

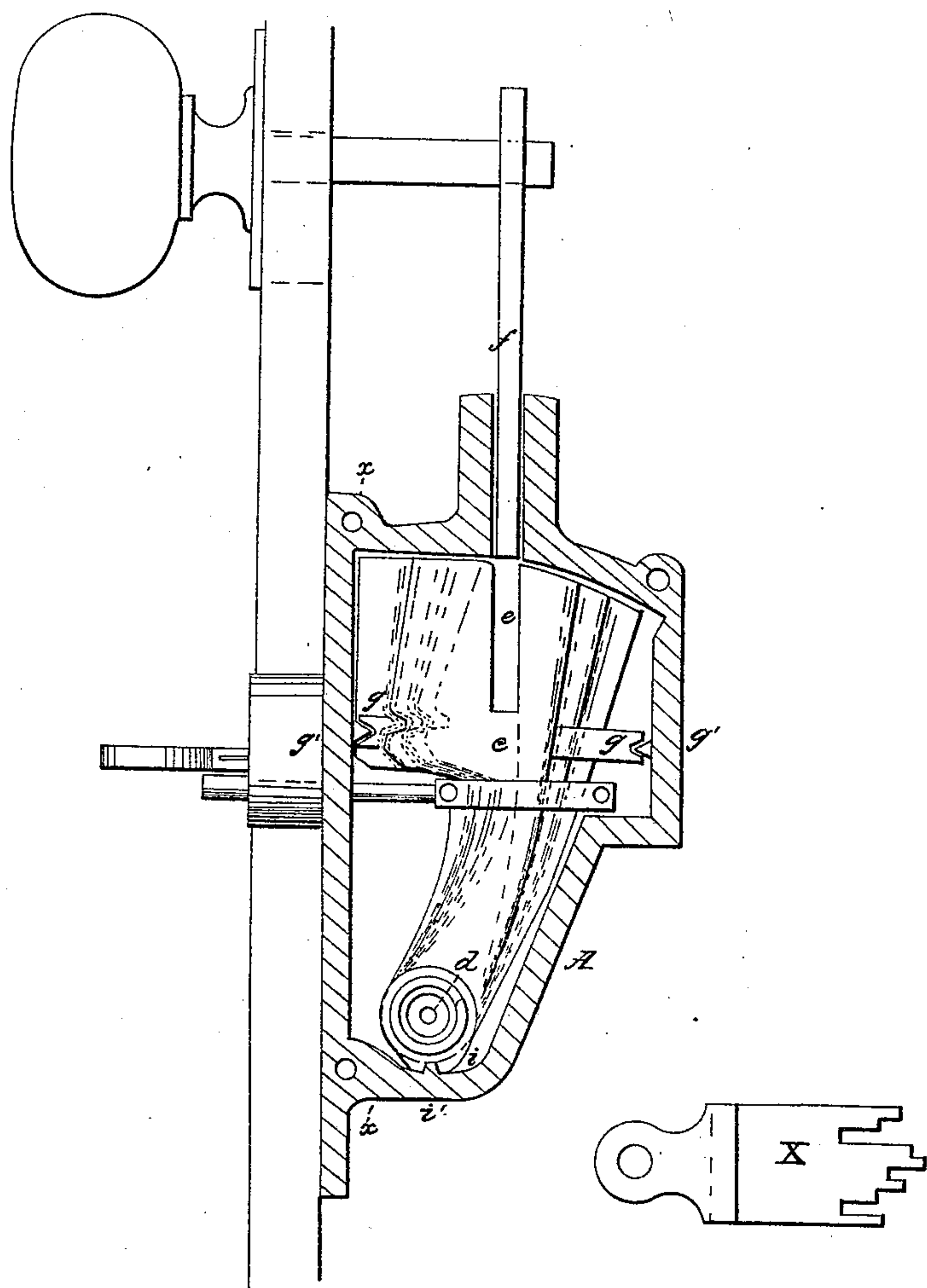
*J. M. Perkins,*

*Safe Lock.*

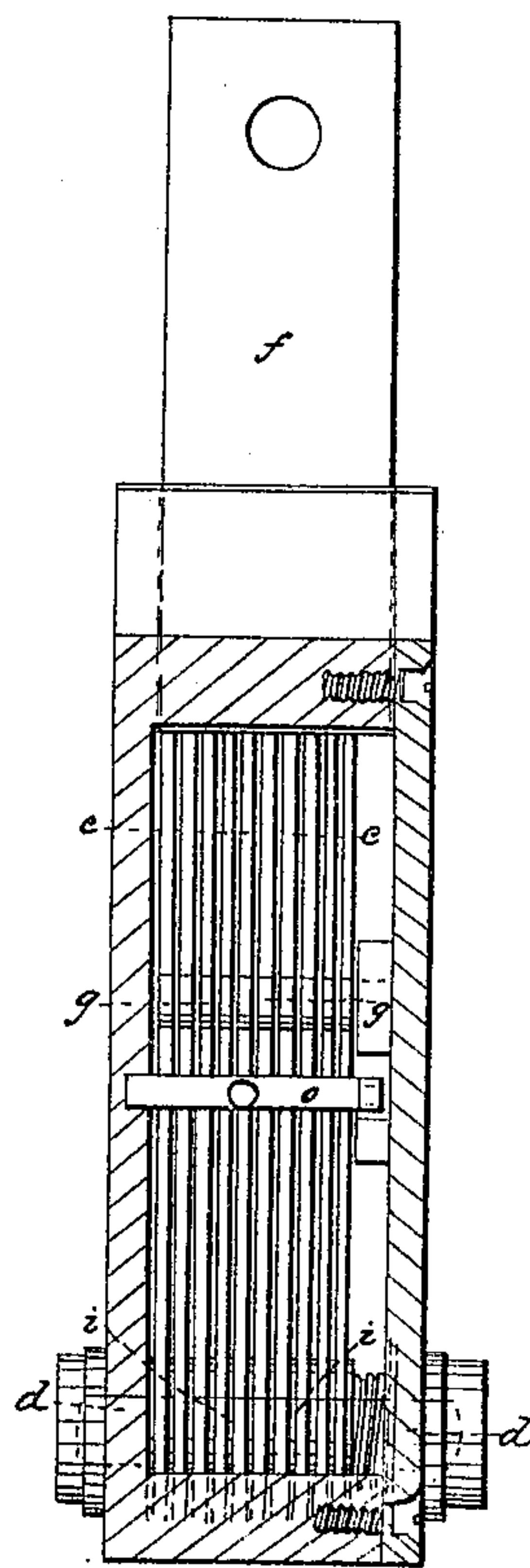
*N<sup>o</sup> 19,533.*

*Patented Mar. 2, 1858.*

*Fig. 2.*



*Fig. 1.*





# UNITED STATES PATENT OFFICE.

JOHN M. PERKINS, OF NEW YORK, N. Y., ASSIGNOR TO ROBERT M. PATRICK, OF SAME PLACE.

## LOCK.

Specification of Letters Patent No. 19,533, dated March 2, 1858.

*To all whom it may concern:*

Be it known that I, JOHN M. PERKINS, of New York, county of New York, and State of New York, have invented certain new and useful Improvements in Tumbler-Locks for Safes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being made to the annexed drawing, making a part of this specification, in which—

Figure I is a transverse vertical section of my lock on the line  $x-x$  of Fig. II. Fig. II is a side view, the plate being removed to exhibit interior, and similar letters indicate similar parts throughout.

My improvement in tumbler locks has more particular reference to that kind used in fire-proof safes, wherein the tumblers stand on end in a vertical position.

The object of these improvements is to give increased security by a more simple construction, to increase the durability, and to reduce the liability to get out of order. These improvements are obtained by an arrangement for separating the tumblers from each other whereby no springs for actuating them are required.

In safe locks the tumblers usually require the application of springs to propel them. These are liable to break, to become weak from age and rust, or to have their freedom of action interfered with by dust, thick oil, &c.

In my improvement the lock is composed of no other pieces than such as are necessary to support the tumblers in position. By thus dispensing with springs each tumbler when moved stands in any position given it without the possibility of its imparting any motion to the next, and in this perfect isolation consists its main element of security. The frame of the lock consists of a strong case of an irregular shape, as shown in the sectional view at (a) Fig. II. Upon the front plate (a') is the key-hole, which is a narrow slit formed in a projecting knob, fitted to receive a flat key X, and is operated in the ordinary way for this class of locks. The tumblers stand in the lock-case so that their front edges shall cross the key-hole. The tumblers are flat pieces cut out of sheet metal and of suitable shape for standing in the lock case, and as seen at (c). They are all secured together at one end by a pin (d) which passes through a hole in each, said

pin being protected at each end by a solid cap or by increasing the thickness of the metal. The tumblers may thus be spread open somewhat like a fan. In the end of each tumbler is a slot (e) but cut at a different place so that when all the slots coincide, the tumblers themselves will stand in irregular positions, as seen by the dotted lines in Fig. II, and in which position the bolt (f) may enter when thrown back. The tumblers are arranged so as to stand parallel to each other, but having a slight space between. This is accomplished by washers (i) put upon the pin (d) between the tumblers, and by parallel bars placed in like order to support their freely moving ends, as seen at (g).

The important feature lies in the manner of applying the washers, so that the moving of one tumbler will not by its friction upon the contiguous washers cause any of them to turn. Upon the end of the lock case is cast a projection (i') which extends like a bar across in line with the center of the pin (d). Each washer has a nick cut upon it which when placed upon the pin is brought to pass over this projection so that the washer is thereby locked in position. The bars (g) are all loose, and are kept in place by a fork in their ends, which fork embraces a projection cast upon the lock case on opposite sides, as at (g'). Thus in placing the tumblers in the case, first a washer is put over the pin (d) and a bar laid across from (g'') to (g'); on this lies the first tumbler. Then another bar and washer is put upon that, and again a tumbler, and so on, until the set is complete; over the last or outer washer a coil spring is put, and the last cross-bar (g) is bent slightly to form also a spring, so that on placing on the lock cover it will compress the bar and the coil and cause all the tumblers to be clamped together, so that it will require some force to move them against the friction of the bars and washers. The locking is effected by the yoke (o), from one end of which a pin passes out through the front and near the key-hole, and it is by pulling this pin outward that the yoke will draw all the tumblers together so that each one will be directly over the other, and in which position the slots (e) no longer coincide, consequently the bolt (f) is kept from entering. The difficulty to be overcome in picking such a lock will lie in the inability to feel the



proper place to which each tumbler should  
be brought in order to make the slots (*e*)  
coincide, because each tumbler will stand in-  
differently in any place it is put without in  
5 the least affecting the others, whereas in  
those with spring tumblers, or those which  
fall by gravity, or both combined, there is a  
common position for them to fall or move  
into, and this whole range of motion is  
10 readily ascertained, consequently it is known  
that such locks can be picked by feeling for  
the final catching place where the springs  
catch in the said tumblers. The proper un-  
locking is effected by a flat key having its  
15 ends cut to different lengths, as shown at X,  
to put the tumblers into proper places for  
bringing the slots (*e*) into a common line.

I claim—

1. In combination with a set of tumblers

arranged and operating in the manner de- 20  
scribed I claim a set of stationary bars at  
one end and a set of washers at the other  
end of, and interposed between said tum-  
blers for the purposes specified.

2. I also claim the yoke embracing the 25  
whole set of tumblers in combination with a  
pin or its equivalent projecting out and  
through the case for the purpose of enabling  
the tumblers to be shoved together so as to  
cover each other, whereby the slots of the 30  
tumblers are caused not to coincide, thus  
preventing the bolt from being withdrawn.

In witness whereof I have hereunto set  
my hand.

JNO. M. PERKINS.

Witnesses:

J. P. PIRSSON,

S. H. MAYNARD.