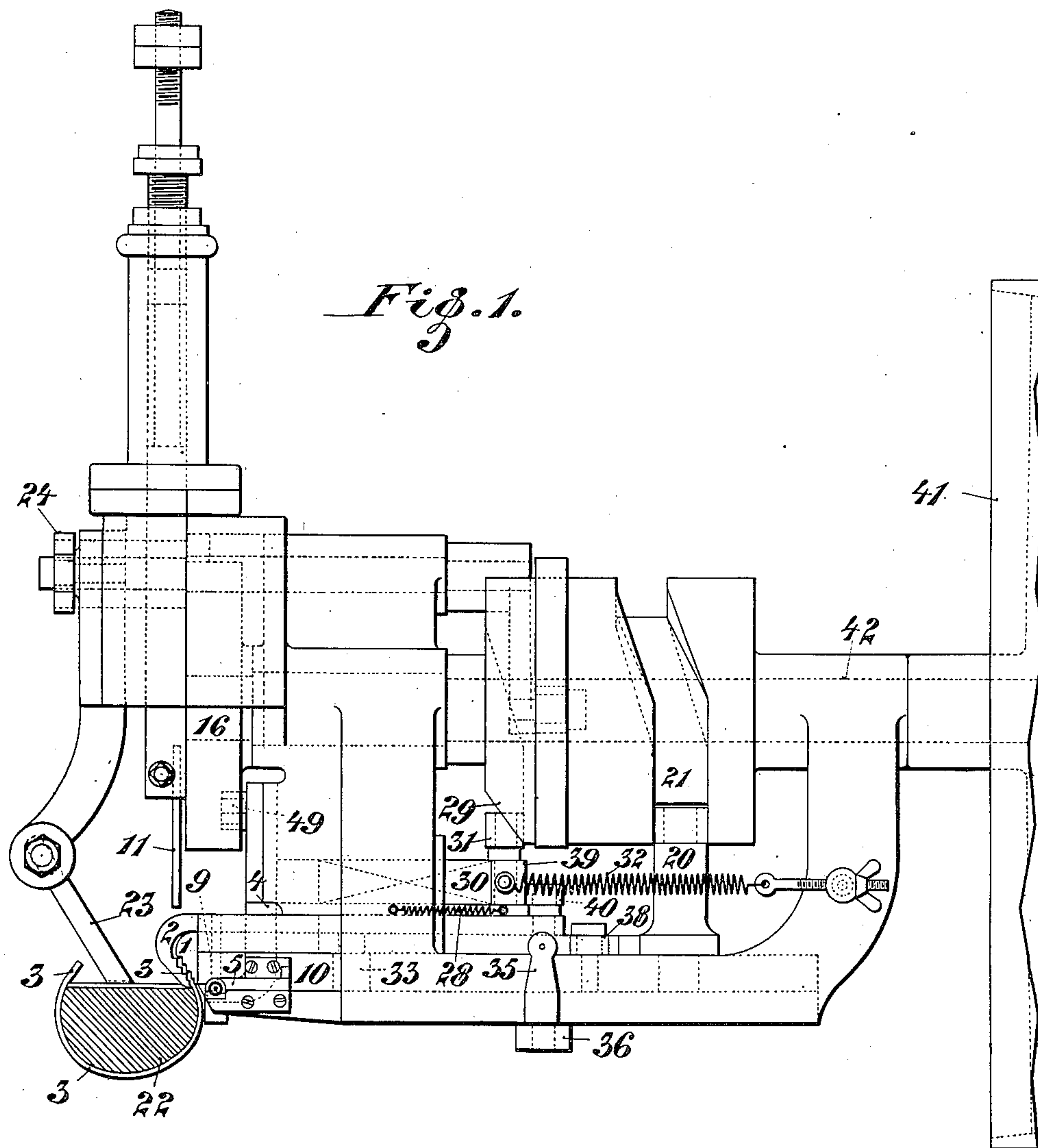


No. 817,660.

PATENTED APR. 10, 1906.

E. NOLLE.
BOOT AND SHOE TACKING MACHINE.
APPLICATION FILED SEPT. 28, 1903.

4 SHEETS—SHEET 1.



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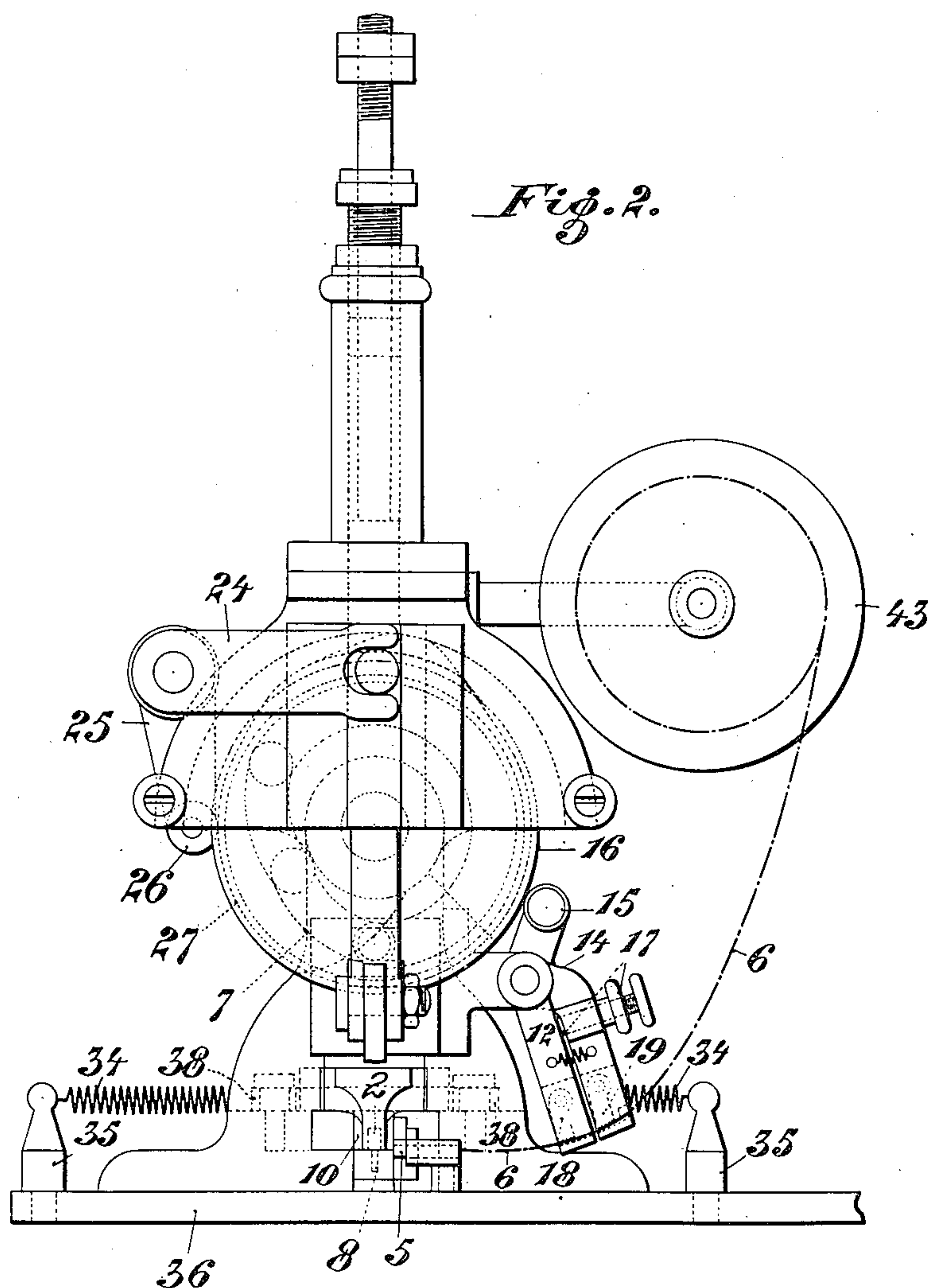
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4 SHEETS—SHEET 2.



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4 SHEETS—SHEET 3.

Fig. 3.

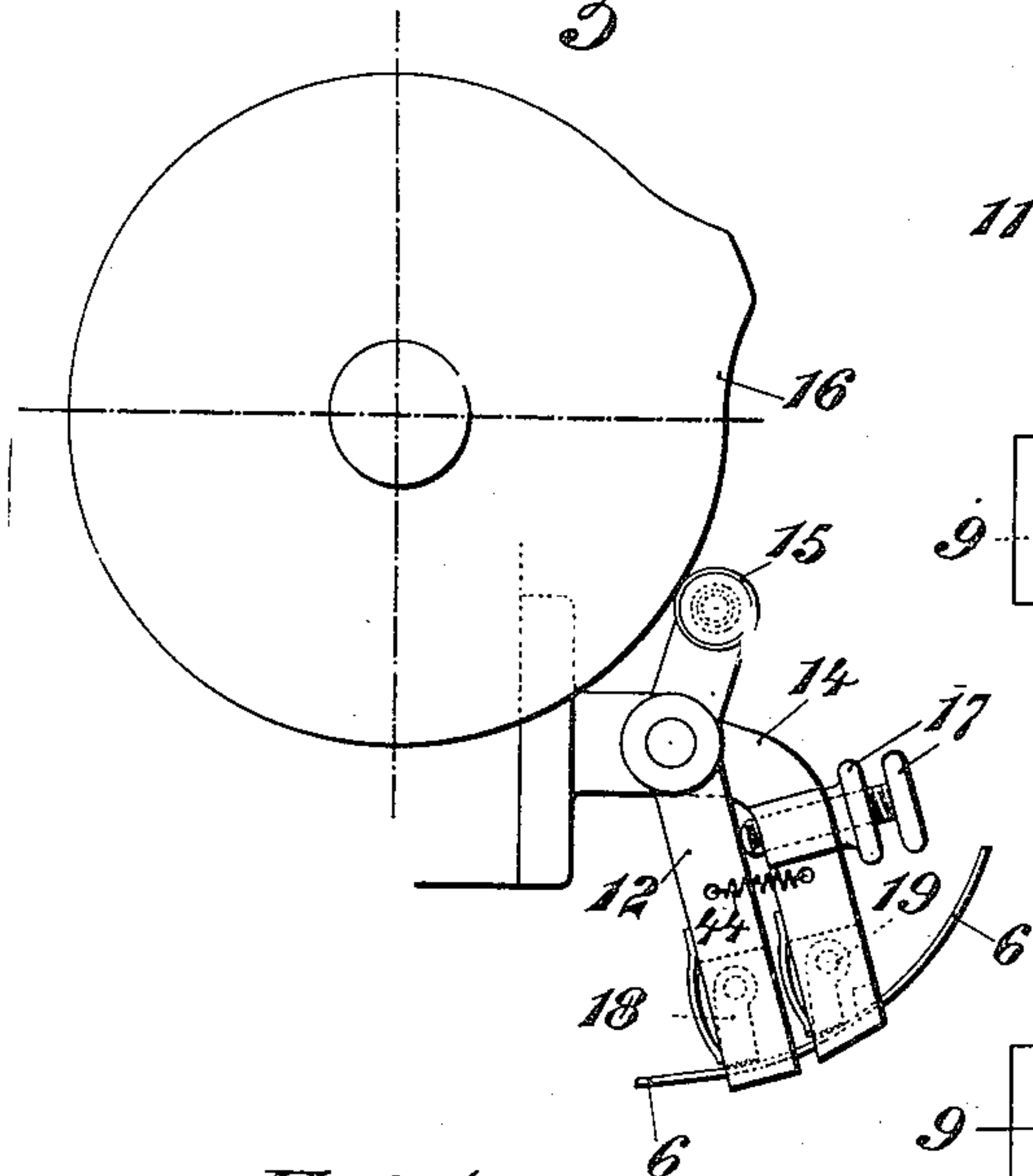


Fig. 4.

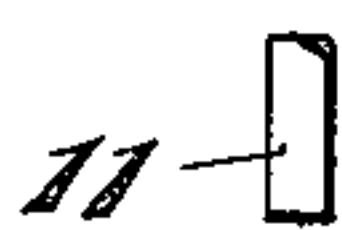
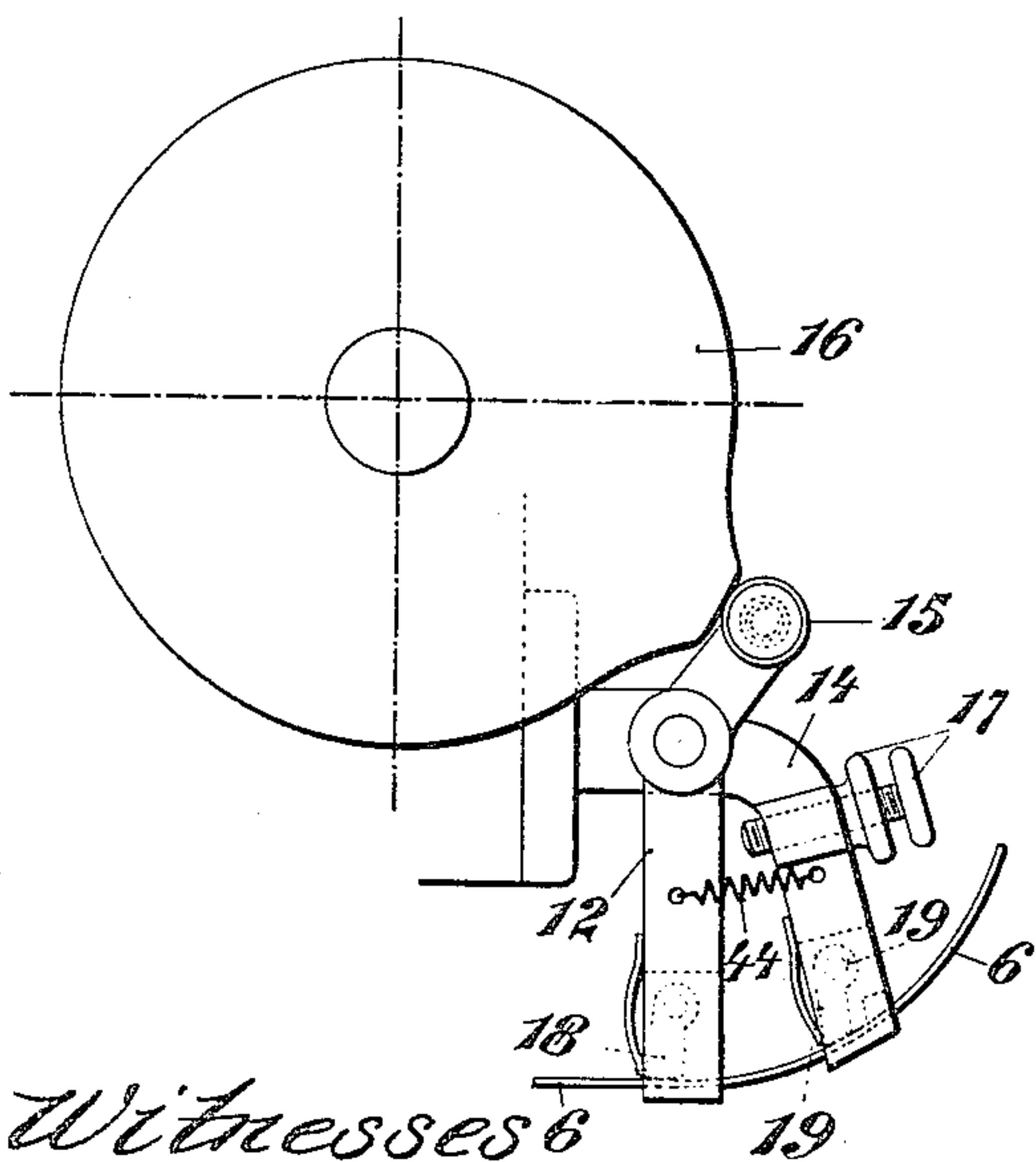


Fig. 5.

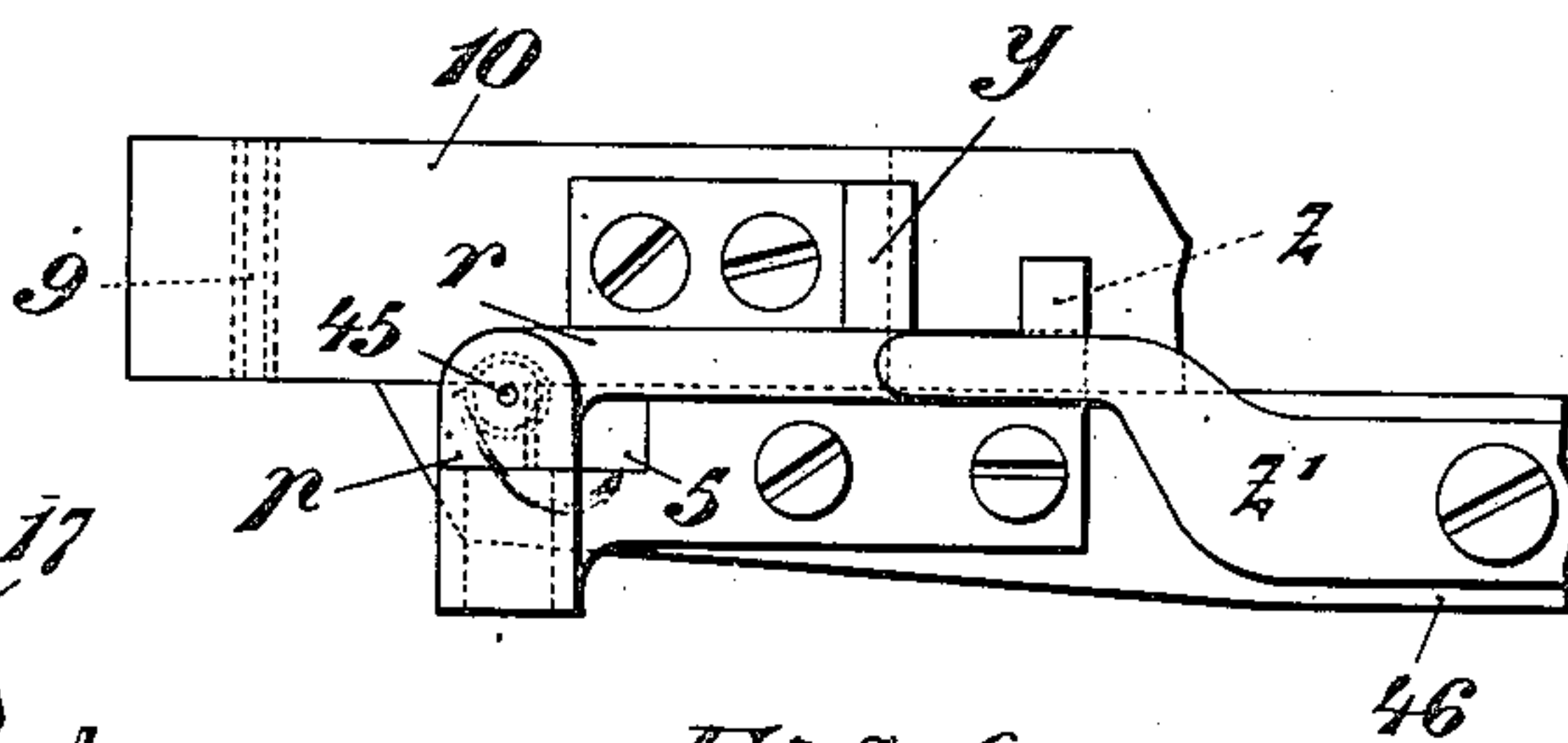


Fig. 6.

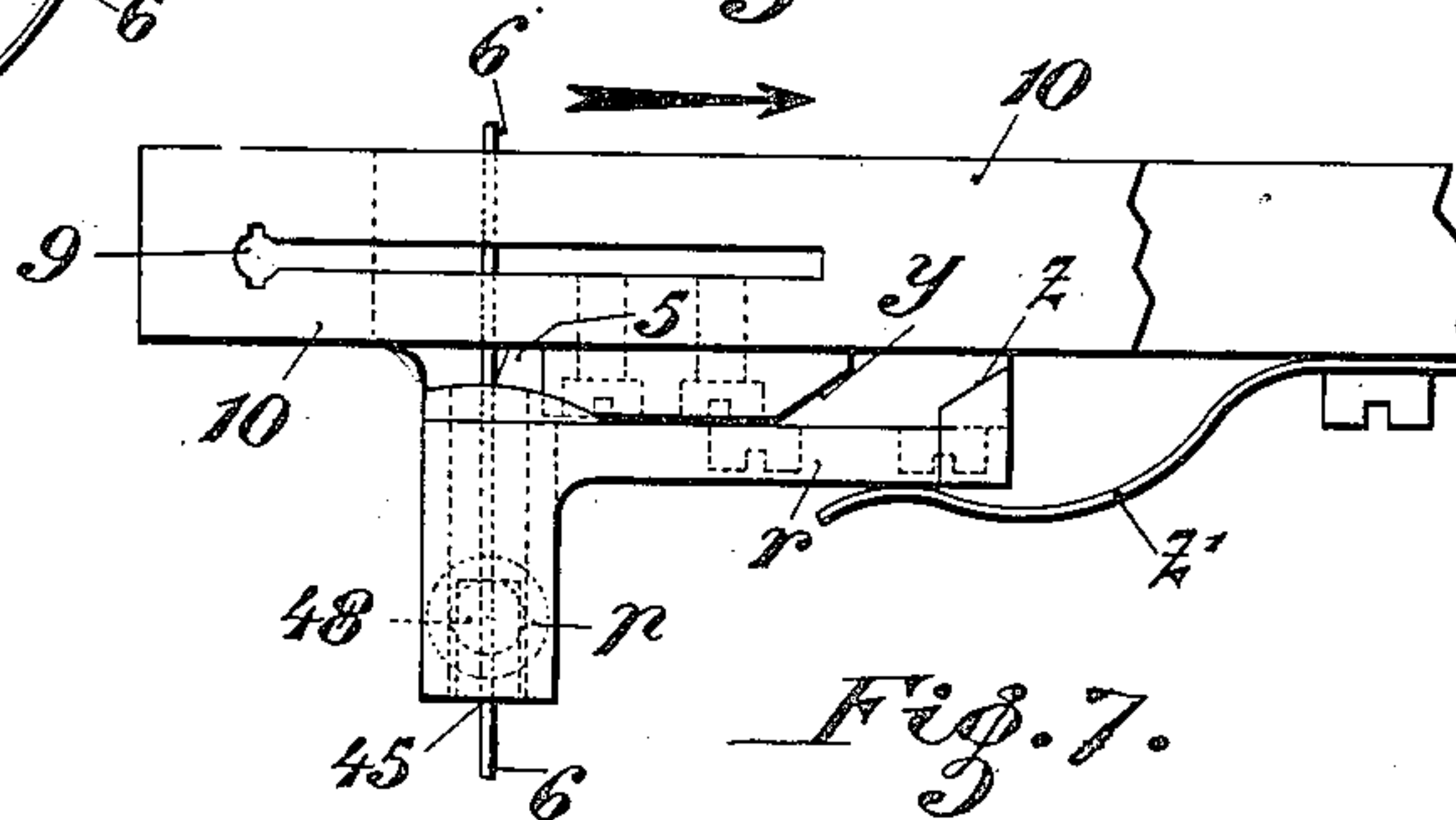
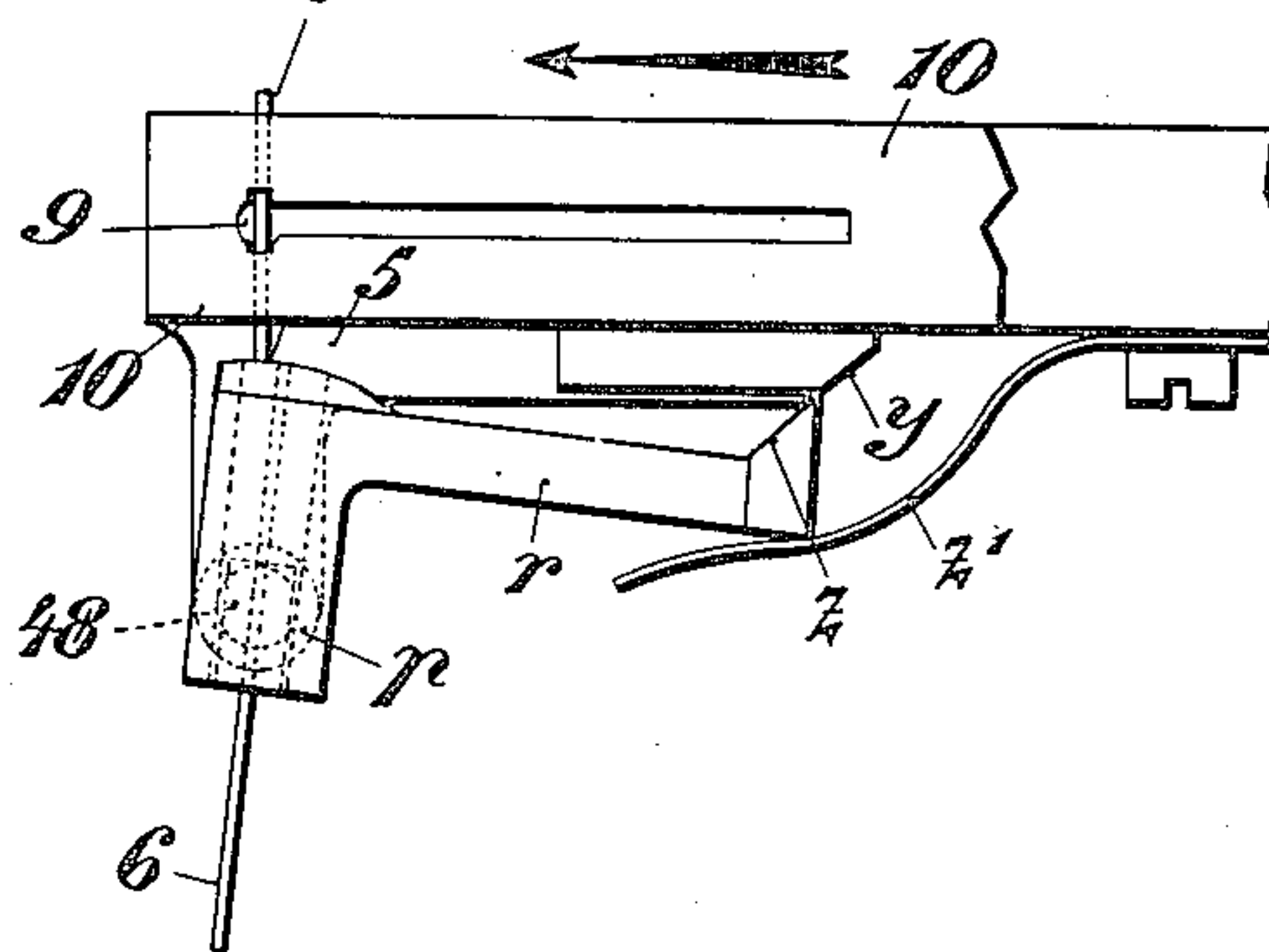


Fig. 7.



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4 SHEETS—SHEET 4.

Fig. 8.

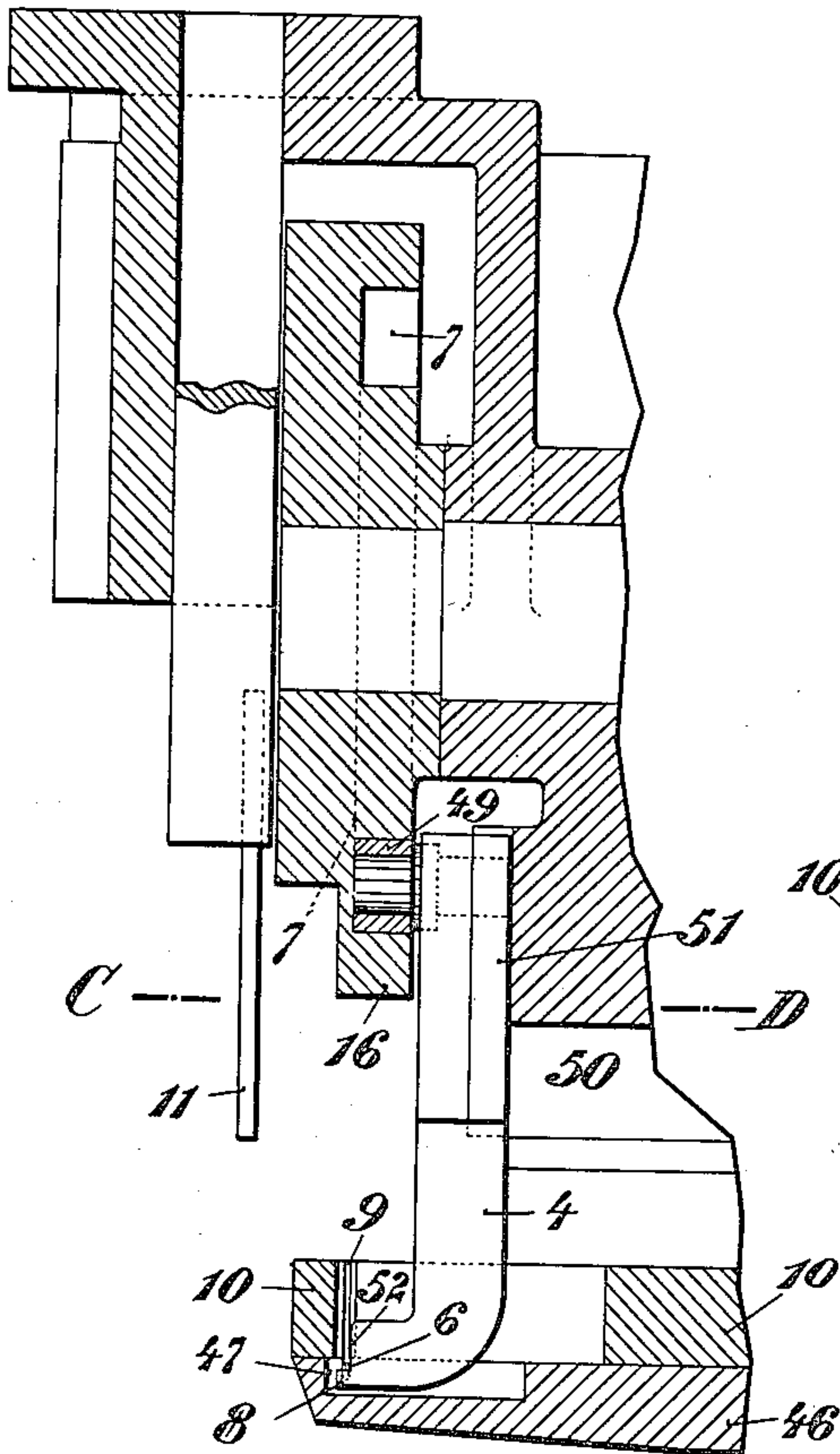


Fig. 9.

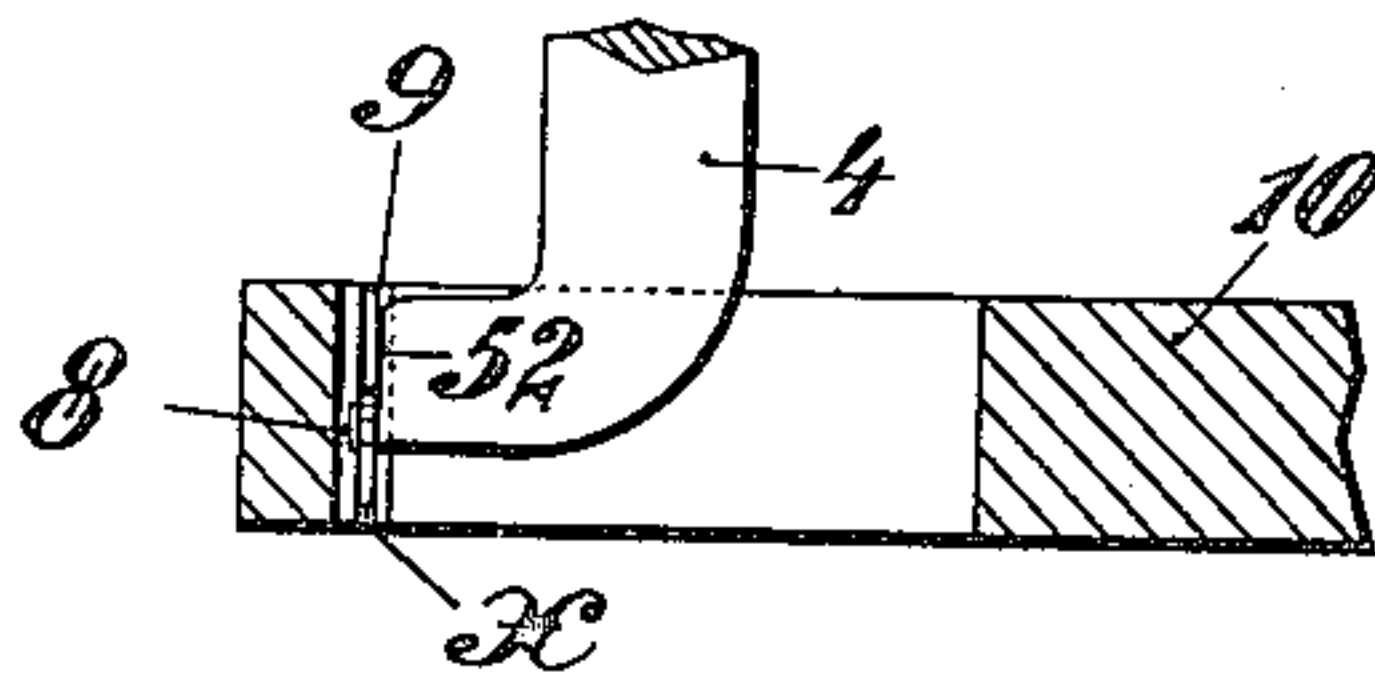


Fig. 10.

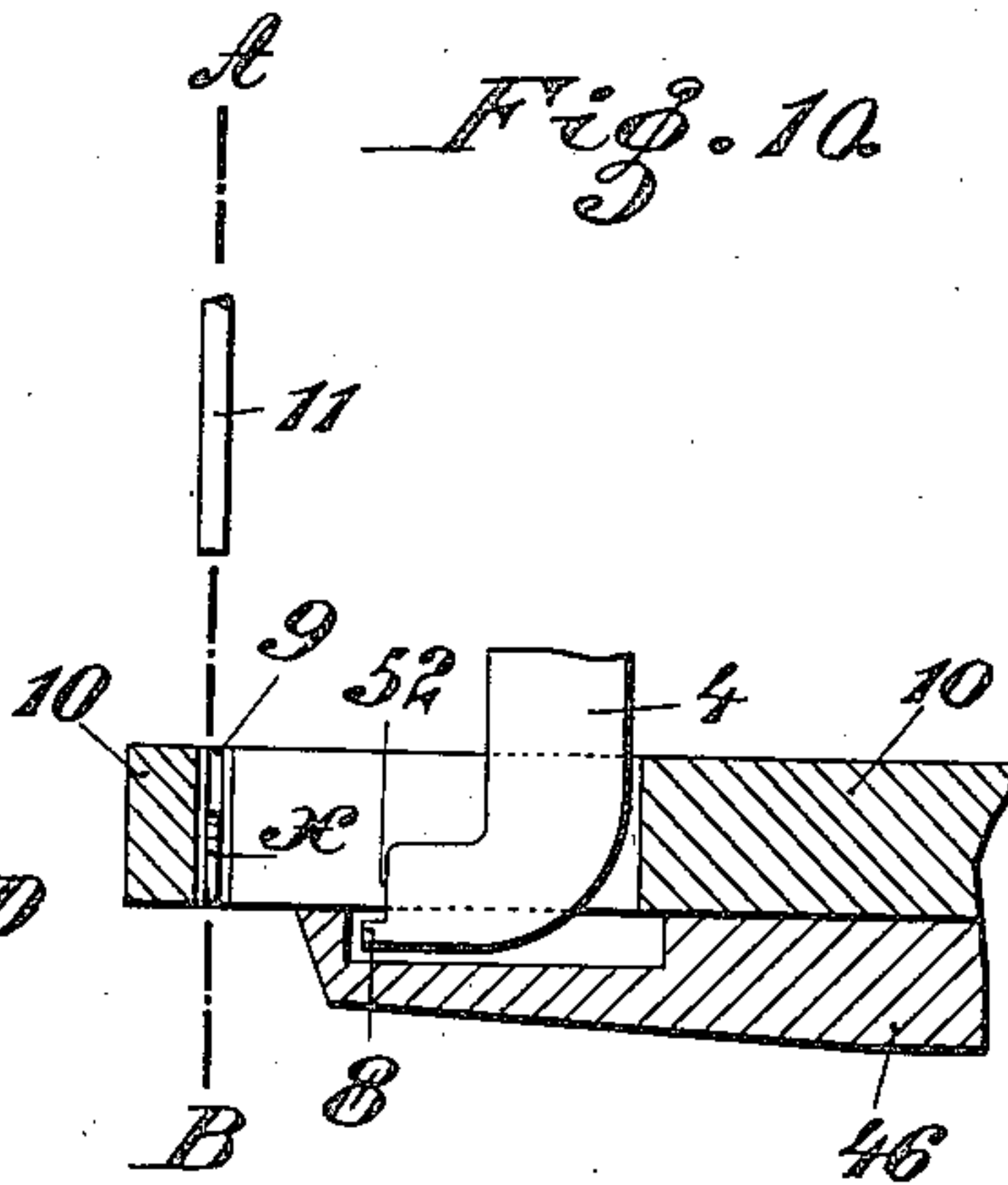


Fig. 11.

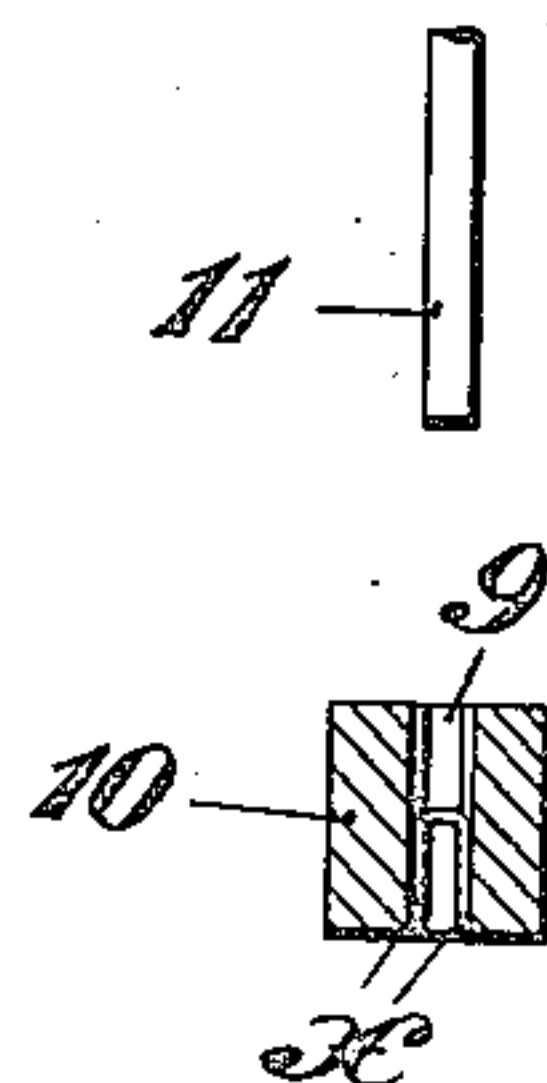
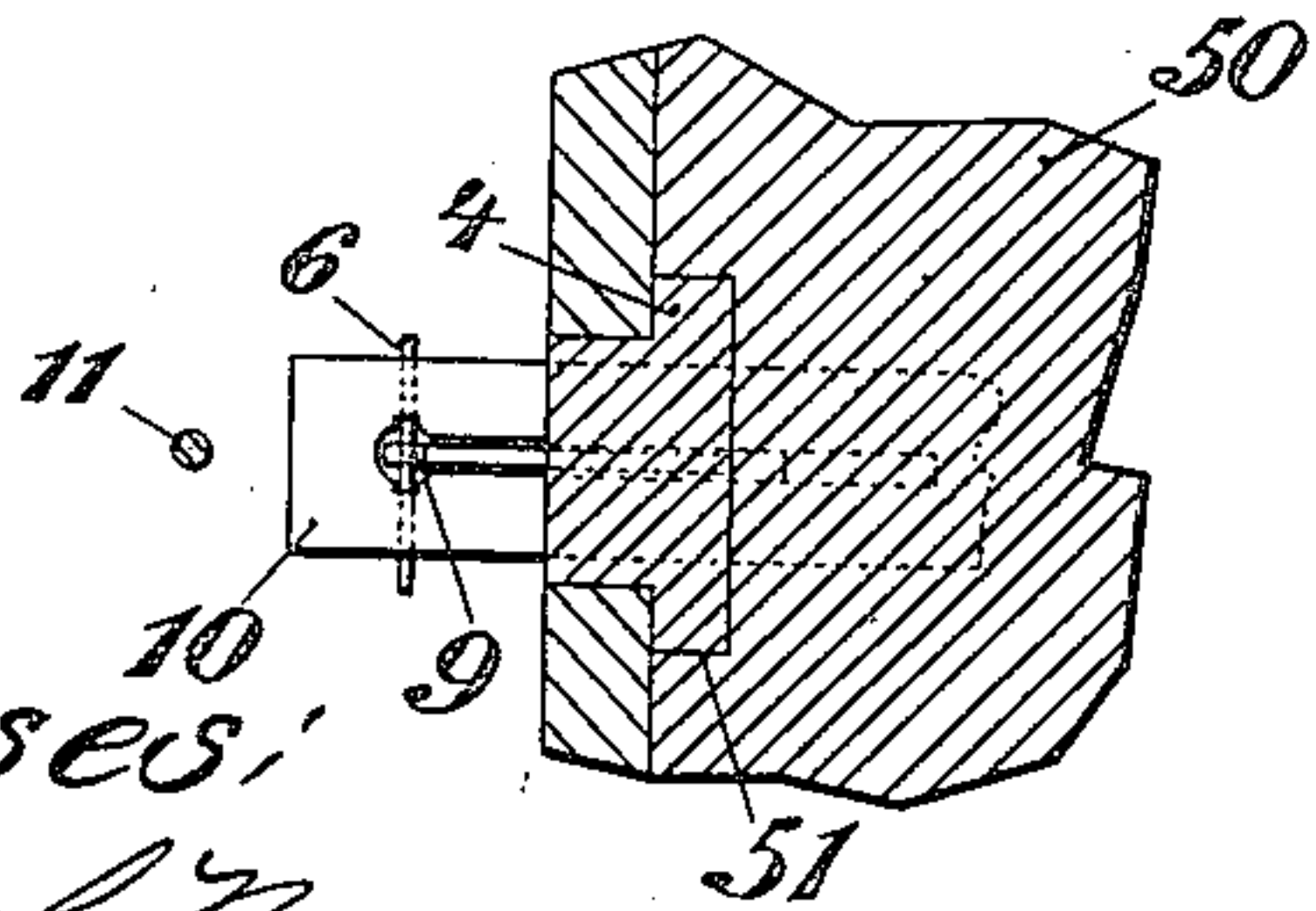


Fig. 12.



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UNITED STATES PATENT OFFICE.

ERNST NOLLE, OF WEISSENFELS, GERMANY.

BOOT AND SHOE TACKING MACHINE.

No. 817,660.

Specification of Letters Patent.

Patented April 10, 1906.

Application filed September 28, 1903. Serial No. 174,984.

To all whom it may concern:

Be it known that I, ERNST NOLLE, manufacturer, a subject of the King of Prussia, German Emperor, residing at Weissenfels-on-the-Saale, in the Kingdom of Prussia and German Empire, have invented certain new and useful Improvements in or Relating to Boot and Shoe Tacking Machines, of which the following is a specification.

10 This invention relates to a tacking-machine.

The machine may be used in various connections advantageously—for example, in connection with an apparatus for the manufacture of shoes—as disclosed in the drawings and hereinafter more particularly described.

15 The machine is simple in construction and effective and rapid in operation.

Other objects and advantages of the invention will be set forth in the following description, while the novelty thereof will be included in the claims succeeding said description.

Referring to the drawings, Figure 1 shows the apparatus with its essential parts in side elevation. Fig. 2 is a front elevation. Figs. 25 3 and 4 show the device for unwinding a given length of wire from the wire-reel in side elevation. Fig. 5 shows the wire-cutting device in side elevation. Fig. 6 shows the same device in plan in the position it occupies when the 30 wire is passed under the slide 10. Fig. 7 is the same plan, but with the parts in the position they occupy at the cutting operation. Figs. 8 to 12 show the device for forming the wire staple, Fig. 8 showing it at the moment when the flat length of wire is being seized by the 35 bending-hook 4 for the purpose of bending it into a staple, Fig. 9 illustrating the device in the position it occupies after a staple has been formed by the rising of the bending-hook 4. Fig. 10 shows the slide 10 moved into position under the driver 11. Fig. 11 is a cross-section on the line A B of Fig. 10. Fig. 12 is a horizontal cross-section on the line C D of Fig. 8.

45 A driving-pulley 41 operates the driving-shaft 42 of the machine. The latter operates the various parts by means of cams. As a rule the parts are returned to their original positions by springs.

50 A wire-reel 43 is rotatably mounted at the side of the machine-frame in the well-known manner. The wire 6 for the manufacture of fasteners or staples is unwound from the said reel by the machine itself.

55 In order to make a staple, a certain length of wire is required, which varies according to

the tacking work that is to be done. These pieces of wire are drawn off automatically by the machine in the following manner: The wire 6 passes through an arm 14, Fig. 5, provided with a pawl 19, which is forced against it by a spring in such way as to prevent it from moving backward. To the arm 14 is pivoted a bell-crank lever 12, having a roller 15 on one arm, against which acts a cam 16, Fig. 1, mounted on and rotating with the driving-shaft 42. The wire 6 passes through a slot or hole in the lower end of the other arm of the lever 12, Figs. 4 and 5. This lever carries a spring-pawl 18, which locks the wire 6 to it and causes it to move with it during its advance. When the roller 15 is pushed outward by the projection of the cam 16, the lever 12 swings with its lower end to the left, as shown in Fig. 5. The spring-pawl 18, co-operating with the lower end of the lever 12, holds the wire and pulls it, partially lifting the pawl 19, whereby a certain length of wire is drawn off from the reel 43. After the projection of the cam 16 has passed the roller 15 a spring 44, connecting the lever 12 and the arm 14, causes the lower arm of the lever 12 to return to the position shown in Fig. 4 next to the arm 14. During this movement the pawl 18 gives way and slides over the already-advanced wire 6, while the pawl 19 locks the latter and prevents it from going back to the reel 43. A set-screw 17 serves to regulate the distance between the bell-crank lever 12 and the arm 14 in the position of rest. The smaller this distance the more wire will be advanced by the cam 16 during the pressing outward of the roller 15. The wire thus advanced passes through a small opening 45 in the wire-cutting device *p* into a recess 47 in a plate 46, Fig. 9, under the slide 10. The cutting device *p* is pivoted about a pin 48 on the plate 46 and has an arm *r* with a cam or inclined surface *z*, which arm is pressed by a spring *z'* against a wedge *y* on the slide 10. (See Figs. 6 and 8.)

On the part 46 is mounted a cutter 5. When during the advance of the slide 10 the wedge *y* pushes away the projection *z*, the spring *z'* being at the same time pressed outward, the wire-guide is slightly turned in a horizontal direction and the projecting wire comes against the cutter 5 and is cut off. (See Figs. 7 and 8.) At the same time the bending-hook 4, Fig. 9, with its lower projection 8, entering the recess 47, has during the advance of the slide 10 (see Fig. 9) come

under the cut-off portion of the wire 6, the position of the slide 10 now being such that the wire 6 lies under the laterally-widened slot 9. The cam 16, operating the roller 15, is provided with a groove 7, Fig. 9, with which engages a projection or roller 49 on the bending-hook 4. The latter on the rotation of the cam 16 slides vertically in the frame between guides 51, Fig. 13. The said cam-groove 7 now causes the hook to rise. The projection 8 of the hook 4, with its cooperating surface 52, pulls and bends the cut-off wire upward—that is to say, into the lateral notches of the hole 9, Figs. 9 and 10, the slide 10 standing still. The ends of the staple, owing to the upward movement of the projection 8, are bent downward in the hole 9, Fig. 12, said staple, owing to the natural elasticity of wire, resting against the sides of the hole 9 in the slide and being held there by its elasticity. In this way a staple x has been formed from the wire 6, Figs. 10 to 12, and it is then only necessary to advance the slide 10 (the bending-hook only moves up and down) in order that the staple x should be driven by means of the driver 11 into the work—say the upper and welt—which had been previously arranged in position.

Having described the invention, what I claim is—

1. In a machine of the class described, a slotted reciprocatory slide and a hook arranged for reciprocation transverse to the slide and working through the slot therein,

said slot having lateral notches to receive the branches of a staple formed by the hook and the latter being arranged on one movement to form a wire extending across the slot into a staple.

2. In a machine of the class described, a slotted reciprocatory slide, a hook arranged for reciprocation transverse to the slide and working through the slot in said slide, said slot having notches at one end to receive the branches of a staple formed by the hook, and means for cutting the wire into determined lengths, said hook being arranged, on one movement, to form the wire into a staple after the cutting operation.

3. In a machine of the class described, a slotted reciprocatory slide, a hook arranged for reciprocation transverse to the slide and working through the slot therein, said slot having lateral notches to receive the branches of a staple formed by the hook, and wire-cutting means arranged for operation by the slide and adapted to cut wire into a determined length, the hook being arranged on one movement to form said wire into a staple after the cutting operation.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ERNST NOLLE.

Witnesses:

HENRY HASPER,
WOLDEMAR HAUPT.