H. URBAN.
Arbor for Safe-Locks.

No. 198,324. Patented Dec. 18, 1877.

Fig. 1

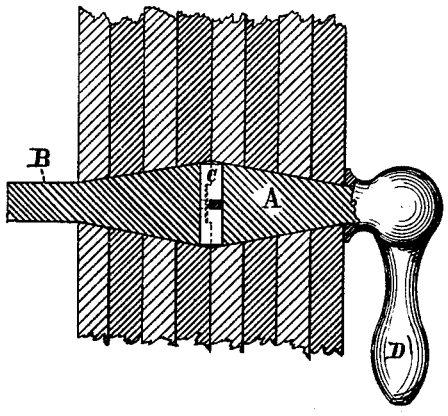


Fig. 2

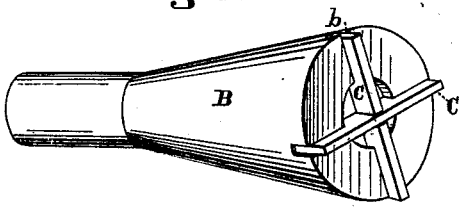


Fig. 3

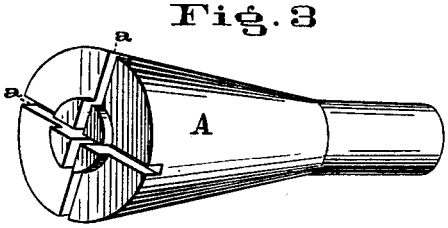
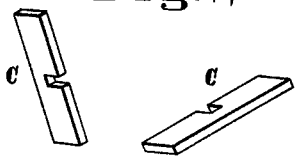


Fig. 4



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UNITED STATES PATENT OFFICE.

HERMAN URBAN, OF CINCINNATI, OHIO, ASSIGNOR TO MACNEALE & URBAN, OF SAME PLACE.

IMPROVEMENT IN ARBORS FOR SAFE-LOCKS.

Specification forming part of Letters Patent No. **198,324**, dated December 18, 1877; application filed September 28, 1877.

To all whom it may concern:

Be it known that I, HERMAN URBAN, of Cincinnati, county of Hamilton, and State of Ohio, have invented a new and useful Improvement in Lock and Bolt Arbors for Burglar-Proof Safes, which invention is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a sectional view of a portion of the safe-door and the arbor in place. Figs. 2 and 3 are perspective views of the parts of the arbor separated, and showing the adjoining ends and mode of coupling the parts together; and Fig. 4 shows the coupling-keys detached.

It is well known to safe-makers that the lock or bolt arbor in a safe is its weakest part. This is owing to the fact that from its size, which is necessary in order to obtain the requisite strength, it is impossible to get a perfect "chill" through the entire arbor, so as to make it drill-proof, so that while the outside, which is cooled suddenly in tempering, will be perfectly drill-proof, the center, which cannot be so suddenly chilled, will be soft; and to the fact that the outer end, to which the lever or knob is secured, must be soft, so as to avoid the danger of its being broken off by a blow or by accident.

The object of this invention is a drill-proof lock or bolt arbor; and the invention consists in dividing the arbor transversely, and, after properly hardening the parts, connecting them together within the walls of the safe by suitable couplings.

Referring to the drawings, A is the outer half of the arbor, and B its inner half, made preferably cone-shaped, so as to prevent the outer one from being withdrawn, and the inner one from being driven in, and are provided with the grooves *a a* and *b b*, cut in their adjoining ends to receive the coupling-keys C C, which are of hardened steel, notched half-way through on their edges, so as to cross each other, and fit snugly in the grooves *a b*.

In constructing my arbor, the parts are first made to the proper dimensions, fitted together, and to the opening in the safe-door. They are then heated to the requisite degree and chilled, thus making the whole exterior drill-proof.

Should an attempt be made to drill through the arbor, the drill will, as soon as it passes through the softer center, strike against the sharp and hardened edges of the grooves or keys, and be obstructed or broken.

It is evident that there may be many modifications of my device which will accomplish the results aimed at without departing from the principle of my invention. For instance, the separable coupling-pieces may be dispensed with, and coupling-prongs or other suitable projections upon end parts of the arbor made to fit into corresponding grooves in the other part, or the arbor may be made in one piece, and perforated transversely through its mid-length, so as to leave rigid webs, connecting the two halves, which would come in contact with the refrigerating liquid in tempering, and present a drill-proof obstruction across the center of the arbor; but the separable coupling-pieces are preferable, as they can be more perfectly chilled.

I claim—

1. A spindle for safe or vault doors, constructed with transverse drill-proof coupling bars or webs at a point within the body of the door, substantially as and for the purpose specified.

2. A spindle for safe or vault doors, consisting of two sections or lengths, made tapering within the body of the door, where their larger ends are united by transverse drill-proof coupling-bars, substantially as and for the purpose specified.

HERMAN URBAN.

Witnesses:
CHAS. F. GESSERT,
GEO. J. MURRAY.