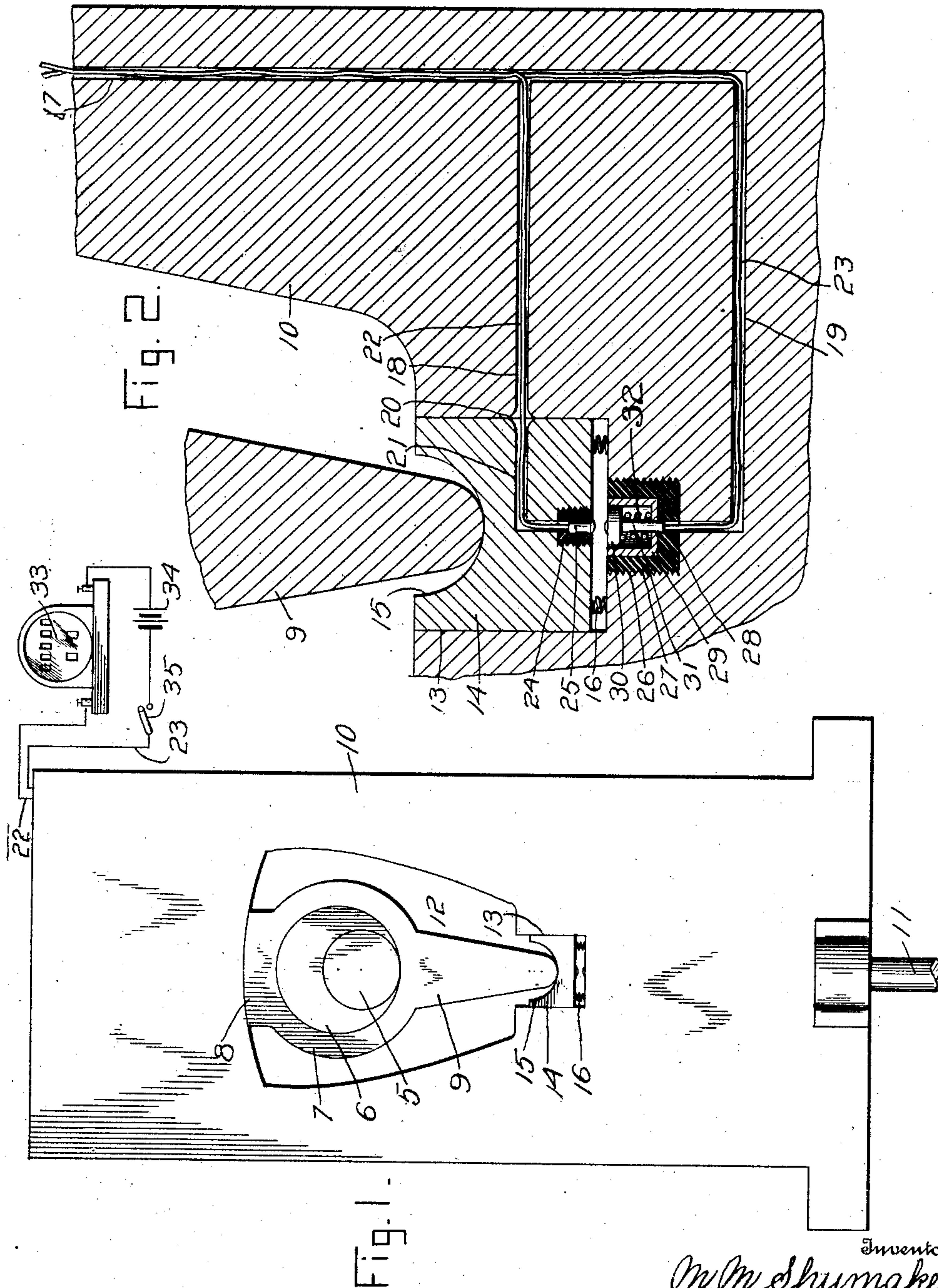


No. 874,254.

PATENTED DEC. 17, 1907.

M. M. SHUMAKER.
REGISTERING DEVICE.
APPLICATION FILED JAN. 14, 1907.

2 SHEETS—SHEET 1.



Witnesses
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2 SHEETS—SHEET 2.

Fig. 3.

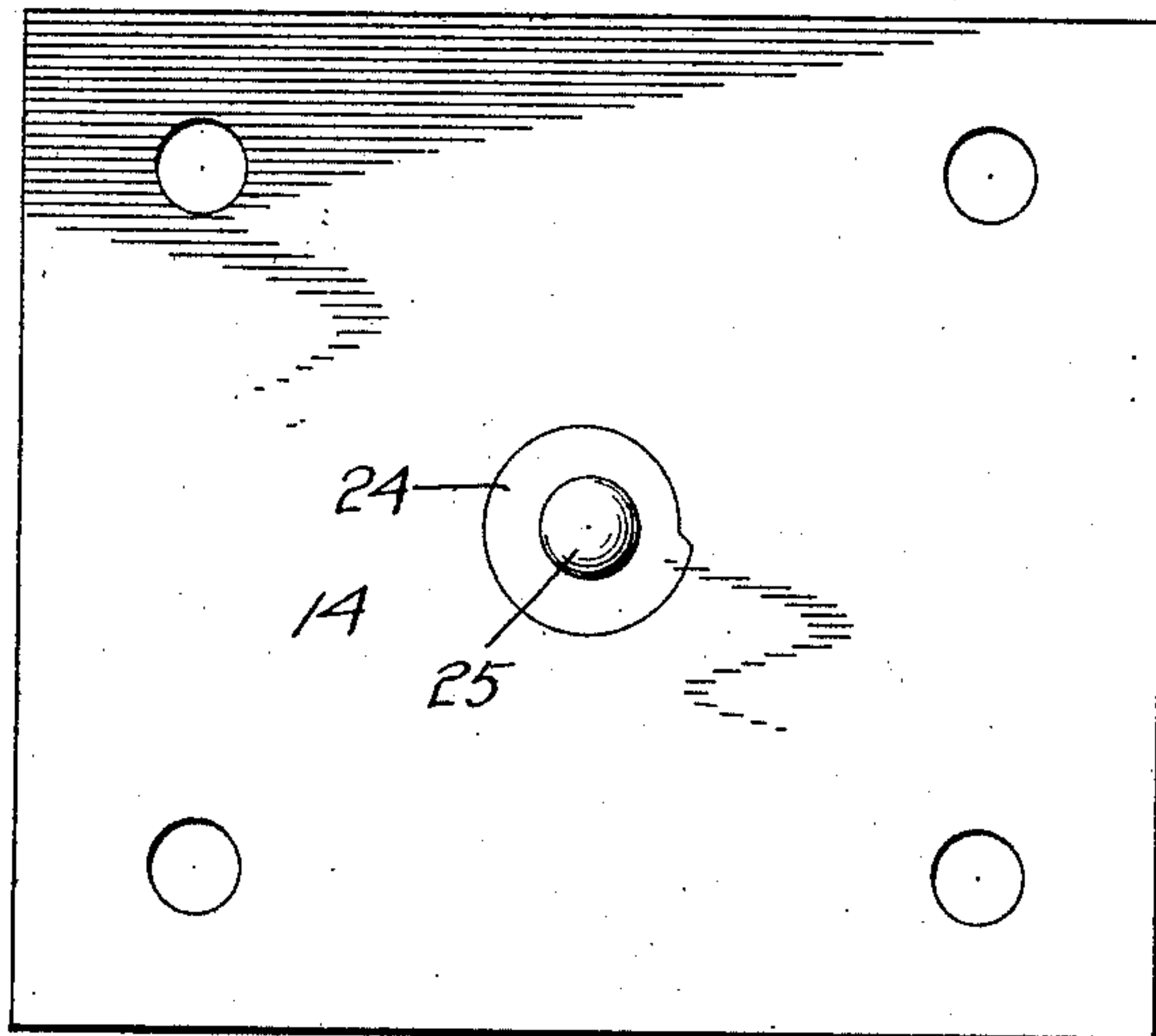
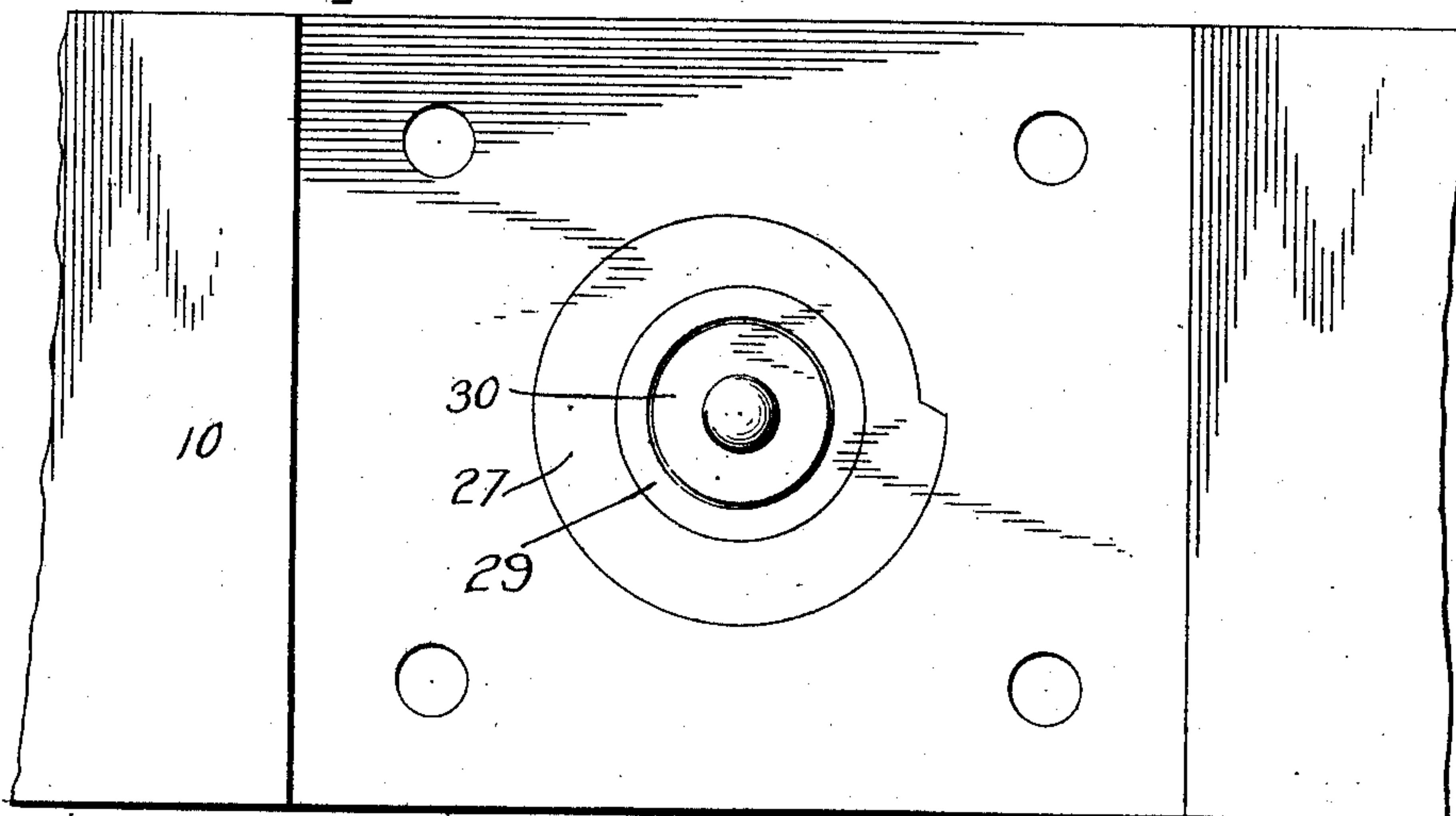


Fig. 4.



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UNITED STATES PATENT OFFICE.

MARSHALL M. SHUMAKER, OF TERRE HAUTE, INDIANA.

REGISTERING DEVICE.

No. 874,254.

Specification of Letters Patent.

Patented Dec. 17, 1907.

Application filed January 14, 1907. Serial No. 352,297.

To all whom it may concern:

Be it known that I, MARSHALL M. SHUMAKER, a citizen of the United States, residing at Terre Haute, in the county of Vigo, State of Indiana, have invented certain new and useful Improvements in Registering Devices; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to registering mechanisms and more particularly to a mechanism which is designed for use in connection with a sheet metal punching machine.

In factories where these machines are used, the men operating the same are frequently put on piece work and the employers either have to depend upon the integrity of the men they employ to correctly state the number of holes punched during the day or have to have counters to count the number of holes after the piece work has been finished. Even with the best of care and management either of these means is productive of considerable loss and hence my invention has for its object to automatically register each hole as it is punched by each machine.

Broadly speaking, the invention resides in the use of an electrically operated register which is located in an electric circuit including contacts, one of which is carried by the machine head and the other by a block which is slidably mounted in a recess in the head and upon which bears the plunger which operates the head and thereby actuates the punch.

In the accompanying drawings: Figure 1 is a view in side elevation of the punch head of a sheet metal punching machine such as is now commonly in use, Fig. 2 is a detail vertical transverse sectional view taken centrally therethrough. Fig. 3 is a bottom plan view of the slidable block which carries one of the contacts, and Fig. 4 is a top plan view of a portion of the head.

Referring more specifically to the drawings, the numeral 5 denotes the machine shaft and 6 an eccentric which is fixed upon the shaft for rotation therewith. Upon the eccentric is engaged the plunger for the machine comprising a collar portion 7 which embraces the eccentric 6 and which is provided with an integral head 8 and a downwardly extending arm 9, the head and arm being located at diametrically opposite points upon the collar

7. The punch head of the machine is indicated by the numeral 10 and carries the usual punch 11, and the said head is provided in its body portion with an opening 12 in which the plunger works, the upper end of the head 8 of the plunger being in engagement with the upper edge of the opening 12 in the head 10, it being understood that this head is mounted for vertical sliding movement in a suitable guide upon the machine. The lower end of the arm 9 of the plunger extends into a recess 13 formed in the lower edge of the opening 12, and in this recess is slidably engaged a rectangular block 14 having a concaved upper face 15 in which the extreme lower end of the arm 9 seats, it being understood that rotation of the shaft 5 will result in vertical reciprocation of the plunger 7 and a consequent vertical sliding movement of the punch head 10, by reason of the fact that the head 8 of the plunger engages the upper edge of the opening 12 and the lower end of the arm 9 engages a block 14 which is located in the lower edge of the opening. The block 14 is held in slightly spaced relation with respect to the bottom of the recess 13 in which it is located, by means of springs 16 which have their upper ends engaged in recesses formed in the under face of the block 14 adjacent each of its corners, and their lower ends engaged in corresponding recesses formed in the bottom of the recess 13.

The punch head 10 is provided with a vertically extending bore 17 from which lead branch bores 18 and 19 which are located respectively above and below the bottom wall of the recess 13, that end of the bore 18 which opens through one of the side walls of the recess 13 being enlarged considerably as at 20, for a purpose to be hereinafter described. Formed in the block 14 is a bore 21 which normally aligns with the branch bore 18 in the punch head 10, and leading from the bore 17 are wires 22 and 23 which extend respectively through the branch bores 18 and 19, the wire 22 being also extended into the bore 21 in the block 14. In the under face of this block, there is formed a recess which has its walls threaded and in which is received a cylindrical bushing 24 preferably of hard rubber. This bushing is provided with a shouldered bore in which is seated a contact plug 25 to which is connected the wire 22.

A recess similar to the recess in the block is formed in the bottom wall of the recess 13

in the plunger, and is indicated by the numeral 26, and in this recess is seated a cup-shaped hard rubber bushing 27 through the bottom of which is formed an opening 28.

5 Seated in this bushing is a cup-shaped brass lining 29, in which is slidably disposed a contact plunger 30 having a stem 31 which extends downwardly and through the bottom of the lining and bushing. The wire 23 is

10 connected to this stem at its lower end, and engaged upon the stem is a helical spring 32 which serves to hold the contact plunger normally at the upward limit of its movement.

15 The contacts 25 and 30 are, as will be readily understood, normally in spaced relation due to the action of the springs 16, but it will be understood that when the plunger is actuated, the block 14 will be initially

20 pushed into its recess causing these elements to contact. The wires 22 and 23 comprise a portion of an electrical circuit in which is included an electrical register 33, a battery 34, and a switch 35, it being understood that

25 the register is actuated each time the circuit is closed by the contacts 25 and 30, and it will also be appreciated that the contacts, being cushioned, will not be battered. It will furthermore be understood that by reason of the fact that the branch bore 18 is

30 enlarged at its end as at 20, there will be no possibility of injury to the wire 22 during the reciprocatory movement of the block 14.

What is claimed is:—

35 1. A registering mechanism of the class described, the combination with a punch head and means for actuating the head, of a block arranged within the head for sliding movement, means for holding the block nor-

mally at the limit of its upward movement, 40 a contact member seated in the under face of the block, a contact member supported yieldably in the head and adapted to be engaged by the contact upon the block upon the initial downward movement of the block, 45 an electric circuit in which the contacts are located, and a register located in the said circuit.

2. In a registering mechanism of the class described, the combination with a punch 50 head provided with a recess, and means for actuating the head, of a block slidably received in the recess, means for holding the block at the limit of its upward movement, a contact member seated in the under face 55 of the block, the punch head being provided with a bore opening into the recess therein, an insulated socket seated in the bore and arranged concentrically with respect to the contact member in the block, a contact slid- 60 ably received in the socket, a stem formed upon the head and extending through the bottom of the socket, a spring engaged upon the stem and acting upon the head to normally hold the same in elevated position, 65 the contact member carried by the block being designed to contact with the contact head upon the initial downward movement of the block prior to movement of the punch head, an electric circuit in which the con- 70 tacts are interposed, and a register located in the circuit.

In testimony whereof, I affix my signature, in presence of two witnesses.

MARSHALL M. SHUMAKER.

Witnesses:

HUGH MCGOWAN,
EUNICE MCGOWAN.