(No Model.)

M. S. GOLDSMITH.

SAFE.

No. 477,800. Patented June 28, 1892.

FIG. 1.

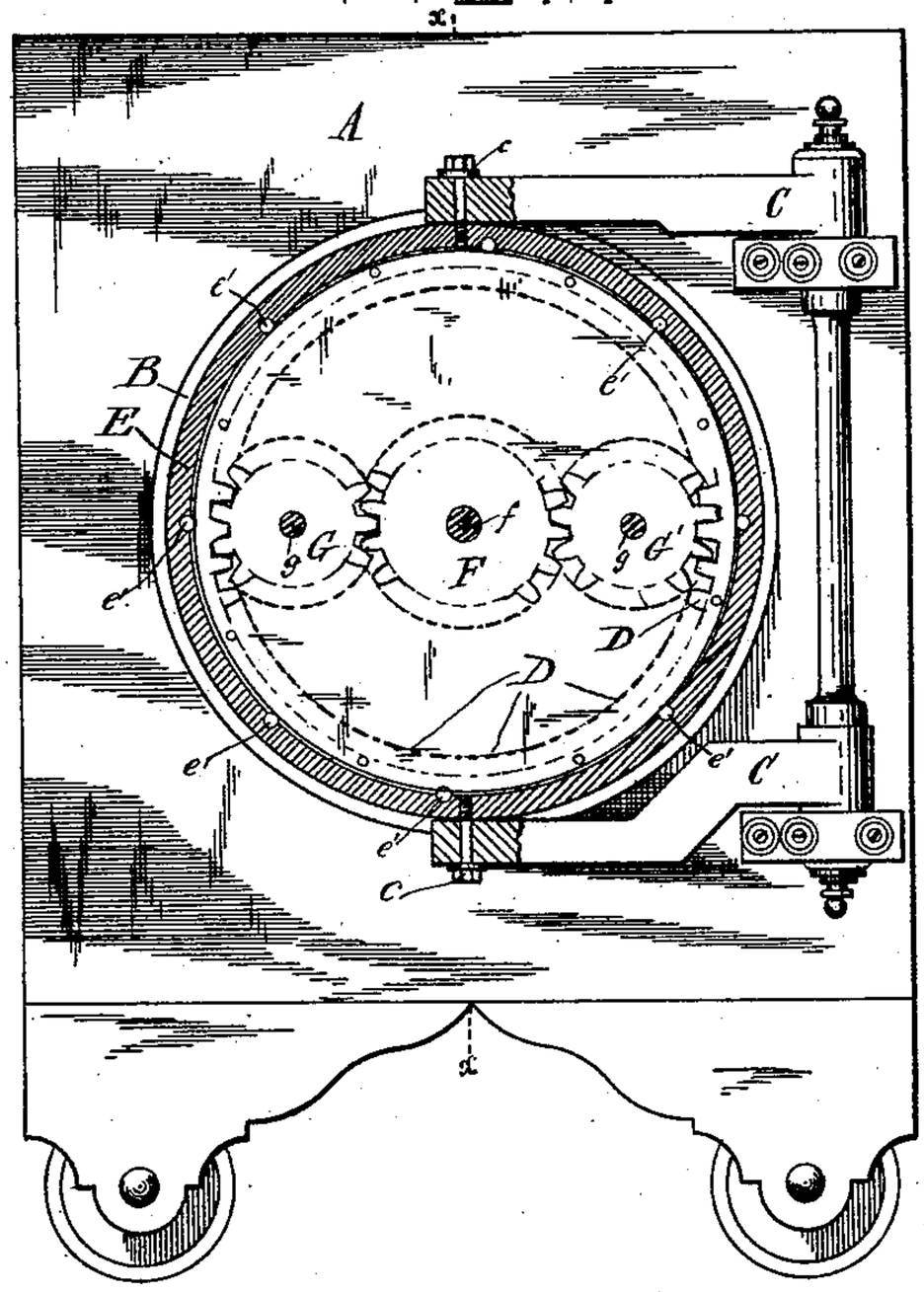


FIG. 2.

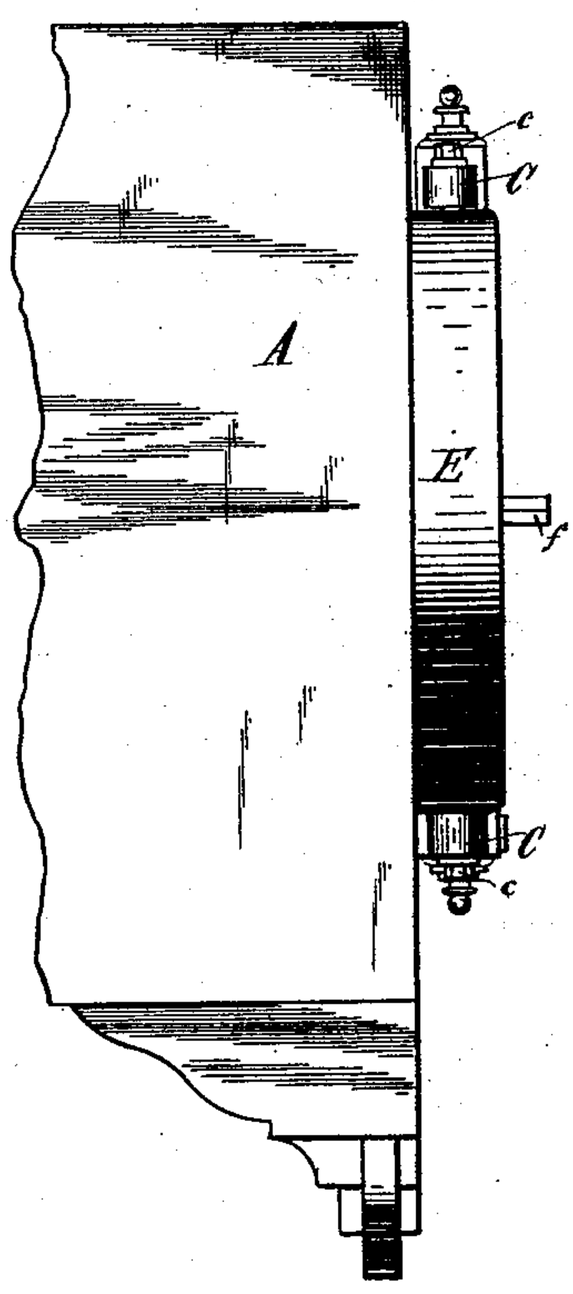
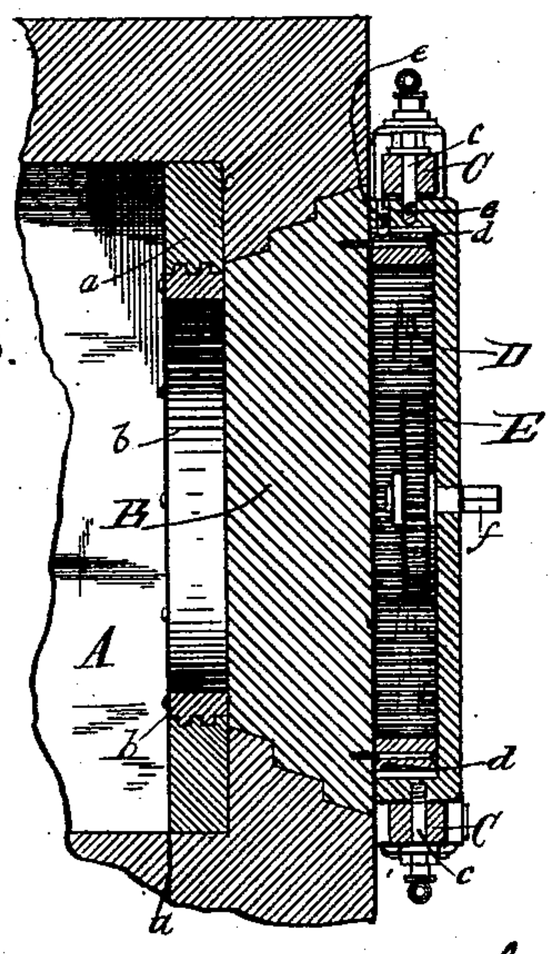


FIG. 3.



Witnesses
Frank S. Davis
David S. Oliver

Inventor
Max S. Goldsmith
By his Attorney Geo. J. Murray

UNITED STATES PATENT OFFICE.

MAX S. GOLDSMITH, OF CINCINNATI, OHIO.

SAFE.

SPECIFICATION forming part of Letters Patent No. 477,800, dated June 28, 1892.

Application filed February 18, 1892. Serial No. 421,967. (No model.)

To all whom it may concern:

Be it known that I, MAX S. GOLDSMITH, a citizen of the United States, and a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Burglar-Proof Safes, of which the following is a specification.

My invention relates to burglar-proof safes, and particularly to that class of safes known as "screw-door safes."

The object of the invention is to provide a simple and reliable means to force the door into its closed position or release it therefrom.

In my patent, No. 470,482, dated March 8, 1892, I show and describe substantially the same system of gears adapted to my improved circular-body safe.

My present invention adapts the system of gears to the rectangular safes now in use which have the body square or rectangular and the front opening circular.

The invention will be first fully described in connection with the accompanying drawings, and will then be particularly referred to and pointed out in the claims.

Referring to the drawings, in which like parts are indicated by similar reference-letters wherever they occur throughout the various views, Figure 1 is a view, partly in front elevation and partly in transverse vertical section, of a safe provided with my improvements. The door is shown in the closed position and the section cuts away the front cap to expose the door-operating gear in elevation. Fig. 2 is a side elevation of the front part of the safe. Fig. 3 is a vertical section taken through line x x, Fig. 1.

The body A, door B, and crane-hinge C may be constructed in the usual well-known manner, and need not, therefore, be specifically described.

To the front of the safe-door is secured the internally-toothed ring D. The periphery of this ring is turned off smooth and is annularly grooved at *d*. E is a flanged cap adapted to fit over the ring D, with its inner flanged edge resting lightly against the front face of the door. The cap is secured to the ring D by round-pointed screws *e*, which are tapped through the flange of cap E and enter the groove in the periphery of the ring D. The groove is formed counter to the points of the screws, which are tapered or rounded. The screws *e* hold the cap E in place while permitting the door and ring D to revolve within it. The edge of the cap is bored to receive steel rollers *e'*, which project slightly within the inner rim of the cap and bear against the periphery of the ring D to reduce friction. These rollers are not essential, especially for small doors, as the pointed screw-pins serve as bearings for the door; but in large doors the rollers should be used, as otherwise the strain upon the pins would be too great. Upon the inner face of the cap are mounted cog-wheels F G G'. The center or driving-cog F is secured upon a shaft *f*, which projects through the front of the cap and has its end formed angular to receive a crank or lever by which the shaft and its cog are rotated. The cogs G G' are journaled upon studs *g*, which are secured to the inner face of the cap. These cogs G G' mesh with the teeth of the driving-wheel F and the teeth of the ring D.

The cap E, with the door and its attachments, is hung between the arms of the crane-hinge by pivot-bolts *c*, which pass freely through hinge-arms and are screwed into the rim of the cap. The cap is free to turn upon its pivots *c*.

The exteriorly-screw-threaded ring *b* is secured to the inner face of the door and engages the interior screw-threads of the ring *a*, which is secured to the inner walls of the door, opening in the usual manner.

By the arrangement of the three gear-wheels with their axes in a plane at right angles to the door-holding pintles *c*, these pintles are relieved from lateral strain which they would be subjected to if but one of the wheels G were used. It is obvious, however, that the omission of one of these wheels would be but an inferior modification of my invention.

It will be seen that all the door-actuating gearing is housed by the cap and therefore protected from dust, while the front of the safe presents a smooth finish which is easily kept clean.

The door is intended to be locked against rotation by a time-lock; but as many of the well-known devices for locking a circular screw-door may be employed I have not thought it

necessary to show or describe any particular form.

What I claim, and desire to secure by Letters Patent, is—

1. The combination of the safe-body having a circular door-opening, the circular door, and screw-threaded connection between the door and body with the internally-toothed ring secured to the outer face of the door, the cap covering said ring and secured to it, so that the ring is free to revolve within the cap, the gear-wheels secured to the inner face of the cap, the shaft of the driving-gear projecting through the cap and having its end formed to receive a key for revolving the ring and door, the crane-hinge, and pivot-pins connecting the hinge-arms and cap, substantially as shown and described.

2. The combination of the safe-body, circular door, and crane-hinge, with the cap E, the gear-wheels G G′, journaled upon studs secured to the inner face of the cap, the shaft *f*, journaled in the cap and having its outwardly-extended end formed to receive a lever, the cog F, secured upon the shaft and intermeshed with the wheels G G′, the pivot-pins *c*, connecting the cap and the arms of the crane-hinge, the ring D, internally-toothed, exteriorly grooved, and secured to the door, and the pointed pins *e*, passing through the flange of the cap and entering groove in ring, substantially as shown and described.

3. In a safe of the character described, the combination of the circular door, the internally-toothed gear-ring secured to the door, the door-supporting cap covering said ring, means to secure the cap and ring together, so that the ring may revolve within the cap, the crane-hinge, and the pins for hanging the cap to said hinge, and the gearing mounted on the inner face of the cap for revolving the ring and door, substantially as shown and described.

MAX S. GOLDSMITH.

Witnesses:
GEO. J. MURRAY,
FRANK S. DAVIS.