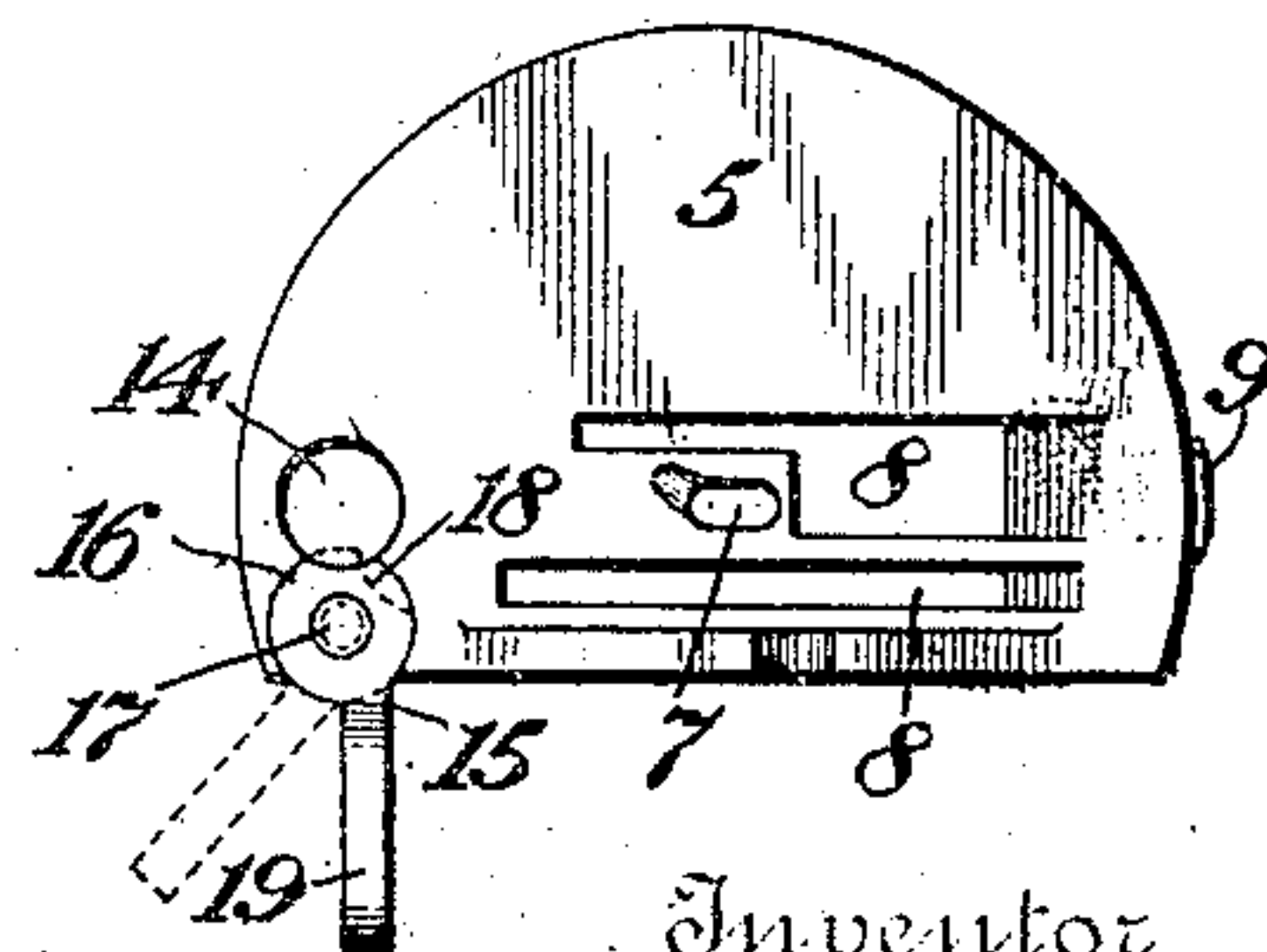
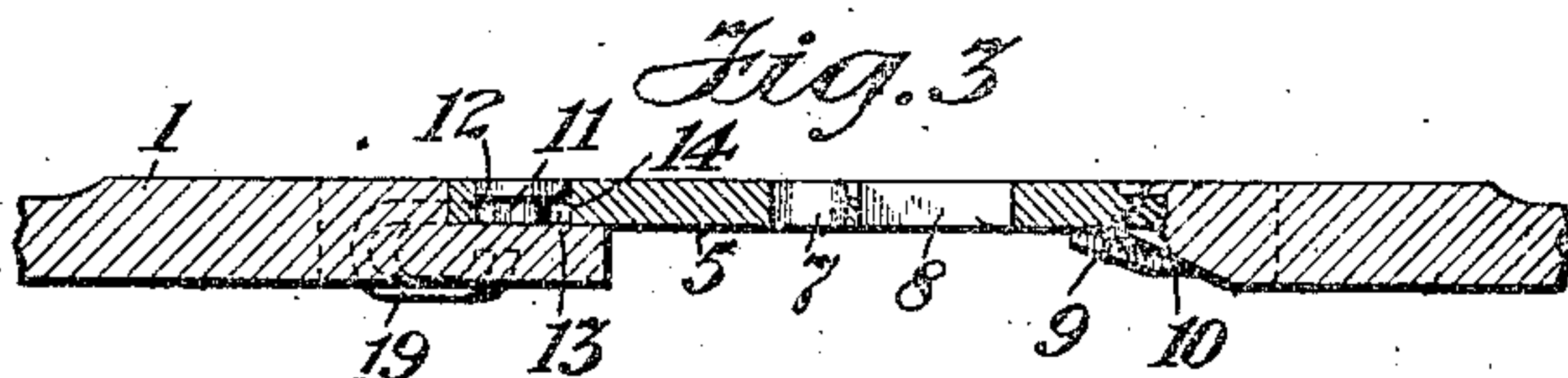
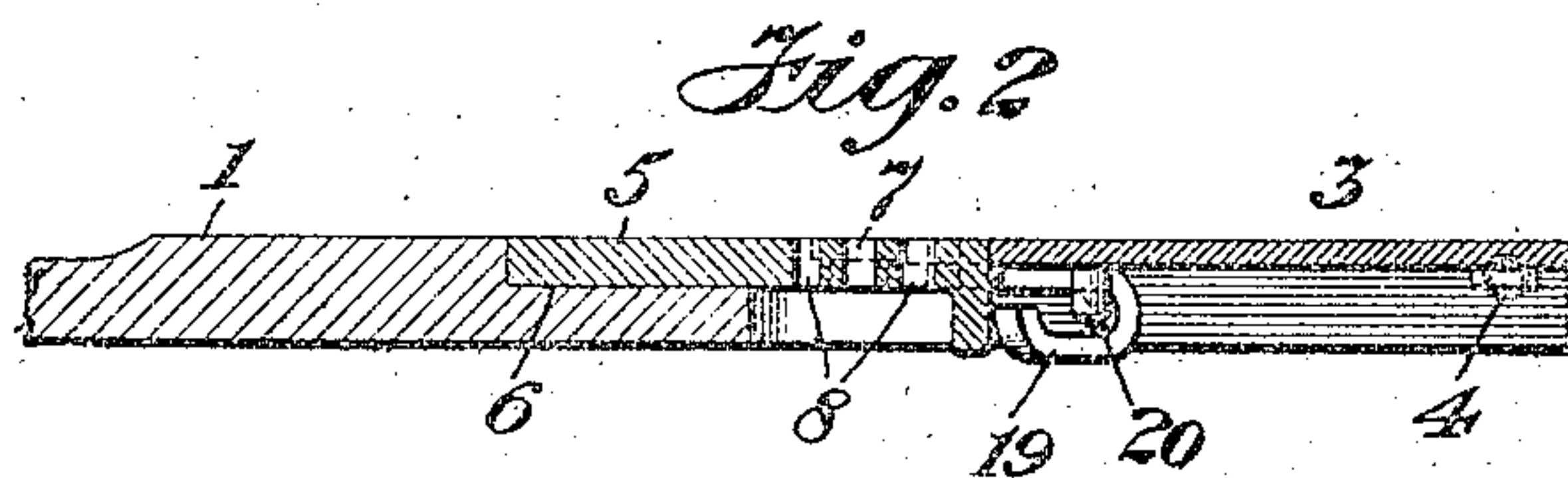
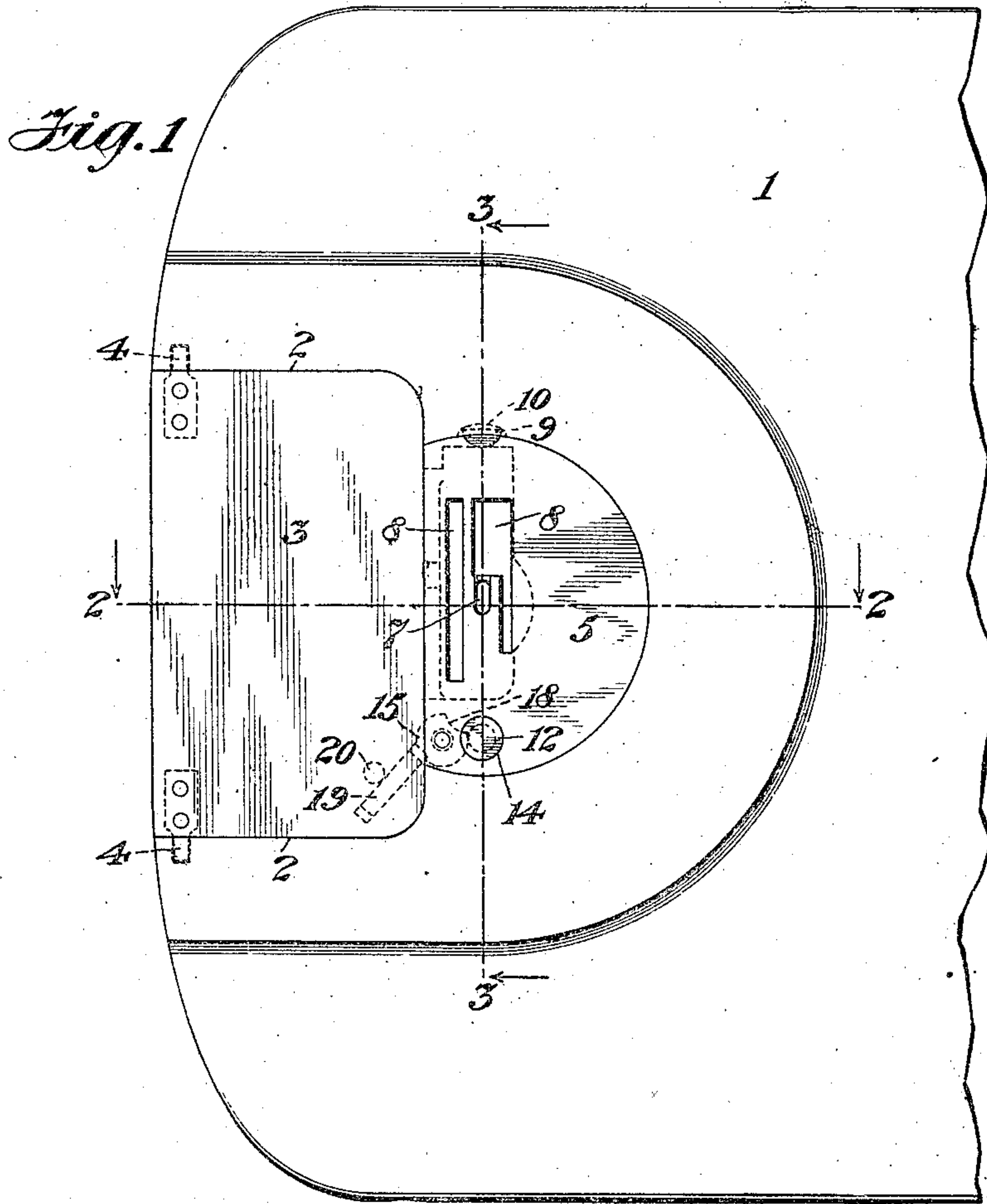


No: 863,491.

PATENTED AUG. 13, 1907.

W. M. AMMERMAN.
SEWING MACHINE THROAT PLATE FASTENING.
APPLICATION FILED DEC. 4, 1905.



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM M. AMMERMAN, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO THE EDWARD J. TOOF COMPANY, OF NEW HAVEN, CONNECTICUT, A CORPORATION OF NEW JERSEY.

SEWING-MACHINE THROAT-PLATE FASTENING.

No. 863,491.

Specification of Letters Patent.

Patented Aug. 13, 1907.

Application filed December 4, 1905. Serial No. 290,059.

To all whom it may concern:

Be it known that I, WILLIAM M. AMMERMAN, a citizen of the United States, and a resident of New Haven, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Sewing-Machine Throat-Plate Fastenings, of which the following is a specification.

This invention relates to needle or throat plates adapted for removable adjustment to the bed-plate of a sewing machine.

The invention has for its main object to promote quick and convenient removal and replacement of a needle or throat plate, or to permit changing of one needle or throat plate for another, and assure positive locking of the replaced or substituted plate, without the necessity of using a screw-driver or other auxiliary tool or device.

The invention consists mainly in certain novel features of construction of the improved needle or throat plate relatively to locking devices held to it and to the sewing machine bed-plate, whereby the same needle plate may be removed and replaced, or whereby one needle plate may be substituted for another, and may be secured preferably by both primary and secondary locking means during use of the sewing machine.

The invention further includes an arrangement of the primary locking device relatively to a movable portion of the machine bed-plate to support the same; all as hereinafter described and particularly pointed out in the claims.

Reference is made to the accompanying drawings forming part of this specification, and in which

Figure 1 is a plan view of the end portion of a sewing machine bed-plate with the improved needle or throat plate applied and locked thereto. Fig. 2 is a longitudinal vertical section, taken on line 2-2 in Fig. 1. Fig. 3 is a transverse vertical section, taken on the line 3-3 in Fig. 1; and Fig. 4 is a bottom plan view of the detached needle or throat plate.

In the drawings, the numeral 1 indicates the main bed-plate of a sewing machine which has an end opening 2, normally closed by a movable auxiliary bed-plate portion 3 which is shown hinged by pins 4, 4, pivoted in the plate 1 at opposite sides of the opening 2. This plate 3 may otherwise be made movable or removable to conveniently expose to the operator from the upper side of the bed-plate the shuttle or looper mechanism arranged therebelow in order to facilitate any desired change or adjustment of parts.

It is a usual practice to fasten the needle or throat plate of sewing machines to the main bed-plate by one

or more screws requiring use of a screw-driver or special auxiliary tool to remove the needle plate last used and substitute another differently slotted or formed needle plate as the work being done may suggest or require. This old method of fastening a needle plate is inconvenient for most operators and also consumes time which otherwise might be used with better results. These disadvantages are obviated by this invention which provides for quick and easy substitution of one needle or throat plate for another without using auxiliary hand tools, and also preferably provides for a double-locking of the needle plate when adjusted for use on the machine.

The improved needle or throat plate 5 fits within a rabbeted opening 6 of the main bed-plate 1, and has the usual general form of prior plates of this class, and is provided with a needle slot or passage 7, and work feeding mechanism slots 8, 8. At one lateral edge the plate 5 preferably has a lip or lug 9, shown in the present case as struck out from the upper surface of the plate, which is adapted to fit snugly within a lateral recess 10 made in the bed-plate 1. Preferably at a point directly opposite the recess 10 there is fixed to the bed-plate 1 and within its opening 6, a detent preferably formed as a stud or pin 11 having an enlarged head 12 providing under it a groove 13 receiving the direct or primary locking device of the needle plate, which plate has a hole or passage 14 into which the stud head 12-13 may enter freely.

The primary locking device may have various forms provided a portion of it is adapted to enter and leave the groove 13 of the stud 11. A preferred primary locking device comprises a lever 15 having its locking head 16 fulcrumed on a pin 17 fixed to the under side of the needle or throat plate 5. The lever head 16 is cut away marginally and preferably on a concave arc 18 corresponding with the curved wall of the needle plate opening 14. It is preferred to extend the lever 15 laterally outward from its head 16 in an elongated loop 19 which normally projects beyond the edge of the throat plate and forms a handle for conveniently turning the lever for locking and unlocking the needle or throat plate 5, and for conveniently lifting said plate 5 from the bed-plate recess 6. The laterally projecting handle loop 19 also forms a rest for the inner free edge of the closed auxiliary bed-plate portion 3. When said needle or throat plate 5 is applied within the main bed-plate opening 6 and the lever head 16 has been adjusted to lock the applied plate, a pin or shoulder 20 fixed to or at the under side of the finally adjusted bed-plate portion 3, stands in front of the lever handle 19 to pro-

vide a secondary positive lock preventing turning of the primarily locked lever 15.

Should it be desired for any reason to remove the needle or throat plate 5, the auxiliary bed-plate portion 3 will be swung over outward upon its pivots 4, or will be bodily slid or removed if arranged for either of these adjustments. Such operation of the plate 3 removes its pin or shoulder 20 from locking position in front of the handle portion 19 of the lever 15 and allows said lever to be turned upon its fulcrum 17 until its handle 19 ranges about parallel with the section line 2-2 in Fig. 1 of the drawings, or in a similar position indicated by the full lines of the detail bottom plan view, Fig. 4. This movement of the lever carries its head 16 out of the groove 13 of the detent or headed pin 11, and causes the concaved edge portion 18 of the lever head to register with the adjacent wall of the needle-plate hole 14, thereby releasing the primary lock and permitting the needle or throat plate 5 to be easily lifted from the detent or headed pin 11-12, by the handle 19, while the plate 5 slips laterally from the bed-plate recess 10. To permit replacement of the same needle or throat plate 5 after it has been removed to facilitate inspection or adjustment of the subjacent sewing mechanism, or to substitute for said removed needle plate another and differently formed one, it is only necessary to hold the desired needle plate by its laterally extended lever handle 19 while applying said needle plate within the bed-plate opening 6 as the lip 9 of said plate 5 slips into the bed-plate recess 10, and as the opening 14 of the replaced or substituted needle plate 5 receives the bed-plate pin 11-12. This being done, the lever 15 is returned to its original locking position shown by dotted lines in Figs. 1 and 4 of the drawings, and thereby the lever head 16 is again turned into the stud or detent groove 13 to primarily lock the replaced or substituted needle or throat plate 5 to the bed-plate 1. The auxiliary end bed-plate portion 3 will then be swung over on its pivots 4 to close the bed-plate opening 2 and will rest upon the lever handle 19 and will conceal and protect the primary locking lever 15, while simultaneously causing the pin or shoulder 20 on the plate 3 to effect the secondary locking of the needle or throat plate 5 by standing in front of the lever 15 to prevent turning of it to unlocking position. This last named secondary locking effect would be assured if the auxiliary movable bed-plate portion 3 having the pin or shoulder 20, was made movable bodily or was fitted in slides or was otherwise arranged to give access to the lower sewing mechanism or to the needle plate locking lever or device 15, as will readily be understood.

Various modifications of this invention may be made by the skilled mechanic within the scope of any one or more of the appended claims.

I claim as my invention:

1. In sewing machine needle or throat plate fastenings, the combination with a needle plate, of a detent on the machine bed-plate, and a locking device movably held to the needle-plate and adapted to engage the said detent for locking the needle-plate to the bed-plate, the said locking device being provided with a projecting part serving as a handle to the needle-plate for use in moving said needle-plate to and from its position on the bed-plate.

2. In sewing machine needle or throat plate fastenings, the combination with a needle plate having an opening, of a detent on the machine bed-plate adapted to said needle plate opening, and a locking device movably held to the needle plate and adapted to engage the said detent for locking the needle plate to the bed-plate.

3. In sewing machine needle or throat plate fastenings, the combination with a needle-plate, of a detent on the bed-plate, an engaging lip and recess at the bed-plate and needle-plate, and a locking device movably held to the needle-plate and adapted to engage the said detent for locking the needle-plate to the bed-plate, the said locking device being provided with a projecting part serving as a handle to the needle-plate for use in moving said needle-plate to and from its position on the bed-plate.

4. In sewing machine needle or throat plate fastenings, the combination with a needle-plate having an opening, of a detent on the bed-plate adapted to said needle-plate opening, an engaging lip and recess at the bed-plate and needle-plate, and a locking device movably held to the needle-plate and adapted to engage the said detent for locking the needle-plate to the bed-plate.

5. In sewing machine needle or throat plate fastenings, the combination with a needle-plate, a detent on the machine bed-plate, a locking device movably held to the needle-plate and adapted to engage the said detent for primarily locking the needle-plate to the bed-plate, and an auxiliary movable bed-plate portion having a detent normally securing the needle-plate locking device at locked adjustment.

6. In sewing machine needle or throat plate fastenings, the combination with a needle-plate having an opening, a detent on the machine bed-plate adapted to said opening, a locking device movably held to the needle-plate and adapted to engage the said detent for primarily locking the needle-plate to the bed-plate, and an auxiliary movable bed-plate having a detent normally securing the needle-plate locking device at locked adjustment.

7. In sewing machine needle or throat plate fastenings, the combination with a needle-plate having an opening, of an undercut or laterally grooved stud fixed to the machine bed-plate and adapted to said needle-plate opening, and a lever fulcrumed to the needle-plate and having a portion formed for movement out of and into register with the needle-plate opening and adapted to engage and disengage the grooved stud for locking and unlocking the needle or throat plate.

8. In sewing machine needle or throat plate fastenings, the combination with a needle-plate having an opening, and an undercut or laterally grooved stud fixed to the machine bed-plate and adapted to said needle-plate opening, a lever fulcrumed to the needle-plate and having a portion formed for movement out of and into register with the needle-plate opening and adapted to engage and disengage the grooved stud for locking and unlocking the needle-plate, and an engaging lip and recess at the machine bed-plate and needle-plate.

9. In sewing machine needle or throat plate fastenings, the combination with a needle-plate having an opening, and an undercut or laterally grooved stud fixed to the machine bed-plate and adapted to said needle-plate opening, a lever fulcrumed to the needle-plate and having a portion formed for movement out of and into register with the needle-plate opening and adapted to engage and disengage the grooved stud for locking and unlocking the needle-plate, and an auxiliary movable bed-plate portion having a pin or shoulder normally securing the primarily locked needle-plate lever.

10. In sewing machine needle or throat plate fastenings, the combination with the machine bed-plate having a movable portion, of a needle or throat plate adapted to said bed-plate, a detent on the bed-plate, and a locking lever held to the needle-plate and adapted to engage the detent and normally projecting laterally beyond the margin of the needle-plate and forming a rest for the closed movable portion of the bed-plate.

11. Sewing machine needle or throat plate fastenings comprising a primary locking device securing the needle-

plate to the machine bed-plate which has an auxiliary movable portion, and a pin carried by the movable bed-plate portion and normally securing the primary needle-plate locking device at locked adjustment.

normally projecting laterally beyond the margin of the needle plate and serving as a handle both to the locking device and to the needle-plate, for the purpose set forth.

Signed at New Haven, in the county of New Haven and State of Connecticut, this 25th day of November, A. D. 1905.

WILLIAM M. AMMERMAN.

Witnesses:

WM. H. H. HEWITT,
WARD CHURCH.

5 12. In sewing machine needle or throat plate fastenings the combination with a needle plate, of a detent on the machine bed-plate, and a locking device movably held to the needle plate and having a part thereof adapted to engage the said detent for removably locking the needle
10 plate to the bed-plate and having another part thereof