(Model.)

G. CROUCH & H. AHREND.

TRUNK LOCK.

No. 300,850. Patented June 24, 1884.

Fig. 1.

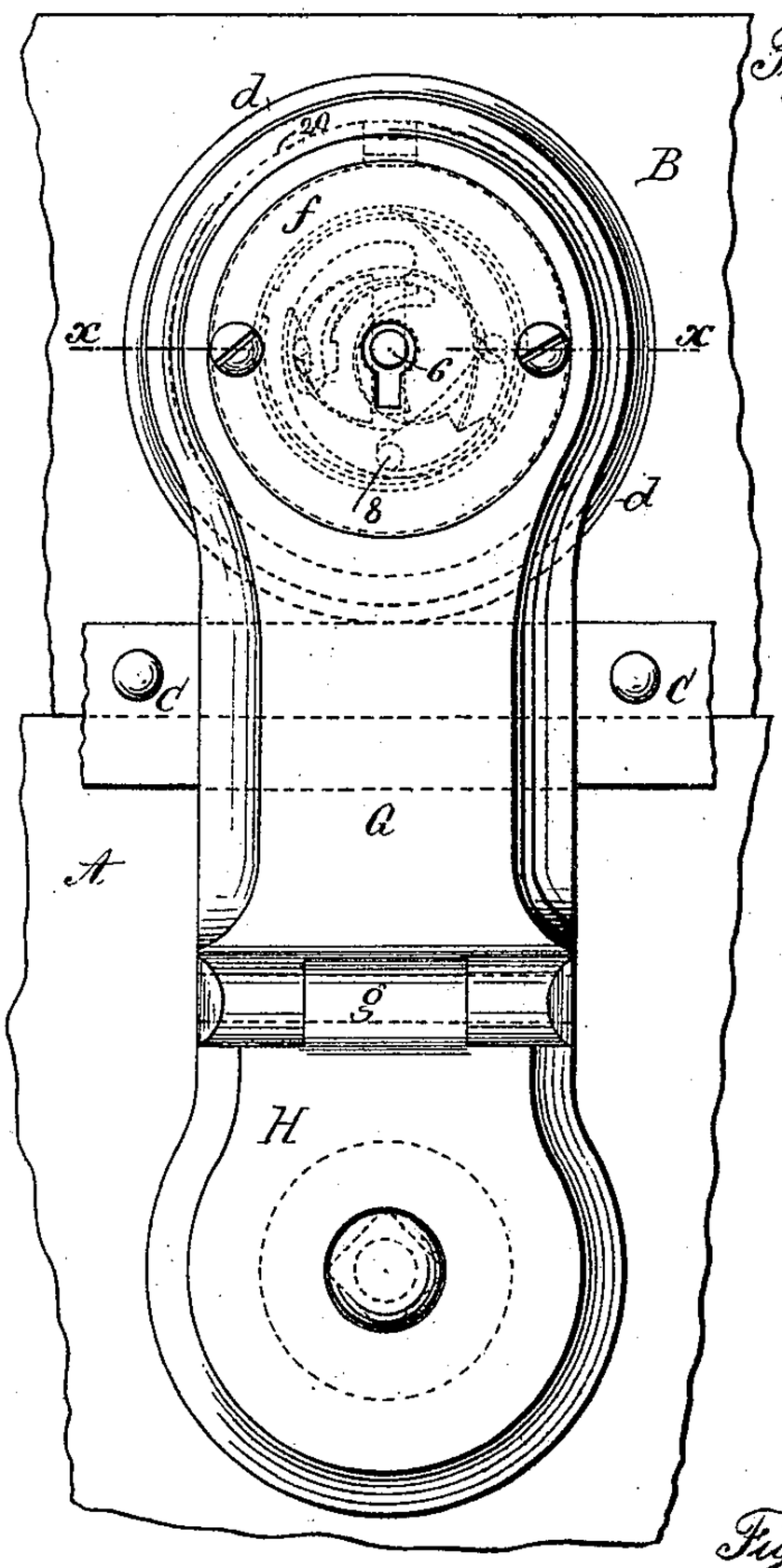

Fig. 2.

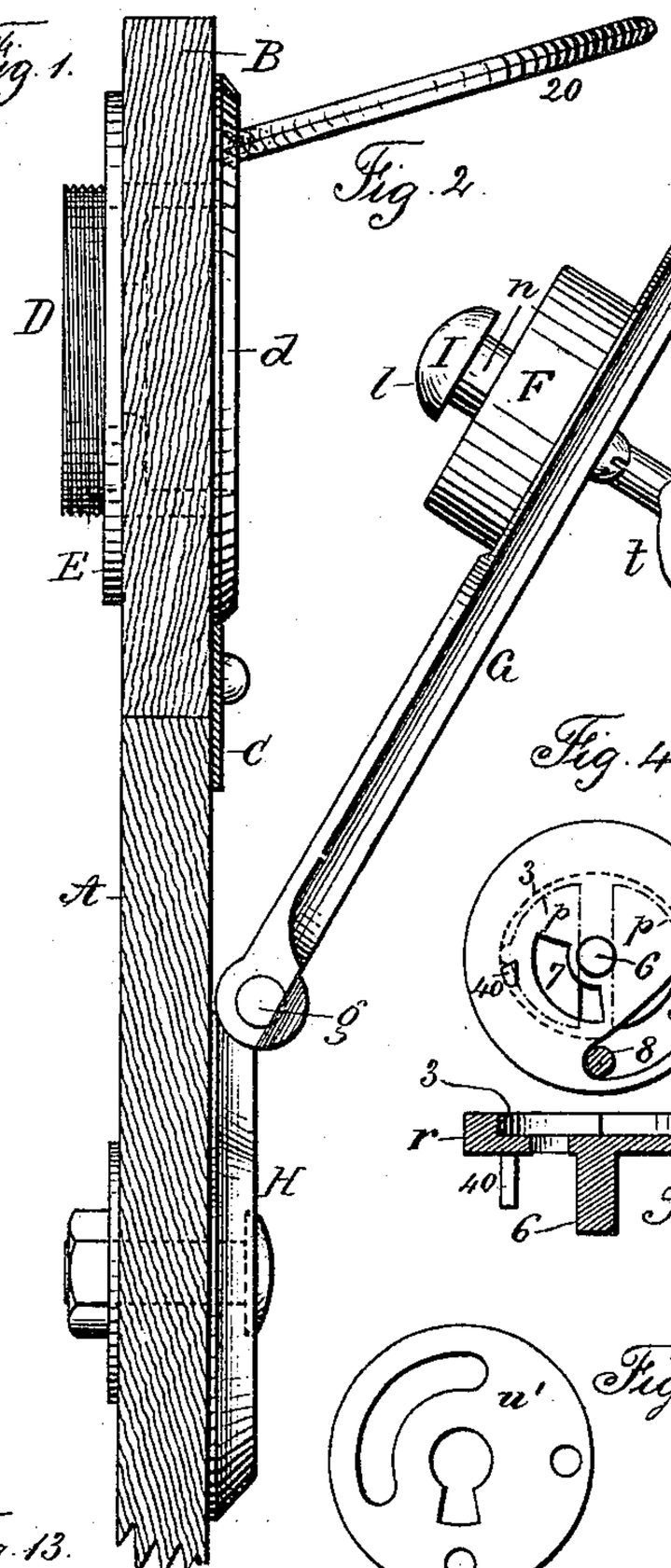

Fig. 4.

Fig. 5.

Fig. 6.

Fig. 7.

Fig. 13.

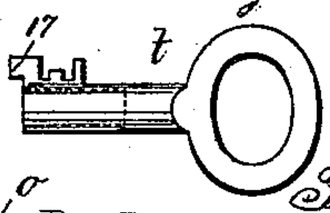

Fig. 3.

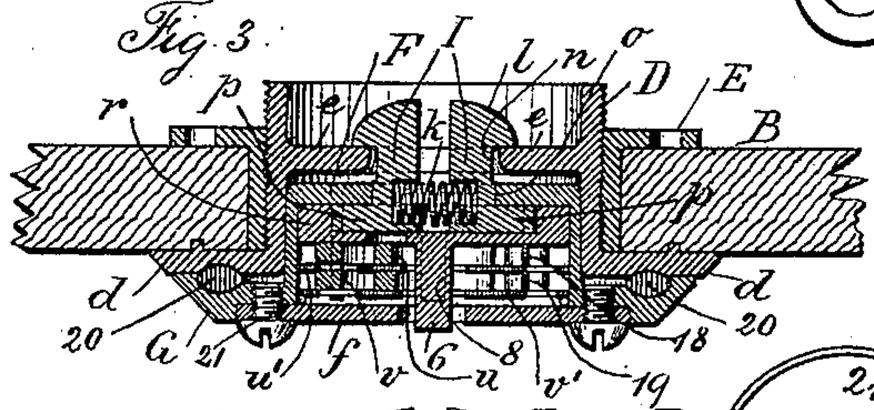

Fig. 10.

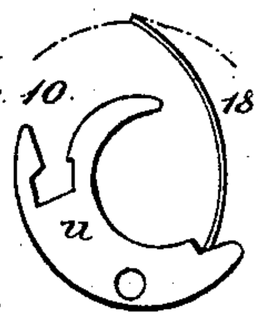

Fig. 11.

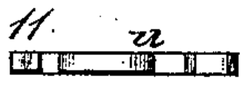

Fig. 8.

Fig. 9.

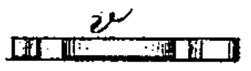

Fig. 14.

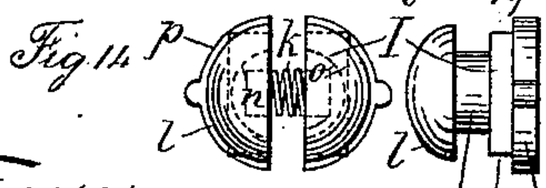

Fig. 15.

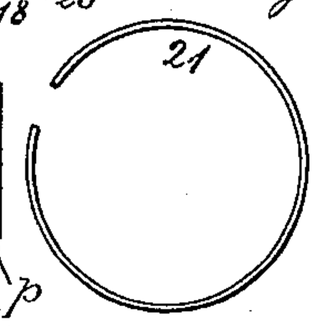

Fig. 12.

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Hermann Ahrend.
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Atty

UNITED STATES PATENT OFFICE.

GEORGE CROUCH, OF NEW YORK, N. Y., AND HERMANN AHREND, OF NEWARK, NEW JERSEY, ASSIGNORS TO SAID CROUCH.

TRUNK-LOCK.

SPECIFICATION forming part of Letters Patent No. 300,850, dated June 24, 1884.

Application filed February 23, 1884. (Model.)

To all whom it may concern:

Be it known that we, GEORGE CROUCH, of the city and State of New York, and HERMANN AHREND, of Newark, in the county of Essex and State of New Jersey, have invented an Improvement in Trunk-Locks, of which the following is a specification.

Trunk-locks have been made within a circular case upon a hinged hasp, the lock having a turn-bolt at the back end, which bolt passes through an elliptical opening in a septum at the bottom of a cup that is secured to the trunk. In these trunk-locks it is necessary to make use of a key to lock the trunk. This is very unhandy, because trunks often have to be closed and locked by one person while another, who may be absent, has the key for opening such lock.

Our invention relates to the combination, with the hinged hasp and cup secured to the trunk, of a spring-lock that catches by simply pressing the lock into its place, but which requires the proper key for opening the same. We also construct the parts of the spring-lock in a peculiar manner, so as to be strong and compact.

In the drawings, Figure 1 is an elevation of the hasp. Fig. 2 is a side view with the hasp partially swung back. Fig. 3 is a horizontal section at the line *x x*, and Figs. 4 to 15 show the detached parts of the lock.

A represents a portion of the bottom part of the trunk, and B a portion of the top part or lid. Usually there is a skirt or band, C, around the lid where it adjoins the bottom of the trunk. The cup D is provided with a flange, *d*, that rests against the outer surface of the trunk, and around the cylindrical cup there is a screw-thread, and the flanged nut E serves to secure the lock-cup firmly to the trunk. This part is similar to that which has before been used, as seen in Patent No. 235,130, except that the opening in the septum *e* for the locking-bolt, instead of being elliptical, is round. The hasp G is hinged at *g* to the stock H, which is bolted firmly to the trunk, and F is the lock-case, which is circular, as in aforesaid patent. The cap-plate *f* of the lock is preferably circular, as shown. It is let into the face of the hasp and closes the lock-case. It is preferable to secure this cap-plate by countersunk rivets instead of the screws shown in the drawings. The lock itself is composed of the bolts I I, that are pressed apart by the spring *k*. Each bolt is made with a rounded head, which is nearly a quarter-spheroid, as at *l*, and next to the end is a neck, which is nearly a half-cylinder at *n*. Next to this is a square portion, *o*, that slides in a square opening at the back of the lock-cup, and within the lock-cup there are the flanges *p*. It is to be understood that when the heads *l* are closed together they can pass through the round opening in the septum *e*, and that when they spring apart the heads *l* pass behind the septum, the necks *n* being within the hole in the septum. The shape of the heads *l* is such that the bolts will be pressed together and the heads pass through the hole in the septum by simply pressing the hasp and lock-case back to their places; hence the trunk can be locked without the use of a key, which is a great advantage in trunk-locks, and one which has not been heretofore attained in hasp-locks and lock-cups. The flanges *p* at the back of the bolts, being within the circular lock-case, prevent the bolt drawing out, and the square opening in the back of such case forms a guide to the parts as they move. We remark, however, that these flanges might be extended within the case, and pivoted so as to swing in opposite directions instead of sliding. Within the lock-case, and next to the flange of the bolt, there is a disk, *r*, having cams that act upon the bolts to draw them toward each other when the disk *r* is partially revolved. These cams are shown at 3 and by dotted lines in Fig. 4 as at the back of the disk, and are at the edges of an elliptical recess, into which the flanges of the bolts enter. We however remark that eccentric slots in the disk-receiving studs on the bolts may be employed, if desired. The stud 6 for the key *t* is in the center of the disk *r*, and there is an opening at 7 in the disk, into which the projecting bit 17 of the key enters to turn the disk in moving the bolts. There is a stud at 8, fixed firmly in the bottom of the lock-case, and projecting up through the slot 30 in disk *r*, and receiving suitable tumblers, and upon the disk *r* is the stud 40, or fence of such tumblers. We prefer to use the notched crescent tumblers *u v*, which are held in place by the stud 8 and

the disks *u' v'*, the edges of which fit within the lock-case. The springs 18 and 19 are within the circular case and between the back ends of the respective tumblers and the notch at the inside of the case, and the ring 21 serves to fill out the space within the lock-case and hold the parts properly in place.

It is to be understood that the notches in the tumblers are to be adapted to holding the stud, except when the bits of the key move the tumblers, so that the stud can be moved out of the notches as the disk *r* is partially revolved to draw the bolts toward each other and unlock the lock. The surface of the flange *d* and the rear surface of the hasp around the cylindrical lock-case are recessed for the reception of the ring 20, which ring is connected to the flange *d* by a loop at its upper portion, so that when the hasp is unlocked the ring can be swung out and used for lifting the lid or cover of the trunk or box.

We claim as our invention—

1. The combination, with a hinged hasp and the lock-cup, of a lock-case upon the hasp and self-acting hooked spring-bolts to connect with the lock-cup when the hasp is pressed to place, substantially as set forth.

2. The combination, with a hinged hasp, of a lock-cup having a flange and a septum with a circular opening, a lock-case upon the hasp, self-acting spring-bolts with heads to pass into and hold the lock in the lock-cup, substantially as set forth.

3. In combination with the hinged hasp, a lock-case having an opening at the back, spring-bolts with heads passing through that opening, a cam within the case to retract the spring-bolts, and tumblers within the lock-case to hold the cams, substantially as set forth.

4. The circular lock-case, in combination with the two-part spring-bolts projecting through an opening at the back, and a disk within the lock-case, having upon it the key-stud, and cams to actuate the bolts, and a stud on the disk and tumblers, substantially as set forth.

5. The combination, with the circular lock-case and hinged hasp carrying the same, of spring-bolts projecting at the back of the case, cams within the case actuated by the key for drawing the spring-bolts together, and tumblers to control the movement of the cams, substantially as set forth.

6. The combination, with the hinged hasp, circular lock, and lock-cup, of a ring introduced between the hasp and the flange of the cup, the parts being recessed for the reception of the ring, substantially as set forth.

7. The combination, with the circular lock-case, of spring-bolts, cams for acting on the same, segmental tumblers, a pivot for the same, and bow-springs confined between the tumblers and the notched inner surface of the case, substantially as set forth.

Signed by us this 18th day of February, A. D. 1884.

GEO. CROUCH.
HERMANN AHREND.

Witnesses:
GEO. T. PINCKNEY,
WILLIAM G. MOTT.