F. W. SMITH & F. EGGE.

Lock.

No. 212,059. Patented Feb. 4, 1879.

Fig 1

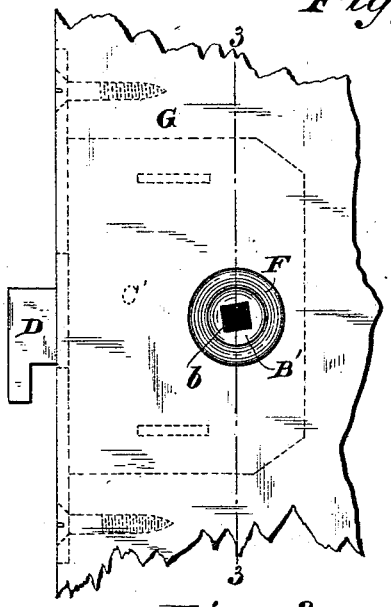


Fig 2

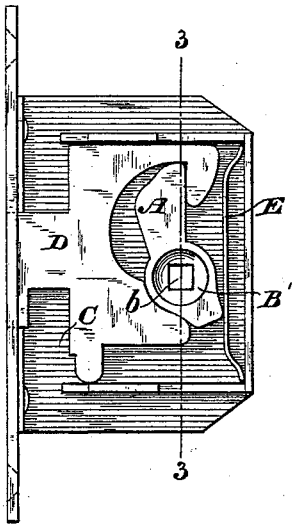


Fig 3

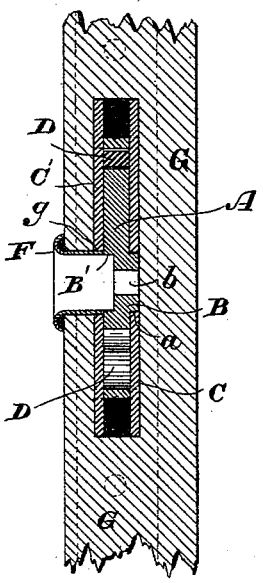


Fig 4

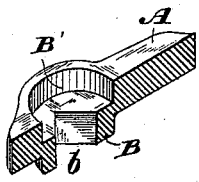
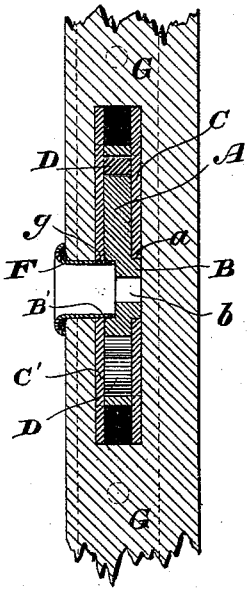


Fig 5.



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UNITED STATES PATENT OFFICE.

FRIEND W. SMITH AND FREDERICK EGGE, OF BRIDGEPORT, CONNECTICUT, ASSIGNORS TO THE SMITH & EGGE MANUFACTURING COMPANY, OF SAME PLACE.

IMPROVEMENT IN LOCKS.

Specification forming part of Letters Patent No. **212,059**, dated February 4, 1879; application filed October 26, 1878.

To all whom it may concern:

Be it known that we, FRIEND W. SMITH and FREDERICK EGGE, both of Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Locks, of which the following is a specification:

Our invention, while more especially relating to sewing-machine-drawer locks and cover or lid locks, relates generally to locks of the class which have pivoted, turning, or oscillating cams or hubs, engaged and operated directly by keys, and acting upon the bolts to shoot and retract them. Types of such locks are shown in United States Letters Patent granted to us May 1, 1877, No. 190,297. The hubs or cams therein shown and described are each composed of two similarly-shaped and correspondingly-produced parts or sections, rigidly united to form a single hub or cam having two journals provided by the oppositely-projecting trunnions or pivotal supports, mounted in two openings or bearings in the sides or front and back of the lock-case, in line with each other. The trunnions fill both openings in the lock-case and project into or through the case on both sides, or at front and back, and terminate flush with the outer surfaces thereof. Each of the two component parts or sections riveted together or otherwise rigidly connected with each other, to make up the complete hub or cam, is made from sheet metal by stamping so as to displace the metal around the key-hole, form a trunnion, and leave a depression or cavity in one side of the section, such depression being made by displacing the metal on the one side at and around the key-hole in producing the trunnion on the other. The two sections, when united to complete the hub, form a central chamber or hollow in the interior of the hub. Such hubs are necessarily of twice the thickness of one of the parts or sections, and require more room in the lock-case, or between the back and front sides of the case, than can always be provided.

In some cases, as where the meeting-rail between two drawers or other wood-work in which the lock is to be inserted is thinner than usual, the lock must be correspondingly decreased in thickness—that is, the distance between the front and back plates of the case must not be so great as to prevent the proper application of the lock in a slot or mortise in the wood-work. In other cases the wood-work is so thin as not to leave a sufficient thickness of wood outside the lock-case to properly secure the escutcheon, eyelet, or metal bushing around the key-hole, the inner end of the escutcheon abutting against the lock before being inserted far enough into the wood around the key-hole to secure it.

Now, the object of our present invention, mainly, is to overcome the defects above pointed out, sometimes incident to the use of the cams or hubs constructed of separately-made and rigidly-united sections, as in our former patent, and at the same time to lessen the labor of producing and cheapen the cost of the hubs.

We form the complete cam or hub of a single piece, preferably in the same way that each of the two constituent sections or component parts of the hub shown, described, and claimed in the before-referred-to patent is made. A hub as we now make it has a single trunnion or journal adapted to fit in a circular hole or bearing in one side only of the lock-case—that is, in its back plate—and the opening in the opposite side or front plate of the lack-case is unoccupied or left entirely open, so that an escutcheon may be made of proper length to facilitate its attachment, even when the wood-work is quite thin, as the escutcheon, when in place, may project at its inner end into or through the opening in the front side of the lock-case, around the key-hole or way to the hub. Were the escutcheon long or the wood-work very thin, the inner end of the escutcheon would project into the circular recess or cavity in the hub formed around the key-hole on the front side or face of the hub, or that side which lies lengthwise next to or against and bears upon the inner side of the front plate of the lock-case.

By our improvements we may make the hub from a single piece of metal and at a single operation, thus saving half or nearly half the stock required to make the two-part hub of

our previous invention, and greatly economizing time and labor by rendering unnecessary both the production of a second part or section to complete the hub and the riveting of the two parts together.

Another advantage arising from our improvements in the hub is, that escutcheons of one size or of a uniform length may be provided for all the locks, regardless of the thickness of the wood-work in which they are to be secured.

The improvements claimed will hereinafter specifically be designated, after first fully describing them with reference to the accompanying drawings, in which—

Figure 1 is a view, in front elevation, of a section of a lid or cover with the lock (partly represented by dotted lines) secured in the wood-work with the bolt shot. Fig. 2 is a view of the lock with the front plate or side of the case removed and the bolt retracted. Fig. 3 is a section on the lines 3 3 of Figs. 1 and 2, showing the escutcheon in place with the inner end projecting into the lock-case, the lock-works being in the positions occupied when the bolt is retracted. Fig. 4 is a sectional perspective view of one of the hubs or cams on an enlarged scale. Fig. 5 is a section similar to Fig. 3, showing the inner end of the escutcheon projecting into the recess or cavity of the hub.

The drawings show but one form of lock of the class to which our improvements are applicable.

As shown and described or suggested in our improvements patented May 1, 1877, as before mentioned, the hubs or cams may differ somewhat in form or outline to adapt them to the different locks to which they are suited. The change in the cam-surface or outline of the hub necessary to adapt it to operate in connection with the bolt-work of a drawer-lock, such as shown in our said patent, will readily be perceived.

The hub A is formed with a hollow trunnion or pivotal support, B, around the key hole or opening *b*. This trunnion is fitted in the opening or bearing *a*, in the rear side or back plate, C, of the lock-case, and the front side or face of the hub, or the side opposite to that from which the hollow trunnion projects, lies against the inner surface or face of the front side or plate, C′, of the lock-case. When the two sides or sections of the case are secured together the hub is confined between them, and but very little space between the front and back of the case is required to accommodate the hub or cam. A very thin case may be thus made.

We prefer in all cases to make the hub or cam by stamping it from sheet metal, as the sections of the two-part hub are made in our prior patent; and, as therein described and shown, with reference to a constituent section or component part of the two-piece hub, the one-part hub A is made at a single operation, the hollow trunnion B being formed by displacing, at a single blow of a punch, the metal at and around the opening *b* for the key, a recess or cavity, B′, being at the same time swaged around the key hole or opening in that side of the hub which comes next the front plate of the lock-case.

The hub is fitted to work in the cam way or slot in the bolt D in a well-known way. A suitable spring, E, acts on the heel of the hub with a tendency to hold it in the proper position (see Fig. 2) to prevent accidental movement of the bolt when in its normal or unlocked position.

An escutcheon, eyelet, or metal bushing, F, for the key-hole in the drawer, meeting-rail between drawers, lid, or other wood-work G projects inward into the wood-work alone if thick enough, or into the lock-case, as in Fig. 3, at the opening *g* in its front side, in line with the hub-trunnion opening *a* in the case, or through this opening *g* and into the recess B′ of the hub, concentric therewith, as shown by Fig. 5.

From the above description it will be seen that when the wood-work is very thin we are enabled, by the use of the hub of the form described, and by leaving unfilled the front opening in the lock-case, to add to the length of the escutcheon seat or opening corresponding to the thickness of the wood-work where the escutcheon is inserted not only the thickness of the front side or plate of the lock-case, but also the depth of the recess in the hub. We are thus enabled to provide escutcheons of a given length suitable for attachment in most, if not all, cases without cutting or shortening them.

Obviously, instead of forming the hub or cam from sheet metal by stamping and swaging about the key-hole, it might be cast. The hub might also be made without the recess or cavity B′, while still giving a greater length of opening for the insertion of the escutcheon than would be given were the front opening in the lock-case filled by a trunnion on the hub, as in our former patent. We prefer, however, to form the hub as shown by the drawings.

When screw-threaded escutcheons are employed, as they sometimes are, the escutcheons may be screwed to the lock-cases, the inner threaded end of an escutcheon taking into a female screw around the opening *g* in the front plate of the lock-case. This attachment or connection between the escutcheon and lock may be made when the escutcheon projects only into the case, as in Fig. 3, as well as when it projects through the case-opening *g* and into the hub-cavity.

We do not confine ourselves to the making of the opening *g* in the lock-case of any particular size, so long as made large enough to admit the escutcheon.

We claim as of our own invention—

1. The hereinbefore-described sheet-metal lock hub or cam, made, as described, of a single piece, having the hollow trunnion B, with

the opening *b*, for the key, on one side or face, and the cavity or recess B′ on the opposite side, for the purpose described.

2. The combination, substantially as hereinbefore set forth, of the lock-case having the front or escutcheon opening and the rear or hub-bearing opening therein, the hub or cam provided with the key-opening and having the single trunnion only fitted in the rear side or plate of the case, and the escutcheon which may be caused to enter the lock-case at the opening in its front without obstruction from the hub, as and for the purpose described.

3. The combination of the thin lock-case having the openings *g* and *a* in its front and back, and the hub or cam having the key-opening, the recess or cavity in its front side or face, and the single trunnion fitting in the opening or bearing in the rear plate or side of the case, substantially as hereinbefore set forth, whereby an escutcheon may be projected through the lock-case at front and enter the hub-cavity.

4. The combination of the lock-case consisting of the front plate, C′, and back plate, C, connected with each other, and respectively provided with the opening *g* and the hub-bearing opening *a*, in line with each other, and the hub having the key-opening through it, provided with the single hollow trunnion, and mounted by said trunnion in the back-plate opening only, thereby leaving unfilled the front opening, by which the key enters the lock-case, as and for the purpose hereinbefore set forth.

In testimony whereof we have hereunto subscribed our names.

FRIEND W. SMITH.
FREDERICK EGGE.

Witnesses:
WM. E. DISBROW,
ISAAC L. FERRIS.