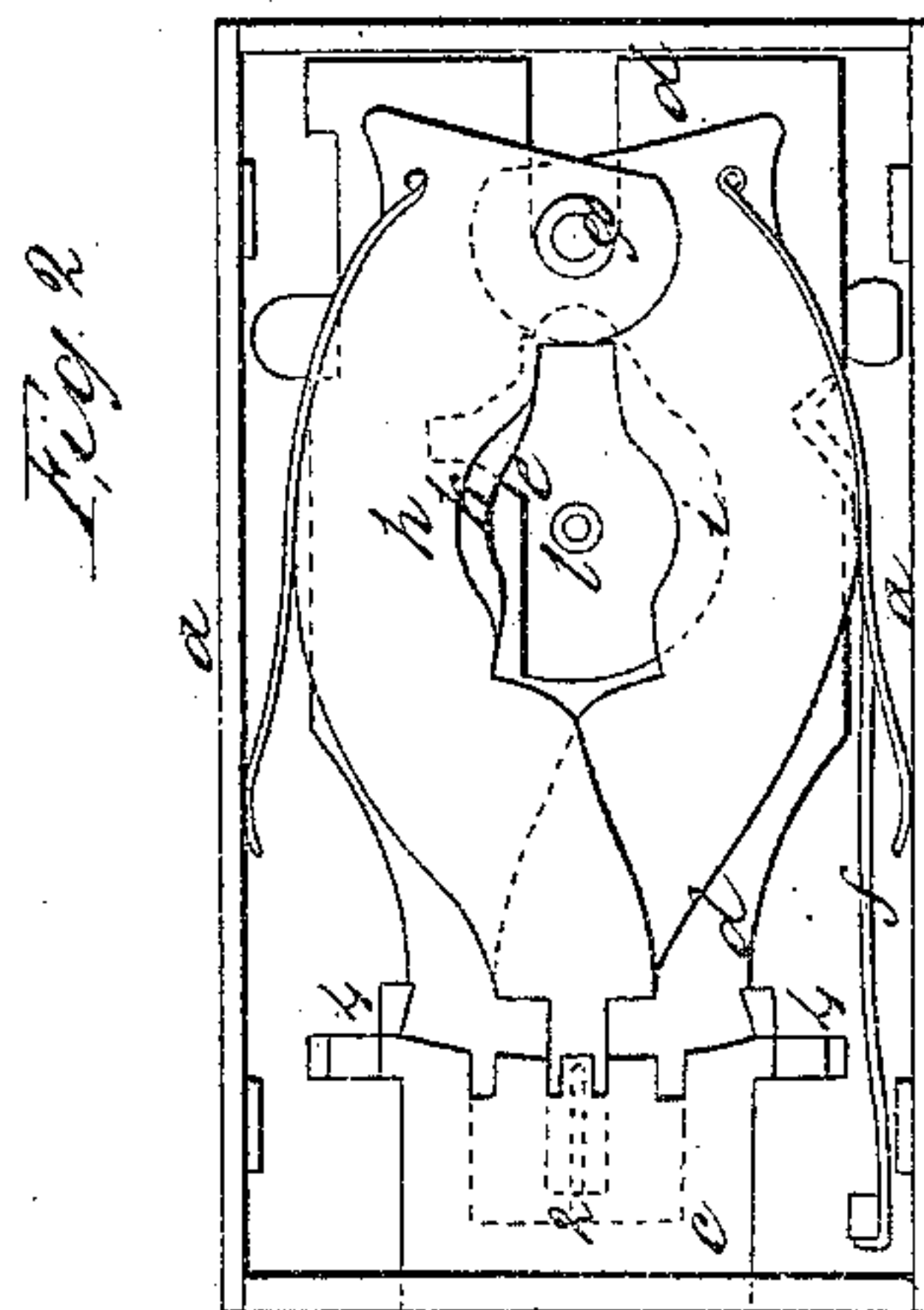
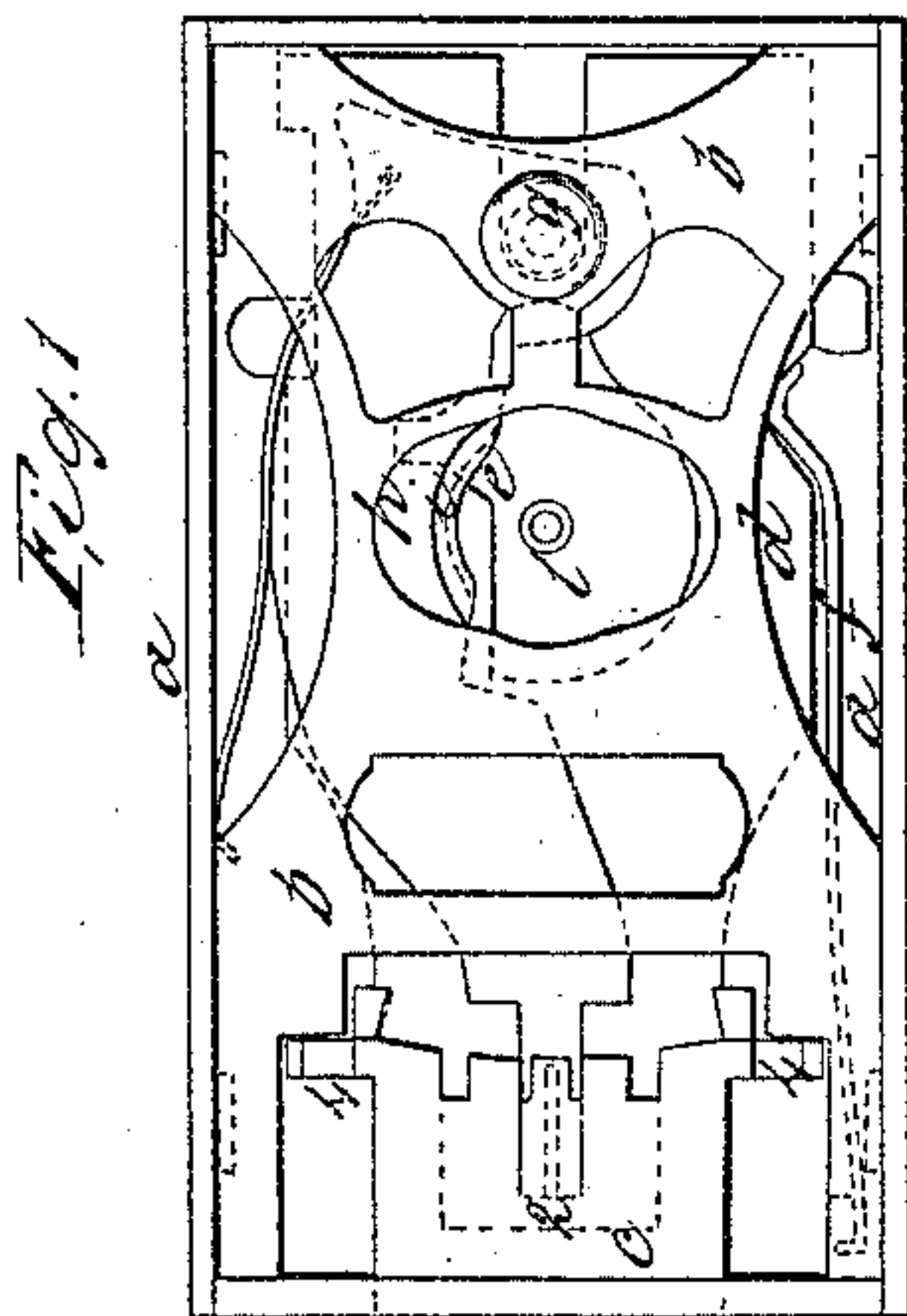
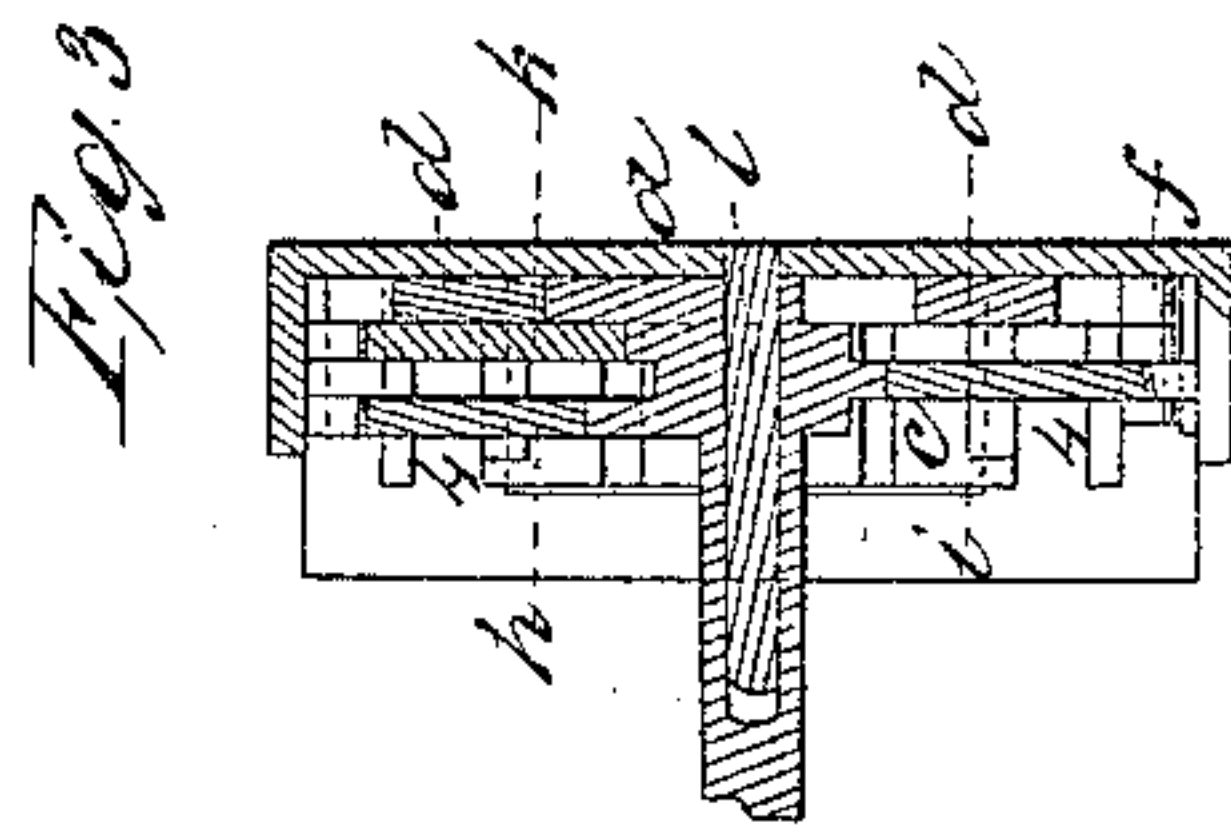
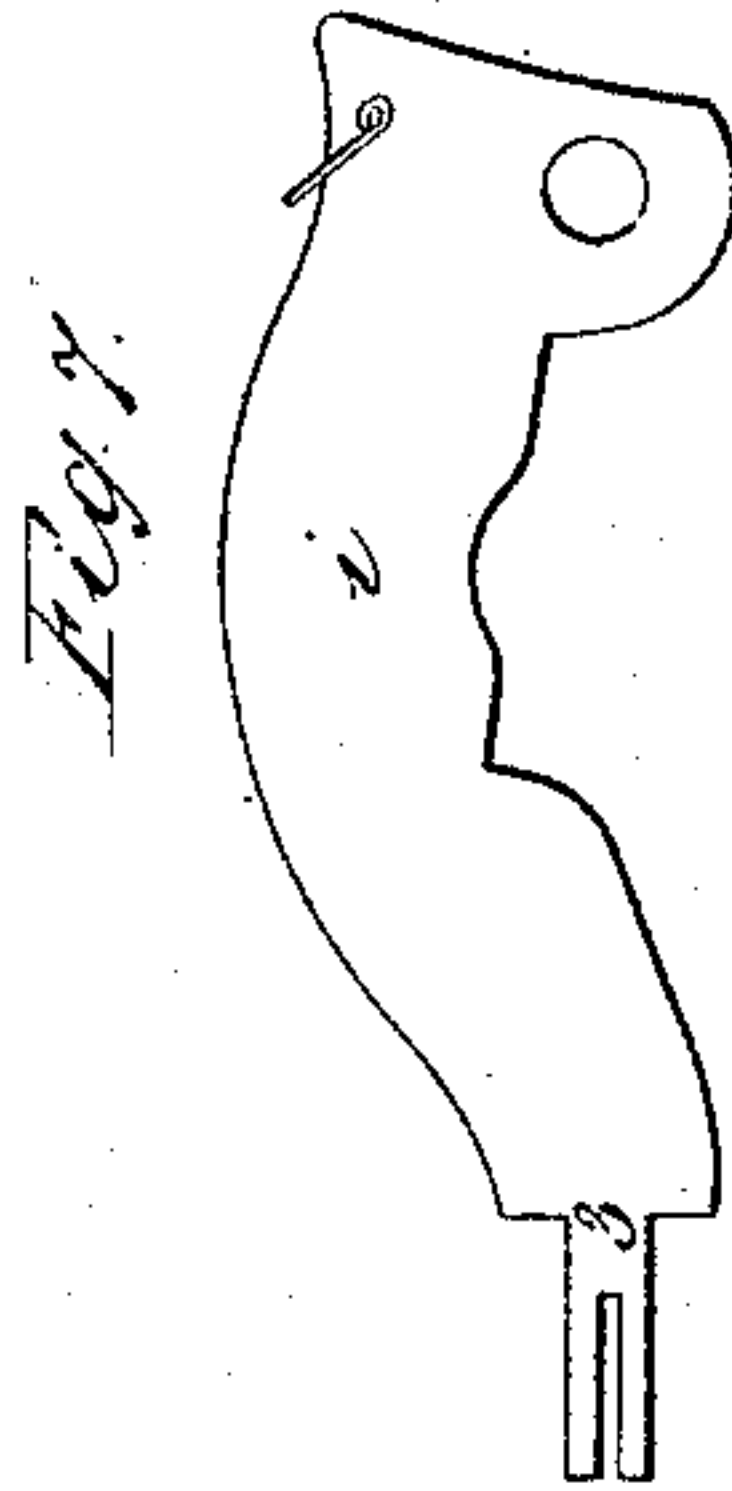
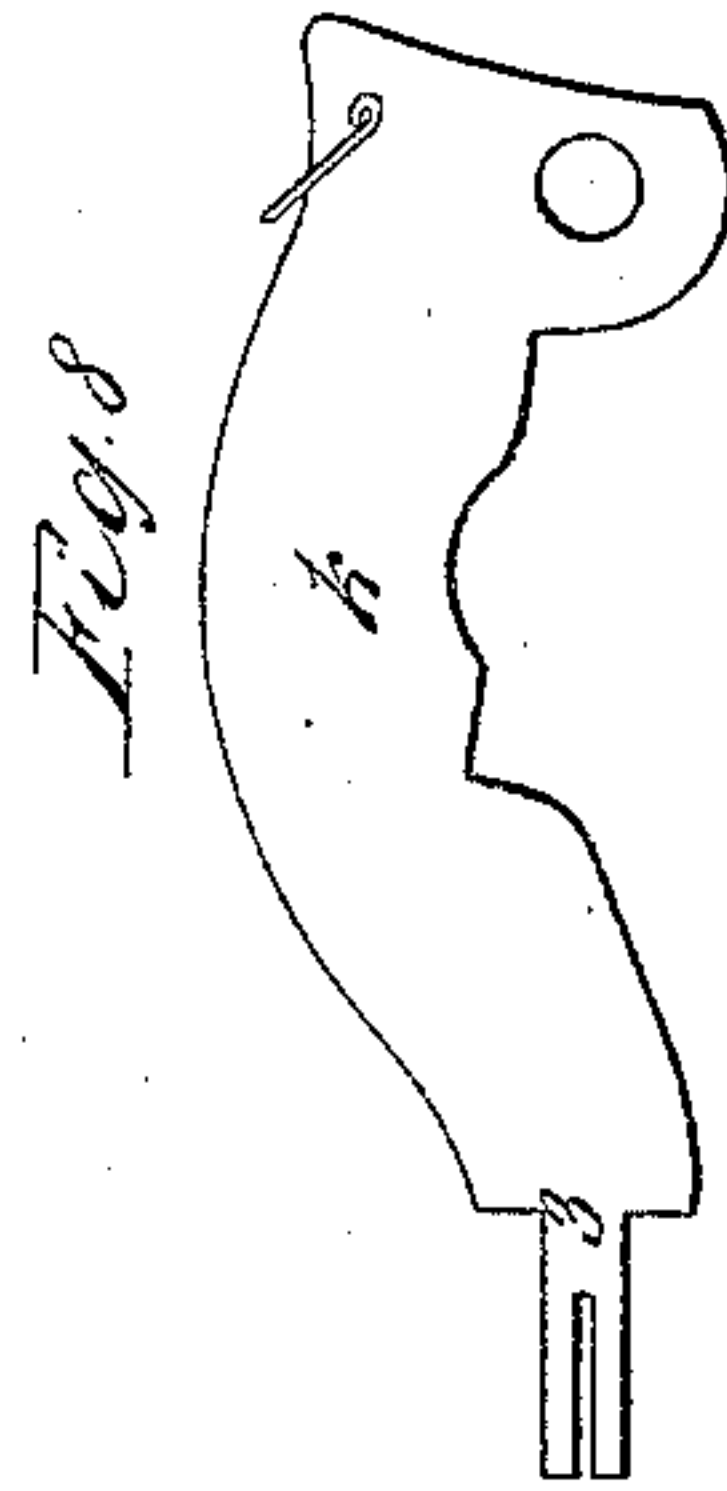
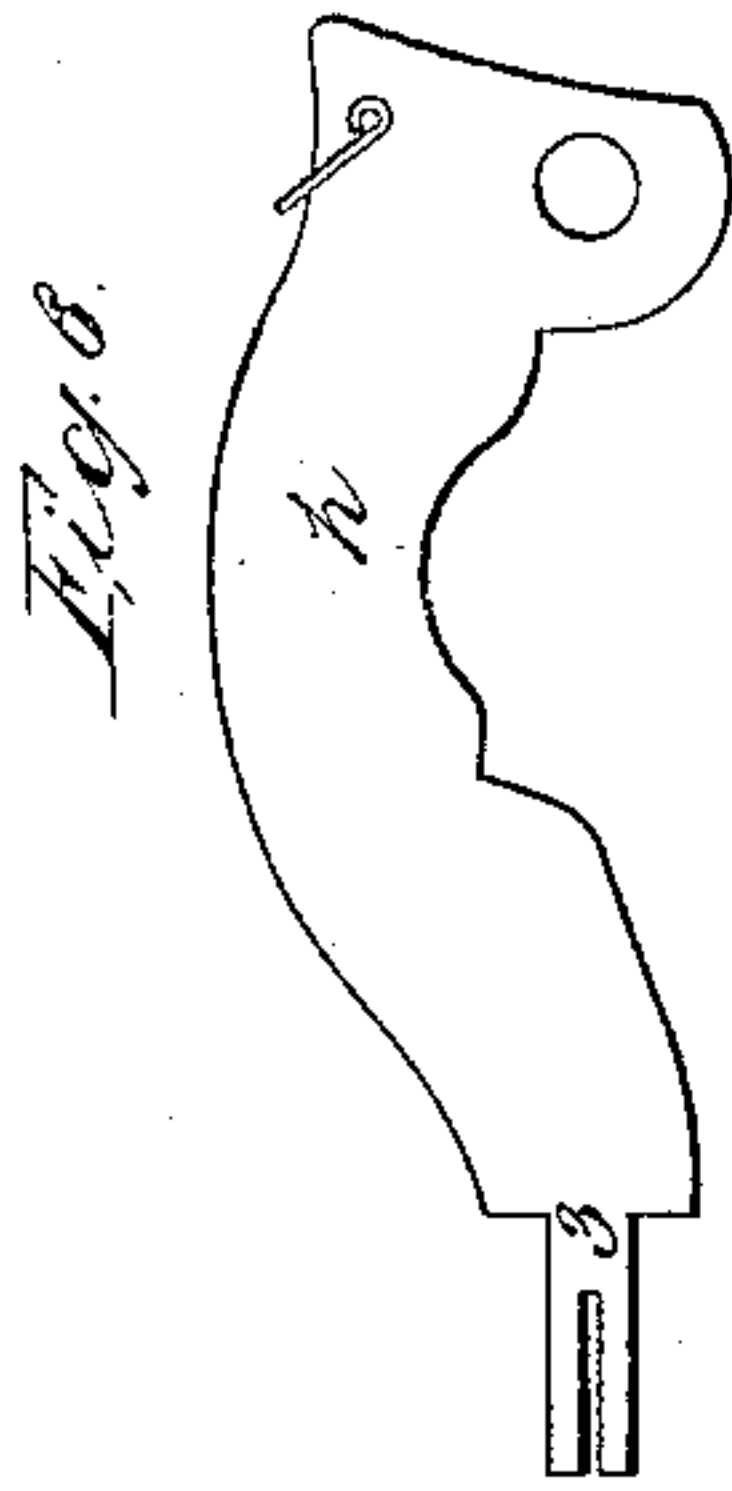
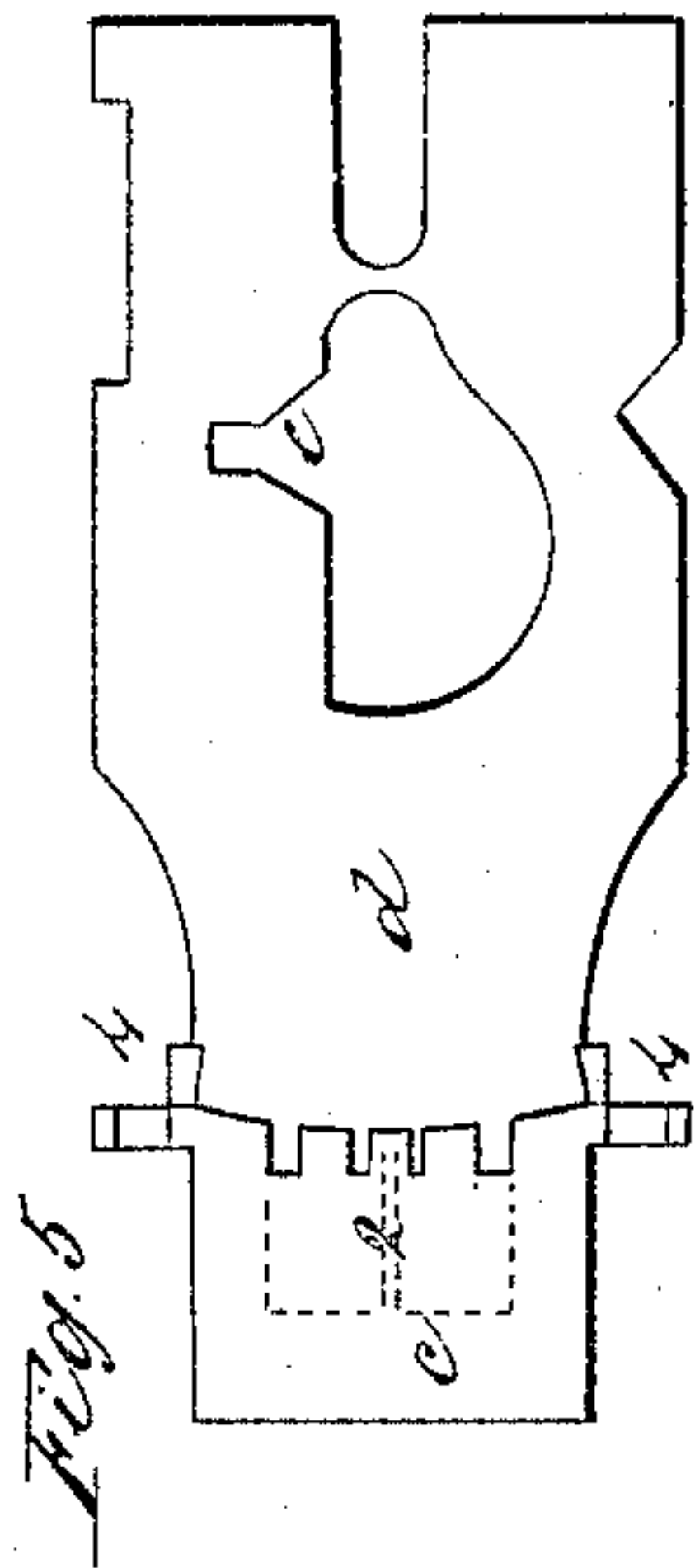
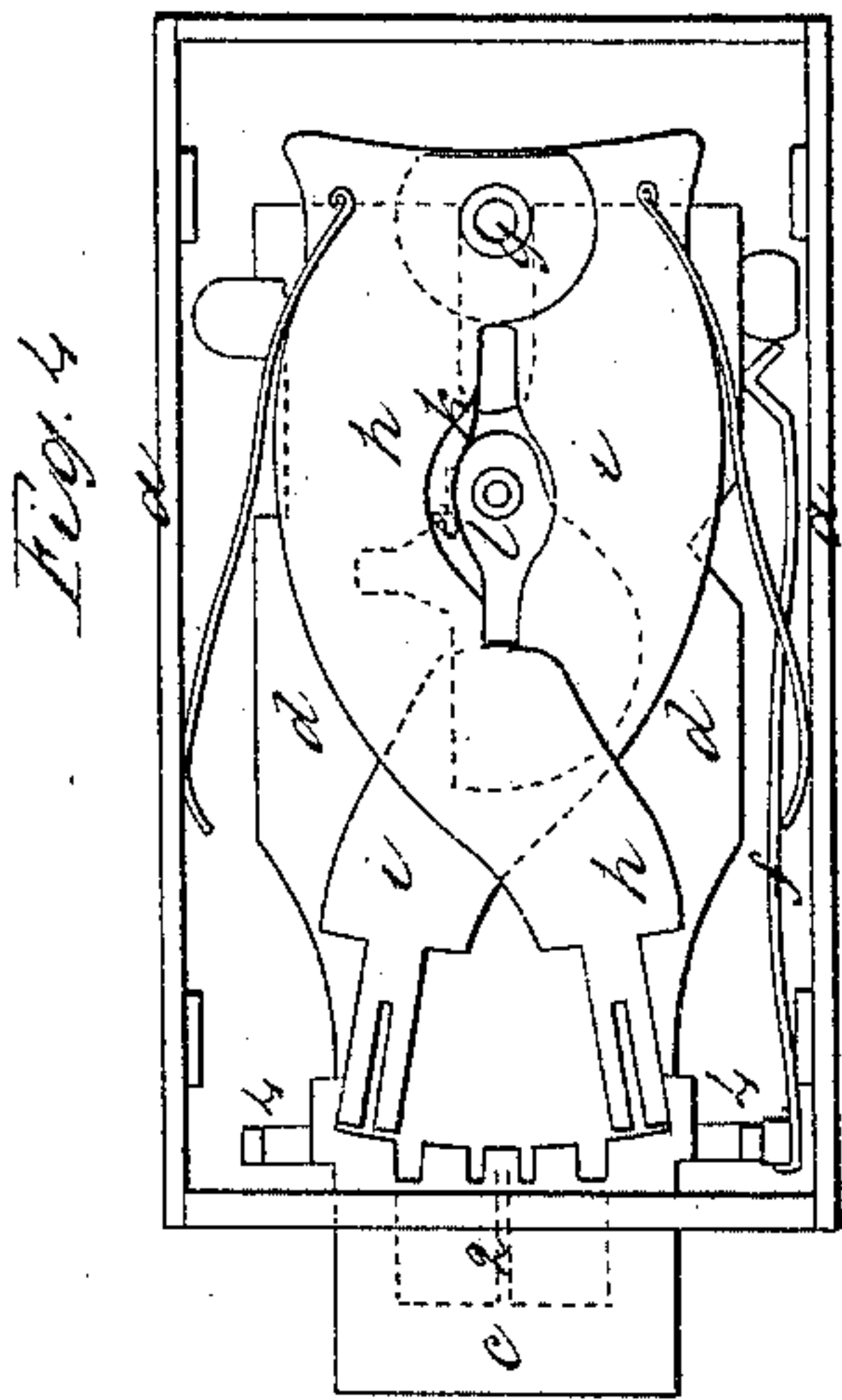


*R. B. Burchell,*

*Lock.*

*N<sup>o</sup> 57,857.*

*Patented Sep. 11, 1866.*



*Witnesses*  
*Chas H Smith*  
*Geo B Walker*

*Inventor*  
*R. B. Burchell*  
*per L. W. Cornell*  
*Atty*

# UNITED STATES PATENT OFFICE

R. B. BURCHELL, OF BROOKLYN, NEW YORK.

## IMPROVED LOCK.

Specification forming part of Letters Patent No. 57,857, dated September 11, 1866.

*To all whom it may concern:*

Be it known that I, RICHARD B. BURCHELL, of Brooklyn, E. D., in the county of Kings and State of New York, have invented and made a certain new and useful Improvement in Locks; and I do hereby declare the following to be a full, clear, and exact description of the said invention, reference being had to the annexed drawings, making part of this specification, wherein—

Figure 1 is an elevation of my lock with the bolts retracted and all the tumblers above the key-stud. Fig. 2 is a similar view with the cap-plate removed and some of the tumblers reversed to stand below the key, and Fig. 3 is a section through the key and tumblers. Fig. 4 is a view similar to Fig. 2, with the bolt projected.

Similar marks of reference denote the same parts.

The nature of my said invention consists in an arrangement of reversible tumblers, in which the tumbler-stud and the key-stud are placed upon the line of a plane passing through the center of the bolt, and the ends of the tumblers take against the inner end of the bolt-head when projected. By this arrangement and combination I am enabled to obtain from the same tumblers a variety of combinations or permutations by reversing the tumblers and bringing some above and others below the key, or all on one side or the other of the key-stud. Hence the lock can be varied so as to require a very different key in case the one usually employed may have been lost or stolen.

By the ends of the tumblers taking against the end of the bolt-head when it is projected, the tumblers can be as long as possible within the given size of case, and the ends of the tumblers are raised either above or below the bolt-head or pass into the hollow bolt-head as the bolt is retracted.

In the drawings, *a* is the case of the lock, of any desired size or shape. *b* is the cap-plate, (removed in Fig. 2;) and *c* is the bolt-head, and *d* the shank or plate of the bolt, with the locking and unlocking talon *e*, as usual.

*f* is a spring, with an inclined end entering a notch in the plate *d*, to prevent the bolt flying out accidentally when unlocked.

The bolt is shown separately in Fig. 5.

The tumblers *h*, *i*, and *k* are set to move on the stud *g*, that is on a central line or a plane running through the center of the bolt and the key-stud *l*, and the ends of the tumblers *h i k*, taking the inner side of the bolt-head when projected, prevent the bolt being retracted until the ends of the tumblers are properly placed by the action of the key-bits.

The tumblers *h*, *i*, and *k* are shown separately in Figs. 6, 7, and 8.

I have shown the bolt-head as hollow, with a stud, 2, entering slots 3 in the ends of the tumblers as the said hollow bolt-head is drawn back over the said ends of the tumblers; but the shape of the ends of the tumblers may be such that they will, by the action of the key, be brought above or below the bolt-head, and the notches at 4 4 pass back over the tumblers as the bolt is withdrawn.

The tumblers may be all on one side of the key-stud or all on the other, or some may be one side and others the other, in either instance the key being so made as to bring them to the proper position for withdrawing the bolt. This allows for great variations in the keys without altering the construction of any part of the lock; and in all instances, when the bolt is retracted, the inner side of the bolt-head comes farther back within the lock-case than the ends of the tumblers. Hence the case of the lock can be smaller in proportion to the size of the tumblers.

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

The reversible tumblers set and turning upon a stud that is upon the central line or plane of the bolt and key-stud, the ends of said tumblers projecting beyond and entering notches at the inner side of the bolt-head when the bolt is retracted, substantially as set forth.

In witness whereof I have hereunto set my signature this 11th day of May, A. D. 1866.

RICHD. B. BURCHELL.

Witnesses:

LEMUEL W. SERRELL,  
CHAS. H. SMITH.