

No. 630,476.

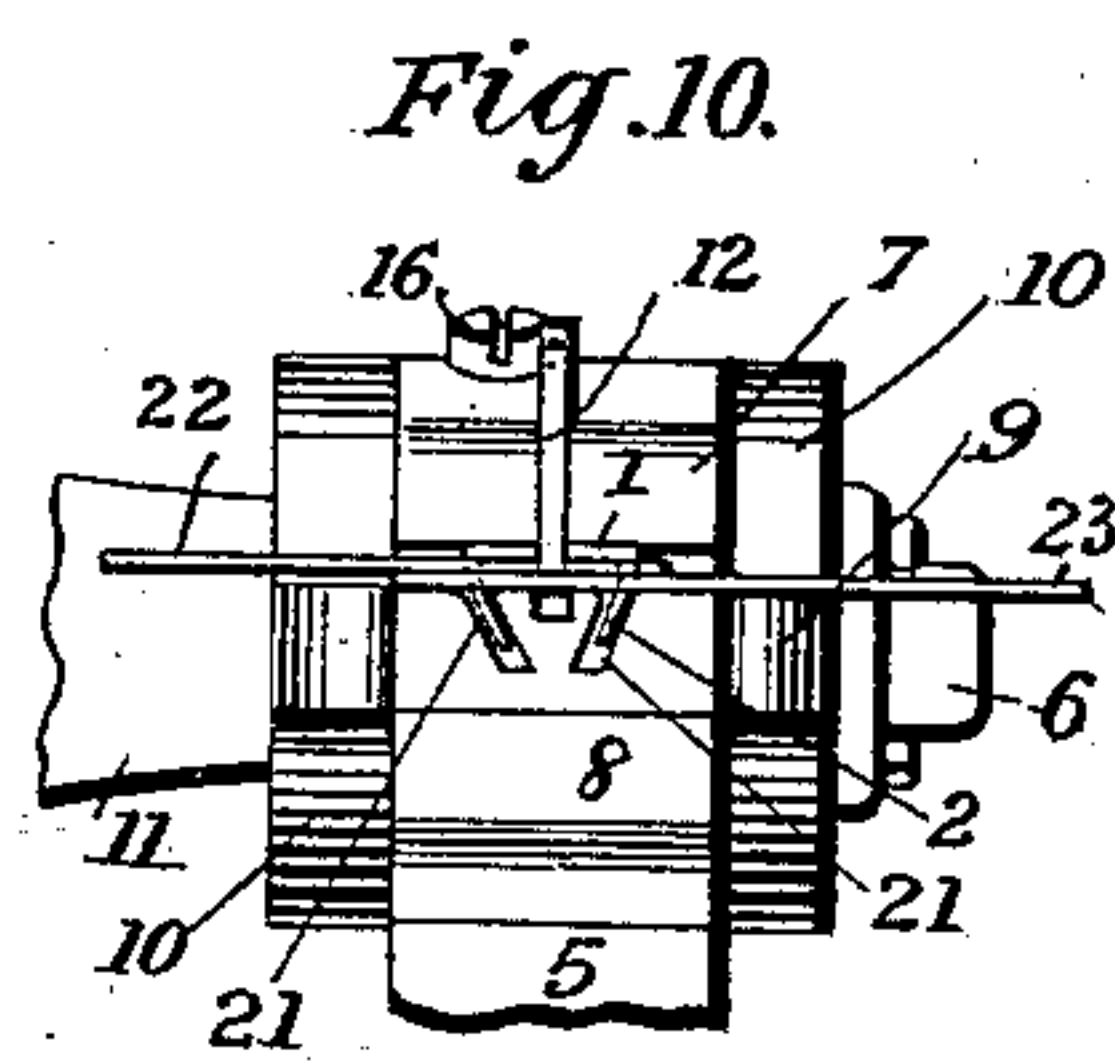
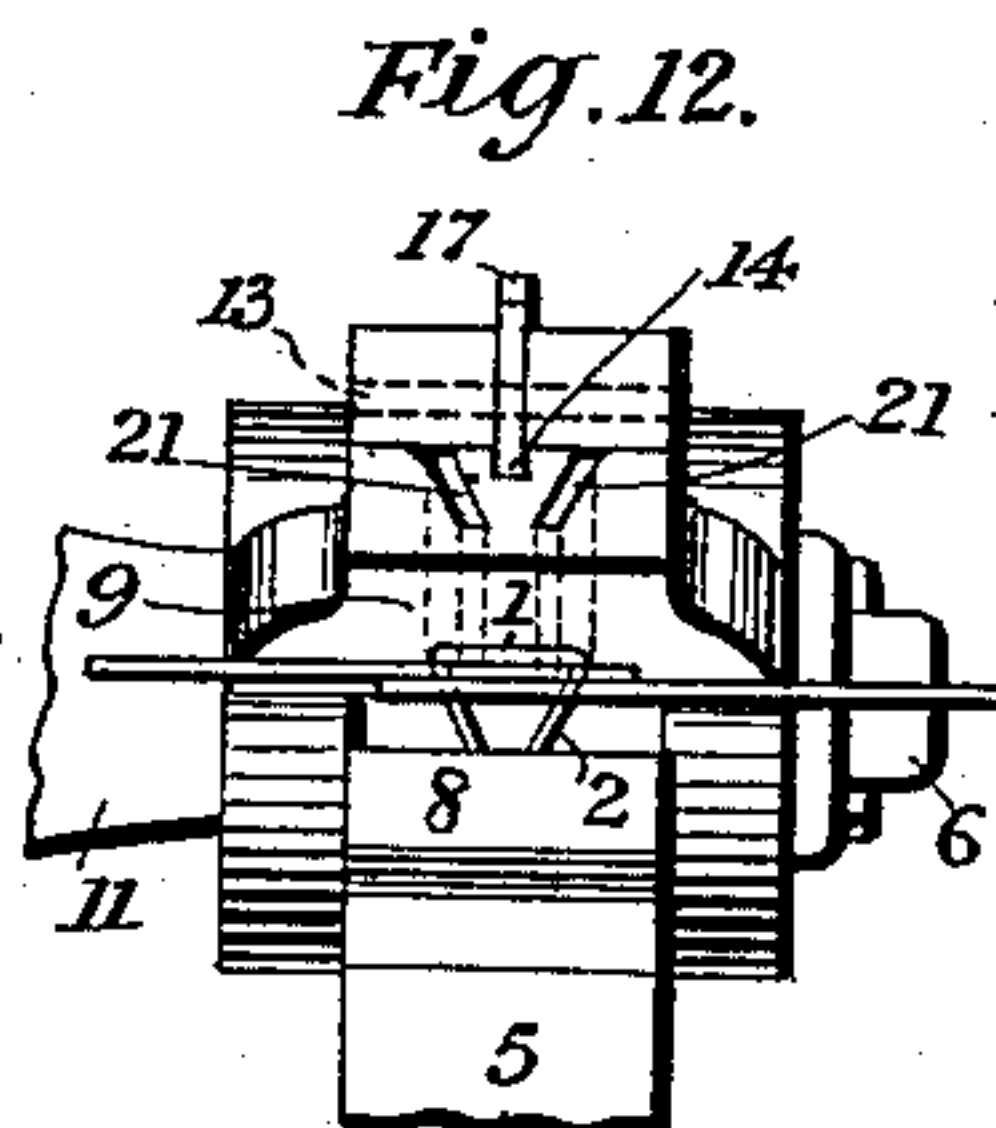
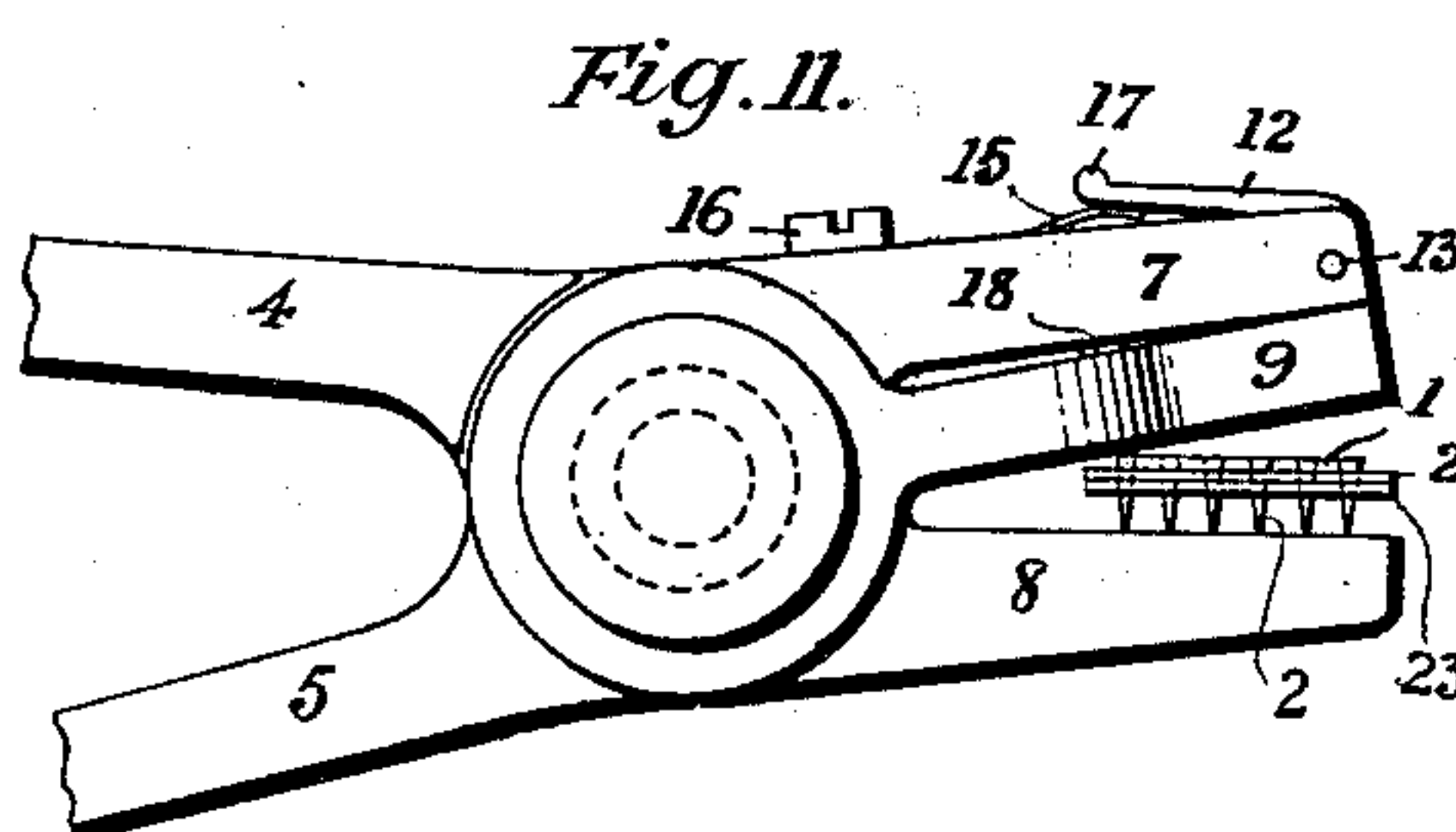
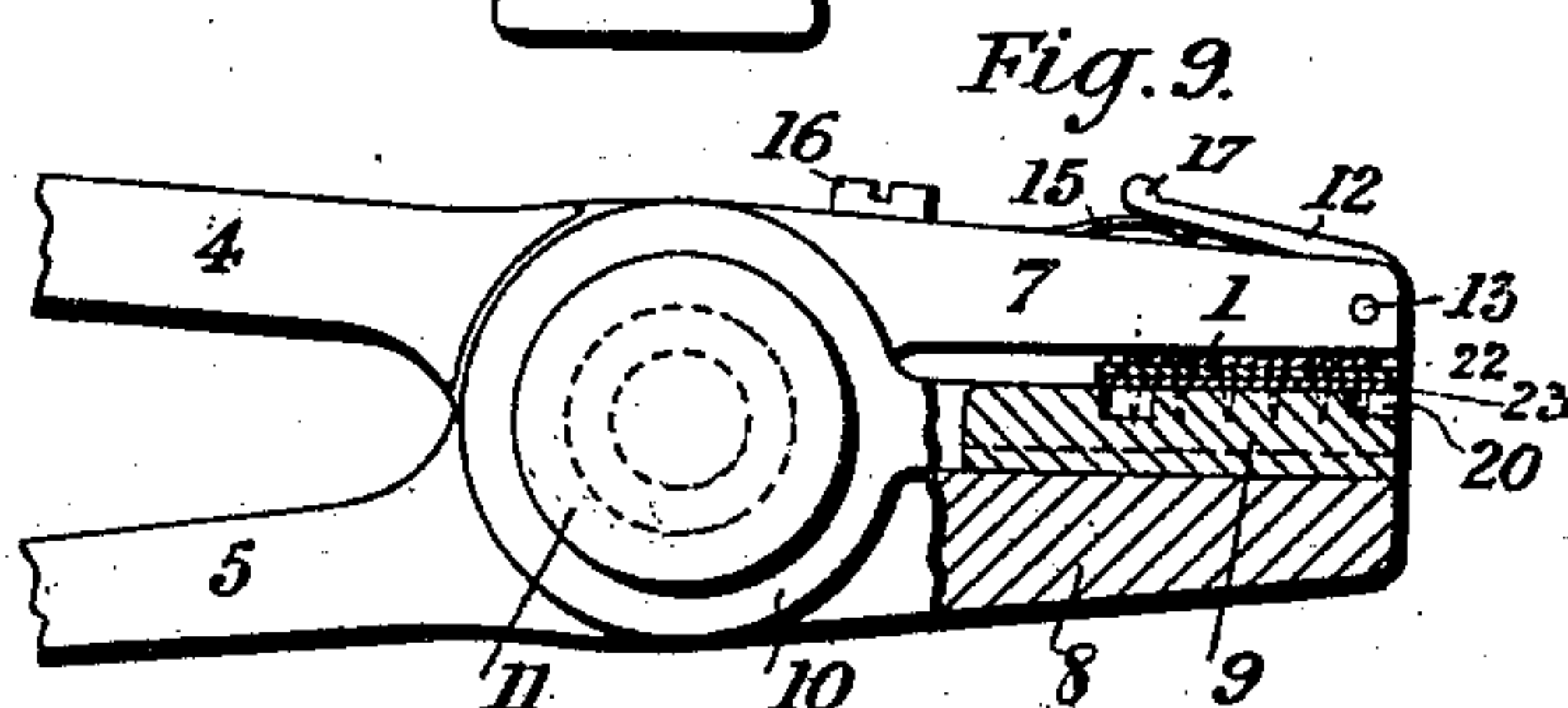
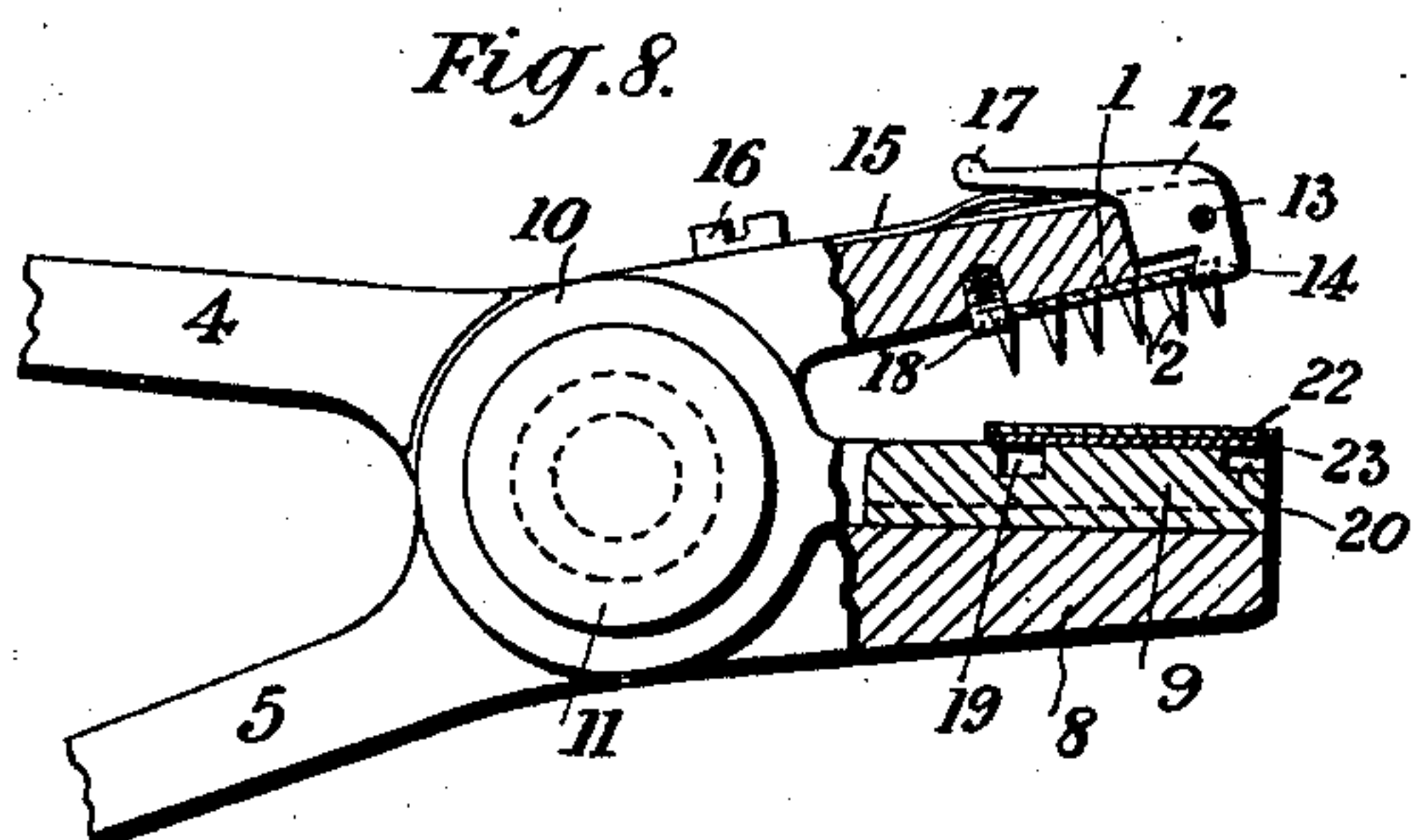
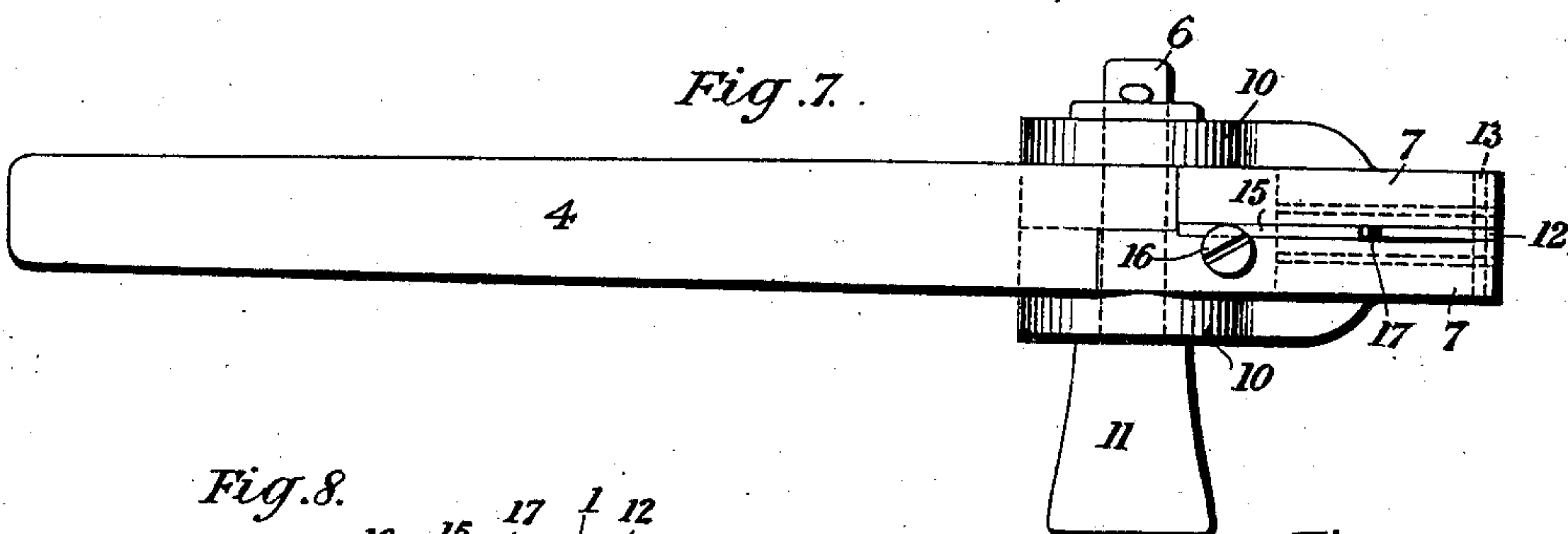
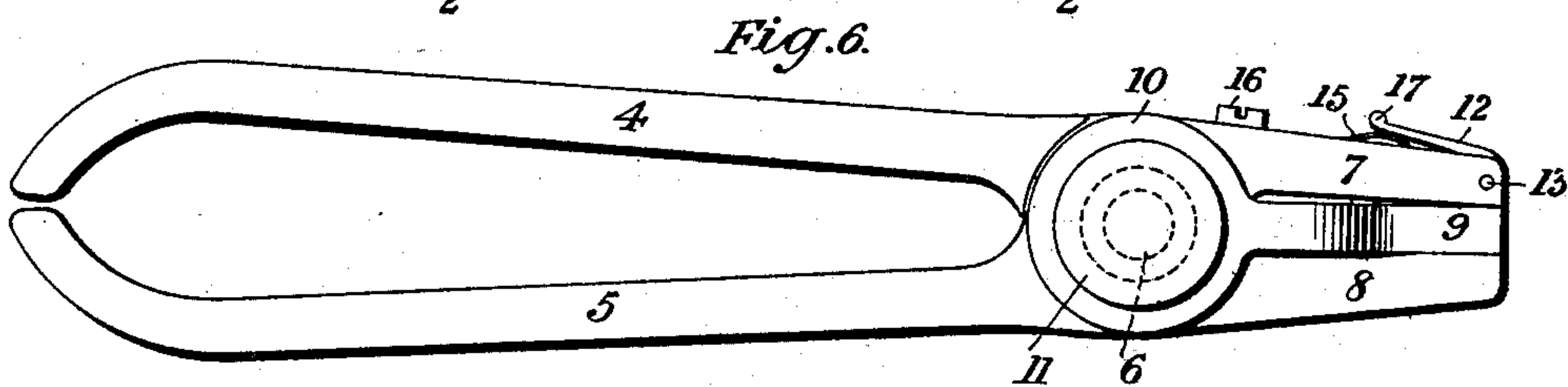
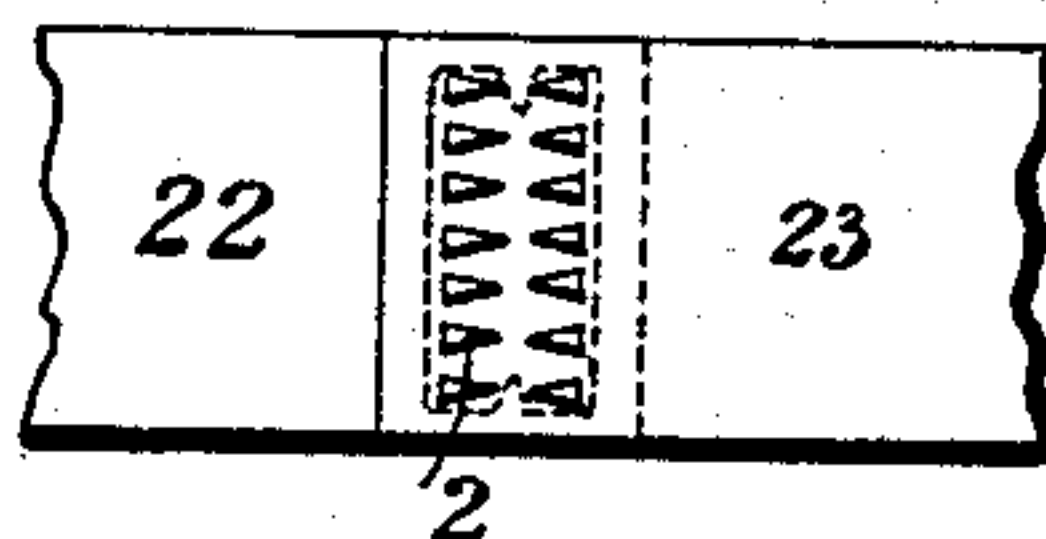
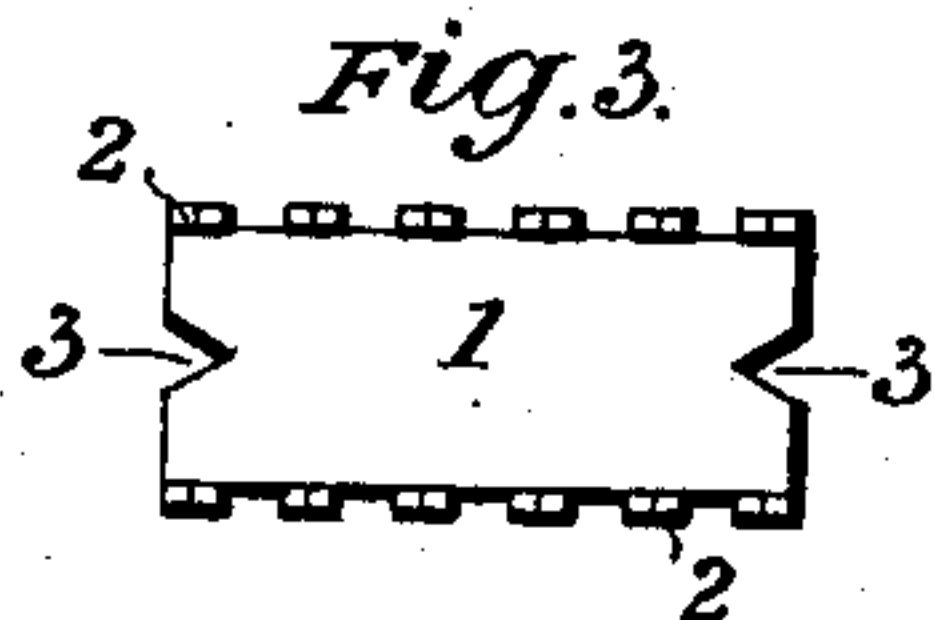
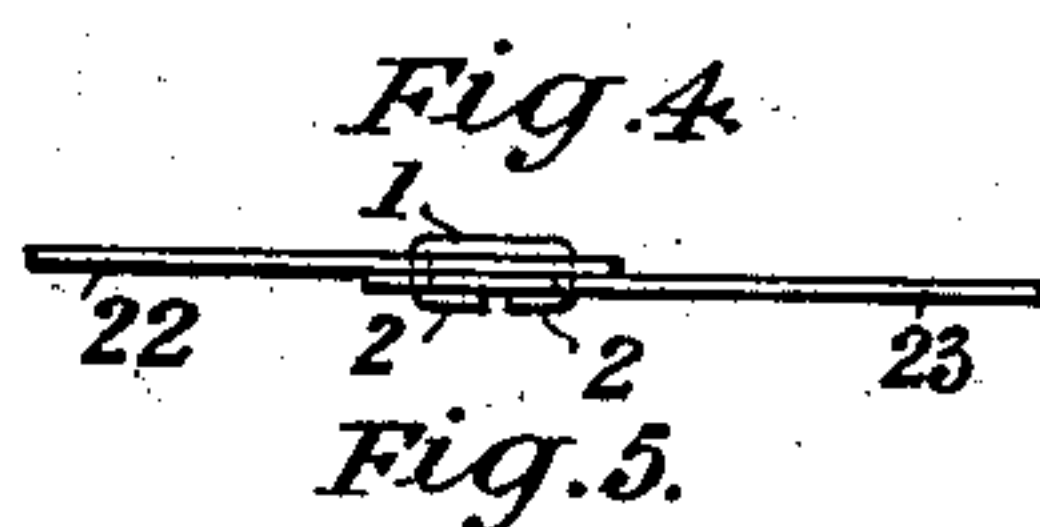
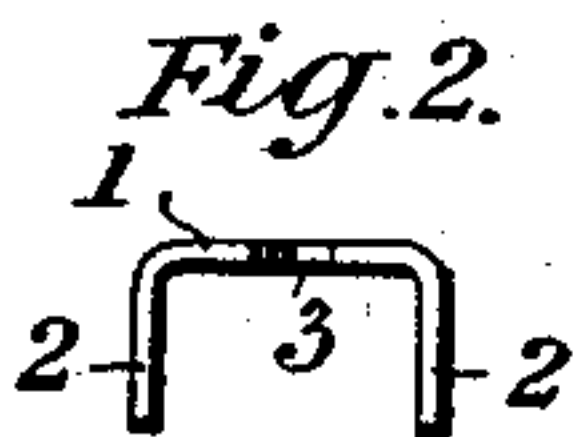
Patented Aug. 8, 1899.

R. C. ANNAND.

TOOL FOR SETTING FASTENERS.

(Application filed Jan. 18, 1899.)

(No Model.)



WITNESSES:

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Wm. C. Fraser & Co.

UNITED STATES PATENT OFFICE.

ROBERT CUMMING ANNAND, OF SOUTH SHIELDS, ENGLAND.

TOOL FOR SETTING FASTENERS.

SPECIFICATION forming part of Letters Patent No. 630,476, dated August 8, 1899.

Application filed January 18, 1899, Serial No. 702,515. (No model.)

To all whom it may concern:

Be it known that I, ROBERT CUMMING ANNAND, of Cornwallis street, South Shields, England, have invented certain new and useful Improvements in Tools for Setting Fasteners and for Like Purposes, of which the following is a specification.

My invention has reference to joining or fastening together the ends of tapes in printing-machines, and comprises a special tool, in the form of a double-mouthed tongs or pliers, for rapidly and efficiently making the connection by means of a particular form of fastener.

In the accompanying drawings, Figure 1 is a side elevation, Fig. 2 is an end view, and Fig. 3 is an under side plan, of the fastener, looking onto the points of the same. Fig. 4 is a side elevation showing the ends of two tapes joined together with the fastener. Fig. 5 is an under side plan of Fig. 4. Fig. 6 is an elevation of the tongs looking from the hammer side. Fig. 7 is an elevation of the tongs, taken at right angles to Fig. 6. Fig. 8 is an elevation of part of the tongs with the jaws in section, showing the fastener in position in the open inserting-mouth of the tongs. Fig. 9 is a similar view showing the tongs closed. Fig. 10 is an end view of Fig. 9. Fig. 11 is an elevation of part of the tongs, showing the fastener inserted in the tape ends preparatory to its points being clenched over. Fig. 12 is an end view of Fig. 11.

Referring first to the fastener, (shown in Figs. 1, 2, and 3,) 1 is a small plate of rectangular shape, a little shorter than the breadth of the tape and preferably about half as wide as it is long. This plate has a series of points 2 along its two longitudinal sides. The plate, with its points, is preferably stamped out of a sheet of thin steel and the points bent at right angles to the plate. A nick or notch 3 is formed in each of the two short sides of the fastener for the purpose of enabling it to be held temporarily in the tongs, as herein-
after described.

Referring now to the double-mouthed tongs, (shown in Figs. 6 to 12,) 4 and 5 are two parts or handles pivoted close to each other on a common pivot-pin 6. At its outer end, beyond the pin 6, the part 4 is formed with a jaw 7, and the outer end of the part 5 is formed with a jaw 8. Between the two jaws

7 and 8 there is arranged a jaw 9, pivoted on the pin 6 by means of two lower extensions 10 10, situated at the respective outer sides of the jaws 7 and 8. One end of the pivot-pin 6 is formed as a hammer-head 11. The cooperating surfaces of the jaws 8 and 9 are plain. A small lever-catch 12 is pivoted at 13 in the jaw 7 and is adapted to project, with its catch portion 14, through a slot internally beyond the surface of the jaw 7, in the center line of the latter. A spring 15, fixed to the jaw 7 by a screw 16, is arranged to press up against the tail portion 17 of the lever 12 and so normally keep the catch 14 in its projecting position between the jaws 7 9. A stud 18 is fixed in the center line of the inside face of the jaw 7 at such a distance from the catch 14 that a fastener 1, when placed lengthwise with the notch 3 in one end up against the stud 18, will just clear the catch 14 when the latter is retracted by pressure applied to the tail 17. Then on releasing the tail 17 the catch 14 will project through the notch 3 in the other end of the fastener and bear upon the fastener, and thus hold it flat up against the inside face of the jaw 7, as shown in Fig. 8. Corresponding recesses 19 and 20 are provided in the cooperating face of the jaw 9 to receive the stud 18 and catch 14 when the jaws 7 and 9 are closed upon each other, as shown in Figs. 6, 9, 10, and 11, and more clearly in Fig. 12. In this face there are also formed two deep grooves 21 21, which extend longitudinally on either side of the center line of the jaw and which are spaced apart at their parallel outer parts at a distance equal to the width of the fastener 1 when held in the jaw 7, so as to receive freely the two rows of points 2 of the fastener when the jaw 7 is moved toward the jaw 9. The grooves 21 21 are arranged to converge at their inner parts to such an extent that on closing the jaws 7 and 9 together the rows of points 2 of the fastener will be bent inward or toward each other about thirty degrees from their original perpendicular position.

The mode of using the fastener and the double-mouthed tongs in joining the ends 22 23 of a tape is as follows: A fastener 1 is inserted in the tongs in the manner shown in Fig. 8, the fastener being held in position by the catch 14 and the stop 18 engaging with

the notches 3 in the ends of the fastener. Then the ends 22 23 of the tape to be connected, having been brought together and placed one upon the other so as to overlap each other to the required extent, the tongs is held so that the said overlapping ends of the tape lie transversely against the face of the jaw 9, so as to exactly face the fastener 1, as shown in Fig. 8. On pressing the handles 4 and 5 of the tongs toward each other the teeth 2 of the fastener are forced through the tape ends 22 23 and they pass into the inclined grooves 21 21 in the opposite jaw 9 of the tongs, whereby the two rows of points 2 of the fastener are bent inward toward each other, as shown in Figs. 9 and 10. The tongs is then opened and the fastener, which is now firmly through the ends of the tape, is brought between the jaws 8 and 9, as shown in Figs. 11 and 12, whereby when these jaws are forced together the points 2 of the fastener are effectually clenched by the pressure of the tongs, as shown in Figs. 4 and 5.

The device on the jaw 7 for temporarily holding the fastener 1 may be arranged to grip the fastener at the sides instead of at the ends, as shown. In such case then the notches 3 would be provided in the sides of the fastener.

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

1. In tools, the combination with two outer jaws, movable the one toward the other for acting on an article between them, of an intermediate member between said jaws having working faces on its opposite sides for acting on an article between itself and one of said jaws, and movable into and out of position relatively to such jaw, and when in position relatively to such jaw, held toward it by the other jaw.

2. In tools, the combination with two opposing jaws, one movable toward the other for acting on an article between them, of an intermediate jaw, between said jaws, movable relatively to both, and having working

faces on its opposite sides opposed to the adjacent faces of the outer jaws, and reciprocal thereto.

3. In a tool or device for inserting the teeth of a plate-fastener through the overlapping ends of tapes to be joined in printing machinery and for clenching said teeth after insertion, two outer jaws movable toward and from each other on the same pivot-pin and having handles for moving same in combination with a middle double-faced jaw between said outer jaws and movable on said pivot-pin but not connected to said handles, said middle jaw coacting with either of said outer jaws as required, substantially as and for the purpose described.

4. In a tool or device having two outer jaws and a middle double-faced jaw all pivoted on the same pivot-pin and two handles for moving said outer jaws respectively as and for the purpose set forth, means for temporarily holding a toothed tape-fastening plate against the inner face of one of said outer jaws and recesses in the coacting face of said middle jaw to receive the fastener-teeth when the jaws are closed, substantially as described.

5. In a tool or device having two outer jaws and a middle double-faced jaw all pivoted on the same pivot-pin and two handles for moving said outer jaws respectively as and for the purpose set forth, a spring-catch and a fixed stud on the inner face of one of said outer jaws, recesses in the coacting face of said middle jaw corresponding with said catch and stud, and two longitudinal grooves in said coacting face of the middle jaw, said inner grooves converging at their inner parts, all substantially as and for the purpose described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

ROBERT CUMMING ANNAND.

Witnesses:

JOHN C. MEWBURN,

ROBERT M. SPEARPOINT.