

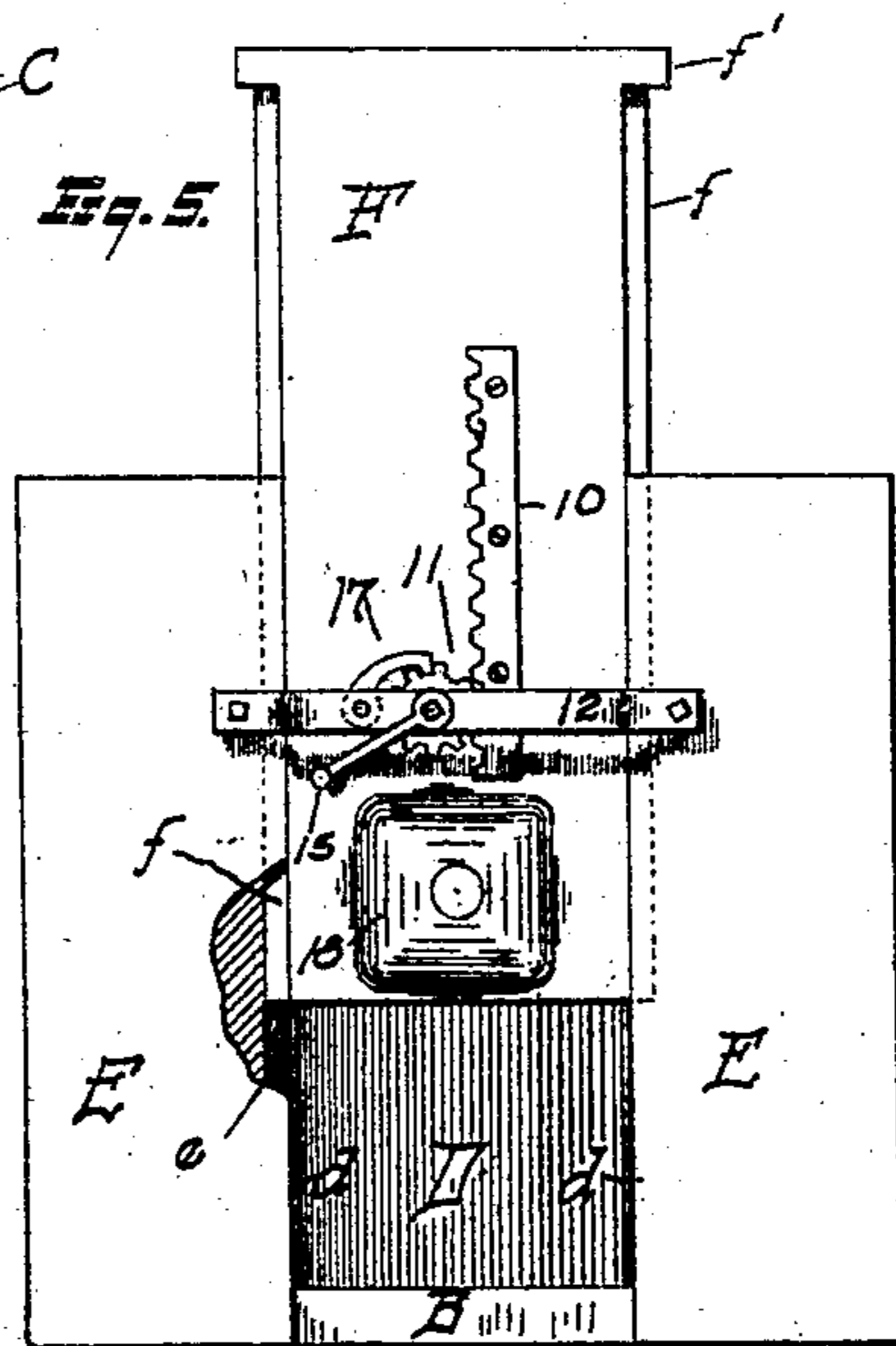
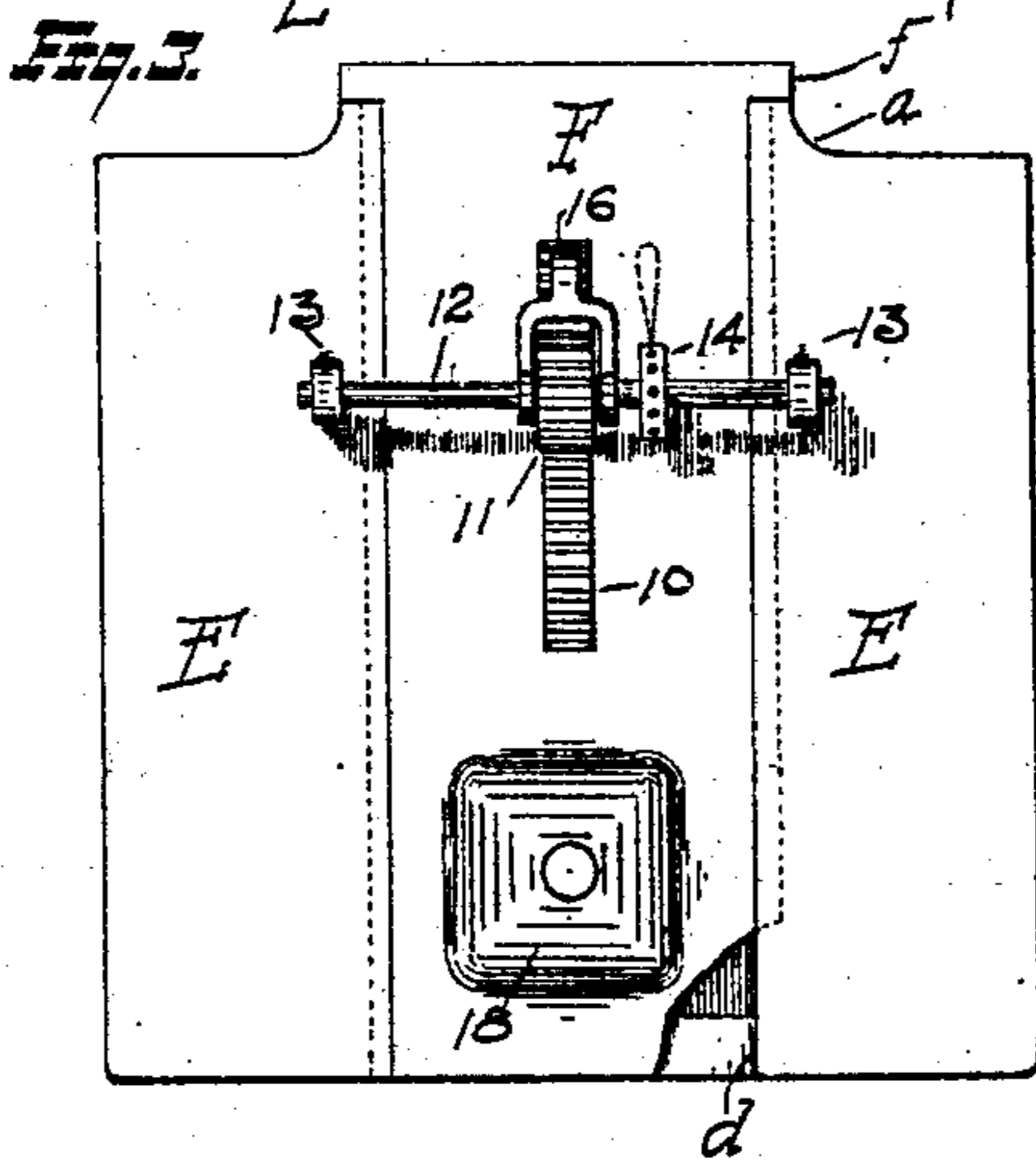
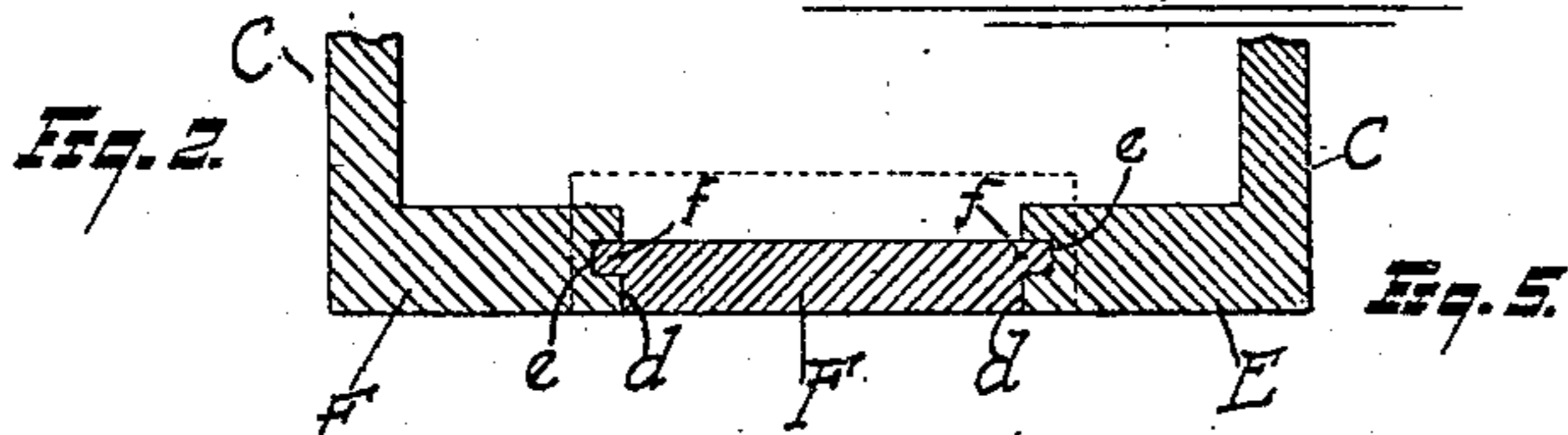
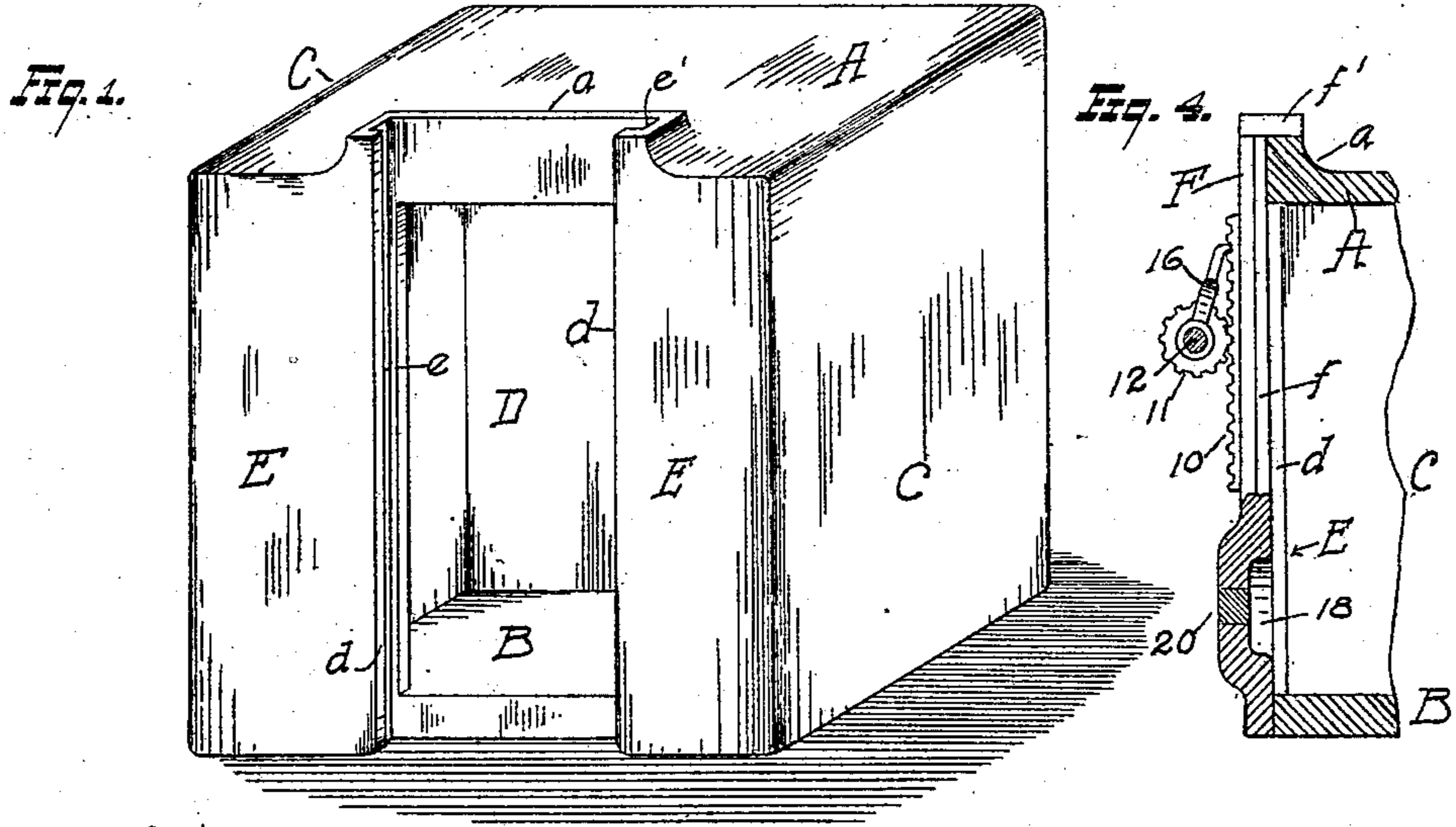
T. S. SPIVEY.

SAFE.

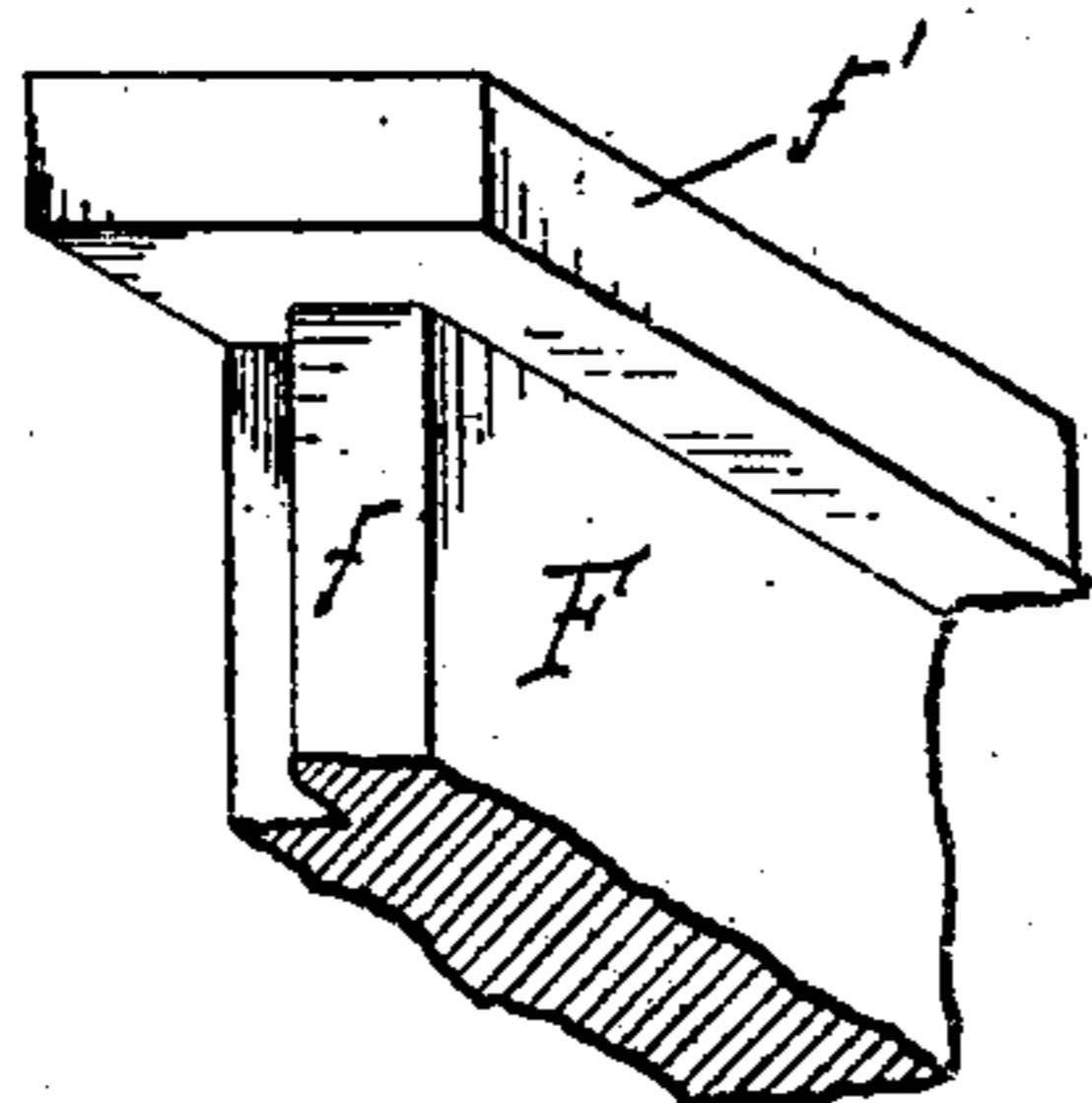
APPLICATION FILED FEB. 6, 1908.

908,511.

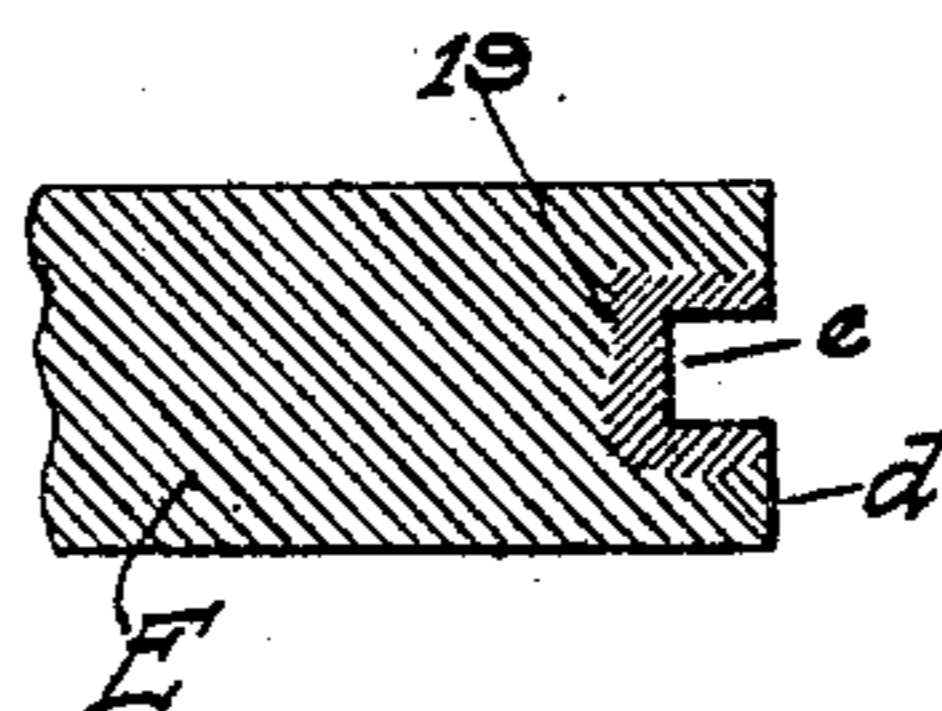
Patented Jan. 5, 1909.



**Fig. 6.**



**Fig. 7.**



WITNESSES.  
C. Spengel  
T. Le Beau.

INVENTOR.

Thomas S. Spivey

# UNITED STATES PATENT OFFICE.

THOMAS S. SPIVEY, OF CINCINNATI, OHIO, ASSIGNOR TO VICTOR SAFE & LOCK COMPANY, OF CINCINNATI, OHIO, A CORPORATION OF OHIO.

SAFE.

No. 908,511.

Specification of Letters Patent.

Patented Jan. 5, 1909.

Application filed February 6, 1908. Serial No. 414,550.

*To all whom it may concern:*

Be it known that I, THOMAS S. SPIVEY, a citizen of the United States, and residing at Cincinnati, Hamilton county, State of Ohio, have invented certain new and useful Improvements in Safes; and I do declare the following to be a clear, full, and exact description of the invention, attention being called to the accompanying drawing, with the reference-characters marked thereon, which forms also a part of this specification.

This invention relates to improvements in the construction of burglar-proof safes, to be used in connection with and within larger and merely fire-proof inclosures.

The object is to provide for such larger fire-proof inclosures, an inner compartment which is made of non-machinable metal to render it burglar-proof and at the same time have it of a shape which is best suited for the most economical utilization of space. I have reference here not merely to the inclosed space within this inner compartment which should be fully available without loss by inaccessible corners or dead pockets as it is the case for instance in round safes, but also to the space occupied by the structure itself so that the same may be advantageously placed within other inclosures like outer safes or vaults and without encumbering those larger receptacles unnecessarily.

With these requirements as to space in view it is obvious that the shape best suited for the purpose is a rectangular box-shape, or parallelopipedon without any extension on its outside projecting therefrom to any considerable extent. To produce a safe of such a shape and with its inclosure of a non-machinable metal is equivalent to the requirement of producing a casting of the contemplated shape out of non-machinable metal and which casting must be integral as to the entire inclosure of the safe-body, since such an inclosure cannot be profitably produced in any other way.

My invention consists therefore in general of constructing such a safe in the manner hereinafter described.

A more particular feature of the invention consists of using a certain form of door and of arranging and devising the casting intended for the safe-body and for said door so as to render the use and practical application of tools and implements possible in an expedi-

tious manner and as far as use of such tools, which are generally grinding implements, is required to provide for the necessary closing and locking means of the safe and for fitting more particularly the door to the body and to hold it thereon in a proper manner to permit its manipulation for opening and closing within an outer inclosure.

Incidentally the particular style of door and the arrangement whereby it is movably fitted into its opening, is of a construction which is devoid of any complicated features, does away with hinges and permits use of manipulating and locking means of the most simple kind, thereby facilitating practical manufacture.

In the following specification and particularly pointed out in the claims at the end thereof, will be found a full description of my invention, together with its operation, parts and construction which latter is also illustrated in the accompanying drawing, in which:—

Figure 1, is a perspective view of the body of such a safe, or chest, shown without its door. Fig. 2, is a horizontal section through the front portion of this body between its top and bottom, with its door in position. Fig. 3, is a front-elevation of the safe shown in the preceding figures. Fig. 4, is a vertical section of Fig. 3, the line of section passing through the door-opening of the body and through the lower part of the door. Fig. 5, is a view similar to Fig. 3, slightly modified as to the manipulating parts, the door being shown partly open. Fig. 6, shows an enlarged perspective view of one of the upper corners of the door viewed from its rear-side. Fig. 7, is an enlarged, horizontal section through one of the door-jambs of the body.

In the drawing, A indicates the top of such a safe, B is the bottom and C, C, are the sides.

D is the opening for the door provided in the front-side extending therein from top to bottom, there being no inclosing wall-portions between top and bottom and within the area of this door-opening. Otherwise the front-side is closed by two front-wall portions E, E, one on each side of this door-opening.

F is the door for this opening fitted between the inner opposite edges *d, d*, of these two front-wall portions E, E, which edges constitute the jambs for the door and be-

tween which edges it is capable of sliding in either direction, that is it may be moved up or down in its opening to permit access to the interior of the chest, or to close the same.

5 For the purpose of holding the door in position and for guiding it during its sliding movement, I provide means like a tongue and groove-connection in the door-way, the complementary parts of which connection are  
10 provided, one in the upright edges of the door and the other one in the opposite, inner edges  $d d$ , of the front-walls E, E. I show here tongues  $f f$ , on the door, which are fitted to occupy grooves  $e, e$ , provided for  
15 them in the door-jambs  $d d$ . At its upper end the door may be provided with a cap  $f'$ , which laps over those adjacent portions of top A, which surround the door-way thereat, the object being to close the interstices of the  
20 door-way between the door at its upper end and the adjacent portions of the safe-top which surrounds it, to prevent introduction of liquid explosives. This surrounding portion of the top may also be raised to form a  
25 ridge  $a$ , as shown in Figs. 1, 3, and 4, all of which serves to render the introduction of any explosive matter in liquid form difficult. In Fig. 5, the body is shown without this ridge.

30 For opening, the door may slide up or down in its way, that is to say, it may be raised up above the top as shown in Fig. 5, or it may be dropped below the bottom. In this latter case cap  $f'$  must of course be  
35 omitted and this method of manipulation presumes also that the safe rests sufficiently elevated to permit the door to drop below. Door-opening D may of course be also arranged horizontally across the front-side of  
40 the body, extending between the sides C C, the door in such case having a lateral motion.

Various mechanical means are available for the manipulation of the door, of which a rack and pinion movement is the most suitable,  
45 the rack 10 being by preference provided on the door. The pinion 11 is carried on a support 12, attached to parts E, E, of the front-wall on opposite sides of the door-opening D and extending across this latter.  
50 In Figs. 3 and 4, this support is a shaft upon which the pinion is mounted and which shaft is supported in bearings 13, provided on the front of the safe, one on each side of the door-opening therein. In Fig. 5, this support  
55 is a bar attached with its ends to the front of the safe on each side of the door-opening. Rotation of the pinion by a lever-handle, to be inserted into a hub 14, as shown in Fig. 3, or by a crank-handle 15, to  
60 be attached to the shaft of the pinion, as shown in Fig. 5, causes in either case movement of the door as will be readily understood.

Suitable retaining devices like ratchets or  
65 pawls as shown at 16 in Figs. 3 and 4, and at

17 in Fig. 5 serve to hold the door temporarily in elevated position. Suitable locking means like bolt-work, not shown, are to be provided to lock the door in its closed position, the bolts to be carried by the door and  
70 movable, to be shot into sockets or keepers located on the body. These locking-means may be actuated by a combination lock, or by time-locks, for the reception of which  
75 locks in either case, a recess 18 is provided on the inner side of the door.

It will now be seen that the shape of this safe is one which favors economic utilization of space in every respect. As to the space  
80 inclosed by it, the same is readily accessible and the shape of this inclosed space is also available for storage to its full capacity in all its parts and without waste. On the outside the shape is such as to permit its ready incorporation within larger structures to which  
85 it may be conveniently fitted. The body may be readily made of an integral casting and the arrangement and shape of this casting is such that if made of non-machinable  
90 metal as contemplated, the work which has to be done on it to fit the door may be readily performed by grinding tools. This work relates particularly to the fitting of the door to  
95 its door-way and contemplates the formation of tongues  $f$  and of the grooves  $e$  which receive them. As will be seen in Fig. 1, for instance, the door-way which extends uninterruptedly from upper to lower ends and is open at both of these ends, permits ready access of any tool or implement.  
100

By providing in the casting soft-metal inserts in positions where they do not come to any of the outer surfaces, some of the finishing work may also be done by machine-tool work. Thus for instance by providing soft-  
105 metal inserted as shown at 19 in Fig. 7, grooves  $e$  may also be cut by machine-tools. The same may apply to tongues  $f$  at the edges of the door.

The rack as shown in Figs. 3 and 4 may be  
110 integral with the door, its position permitting ready grinding out of the teeth. As shown in Fig. 5, the rack would have to be attached by screws, soft-metal inserts being provided in the door to receive their ends.  
115 If use of a combination lock is contemplated, a soft-metal insert would be provided at 20 to permit drilling of an opening to receive the lock-spindle for this lock.

A sliding door of this kind, held in position  
120 as shown, is not necessarily limited to use in connection with a safe-body of the particular shape described, as long as such a body presents at least one flat surface which permits application of the door-way. Therefore  
125 where no limiting conditions exist as to space, or as to shape of the safe-body, this shape may be modified, provided it contains a flat surface permitting application of the door-way.  
130

Having described my invention, I claim as new:

1. A safe, the body of which consists of an integral casting comprising top and bottom walls, opposite sides and a back-wall, the front being formed by two wall-portions spaced apart to leave a door-opening between them which extends from top to bottom, the inner opposite edges of these wall-portions being arranged to form a door-way which extends also over the front edges of top and bottom walls between these opposite edges and is open at both ends, and a door fitted with a sliding engagement between these opposite edges of the front-wall portions and against the front edges of top and bottom-walls between these edges.

2. A safe, the body of which consists of an integral casting comprising top and bottom walls, opposite sides and a back-wall, the front being formed by two wall-portions spaced apart to leave a door-opening between them which extends from top to bottom, the inner, positive edges of these wall-portions being arranged to form a door-way which is open at both ends and a door fitted to this door-way and provided at one of its ends with a cap which projects over the door-way to close the same thereat.

3. A safe, the body of which consists of an integral casting comprising top and bottom walls, opposite sides and a back-wall, the front being formed by two wall-portions spaced apart to leave a door-opening be-

tween them which extends from top to bottom, the inner opposite edges of these wall-portions being arranged to form a door-way which is open at both ends, a ridge formed around the door-way at its upper end, a door fitted to this door-way and a cap provided on the door fitted to cover this ridge and to close the door-way thereat.

4. A safe, the body of which consists of an integral casting of rectangular box-shape which is provided with a door-opening in one of its sides, a door slidably fitted to this opening, a rack provided on the front side of this door, a pinion fitted to this rack and means connected to the front side of the body so as to extend across the door-opening therein, whereby the pinion is supported in front of the door and devices to rotate this pinion.

5. A safe, the body of which consists of an integral casting of non-machinable metal and of rectangular box-shape provided with a door-opening in one of its sides and a door also of non-machinable metal, fitted to this opening and movably held therein by a tongue and groove-connection, soft metal inserts being provided to permit formation of this tongue and groove-connection.

In testimony whereof, I hereunto affix my signature in the presence of two witnesses.

THOMAS S. SPIVEY.

Witnesses:

C. SPENGEL,  
T. LE BEAU.

It is hereby certified that in Letters Patent No. 908,511, granted January 5, 1909, upon the application of Thomas S. Spivey, of Cincinnati, Ohio, for an improvement in "Safes," an error appears in the printed specification requiring correction, as follows: In line 24, page 3, the word "positive" should read *opposite*; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 9th day of February, A. D., 1909.

[SEAL.]

C. C. BILLINGS,  
*Acting Commissioner of Patents.*