

H. MESSER.

MACHINE FOR PRINTING RAILWAY-TICKETS.

No. 174,375.

Patented March 7, 1876.

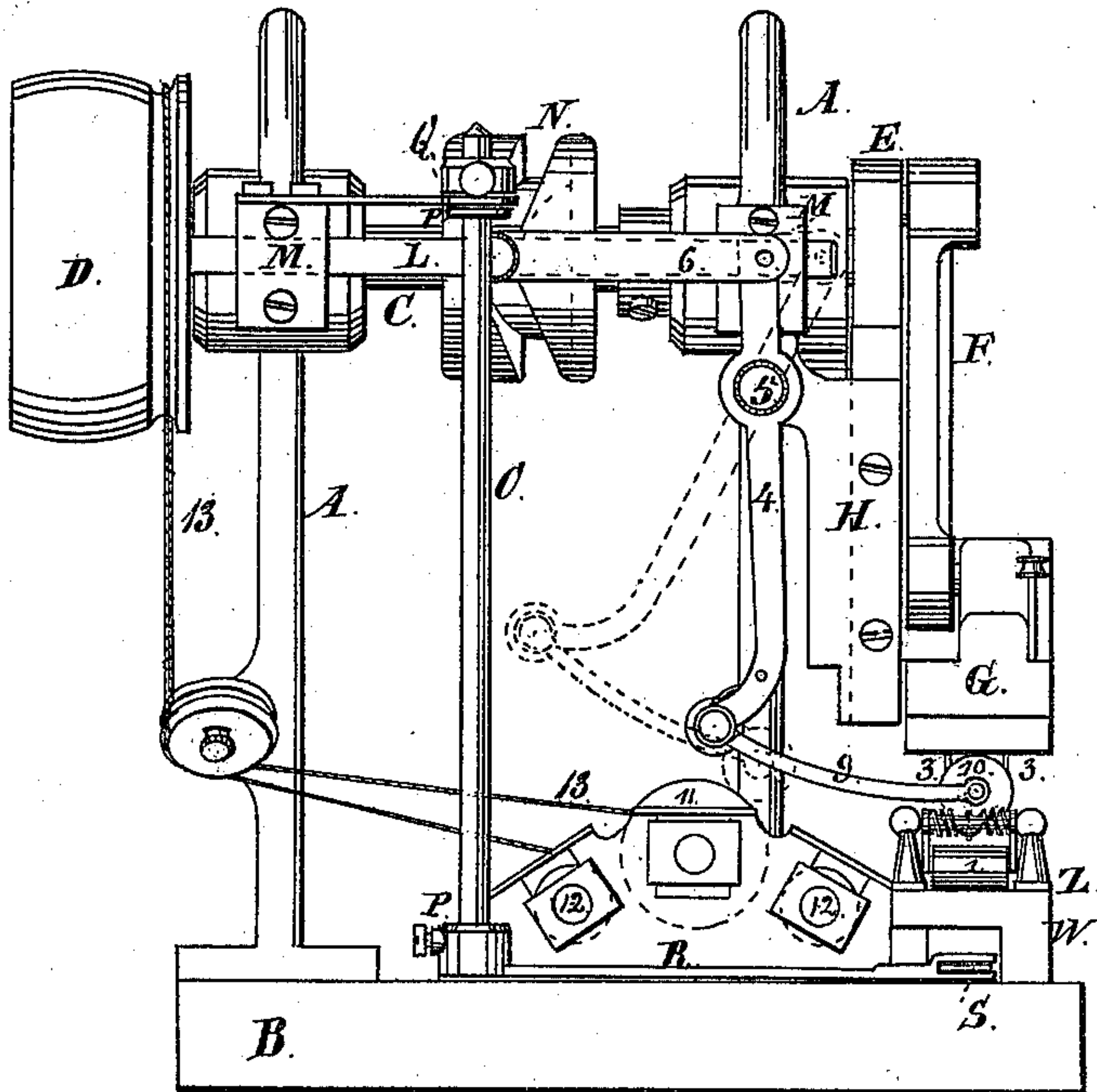


Fig. 1.

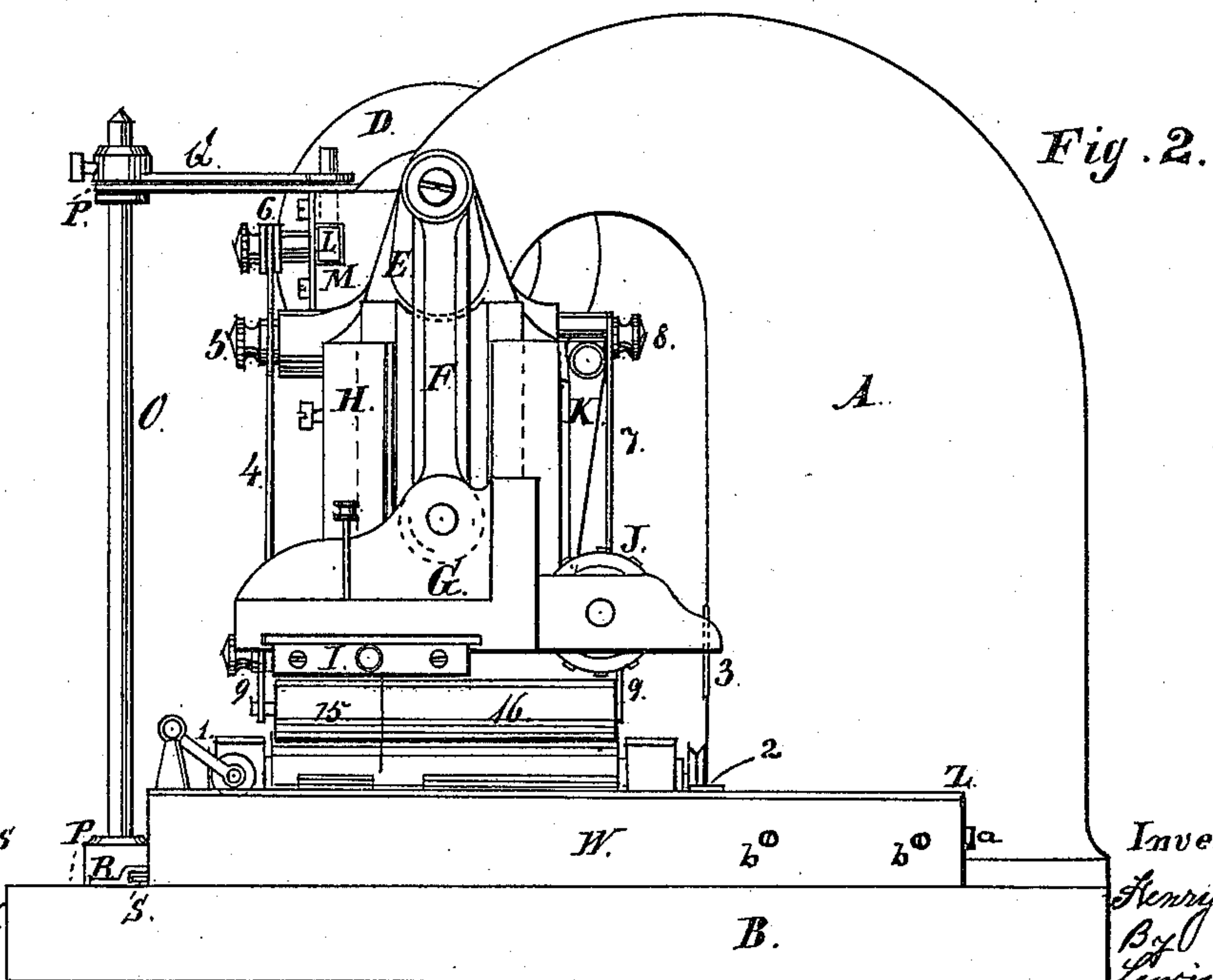


Fig. 2.

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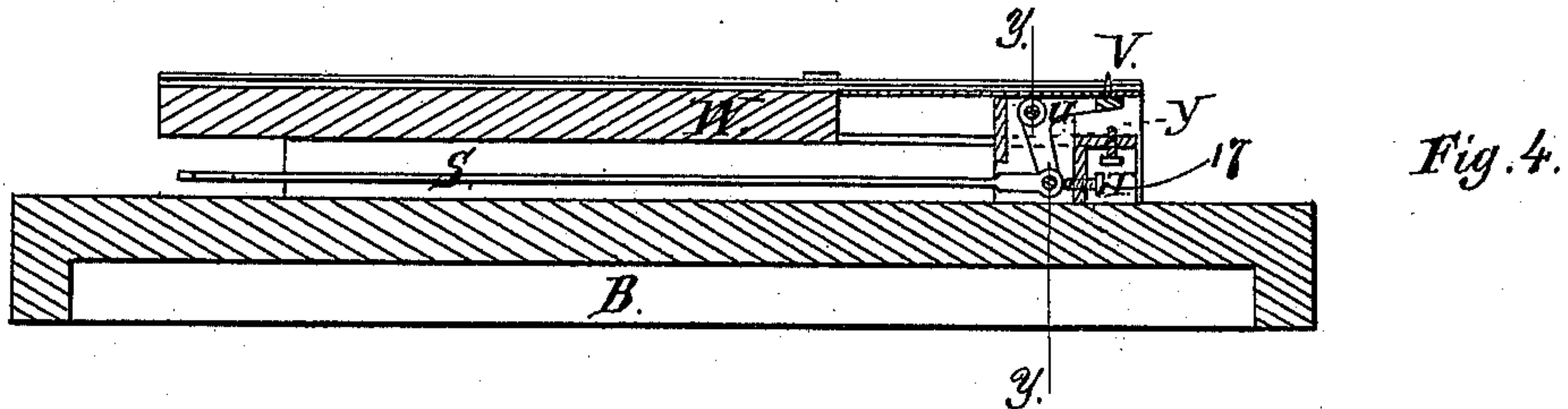
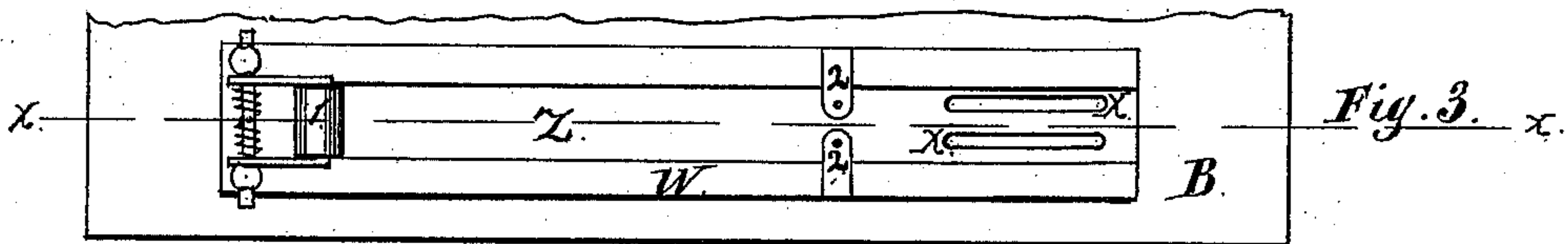


Fig. 8.

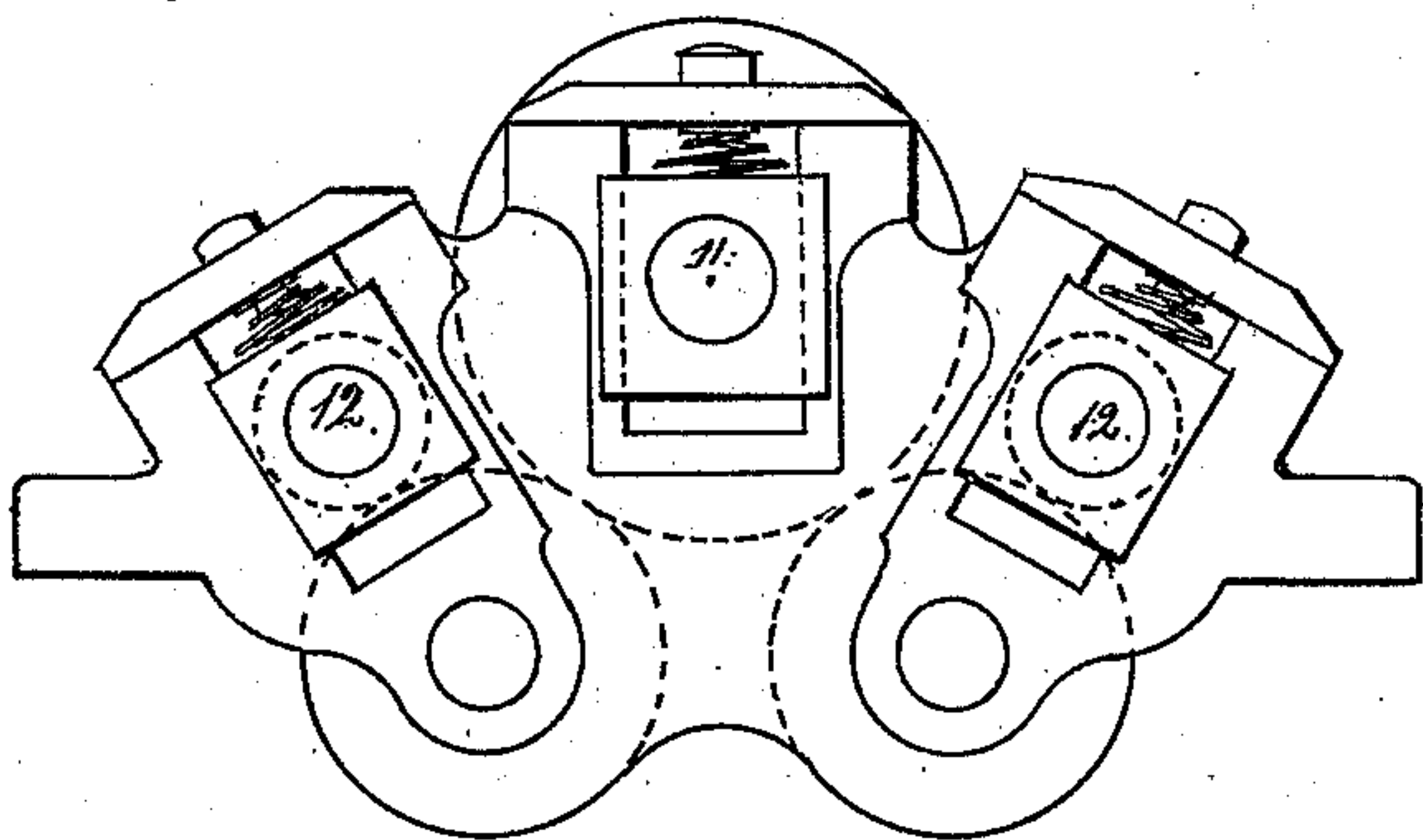


Fig. 5.

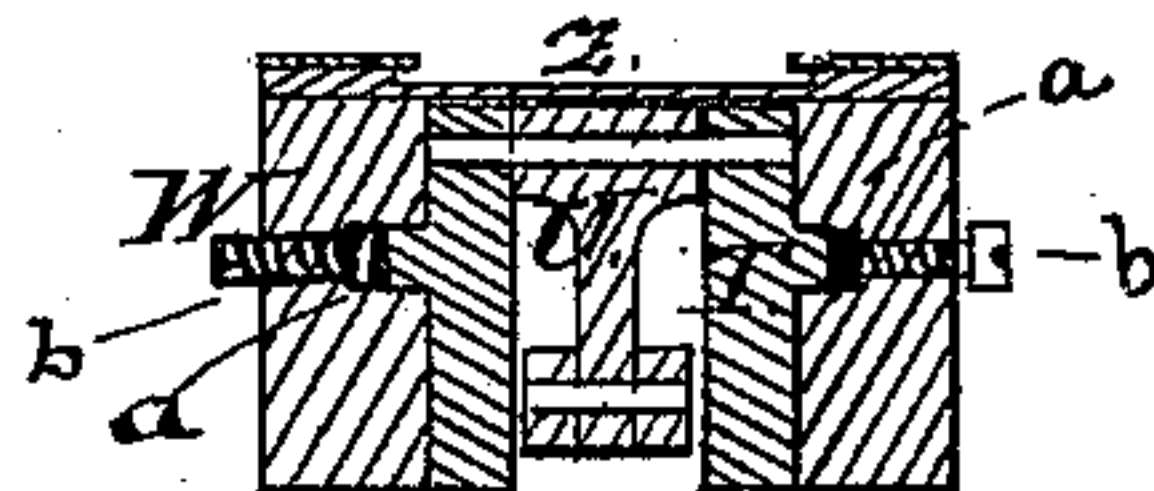


Fig. 6.

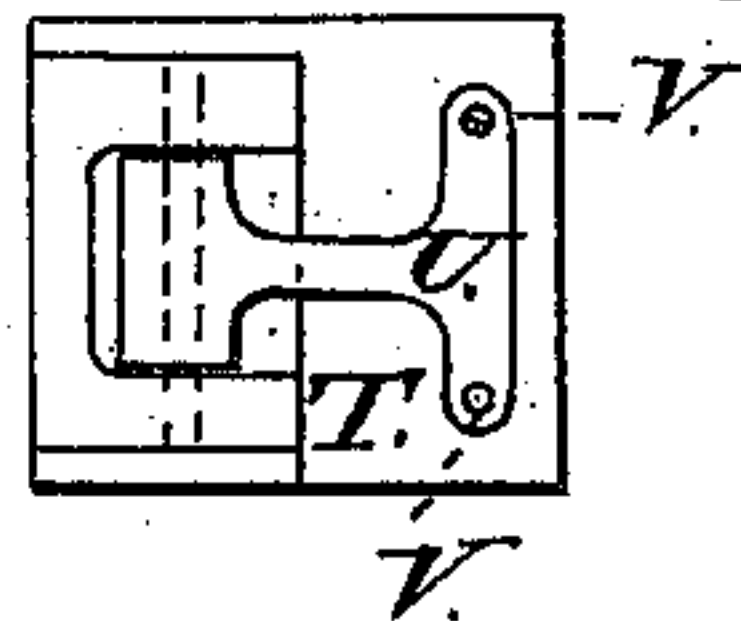
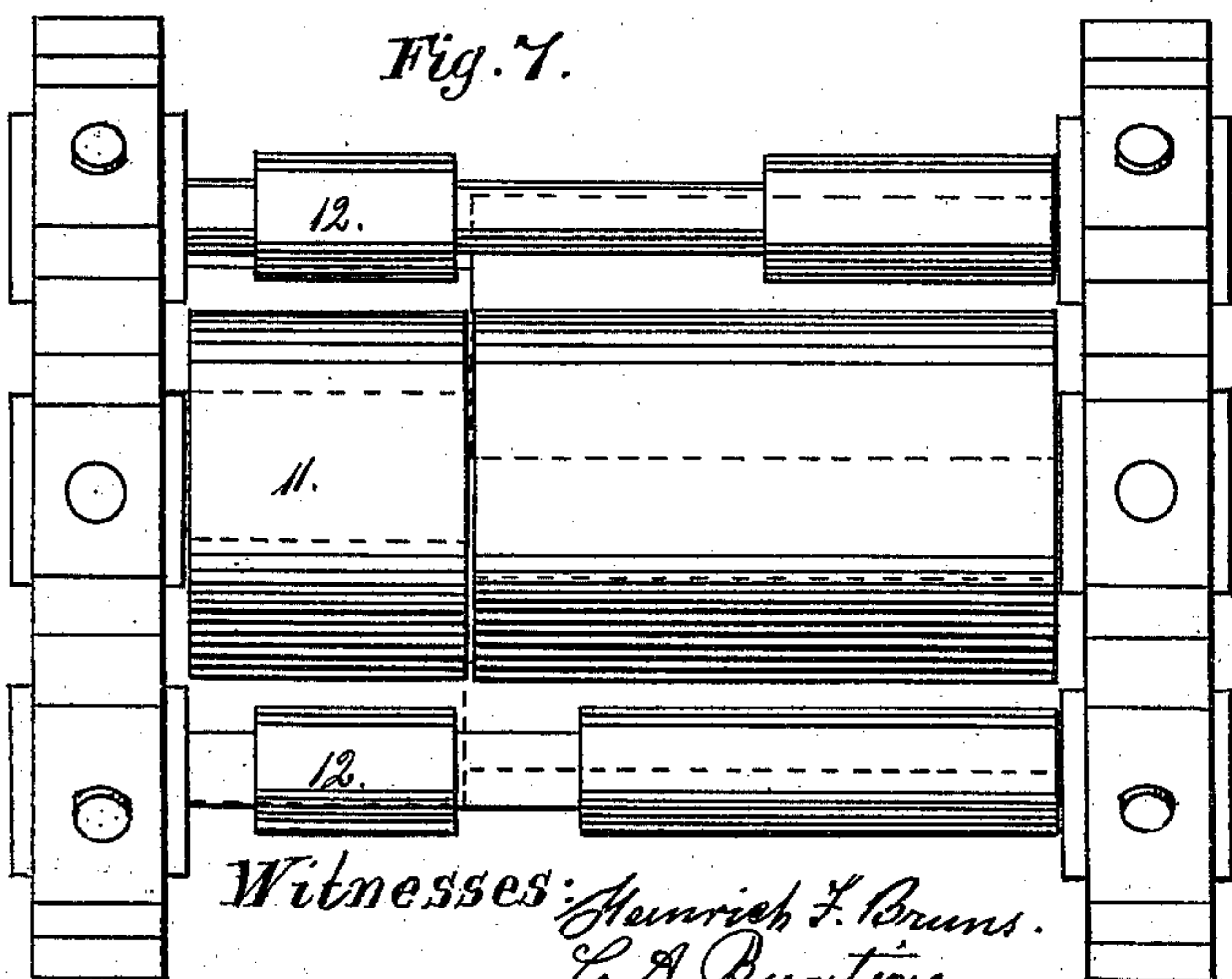


Fig. 7.



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# UNITED STATES PATENT OFFICE.

HENRY MESSER, OF CHICAGO, ILLINOIS.

## IMPROVEMENT IN MACHINES FOR PRINTING RAILWAY-TICKETS.

Specification forming part of Letters Patent No. 174,375, dated March 7, 1876; application filed January 9, 1875.

*To all whom it may concern:*

Be it known that I, HENRY MESSER, of Chicago, county of Cook, State of Illinois, have invented a Machine for Printing Railway-Tickets, reference being had to the accompanying drawings, which form a part hereof.

The object of my invention consists in making a machine that will print tickets in different colors, and number them consecutively with consecutive numbers, and also make a positive feed by means of holes punched in the paper between the tickets, as hereinafter more fully described.

My invention consists in the special mechanisms and the combinations of devices hereinafter more fully described, whereby the above-named results are accomplished.

In the annexed drawings, Figure 1 represents a side elevation of my machine. Fig. 2 represents a front elevation. Fig. 3 represents a top view of the feeding device; Fig. 4, a vertical section of the feeding device, taken at the line *xx* in Fig. 3. Fig. 5 is a transverse section taken at the line *yy*; Fig. 6, a top or plan view of feeding device; Fig. 7, the top view of the inking-rollers, and Fig. 8 an end view of the same.

A represents the frame of the machine, having a bed-plate, B. C is a shaft driven by the pulley D. E is a crank on one end of the shaft C. F is a pitman, which is suspended from the crank E, and is pivoted to a sliding head or block, G. This sliding block or head vibrates vertically in a guideway in the piece H, which is attached rigidly to the frame A.

I is a case or box for holding type. It may be made in two or more divisions, if necessary, to hold different sets of type, for printing in different colors, as hereinafter more fully described.

J is a consecutive numbering-wheel, made in the usual manner of making wheels for paging-books or numbering consecutively; and I make no claim to the special construction of the mechanism of the wheel, but use any of the well-known paging or consecutive-numbering wheels.

K is a swinging arm, pivoted as shown, and simply serves as a dog to turn the wheel J one space at each vibration of the block or

head G. L is a sliding bar, which slides in bearings M. It has a projection extending into the eccentric groove N, and is slid back and forth as the shaft C revolves. O is a vertical rock-shaft, with bearings at P P. It is caused to rock by the arm Q, which is connected at one end to the sliding bar L. R is an arm rigidly attached to the lower end of the rock-shaft O, and is simply made to vibrate back and forth as the rock-shaft is rocked by the arm Q, but it is attached to the connecting-rod S, which operates the feeding mechanism, as hereinafter described.

The feeding mechanism, which is operated by the rod S, consists of a sliding block, T, in which is pivoted the angle-piece U. The rod S is pivoted to one arm of the angle-piece U, and pins V project from the other arm, as more clearly shown in Figs. 4 and 6.

The sliding block T has lugs on its side, as clearly shown in Fig. 5, which have bearings in the box or casing W. As the rock-shaft O is vibrated, the arm R, through the means of the connecting-rod S, slides the sliding block T, but before moving the sliding block, when in the position shown in Fig. 4, it vibrates the angle-piece U, and causes the pins V to be drawn down from projecting through the slots X X. *a* is an adjustable piece lying in the groove on one side of the sliding block T, and is adjusted by set-screws *b*.

The object of the adjustable pin or friction-jib is to make the sliding block T slide sufficiently hard, so that the rod S will always operate the angle-piece U and project or recede the pins V, as above described, before sliding the block T.

The arm of the angle-piece U, which carries these pins, strikes the set-screw Y, and then as the rod S continues to move back, the sliding block T is drawn back to the position where it awaits the forward movement, as hereinafter described.

Z is a bed-plate, on which the continuous strip of paper upon which the tickets are printed is fed. I ordinarily feed such continuous strip from a reel or spool, conveniently placed at the end of the machine, from which it is fed under the spring pressure-roller 1.

2 2 are dies, through which punches 3 (which are carried in the sliding head or block



G, and shown in Figs. 1 and 2) pass to punch holes in a continuous strip of paper upon which tickets are printed. These dies are just the length of a ticket from the slots X X, and the holes punched by the punches 3 receive the pins V as they are thrown up through the slots X X by the rod S, when it receives its forward movement from the rock-shaft O. The rock shaft O moves the rod S after vibrating the angle-piece U just far enough to slide the sliding block T with the pins V to carry the continuous strip of paper along just the length of a ticket. The sliding block is then drawn back, as above described. There is a pivoted lever, 4, which is pivoted to the frame A of the machine at 5. The upper end of this pivoted lever is pivoted to a piece or rod, 6, which is also pivoted to the sliding piece L. The lower end of this pivoted lever 4 carries one end of a shaft, which has its other end carried in the lower end of the pivoted arm 7, which is pivoted at the frame A at 8. From this shaft the ink-roller holder 9 extends to ink the type-carrier in the case I. The levers 4 and 7 are thrown back in the position shown by the dotted lines in Fig. 1, when the inking-roller 10 is thrown back in contact with the roller 11, as shown, to receive its ink.

12 12 are two smaller inking-rollers for spreading the ink on the roller 11. They operate in the usual manner of inking-rollers for spreading ink, and are revolved by contact with roller 12, which is driven by the belt 13. These inking-rollers are shown in the drawing divided into sections. The first section, marked 15, is used for one color of ink, and the section marked 16 is used for another color of ink. The type for the printing matter that is intended to be printed in one color is put in that section of case I where it will be inked from the section of the inking-roller which carries that color, and the part which is intended to be printed with another color is put in the opposite end of case I, where it will be inked from section 16 of the inking-roller. This part of the inking-roller also inks the consecutive-paging wheel J, as clearly shown in Fig. 2.

The operation of my machine is as follows: As the shaft C revolves the sliding head G is thrown down upon the continuous strip of paper resting upon the bed-plate Z, when one color is printed upon one ticket, and another color is printed upon another ticket, and the numbering is printed upon another ticket, and the punches 3 punch holes between two of the tickets. The sliding head G is then raised, when the shaft O and the vibrating lever 4 are put in motion from the same shaft C, and the pins V thrown up through the holes punched by the punches 3 through the continuous strip of paper, and the paper is moved along by said pins just the length of a ticket, and at the same time the inking-roller passes over the type, inking it as above described, and the feeding device is brought back ready for another operation, and the inking-roller carried

into position shown by the dotted lines in Fig. 1, when the sliding head G passes down for another operation, one set of type printing a new ticket, another type printing another color on the ticket previously printed on by the first set of type, the numbering-wheel numbering the ticket last printed on by the last set of type, and the punches punching some new holes to be carried forward to receive the feeding-pins V, as above described. As the paper is fed it is drawn under the pressure-roller 1, which also serves to hold it accurately in place.

It will be observed that the length of the tickets may be varied by the set-screw 17. The rod S always moves a certain distance, but it does not move the sliding block T until it strikes the set-screw 17, and the length of the ticket is governed or determined by the distance which the sliding block T is moved, which is varied by the adjustment of the set-screw.

Having described the construction and operation of my machine, what I claim, and desire to secure by Letters Patent, is—

1. The bed-plate Z and sliding block T, combined with the angle-piece U, pins V, set-screw 17, and connecting-rod S, to constitute a regulatable intermittent feed, as set forth.

2. The sliding head G, crank E, shaft C, sliding bar L, and the rock-shaft O, and arm R, combined with the pitman F, cam N, and arm Q, whereby the feeding device is operated from the same shaft as the sliding head, as and for the purpose set forth.

3. The reciprocating head G, which carries the type-box and its operative mechanism, combined with the cam N, sliding bar L, rod 6, pivoted arm 4, ink roller-carrier 9, and swinging arm 7, to actuate the numbering-wheel, all substantially as set forth.

4. The type-box I and consecutive numbering-wheel, with their operative mechanisms, in combination with the punches 3, pins V, and inking-rollers, with their operative mechanisms, whereby the strips of paper are automatically punched, fed, and printed, substantially as set forth.

5. The grooved bed-piece W, sliding block T, provided with the adjusting-screw 17, and pivoted angle-piece U, combined with the reciprocating rod S, and adjustable piece a, as set forth.

6. The reciprocating angle-piece U, provided with the feeding-pins V, combined with the bed-plate Z, and the spring press-roller 1, whereby the feeding-pins are prevented from moving the paper strip in their retrograde motion.

7. The type-box I, with its operative mechanism, in combination with the punches 3, feed-pins V, and inking-rollers, with their operative mechanisms, for the purpose set forth.

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