

# J. Farrel, Lock.

N<sup>o</sup> 36,946.

Patented Nov. 18, 1862.

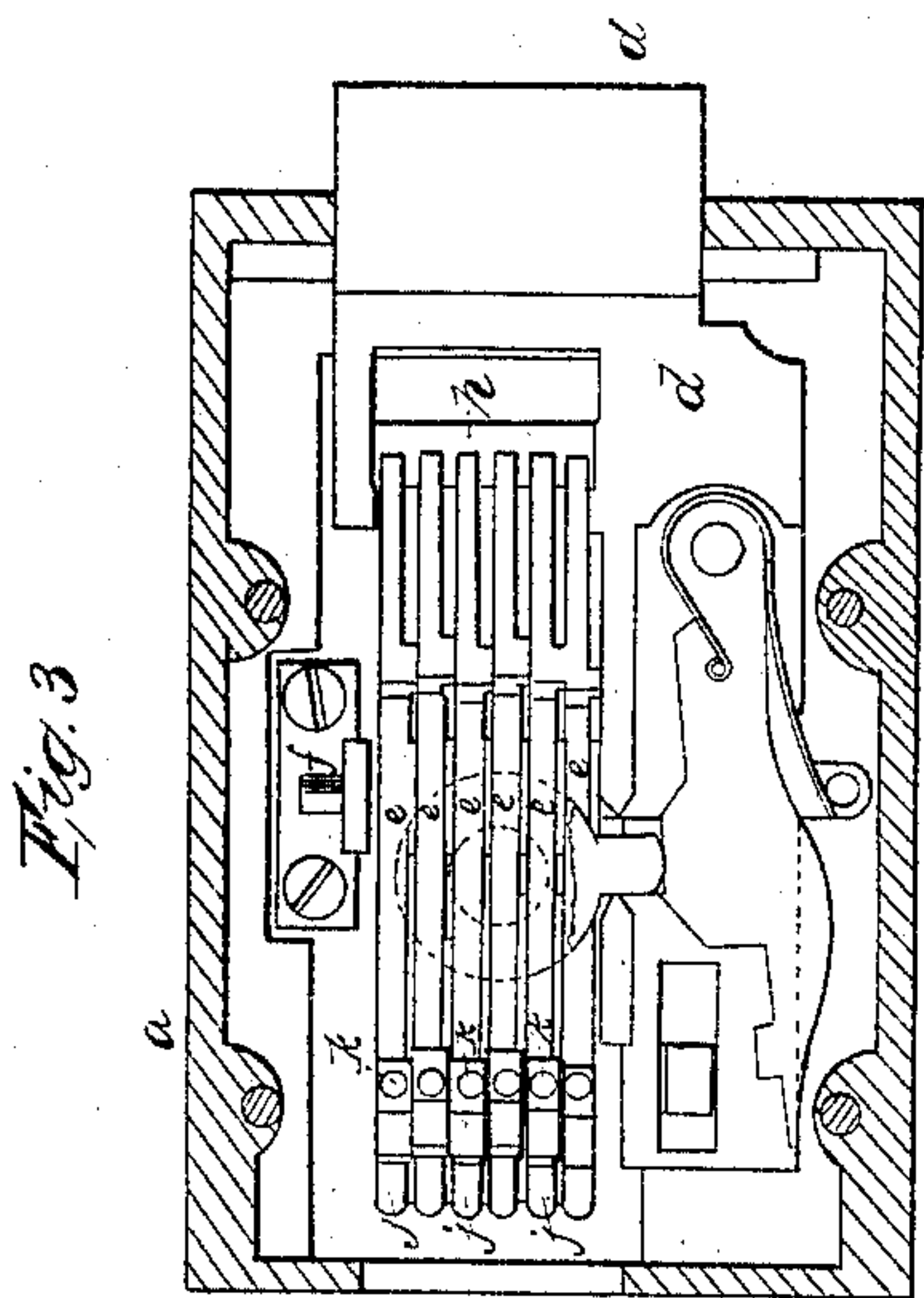


Fig. 3

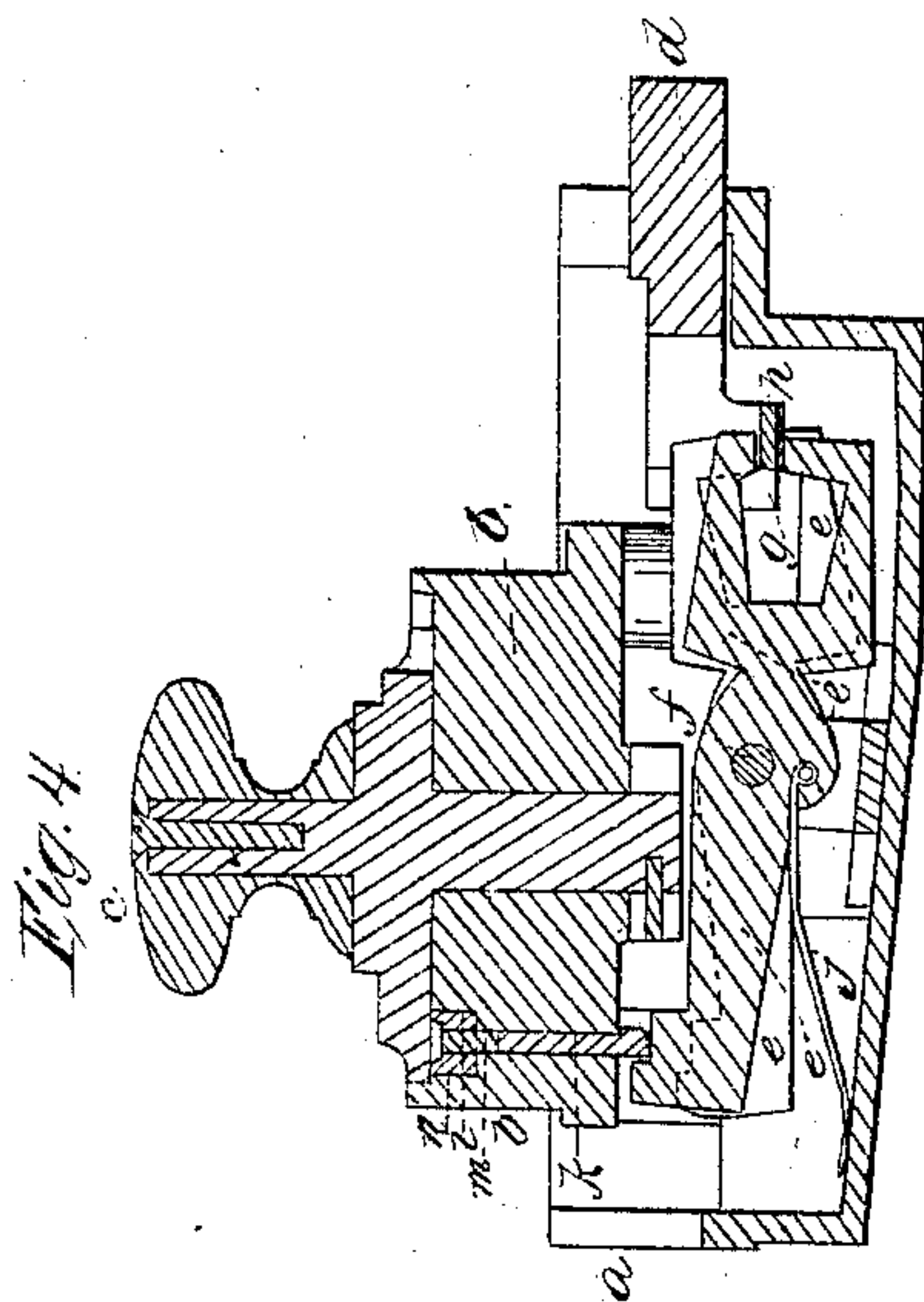


Fig. 4

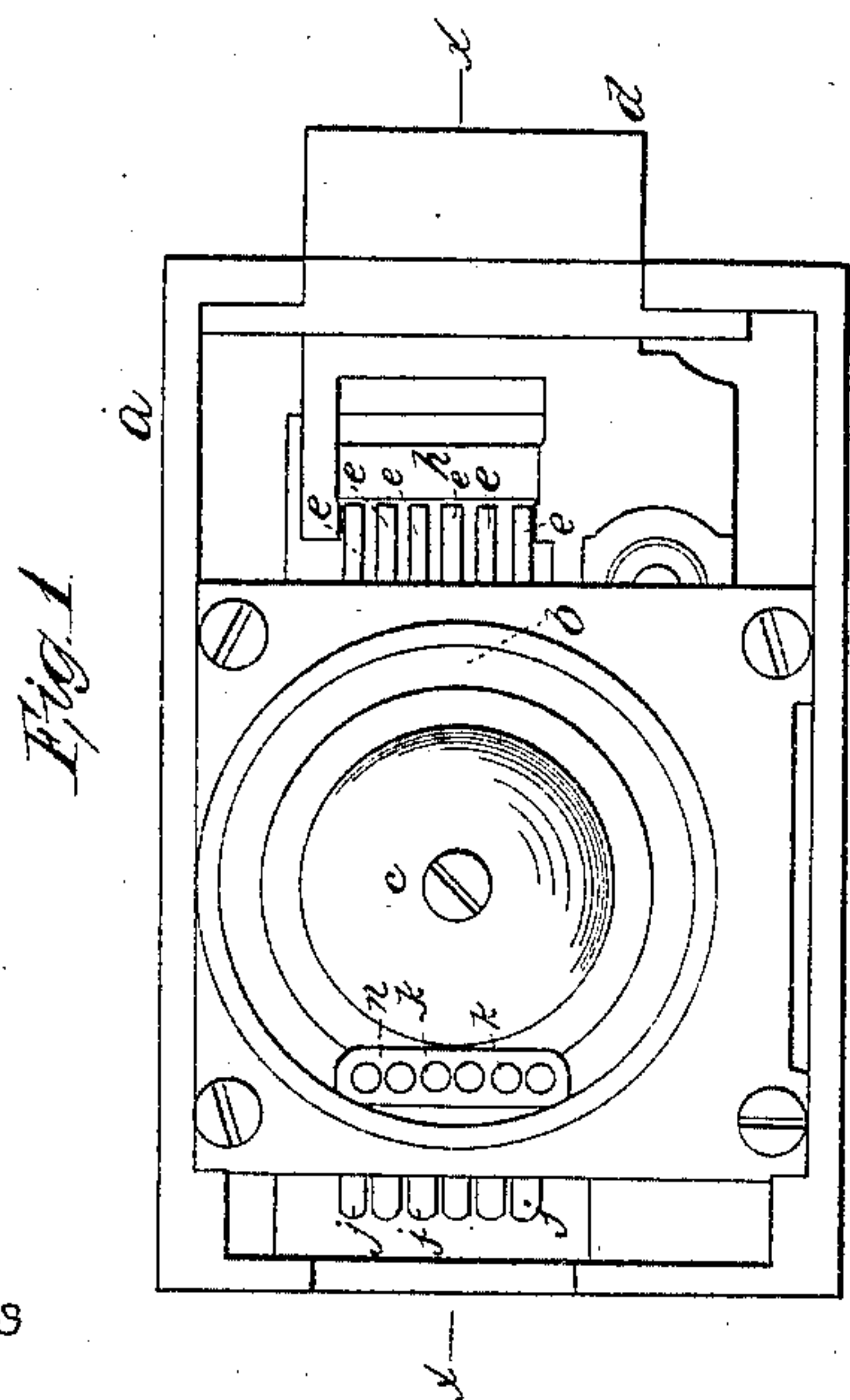


Fig. 1

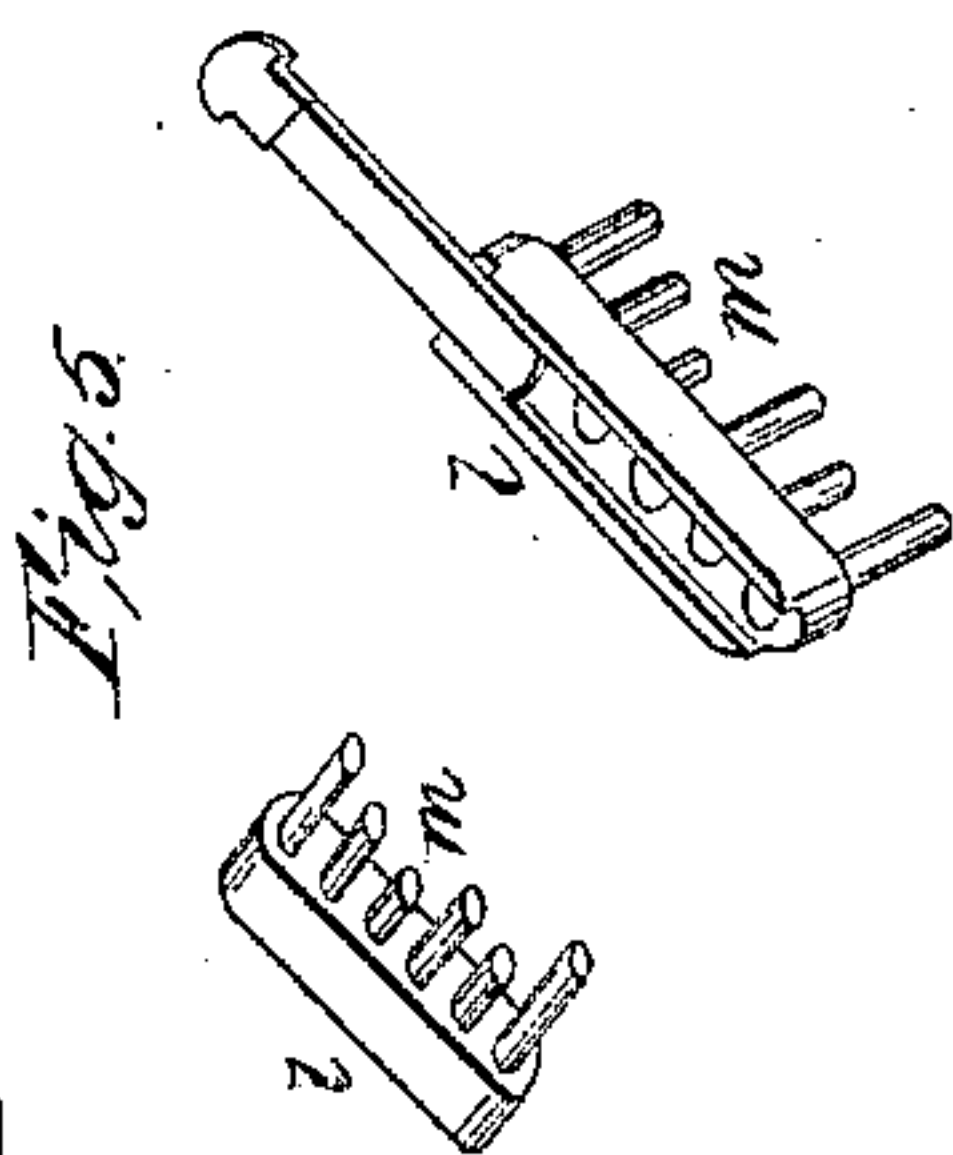


Fig. 5

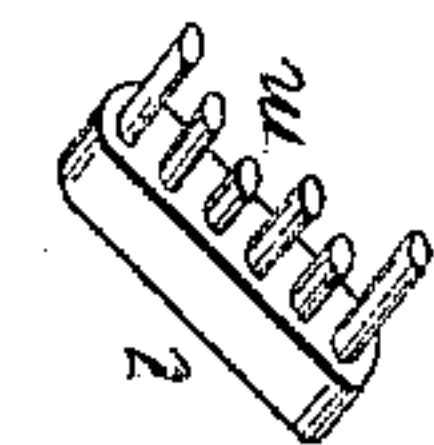


Fig. 6

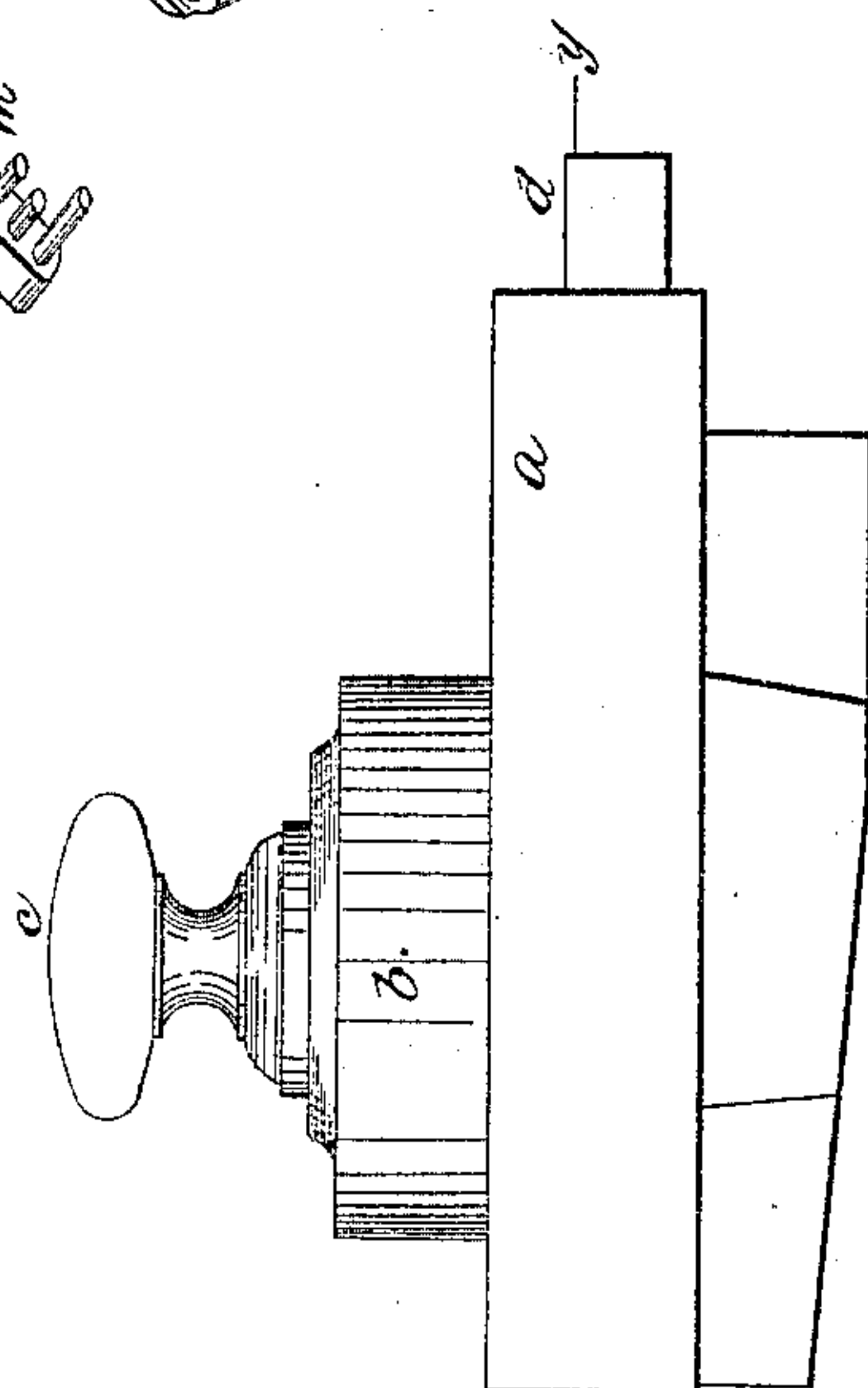


Fig. 2

Witnesses

A. de Lacy

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Inventor:

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# UNITED STATES PATENT OFFICE.

JOHN FARRELL, OF NEW YORK, N. Y.

## IMPROVEMENT IN LOCKS.

Specification forming part of Letters Patent No. 36,916, dated November 13, 1862.

*To all whom it may concern:*

Be it known that I, JOHN FARRELL, of the city, county, and State of New York, have invented a new and useful Improvement in Locks, intended principally for Burglar-Proof Safes; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a face view of the lock; Fig. 2, a side view; Fig. 3, a horizontal section thereof, taken at the line *y y* of Fig. 2; Fig. 4, a vertical section at the line *x x* of Fig. 1, and Fig. 5 perspective views of the key.

The same letters indicate like parts in all the figures.

My said invention relates to an improvement on what is known as "Hall's Patent Powder-Proof Lock," described in Letters Patent granted to the said Hall on the first day of August, 1848.

In Hall's powder-proof lock the lever-tumblers are forced into the required position to permit the bolt of the lock to be thrown back by means of a series of cylindrical pins or plugs, one for each lever, which plugs are acted upon for this purpose by the key, which has one projection for each pin or plug. When the lock is all incased or surrounded with hard metal—such as hardened steel or franklinite iron—there is no place through which access can be had to the inside, except at one place, which is the vulnerable part of this lock. The pins or plugs slide in holes made through the lock-plate, and act on the tumblers between their fulcrum and their forward ends, which hold or stop the bolt, so that by drilling longitudinally through the pins or plugs access can then be had to the lever-tumblers to cut them off, and when cut off they can no longer act as stops to prevent the bolt from being thrown back by simply turning the knob. If the pins or plugs be made of hard metal, to resist drilling, the defect will not be cured, because they can then be broken and the pieces withdrawn, leaving apertures, through which tools can be inserted to cut off the ends of the tumblers.

My said invention, by which I remedy such

defect, consists in mounting the lever-tumblers on an axis at or about the middle of their length, in combination with the placing of the pins or plugs and the key-hole so as to act on the rear ends of the lever-tumblers, instead of the forward ends, which perform the function of stops to prevent the bolt from being thrown back.

In the accompanying drawings, *a* represents the lock-frame; *b*, the inner lock-plate, in which is mounted the shaft of the knob *c*, and *d* the bolt. The lever-tumblers *e* are hung about the middle of their length on a fulcrum pin or axis, *f*. The forward end of each of these levers is formed, in the usual manner, with a slot, *g*, which in the proper position permits the "knife" *h* (as it is termed) on the bolt to enter freely, so that when all the lever-tumblers are in the right positions the bolt *d* of the lock can be thrown back by simply turning the knob, but in any other position they will act as stops to prevent the bolt from being thrown back. These lever-tumblers are all of them provided with springs *j*, which tend constantly to hold them in the positions represented to stop the bolt.

A series of holes are made through the inner lock-plate, *b*, to receive a series of pins, *k*, which slide therein freely, so that there shall be one such pin for every lever-tumbler, and opposite thereto, so that by pushing all the said pins, each to the required distance, all the slots will be brought in line to permit the bolt to be thrown back. The key is formed of a plate, *l*, with a series of projecting pins, *m*, of different lengths, and which can be shifted for a permutation-lock, and these pins are of such various lengths, corresponding to the position of the slots in the several lever-tumblers, that when the key is inserted in the key-hole *n* the several pins *m* will act on the sliding pins *k*, and these in turn on the back end of the lever-tumblers, to bring their opposite ends in line to permit the bolt to be thrown back.

From the foregoing it will be seen that if the sliding pins *k* be cut or broken or otherwise taken out, and the back end of the lever-tumblers cut away, it will not prevent their

forward end acting as stops to hold the bolt and prevent it from being thrown back.

What I claim as my invention, as an improvement on the said Hall lock, is—

Mounting the lever-tumblers on an axis at or about the middle of their lengths, substantially as described, in combination with

the placing of the key-hole so as to act on their back instead of their forward end, substantially as and for the purpose described.

JOHN FARRELL.

Witnesses:

WM. H. BISHOP,  
A. DELACY.