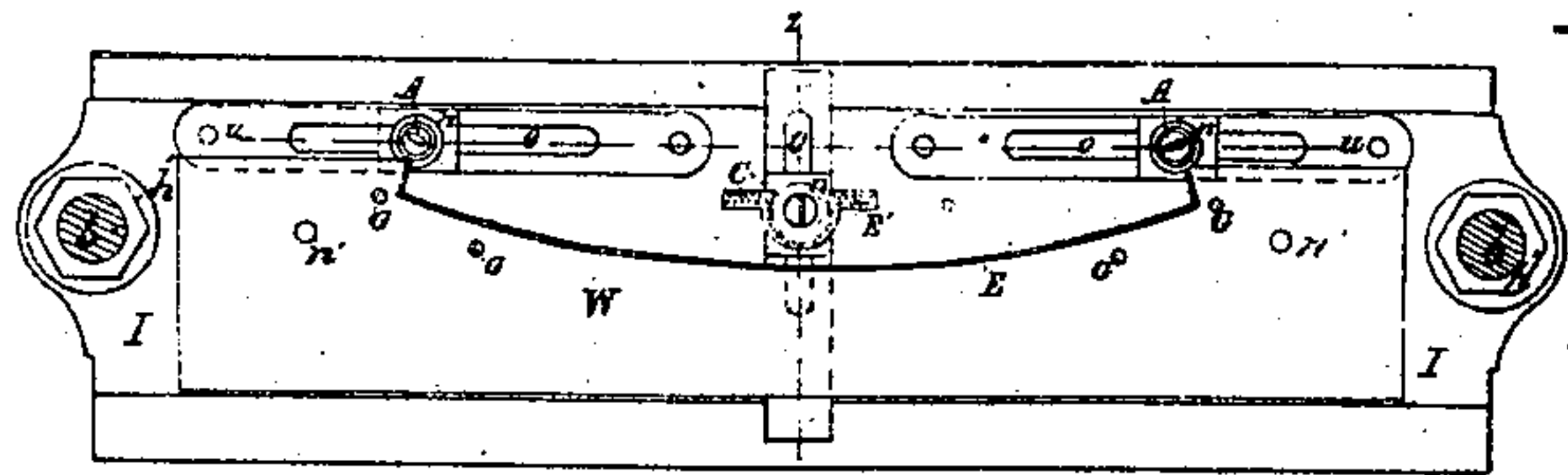


Fig. 5.

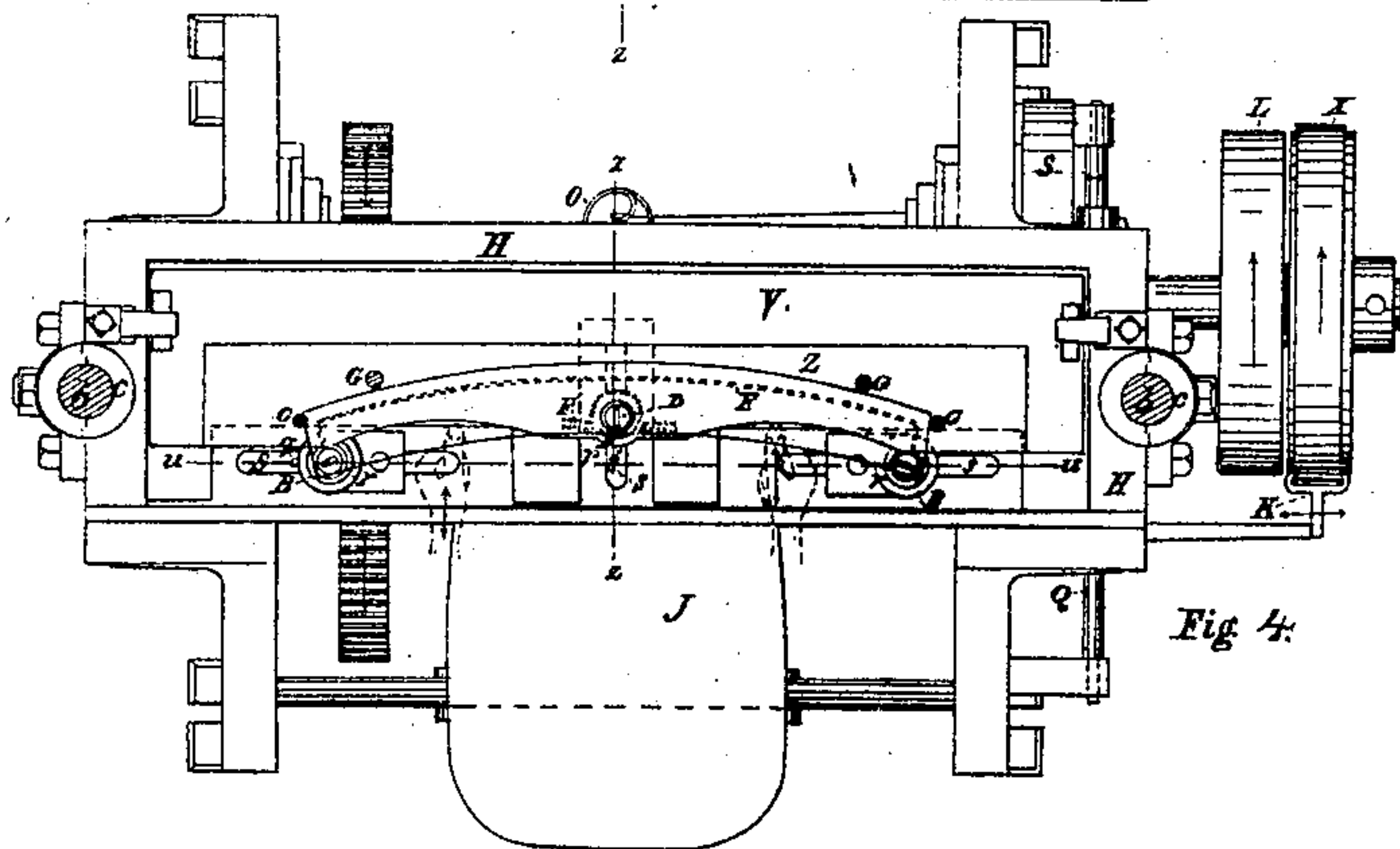


Fig. 4.

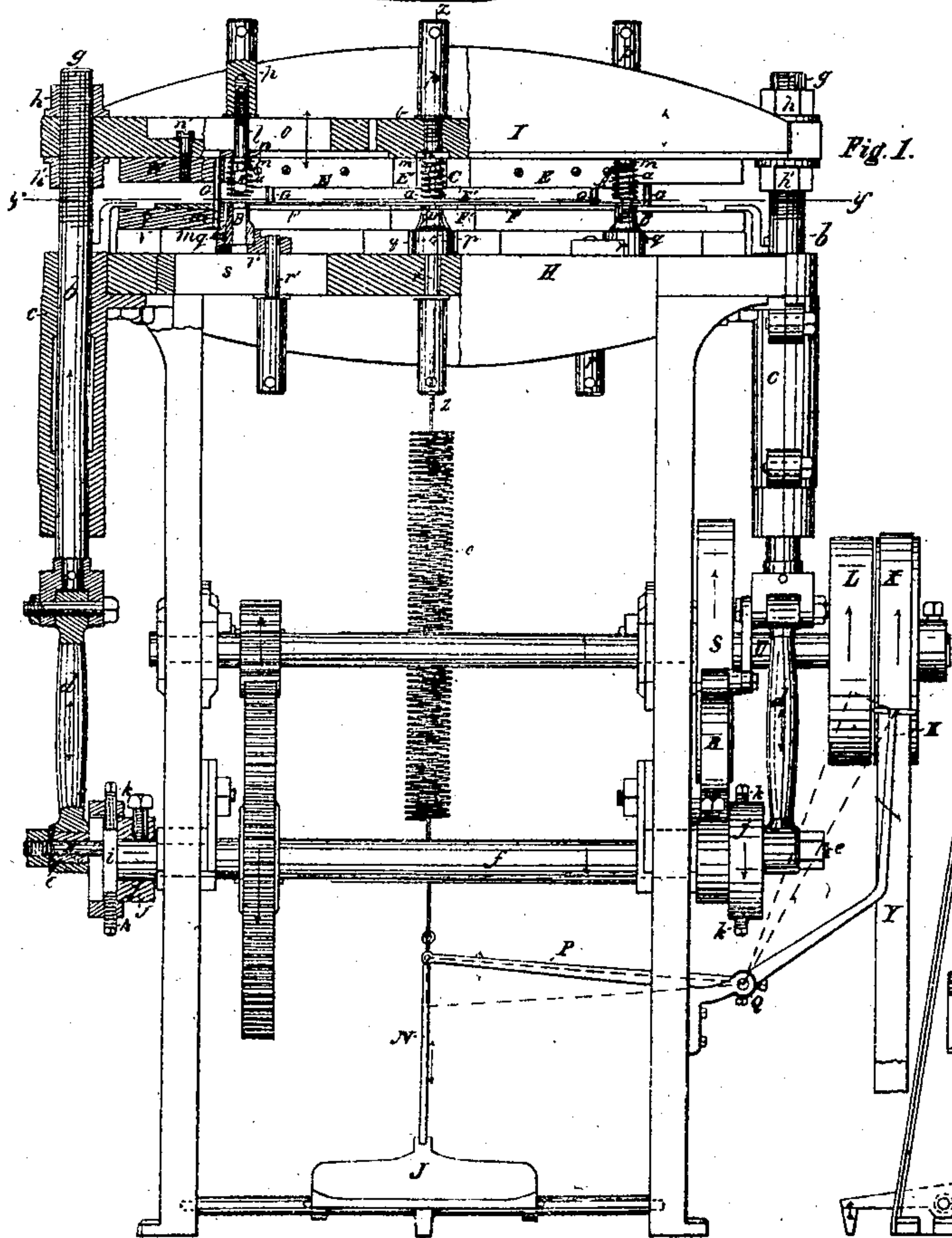


Fig. 1.



Fig. 9.

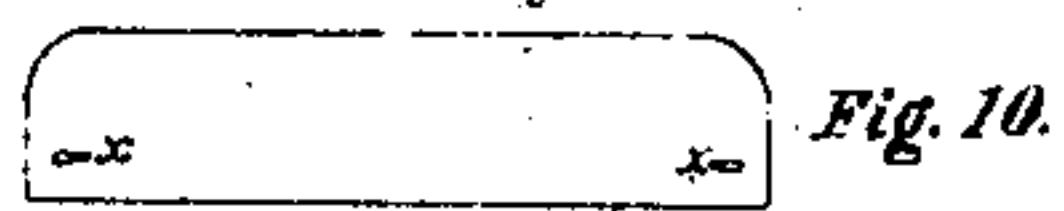


Fig. 10.

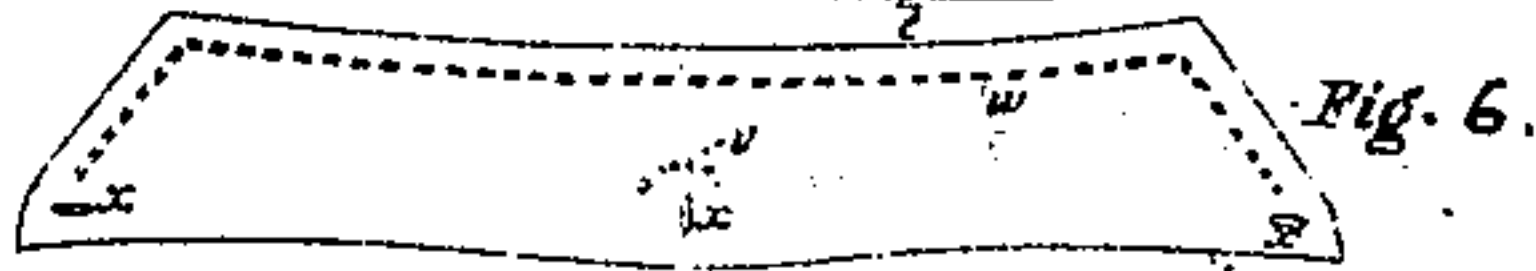


Fig. 6.

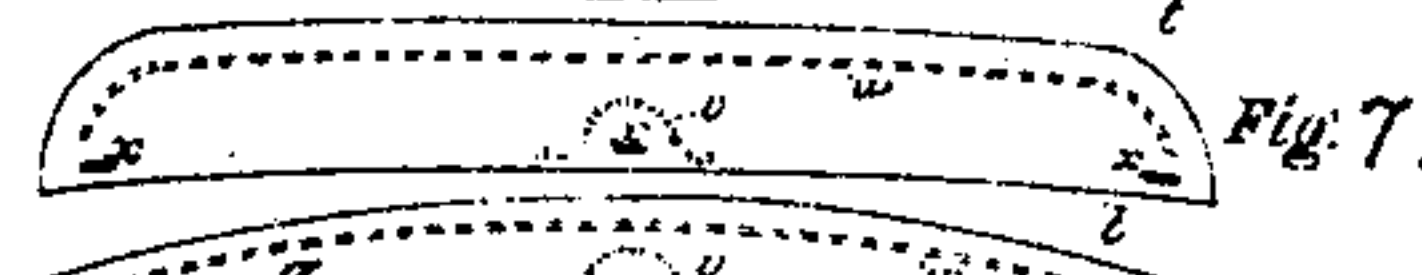


Fig. 7.



Fig. 8.

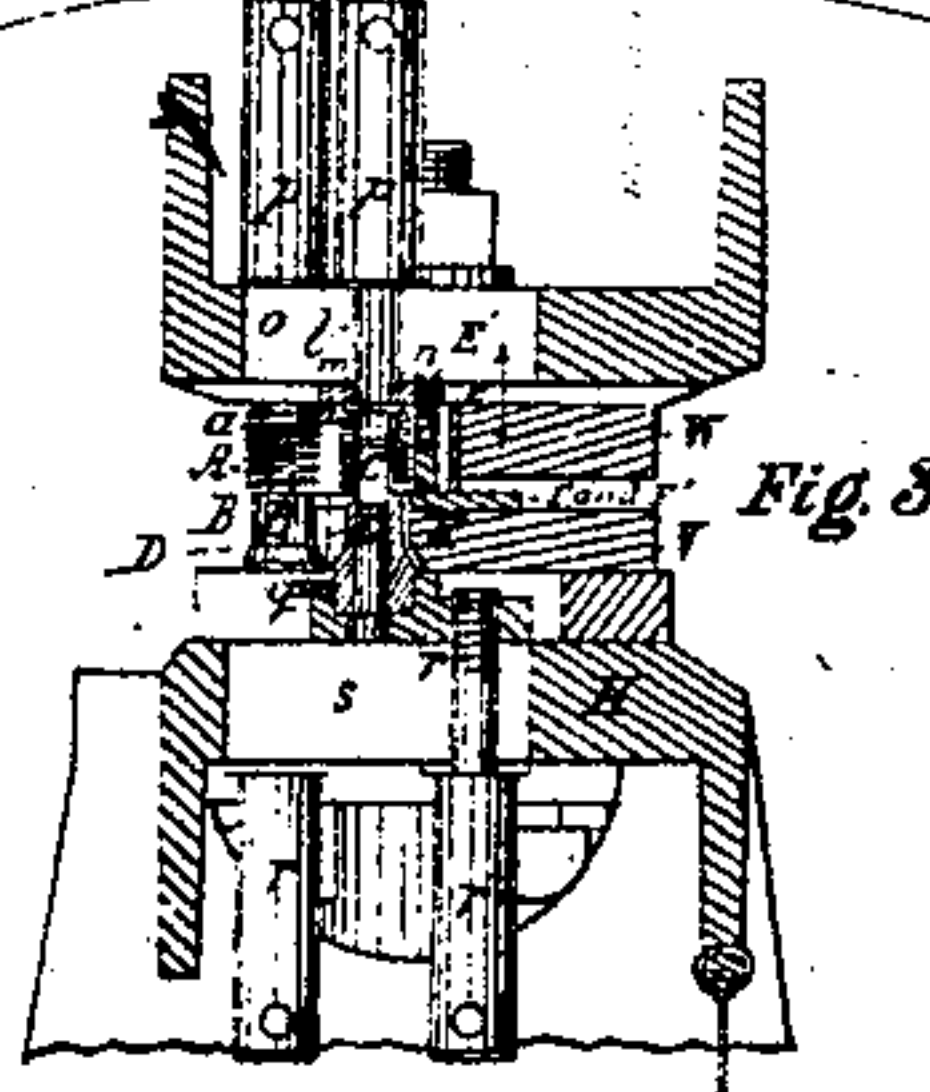


Fig. 3.

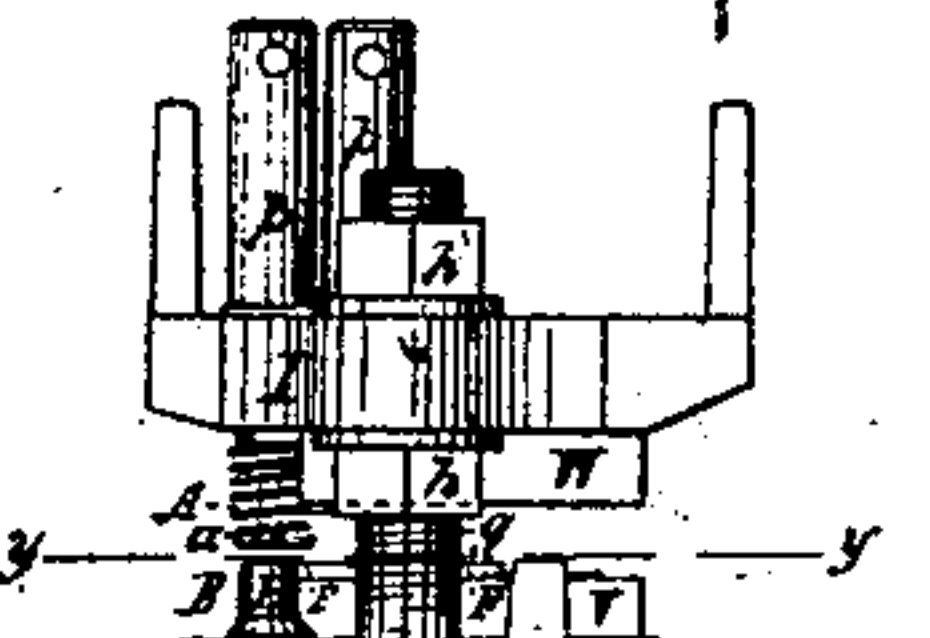
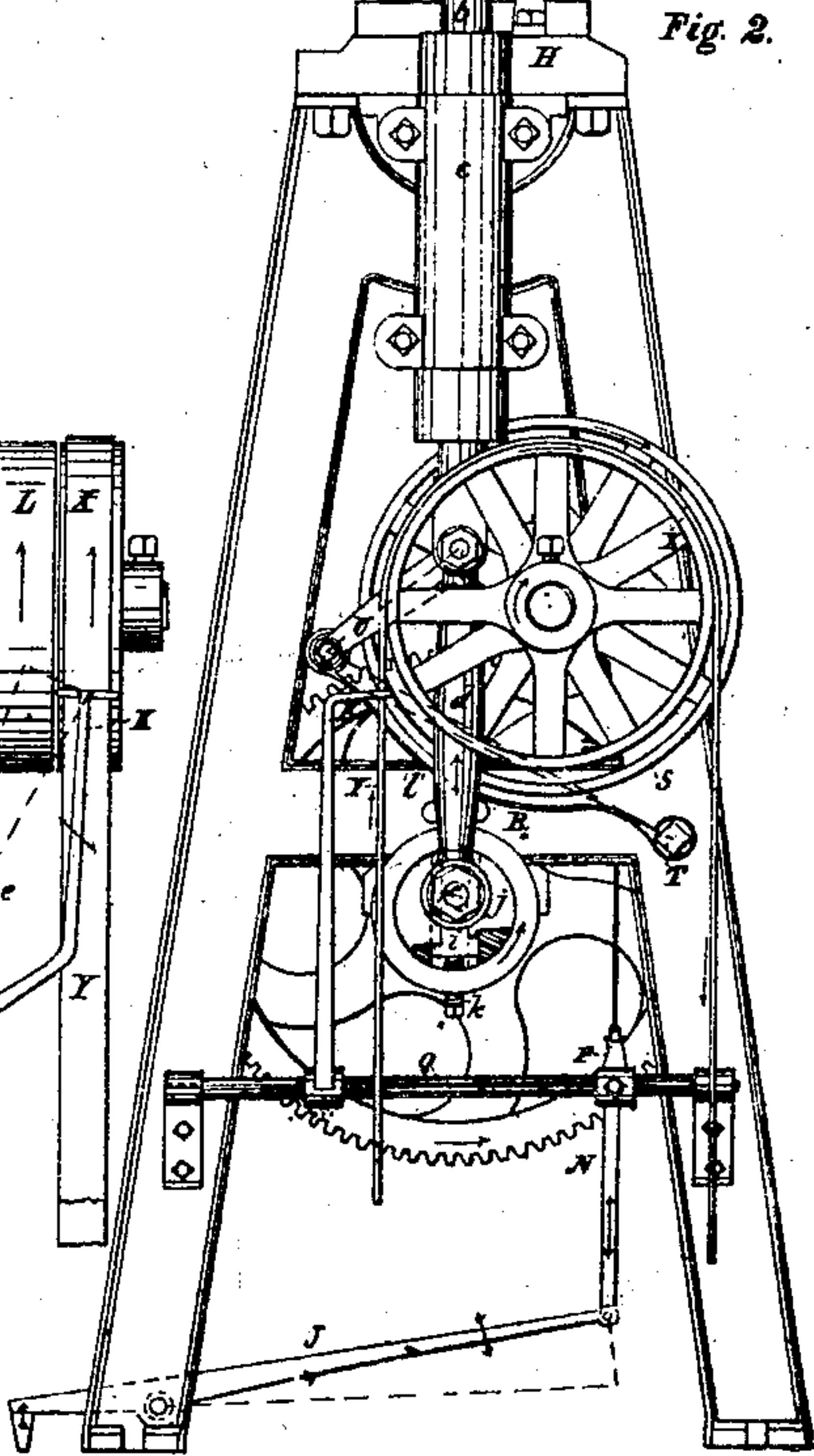


Fig. 2.



Witnesses { P. P. Marsh }  
 { Austin J. Park }

Inventor, Samuel S. Stone



# UNITED STATES PATENT OFFICE.

SAMUEL S. STONE, OF TROY, NEW YORK.

## IMPROVEMENT IN MACHINES FOR INCISING BUTTON-HOLES AND EMBOSSING AND PRINTING ARTICLES OF WEARING-APPAREL.

Specification forming part of Letters Patent No. 43,932, dated August 23, 1864.

*To all whom it may concern:*

Be it known that I, SAMUEL S. STONE, of the city of Troy, in the county of Rensselaer and State of New York, have invented a new and useful machine for finishing cuffs, collars, and wristbands of paper, stiffened cloth, paper and cloth combined, or other suitable material; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a front elevation of the machine. Fig. 2 is an end elevation. Fig. 3 is a partial section at the line *g g* of Figs. 1, 4, and 5. Fig. 4 is a plan of the parts beneath the line *y y* of Figs. 1 and 2. Figs. 1, 7, and 8 are plans of several forms of shirt-collars. Figs. 9 and 10 are plans of cuffs and wristbands.

The same letters refer to like parts in all the figures, and the arrows therein indicate the direction in which some of the parts move.

Cuffs, collars, and wristbands, made in whole or in part of paper, are cut in numbers by one single pressure or by a single blow; but to finish them completely it has hitherto been found necessary to pass them through several hands and through a varied manipulation.

Now, it is the object of my invention to finish cuffs, collars, and wristbands, of any form or style required for the use of ladies or gentlemen, in one machine and at a single operation.

To this end my invention consists in a machine that will cut the button-holes in cuffs, collars, or wristbands in any varied number, in any required position, and in any desired relation to each other or to the several articles named, to ornament them by embossing, and to print thereon the size, number, or trade-mark of the manufacturer, and all this at a single impression, so that when the articles pass through the machine they are completely finished and ready to go upon the market.

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

A frame, *A''*, Figs. 1 and 2, of any suitable material, (though I prefer metal for lightness and neatness,) supports on its top a fixed bed-plate, *H*, and the main driving-shaft *H'*, which

rotates in proper bearings secured to the rear of the standards thereof. The cross-braces *B''* of the frame *A''* support in suitable boxes the shaft *f*, and to flanges *C* and *C'*, projecting from the top ends of the frame *A''* are suspended guide-boxes *e* and *e'* for the rods *b* and *b'*, which terminate at their upper ends in screws *g* and *g'*, while the lower ends of the rods *b* and *b'* are hinged at *g'' g'''* to the coupling-rods or pitmen *d* and *d'*, which rotate on eccentric pins *e* and *e'* in the adjustable plates *i* on the ends of the shaft *f*. The shafts *H'* and *f* are connected by gear-wheels *n'* and *n''*, proportioned as desired, for determining the number of the impressions or the speed of the machine, though these may be driven by belts, if preferred, running on pulleys.

The platen or impression-plate *I* is attached to the rods *b* and *b'* by screw nuts *h* and *h'*, that the platen may be set as desired for giving the impressions.

The shaft *H'* carries a brake-wheel, *S*, between the frame and the rod *b'*, and on the outside of the rod *b'* the shaft *H'* carries a fast pulley, *L*, and a loose pulley, *K*, which are driven by the belt *y*, connected with any suitable power; but if it be desired to drive the machine by hand a crank-arm may be used.

A foot-lever or treadle, *J*, connected by a wire or strap, *n*, to a bell-crank lever, *P*, serves to place the control of the belt-shipper (attached to the long arm of the lever by a collar and set screw) under the feet of the operator, so that his hands may be left at liberty to tend the machine. The short arm of the lever *P* is connected by a spring, *O*, to the frame, in order to keep the shipper always on the loose pulley, as shown in the drawings. A brake-band, *R*, is fastened on a stud, *T*, attached to the frame, and, passing close to the under side of the brake-wheel *S*, is fastened by a strap, *W*, to the rod *b'* at the hinge or point of connection with the pitman *d'*, so that at each revolution of the shaft *H'* the strap or band *R* will press upon this brake-wheel *S*, and thus enable the operator, with the aid of the foot-lever, instantly to stop the machine to avoid impressing or stamping a defective or improperly-placed piece, or to arrest the movement of the platen a greater or less length of time, to suit the condition or requirement of the work to be done.



The fixed bed-plate H supports a set of adjustable dies, B, B', and D, the former being to receive the button hole punches for the ends of the cuffs, collars, or wristbands, and the latter for the center hole of such articles as require a button hole there. These dies are not only adjustable on the bed-plate to suit long or short, wide or narrow articles of any varied form, but they are centrally countersunk on the top to receive the punches truly, and each is pivoted in the seat, having the lateral adjustment where it is free to turn and correspond accurately to any position or direction of the punch, and when properly adjusted each is also provided with a set-screw to hold it firmly in the proper position to receive the punch. The bed-plate also sustains forms of any suitable material to receive the impression of the platen (I find leather to answer well) and support the under side of the article to be finished, and these may be made to carry the guide-pins or the openings to secure them where they are fastened to the platen. The reciprocating impression-plate or platen I, fastened to the bars *b'* and *b'* by the upper and lower screw-nuts, *h* *h'*, is vertically adjustable to give any length of motion required, the motion being limited by the length of the eccentrics on the ends of the shaft *f*. The platen I carries punches A' A' and C, the former for punching the end button-holes in cuffs, collars, and wristbands at varied distances apart, and the latter for punching the central button-holes in such articles as require them. These punches are adjustable in slots in the platen to adapt them to articles of different sizes and forms, and when adjusted as desired on the platen they are secured in position by tightening the screw in the cap on that in the punch, as shown at *p*, Fig. 1, until it is fast on the edges of the slot. At the same time the punches can be turned on their axes and adjusted so as to punch the holes longitudinally, as in Fig. 7, or in any other direction—as, for example, those in Figs. 8 and 9—while the relative position of the button-holes can be adapted to any form of article to be finished, as shown in Figs. 1, 7, 8, 9, and 10. The reciprocating platen also carries adjustable guide-pins *g*, to hold the articles in position for register, and their position can be widely varied to suit the different sized and shaped articles to be finished; or, if preferred, they may be placed in the bed-plate, in which case the platen must have openings in its impression-plate to receive them.

The impression-plate E, attached to the under side of the platen I, may be of metal or of any suitable material to carry the impression-type for printing the desired words and figures upon the article finished in the machine; and embossing-plates F may be attached to the plate of any figure with which it is deemed desirable to ornament the article. In the drawings I have shown it as ornamented with only one or more rows of stitching near

the outer edges, as in Figs. 1, 7, 8, and 9, while Fig. 10 is shown with a plain finish.

The operation of my invention is obvious. The driving-shaft, being rotated in the direction of the arrow upon it, will, through the gear *n'* and *n'*, rotate the shaft in the opposite direction, and the rotation of shaft *f* through the eccentrics on its ends will rotate the pitmen *d* and *d'*, which will give a reciprocating motion to the rods *b* *b'* and the platen I, which is secured upon them, and every revolution of the shaft *f* will give one reciprocating movement to the platen. When the platen is at its greatest height, the brake-strap R is applied to the brake wheel S on the driving-shaft, and if then the foot-lever is permitted to occupy its normal position the driving-belt will run on the loose pulley, and the platen will be stopped as long as the operator may desire; but if, when the brake is applied, the foot-lever be depressed, and the driving-belt shifted to the fast pulley, the wheel S will slip in the strap R and the work progress without interruption, and an article will be finished at each revolution of the shaft *f* or impression of the platen.

It is evident that by this arrangement of the machine its progress and capabilities can be regulated by the operator with such precision as rapidly to finish the articles presented to it for impression without injuring a single one in a whole day's work, while every impression finishes one article complete and fits it for the wearer, whether it be a cuff, collar, or wristband.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, in one machine for finishing cuffs, collars, and wristbands, of a pressing, punching, printing, and embossing mechanism with a brake and belt-shifter, substantially as and for the purpose described.
2. The combination of two end button-hole punches for cuffs, collars, or wristbands, having longitudinal and axial adjustment, with a reciprocating platen and corresponding receiving-dies having a like adjustment on a stationary bed plate, substantially as and for the purpose described.
3. The central button-hole punch, having an adjustment across the collar as well as an axial one, in combination with the platen and end punches, and with a central receiving-die having like adjustment in the fixed bed-plate, substantially as and for the purpose described.
4. The vertically-adjustable and reciprocating platen, in combination with embossing-plates, and with end or end and central adjustable button-hole punches and their dies on the fixed bed-plate, when operating to ornament and punch cuffs, collars, or wristbands, substantially in the manner described.
5. The combination of a printing-block with the adjustable reciprocating platen, button-hole punches, embossing-plate, receiving-dies, and stationary bed-plate, for the purpose of printing (while punching and embossing)



cuffs, collars, or wristbands, substantially in the manner described.

6. The reciprocating adjustable platen with its punches, types, and embossing-plates, in combination with guide-pins and a fixed bed-plate, when the guide-pins can be varied in position to secure a perfect register of the punching, printing, and embossing of cuffs,

collars, and wristbands, however varied in size or form substantially as set forth.

In testimony whereof I have hereunto subscribed my name.

SAMUEL S. STONE.

Witnesses:

F. I. MARSH,

AUSTIN F. PARK.