

(No Model.)

W. F. TROAST.
PADLOCK.

No. 418,359.

Patented Dec. 31, 1889.

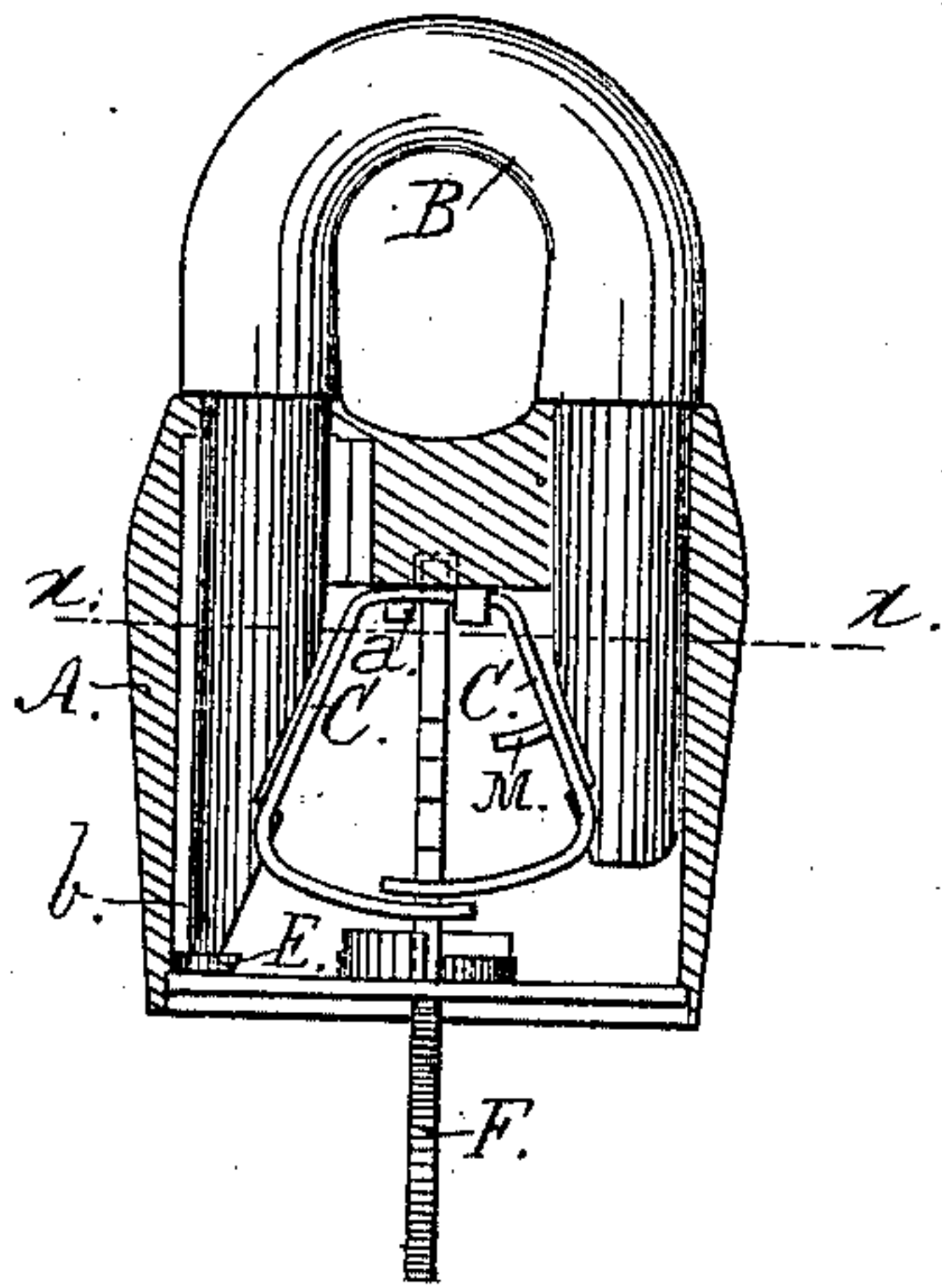


Fig. 1

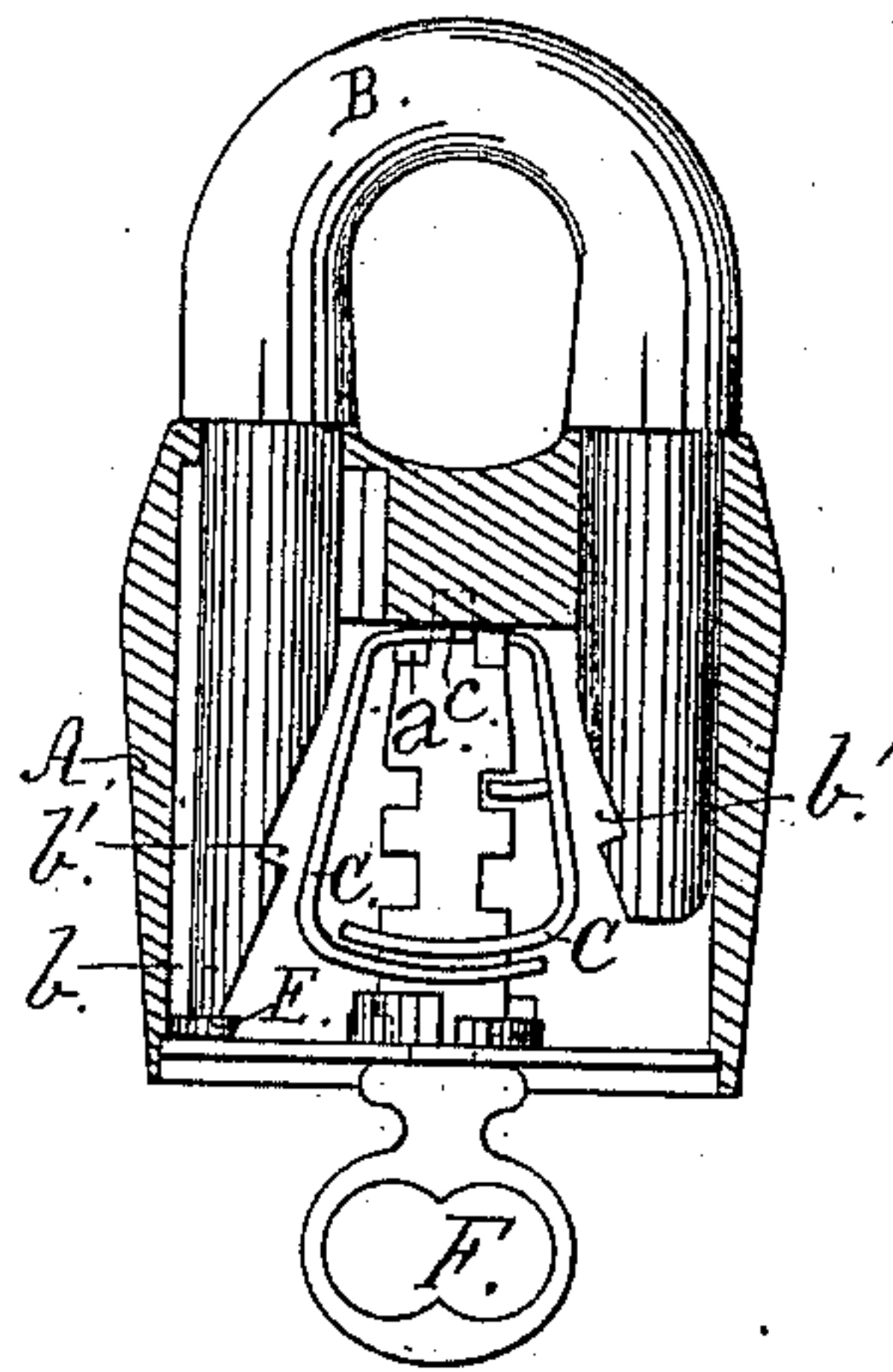


Fig. 2.

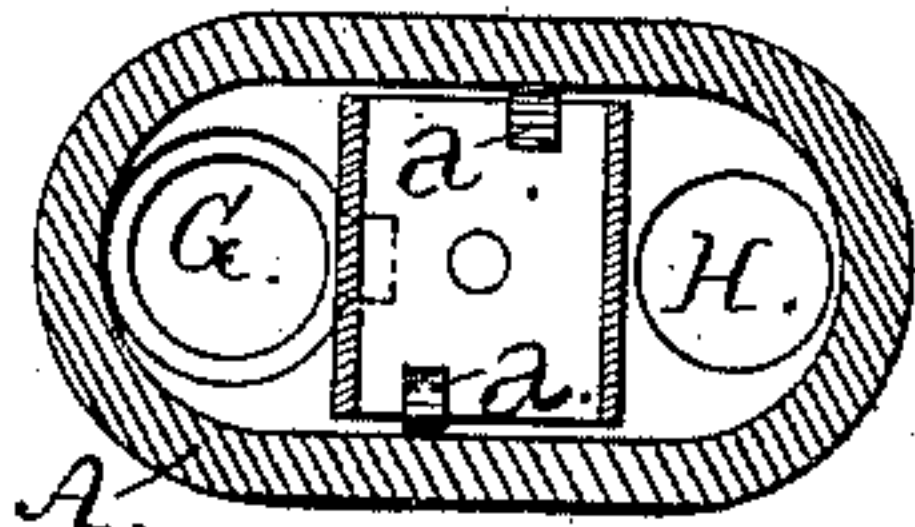


Fig. 4.



Fig. 5.

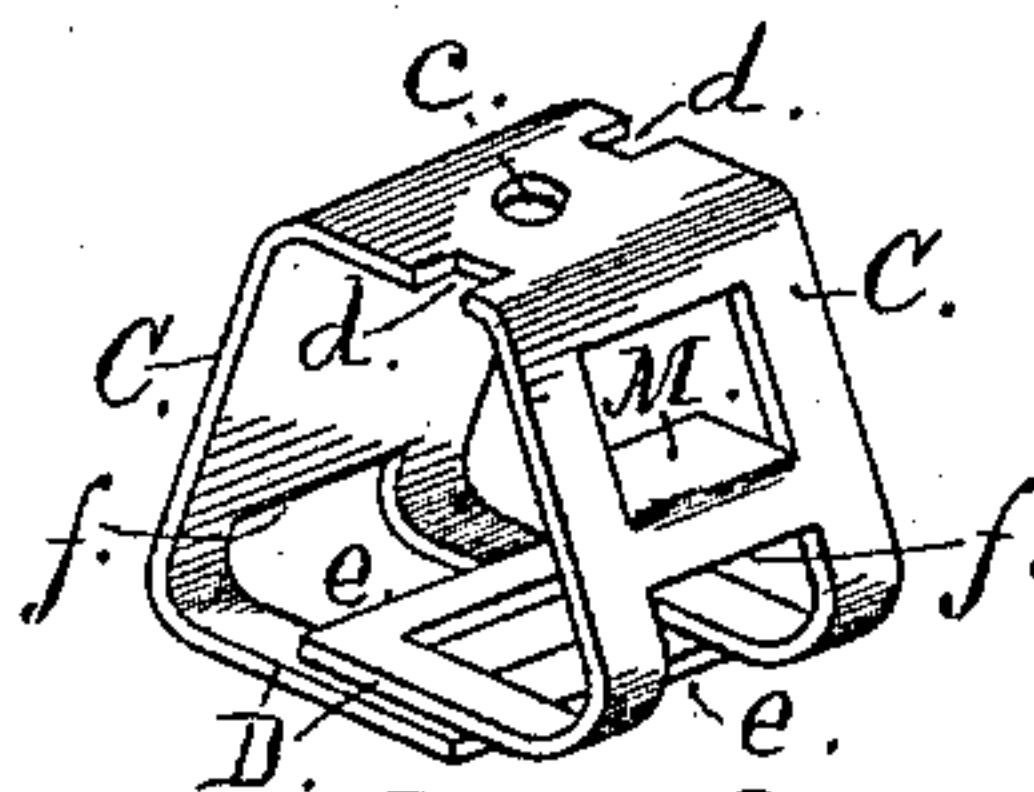


Fig. 3.

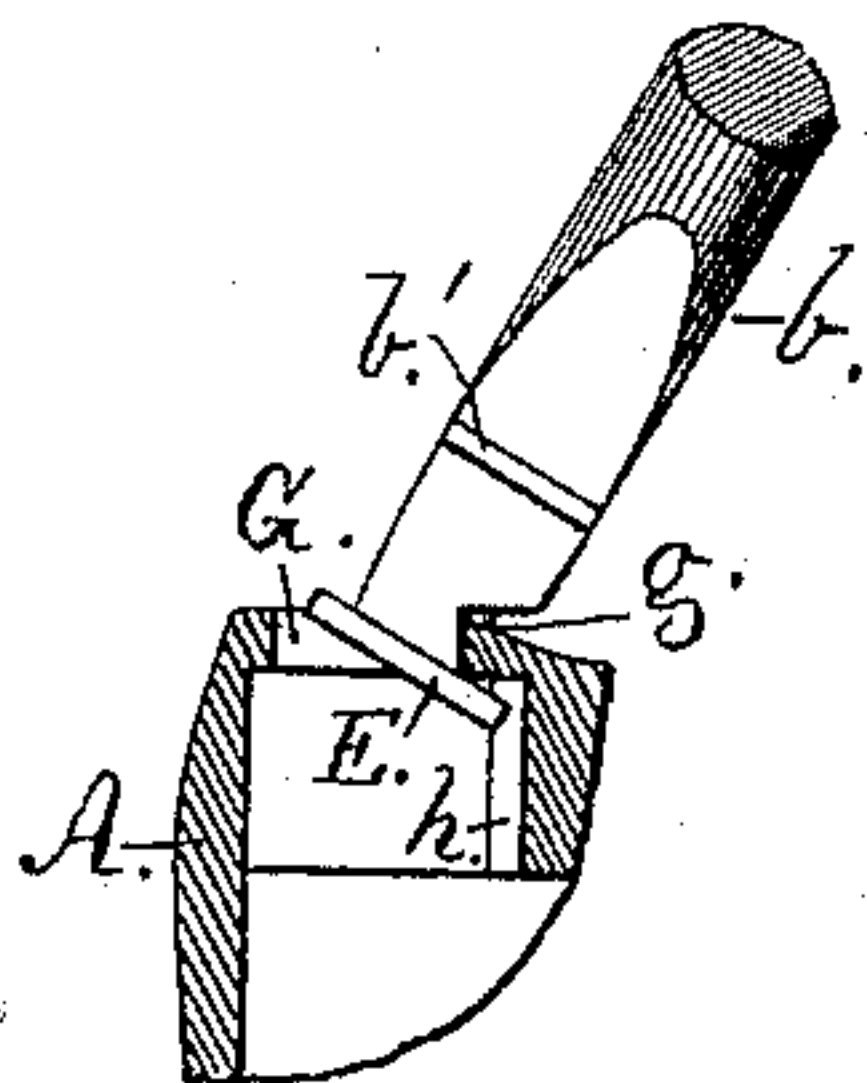


Fig. 6.



Fig. 8.

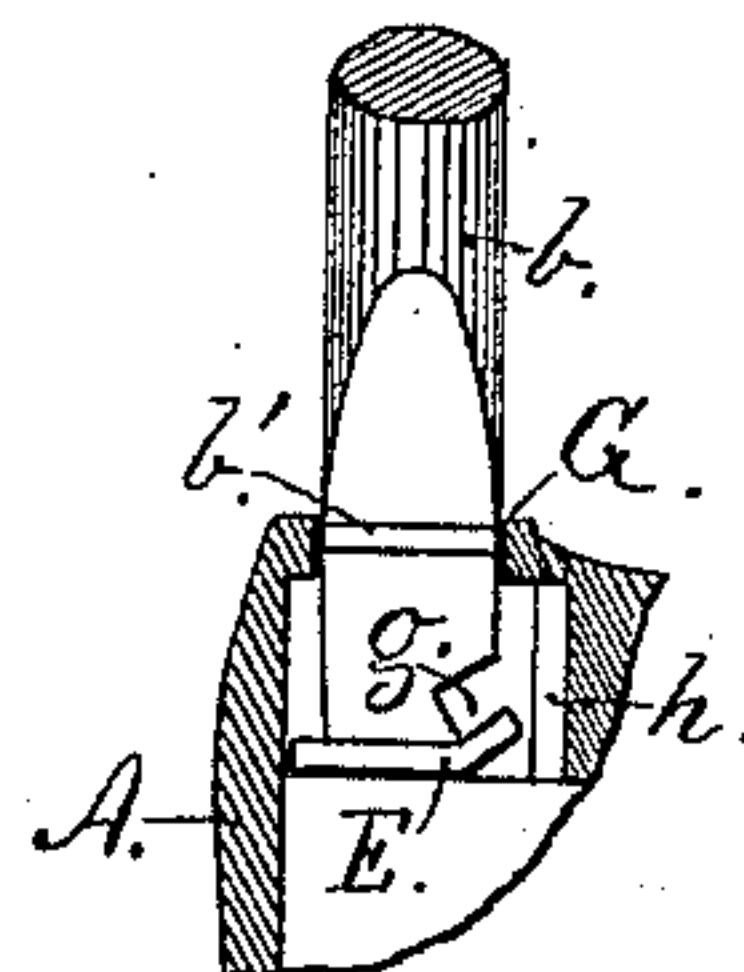


Fig. 7.

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UNITED STATES PATENT OFFICE.

WILLIAM F. TROAST, OF LANCASTER, PENNSYLVANIA, ASSIGNOR OF ONE-THIRD TO SAMUEL R. SLAYMAKER AND JOHN F. BARRY, OF SAME PLACE.

PADLOCK.

SPECIFICATION forming part of Letters Patent No. 418,359, dated December 31, 1889.

Application filed October 29, 1888. Serial No. 289,394. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. TROAST, a citizen of the United States, residing in Lancaster, in the county of Lancaster and State of Pennsylvania, have invented certain Improvements in Padlocks, of which the following is a specification.

My invention relates to improvements in that class of padlocks in which a U-shaped hasp or shackle, with notches cut in both arms thereof, is held in place by tumblers extending longitudinally between the top and bottom of the case, and is an improvement on a lock of the same class for which Letters Patent No. 386,510, dated July 24, 1888, were issued by the United States to myself and Samuel R. Slaymaker; and the object of my improvement is to simplify the construction and cheapen the cost of that class of locks, as will be hereinafter fully described.

My invention consists in the combination, with a U-shaped hasp or shackle having notches cut in the arms thereof, of two tumblers for engaging the notches in the arms of the shackle extending from the top to the bottom of the case, the said tumblers being formed of a single piece of spring-steel, with its lower ends bent inward so as to lap each other and constructed to be engaged by the key.

My invention consists, also, of an improvement in the manner of securing the fast end of the shackle in the case, as will be hereinafter fully described and claimed.

In the drawings, Figure 1 is a side elevation of a padlock embodying my invention, with the case in section, and showing the tumblers in engagement with the notches in the arms of the shackle. Fig. 2 is a similar view, but showing the tumblers disengaged from the shackle. Fig. 3 is a perspective view of the tumblers separate from the lock-case. Fig. 4 is a horizontal section through the line *x x*, the lock being viewed from the bottom. Fig. 5 is an inside plan view of the bottom plate. Fig. 6 is a sectional view of a portion of the case, showing the position of the fast arm of the shackle as it is about to be introduced into the case; and Fig. 7, a view of the same after that arm has been inserted. Fig. 8 is an end view of the fast arm of the shackle.

A represents the case, B the shackle, and *b* the fast arm of the shackle. The tumblers C extend longitudinally between the top and bottom of the case. They are formed integral with each other at the top and are made of a single piece of spring metal, thus combining the functions of the tumblers and the spring which forces them into engagement with the notches in the arms of the shackle in the same part. The upper or connected portion *c* of the tumblers is flattened, so as to rest against the top of the case. Upon each side this flattened portion is provided with recesses *d*, which are engaged by pins *a*, projecting downward from the top of the case and located next to the sides thereof.

After the tumblers are placed in the case and the pins *a* are engaged by the recesses *d* the former are bent over, as shown in Figs. 1, 2, and 4, to secure the tumblers in place. In each arm of the shackle there are one or more notches *b'* formed, which, when the arms rest in the case, are engaged by slots *f*, cut through the sides of the tumblers. These slots hook over the lower sides of the notches, so as to prevent the withdrawal of the shackle while the parts are so engaged. The lower ends of the tumblers are bent inward, so as to have those parts D lap each other. Each of the parts D have openings *e* made through them wide enough to receive the key F crosswise therein, and they are of such length that when the tumblers are engaged with the shackle each opening extends back of the end of the corresponding part D of the other tumbler. When in this position there is enough of the openings *e* left between the ends of the two parts D for the key to pass through, as shown in Fig. 1. The turning of the key in this space between the ends of the parts D causes it to engage the outer ends of the several openings *e* and draw the tumblers toward each other and out of engagement with the arms of the shackle, as shown in Fig. 2. In one of the tumblers a piece M is cut out and bent inward so as to form a "change," which engages a corresponding recess in the proper key of the lock. By this construction the spring and tumblers can be struck or cut out of a sheet of metal much more easily and cheaply than can be done

when those parts are made separately, and I obtain the same advantages in putting the parts together.

On the arm *b* of the shackle, which is permanently fastened in the case, there is formed a semi-annular flange *E*, which widens toward its extremities, and above the flange there is a recess *g* cut in one side of the arm. This recess is of such width as to be able to receive the metal surrounding the opening *G* in the top of the case above a groove *h*, formed in the wall of the recess surrounding the opening for receiving the long arm of the shackle in the case. (Shown in Figs. 1, 2, and 6, more particularly the latter.)

In inserting the arm *b* in the case the flange is introduced diagonally with the end below the recess *g* entering first and on the side of the opening *G* on which the groove *h* is placed. When the end of the flange *E* reaches the groove *h*, it is pushed into it, the edge of the metal about the opening *G* being received in the recess *g* of the arm *b*, as shown in Fig. 6, which permits the other end of the flange *E* to be inserted in the opening *G*. The arm *b* is then pushed down into the case, and the end of the flange *E* below the recess *g* is bent inward, so as to close the mouth of that recess or reduce it to such an extent as to prevent it from allowing the shackle to be accidentally disconnected from the case, as shown in Fig. 7. This way of fastening the shackle in the case is easy, simple, and requires but little work.

The slot *k* in the bottom plate *K* of the case has a recess *k'* on each side, as shown in Fig. 5, located at opposite ends of the slot to permit the key to turn. About the slot *k* on the inner face of the bottom plate there is a disk *L* formed, having recesses *l* cut in the face thereof parallel with and on the same side of the slot as the recesses *k'*. The ends of the recesses *l* form shoulders *m*, which engage wards upon the key and serve as stops to limit the distance the key is turned.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the shackle and case, of the tumblers extending from the top to the bottom of the case and formed of a single piece of spring metal, the portion *c*, connecting the tumblers, being immovably secured to the top of the case, substantially as specified.

2. The combination, with the shackle and case, of the tumblers extending from the top to the bottom of the case and formed of a single piece of spring metal, the portion *c*, connecting the tumblers, having recesses *d* cut therein, and pins projecting downward from the top of the case and adapted to be received in the recesses *d* and have the ends bent over to secure the tumblers in place, substantially as herein set forth.

3. The combination, with the case, of the tumblers formed of spring metal and extending from the top to the bottom of the case and having transverse slots cut through them, and the shackle, the arms of which are provided with notches adapted to hook into the slots in the tumblers, substantially as and for the purpose specified.

4. The combination, with the case having a groove *h* formed in the wall of the recess surrounding the opening for receiving an arm of the shackle, of the shackle having a transverse projection formed on the end of one of its arms and a recess *g* cut therein above said projection, said projection being adapted to be bent inward to obstruct the mouth of said recess, substantially as and for the purpose specified.

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Witnesses:

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