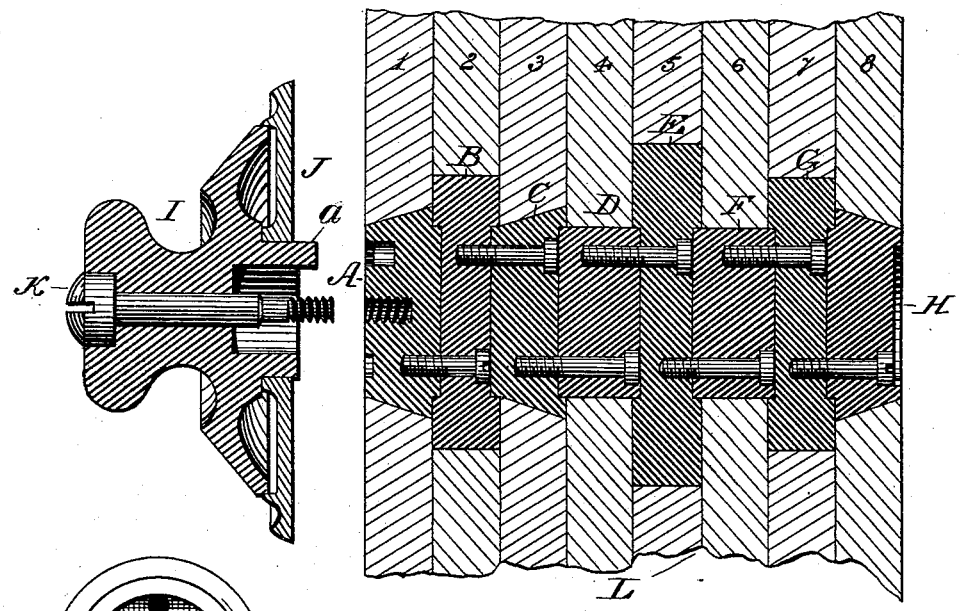
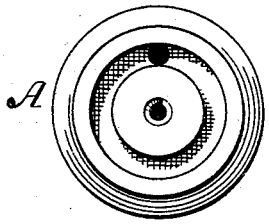
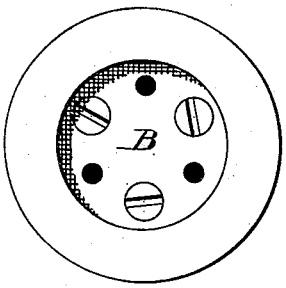
J. WHITE.

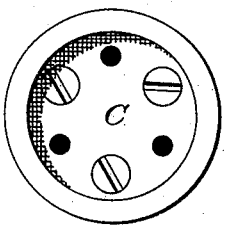
Spindles for Safe and Vault Doors.

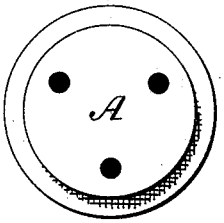
No. 196,173. Patented Oct. 16, 1877.

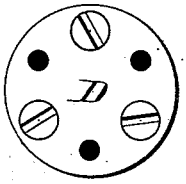


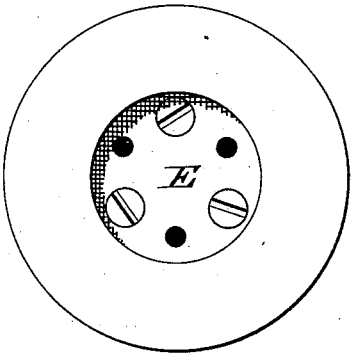


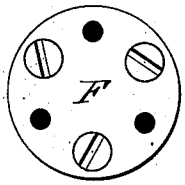












Witnesses:
Will. A. Dodge.
Conn. P. Twitchell.

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by Dodger & Son.
Attys.

UNITED STATES PATENT OFFICE.

JAMES WHITE, OF CINCINNATI, OHIO.

IMPROVEMENT IN SPINDLES FOR SAFE AND VAULT DOORS.

Specification forming part of Letters Patent No. **196,173**, dated October 16, 1877; application filed August 15, 1877.

To all whom it may concern:

Be it known that I, JAMES WHITE, of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain Improvements in Spindles for Safes, Vaults, &c., of which the following is a specification:

My invention relates to the construction of spindles or arbors of safe and vault locks; and the improvements consist in forming the arbor or spindle of a series of thin plates or disks, connected with each other by means of screws, studs, pins, or similar devices, whereby the plates or sections of the arbor may be tempered sufficiently hard to resist the action of drills and other tools, and whereby the driving or drawing out of the spindle is prevented.

In the drawings, Figure 1 represents a vertical section of my improved device, and the remaining figures represent the plates detached.

The object of this invention is to prevent the arbor or spindle by which a safe or other lock is operated from being drilled, drawn, or driven out by burglars, in order to operate upon the lock mechanism, or for the purpose of introducing explosive materials for blowing open the safe, vault, or other receptacle to which the arbor or spindle is applied; and to this end the invention consists in forming the spindle or arbor as represented in Fig. 1.

In this figure, letters A to H represent the plates constituting the spindle or arbor, and I the dial by which the spindle is operated. L represents a section of the safe-door, composed, in this instance, of eight plates, each plate being provided with one of the disks or plates constituting the arbor or spindle.

The disks or plates of the arbor are made of varying diameters and of different forms, as represented in Fig. 1, so that the number of angles will render it impossible to introduce explosives. The disks or plates of the arbor are inserted each into its proper layer or plate of the door during the process of securing said layers or plates together, they being so arranged therein that they can only be removed by separating the layers or plates of the door.

In order to communicate motion from the dial to the lock mechanism, it is necessary that the arbor plates or disks should be connected one to the other; and this may be accomplished either by means of screws, as represented in the drawings, by dowel-pins, or by studs formed upon the plates, and entering holes or sockets in the adjoining plate or plates.

By making the plates or disks A, B, C, D, E, F, G, and H separately they may be tempered very hard through their entire thickness—a result which cannot be attained when the spindle is made in one piece, or even when made in sections of considerable length.

I represents the dial by which the spindle or arbor is operated, said dial being provided with one or more projecting studs, *a*, to enter a corresponding recess in the forward disk or plate A of the arbor or spindle, thus causing the rotation of one to carry with it the other.

The dial I is attached or secured to the plate A by means of a central screw, K, a washer or escutcheon, J, being interposed between the dial and the face of the door, and surrounding the central shank and periphery of the dial, as usual.

The plates of the spindle, being tempered very hard, resist the action of drills, and, being of varying diameters, and bearing either directly or through the adjoining disk or plate against a layer or plate of the door on both faces, they cannot by any possibility be drawn or driven out.

By reference to Fig. 1 it will be seen that at each layer of the door the plates or disks are set into each other, thus "breaking joint" with the layers of the door, and effectually preventing the insertion of explosive materials, or the entrance of tools at these points from the joints of the layers composing the doors into those of the spindle, and vice versa.

I am aware that a lock-spindle for safes has been patented to C. O. Yale, consisting of an interceptive piece of Franklinite inclosed in an envelope of ductile metal, and I do not claim such; but

What I do claim is—

An arbor or spindle composed of a series of plates secured one to another, and inserted in the wall or door of a safe, vault, or other receptacle for valuables, substantially as shown and described.

JAMES WHITE.

Witnesses:

R. T. PULLEN,

CHARLES BIRD.