

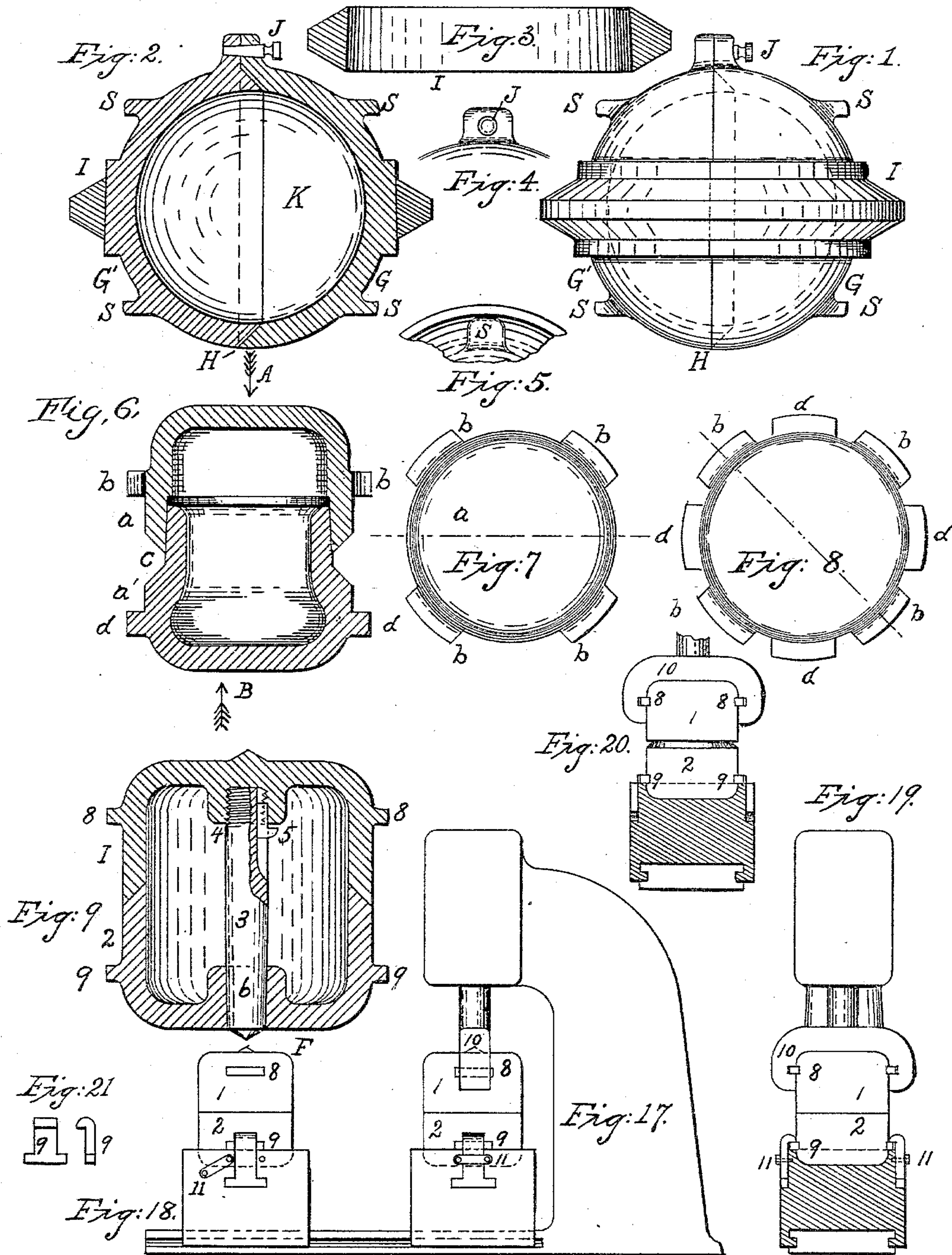
(No Model.)

3 Sheets—Sheet 1.

H. J. COLBURN.  
SAFE.

No. 545,154.

Patented Aug. 27, 1895.



WITNESSES.

W. H. Harris  
C. W. Neilson

INVENTOR.

Henry J. Colburn.

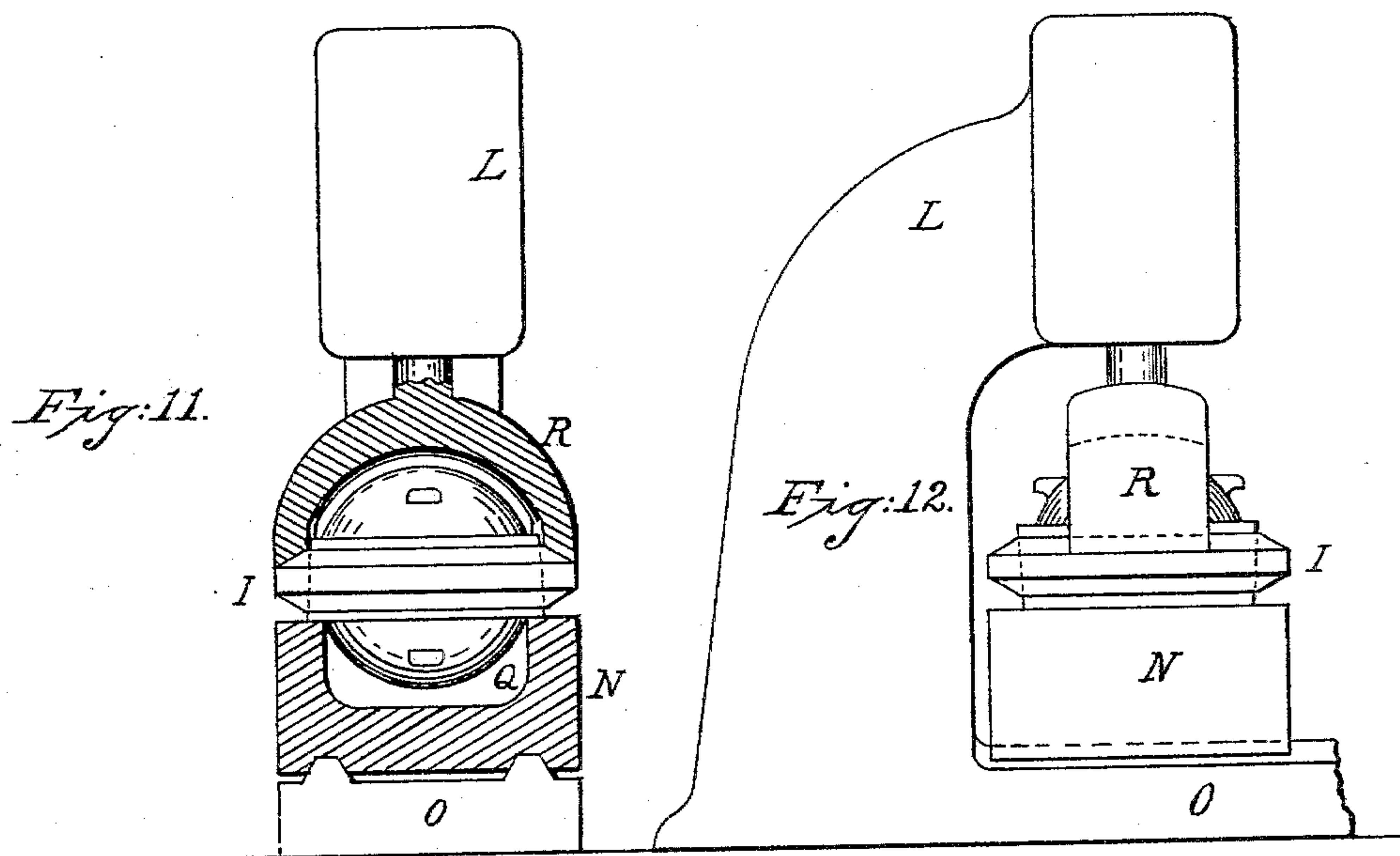
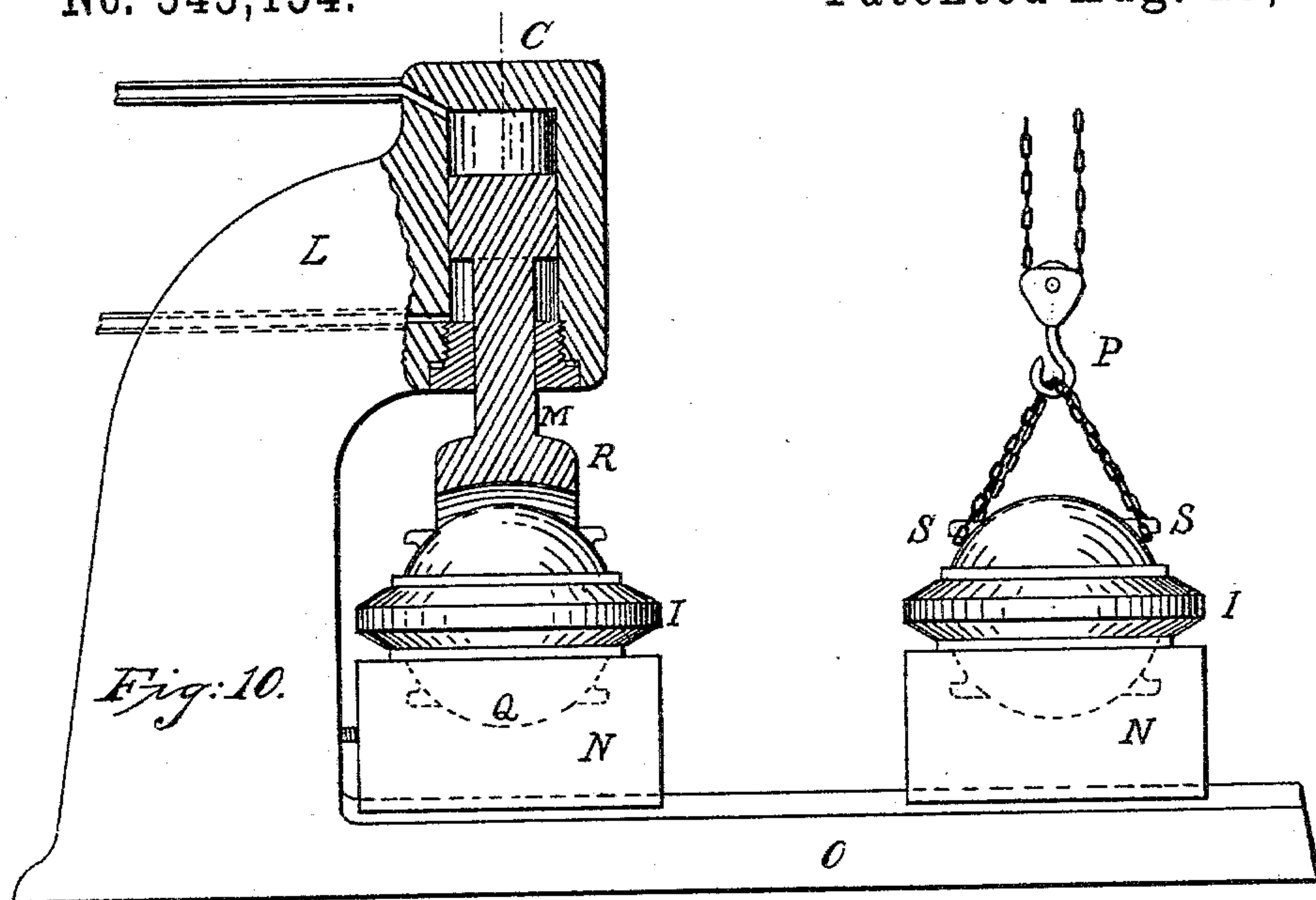
(No Model.)

3 Sheets—Sheet 2.

H. J. COLBURN.  
SAFE.

No. 545,154.

Patented Aug. 27, 1895.



WITNESSES.

W. H. Harris  
C. H. Neilson

INVENTOR.

Henry J. Colburn.



(No Model.)

3 Sheets—Sheet 3.

H. J. COLBURN.  
SAFE.

No. 545,154.

Patented Aug. 27, 1895.

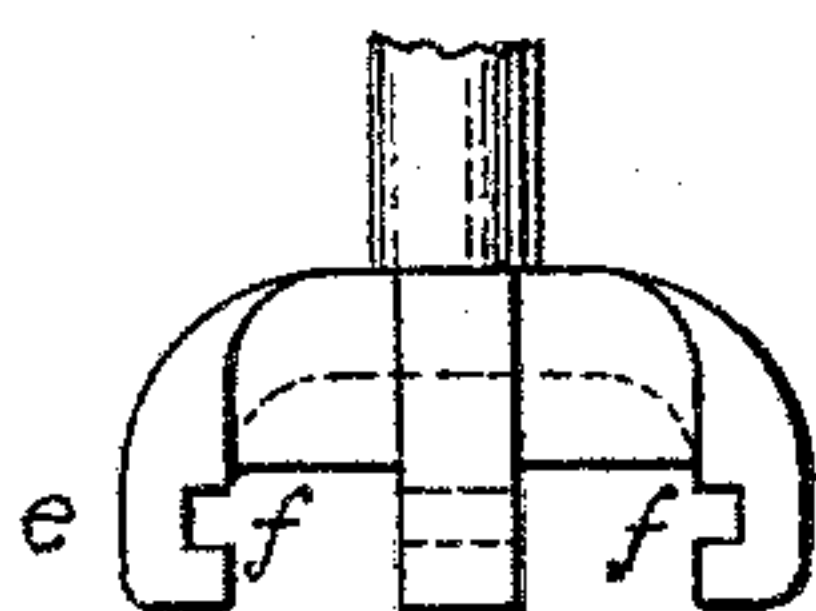
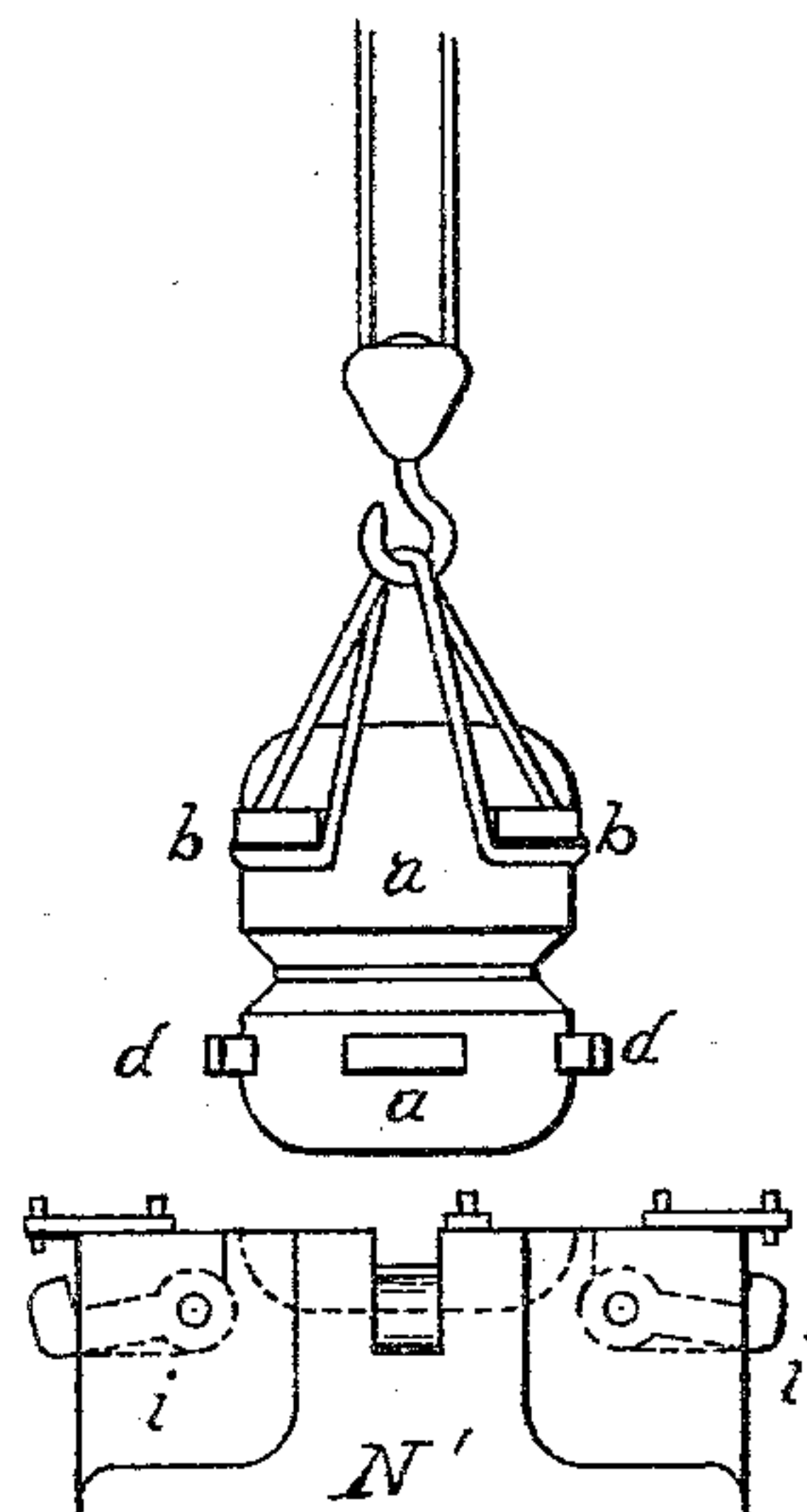
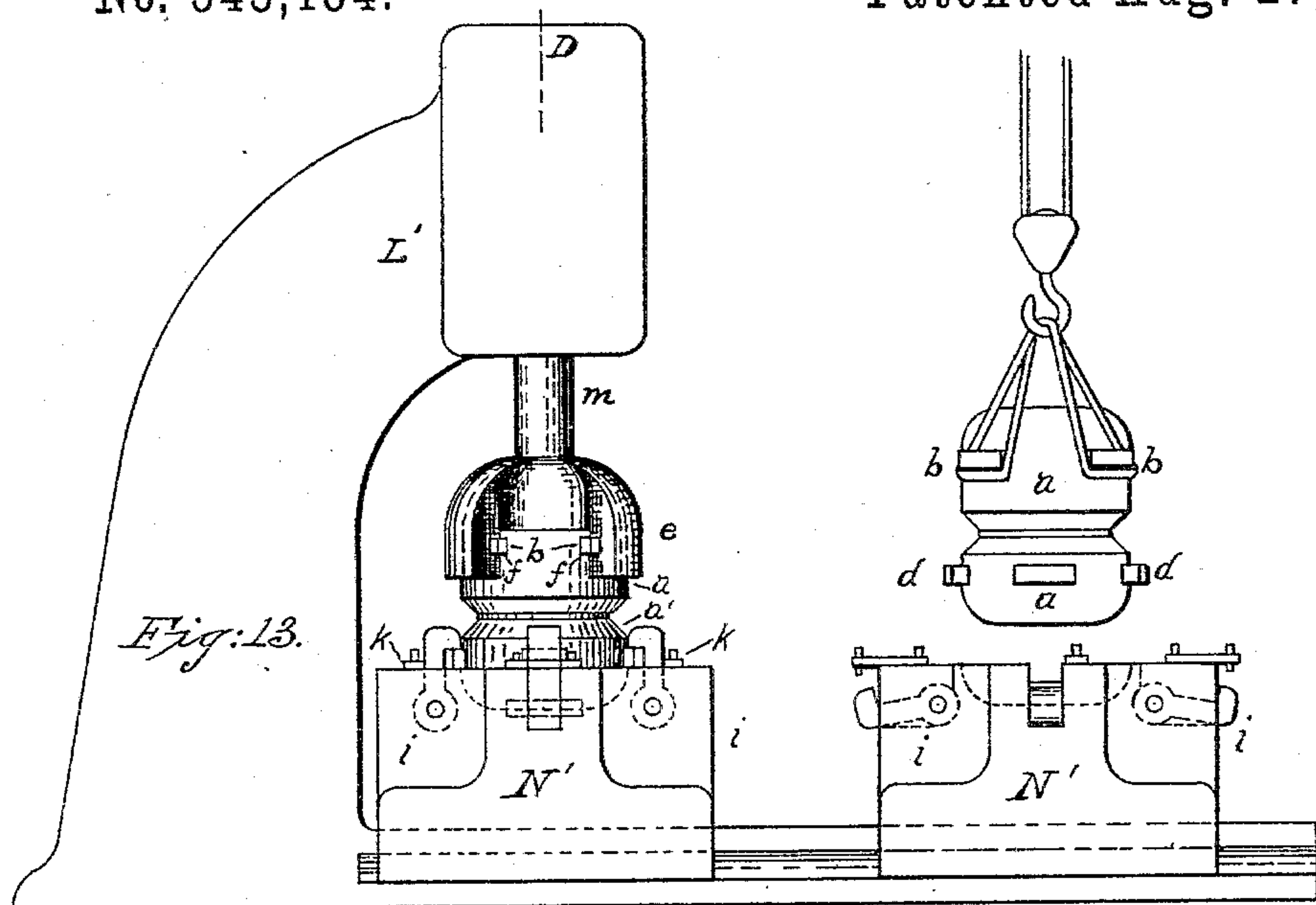


Fig. 15 1/2.

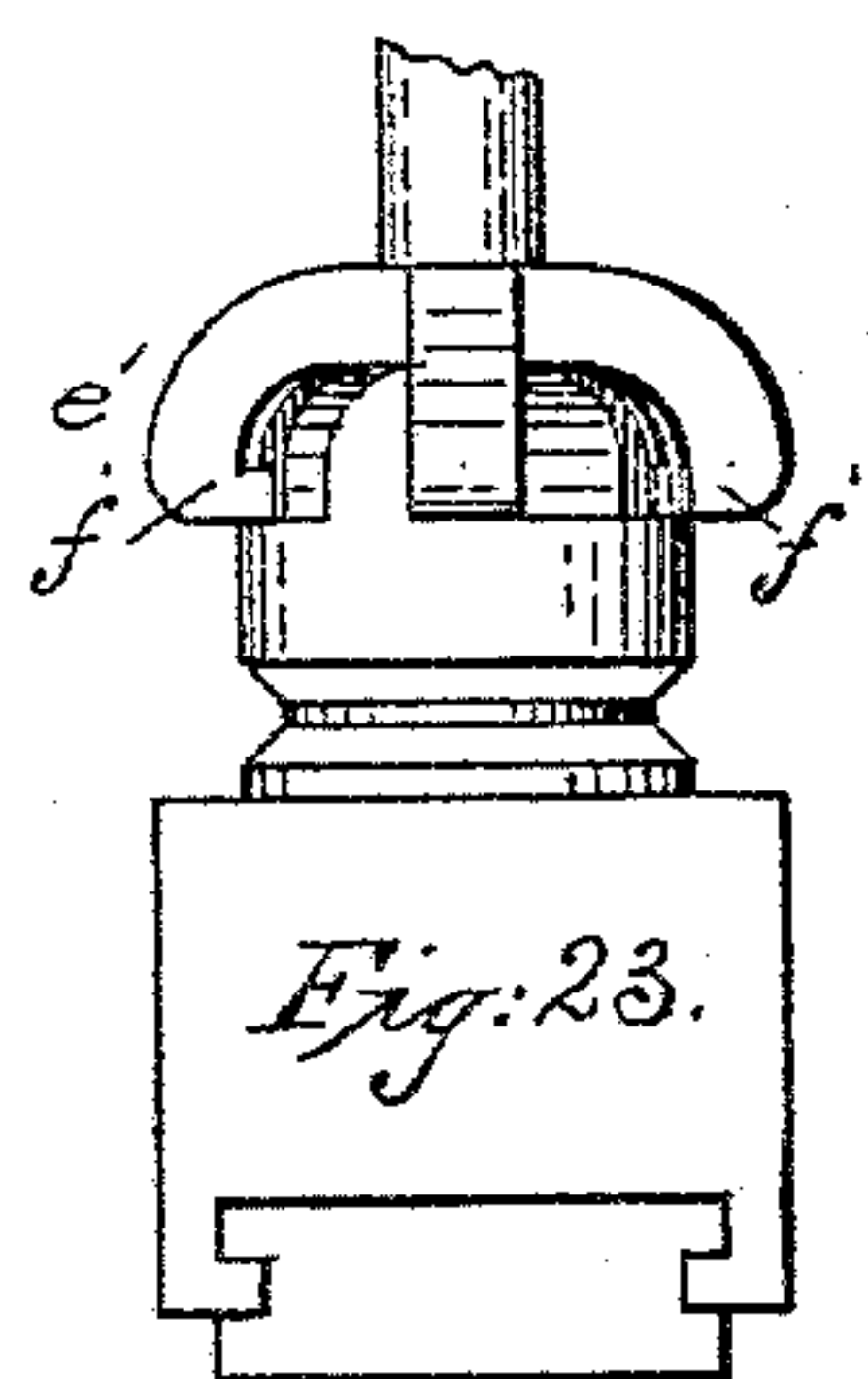


Fig. 23.

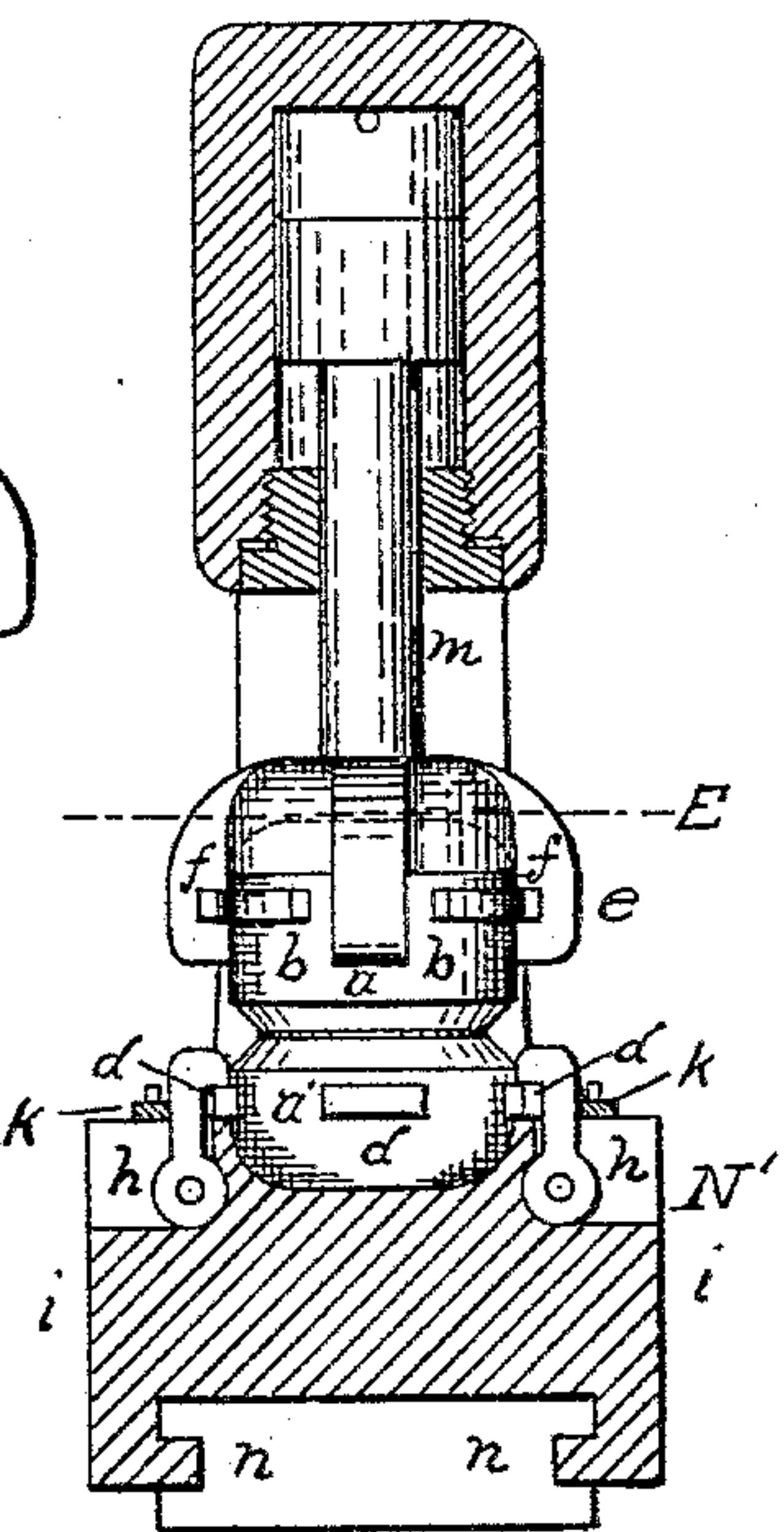


Fig. 14.

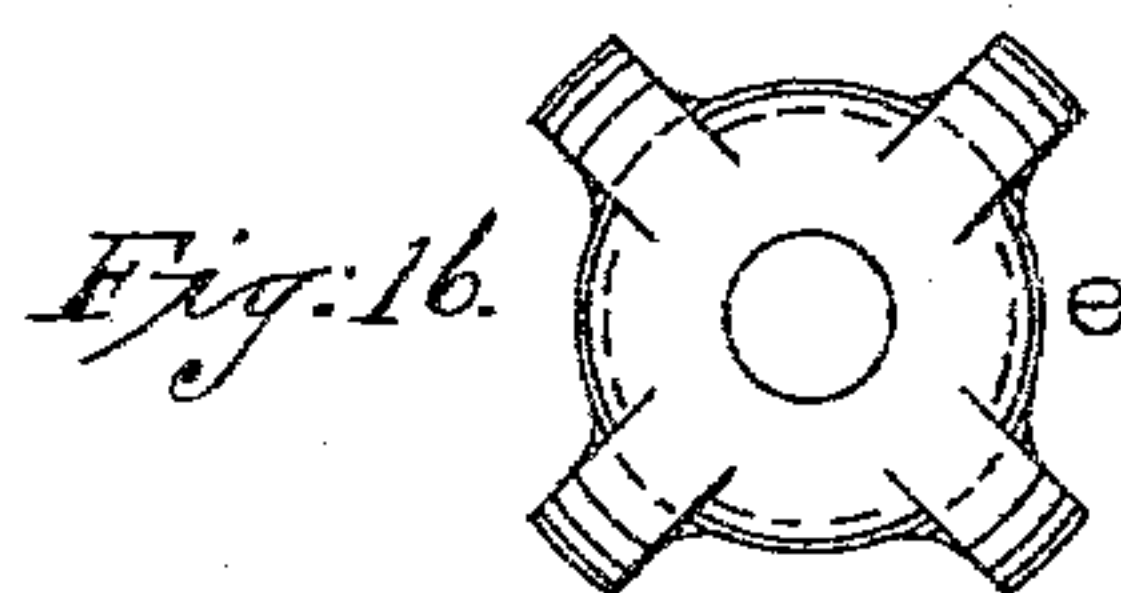


Fig. 16.

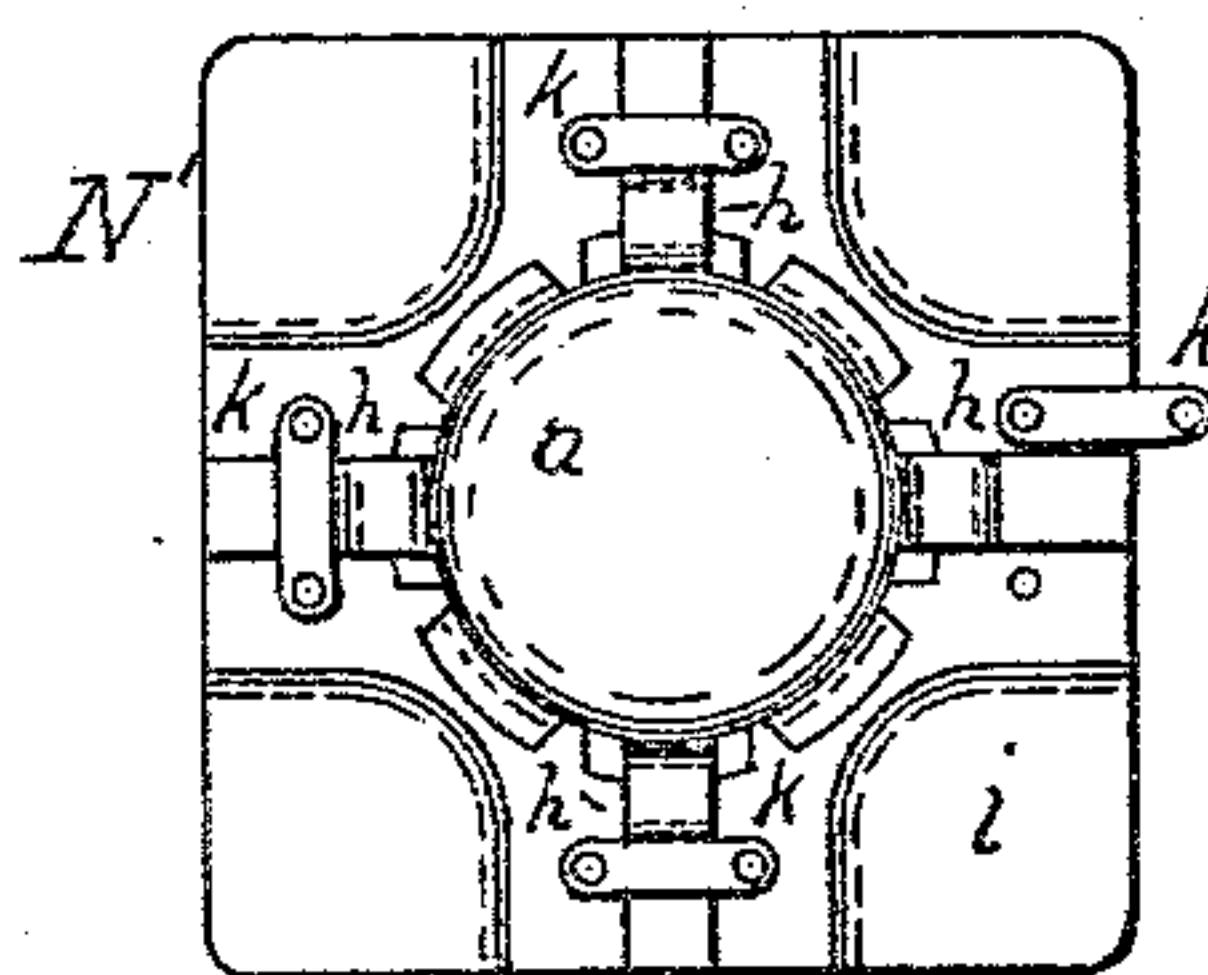


Fig. 15.

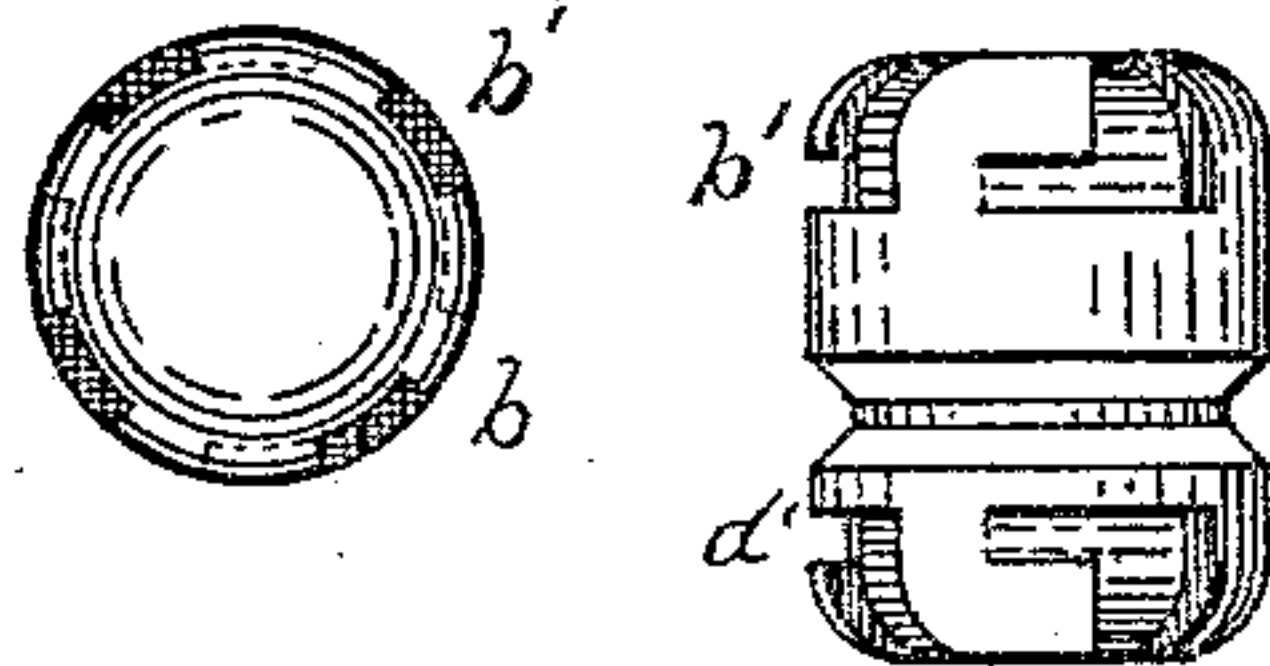


Fig. 22.

WITNESSES.

W. A. Harris  
C. W. Neilson

INVENTOR

Henry J. Colburn.



# UNITED STATES PATENT OFFICE.

HENRY J. COLBURN, OF TOLEDO, OHIO.

## SAFE.

SPECIFICATION forming part of Letters Patent No. 545,154, dated August 27, 1895.

Application filed February 23, 1895. Serial No. 539,431. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY J. COLBURN, a citizen of the United States, residing at Toledo, in the county of Lucas and State of Ohio, have invented certain new and useful Improvements in Safes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to burglar-proof safes, particularly that class which are carried on trains between leading stations and are especially exposed to danger and plunder from train-robbers, who, having held up the train and intimidated the guardians of the treasure, gain complete access to the exterior of the safe at all points, rendering it only a question of time to enter the same, as now generally constructed.

My object is to do away with all keys, key-holes, combination-locks, time-lock devices, bolts, bars, hinges, &c., and all appreciable apertures and crevices whatever, making the safe so massive and strong that external violence can have no serious effect upon it, and, finally, making the means of entry such that it can be applied only at the principal stations at the ends of the transit route, even by experts and the most skilled mechanics.

To this end I construct my improved safe of the most approved burglar-resisting materials, of any desired figure, but in two hollow partible sections, without doors, openings, locks, hinges, or like appliances, such as are commonly used to afford access to the interior. In lieu of these I cause the sections to be accurately fitted to each other at the line of juncture, said juncture in one form being a gradually-tapered joint, which causes the two sections to adhere very closely when pressed together by powerful machinery adapted for the purpose—as, for example, a hydraulic press.

In another form of my invention an internally-tapered ring is compressed upon a correspondingly-tapered portion of the external surface of the two joined sections, thus powerfully binding them together; and in still a third form a tapered central pin and socket performs the same function in a similar manner. Lugs or indentations are provided on

the exterior of the sections to enable them to be manipulated by the machinery employed.

Referring to the accompanying drawings, 55 forming a part of this specification, Figure 1 is a vertical side elevation of one form or variety of my improvement. Fig. 2 is a vertical section of same. Fig. 3 is a vertical section of a binding-ring. Fig. 4 is a top view of a pin-lug. Fig. 5 is a top view of a lifting-lug. Fig. 6 is a vertical section of a second variety of my improvement. Fig. 7 is a top view or plan of its top section, viewed in the direction of arrow A, Fig. 6. Fig. 8 is a top view 65 of the entire safe, seen in the direction of arrow A, Fig. 6. Fig. 9 is a vertical section of a third variety of my improvement. Fig. 10 represents a vertical elevation and a partial section of a hydraulic press adapted to close 70 and open safe, variety No. 1. Fig. 11 is a front view showing a part of said press in section on line C, Fig. 10. Fig. 12 represents a partial side elevation of the view shown in Fig. 10. Fig. 13 represents a vertical elevation of a hydraulic press adapted to close and 75 open safe, variety No. 2. Fig. 14 is a vertical section of said press on line D, Fig. 13. Fig. 15 is a plan of a safe-supporting block N', showing safe in position, but having the operating-yoke removed. Fig. 15½ represents 80 an operating-yoke. Fig. 16 is a top view or plan of the yoke shown in Fig. 15½. Fig. 17 represents a vertical elevation of a hydraulic press adapted to close and open safe, variety 85 No. 3. Fig. 18 is a plan of a safe-supporting block, showing safe in position, but having the operating-yoke removed. Fig. 19 is a partial front elevation and a partial vertical section of press shown in Fig. 17. Fig. 20 is 90 same view of supporting-block and safe shown in Fig. 19, with slight variations, hereinafter explained. Fig. 21 illustrates two views of opening-hook. Fig. 22, in two views, represents safe illustrated in Fig. 6, wherein 95 the operating-lugs in modified form b' and d' are indentations into the shell of the safe instead of projections therefrom. Fig. 23 represents a yoke e', which is a modification of the one illustrated in Fig. 15½. 100

Similar letters and figures refer to similar parts throughout the several views.

In Fig. 1, G and G' are two sections of a spherical case, which are ground and closely



fitted together, preferably with a conical joint H. A ring I is taperingly fitted over the said sections G and G' for holding and binding them together, and in order to secure more perfect alignment of the parts G and G' a pin or its equivalent may be inserted at J.

The operation of this device is as follows: The hollow space is used for the reception of valuables, and it may be divided and subdivided in any desired manner. When it is ready to be closed, the parts G and G' are placed together, as shown in Fig. 1, and the ring I placed over the said parts, as shown in said figure, when the said parts are ready to be operated upon by a hydraulic press. (Shown in Figs. 10 and 11.) This press is of ordinary construction so far as relates to its frame and cylinder L and piston and plunger M. A concave carriage N is imposed upon slideways O. The safe by any suitable means, such as tackle P, is placed therein, with the shoulder of the large end of the tapered part resting upon the top thereof, as shown in Figs. 10 and 11. A yoke R, connected with the plunger M, is adapted to fit over sections G and G' and impinge upon the ring I. Hydraulic force is then applied and the ring seated upon the tapered part of the said sections G and G' with any desirable degree of pressure. When it is desired to open said safe, it is only necessary to reverse it by turning it "upside down," when the same process which closed it is adapted to open it, in an obvious manner, as shown in Fig. 12. By means of lugs S the said safe is adapted to be lifted, as shown in Fig. 10. In consequence of the sections composing the shell of this safe being substantially smooth upon their exterior surface, the necessity of the aforesaid lifting-lugs is obvious.

In Figs. 6, 7, and 8 is illustrated the second variety of my improvement, wherein the ring I is dispensed with and the two sections *a* and *a'* are taperingly fitted together, as shown at c. A hydraulic press L', Fig. 13, of the same variety as before described, is also employed to close and open this variety of safe. The carriage N' is adapted to substantially fit the exterior form of the upper as well as the lower section of the safe. The safe is closed by direct pressure, as shown in Fig. 13. The interior concave of the yoke *e* is of the same form as that of the concave in the carriage. The sections *a* and *a'* are provided with lugs *b* and *d*. When it is desired to open this variety, a yoke (shown in Figs. 13 and 14 at *e*) is employed. This yoke has interior slots *f*, adapted to fit over the lugs *b*, which, after passing, are turned to the position shown in Fig. 13. It is obvious that in lieu of slots *f*, shown in Figs. 13 and 15½, lugs *f*, shown in Fig. 23, might be employed in combination with indentations shown in said figure and in Fig. 22 at *b'*, with equally good results. Dogs *h* are pivotally attached in recesses in carriage N' and are brought in position to clasp over lugs *d*. Straps *k* are adapted to se-

cure said dogs in working position, as shown. It is also obvious that the dogs might be employed as well with slots *d'* as with lugs *d*. The press plunger is now reversed and the parts *a* and *a'* drawn apart in an obvious manner, the carriage being secured to the tracks by means of grooved ways. (Shown at N.)

In Fig. 9 is illustrated the third variety of my improvement. The casing of this safe is constructed in two parts, 1 and 2, which parts are also ground and fitted together like parts G and G' in Fig. 2. A spindle is fitted in any suitable manner to the section 1 in the present illustration, with a screw-thread 4 and key 5. At 6 the parts 2 and 3 are taperingly ground and fitted together, the lower extremity of said spindle extending through the case 2. In closing this variety a hydraulic press, Fig. 17, substantially identical with those shown in Figs. 10 and 13, is employed, the safe being placed in the carriage in the same manner as in the second variety and put together by direct pressure. In opening, lugs 8 and 9 are employed in combination with yoke 10 and hooks 12, secured by means of straps 11, substantially as in the case of the second variety.

It is to be observed in relation to my invention that in adapting means to ends sought the old and established principles of safe construction have in a large measure been disregarded. Heretofore have been used divers forms of curious keys, complex locks, secret springs, time-lock combinations, brain-puzzling dials and bolts, and scores of analogous devices, which, for the most part, are devoid of intrinsic strength and are means which are often at hand when they should not be, and are adapted to be readily operated by any one who may be somewhat skilled in the art or method employed, thus rendering safes to which such devices are applied insecure to him who would trust his valuables within them. I seek to overcome these objections, first, by increasing the strength of construction in the safe; second, by closing all avenues to its interior; third, by increasing the imponderability in the key.

My safe is almost indestructible, powder and dynamite proof, inert ever, and portable only when handled with specific means not generally accessible and especially designed for and kept at locations of departure and receipt, the presence of which at other places would be indicative of improper use. No keyholes or inwardly-opening passage-ways of any variety, no key but a cumbersome heavy machine never to be transported with the safe which it is designed to open, which can only be duplicated at great expense and after the lapse of much time and with the employment of great mechanical skill, and which is adapted to be operated only in the presence of appropriate motive power, not found upon steam cars and boats or other transportation routes.



Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A burglar proof safe, consisting of two integral, concave metallic sections accurately fitted to each other by a close tapered joint connection, having no external appendages except the knobs, indentations or other means whereby the parts are enabled to be grasped by machinery, and constructed and adapted to be acted upon by powerful compressing machinery by which alone the closure and separation can be practically effected substantially as specified.

2. A burglar proof safe consisting of two integral, concave metallic sections of any desired cross section, accurately fitted to each other by a close joint connection, without appendages of the nature of hinges, locks, bolts, dials, &c., but provided with lugs or indentations or other means whereby the sections may be manipulated by machinery and constructed and adapted to be firmly secured together by frictional contact between an internal tapered surface and an external tapered surface when pressure is powerfully applied to move the said surfaces over each other in opposite directions by means of suitable power-compressing apparatus, and incapable of separation except by a similar force similarly applied in reverse direction, substantially as specified.

3. A burglar proof safe consisting of two

massive integral concave metallic sections, fitted to each other by a close joint connection, having no locks, bolts, bars, keyholes, combination dials, or apertures, but secured to each other solely by powerful compressive force applied through appropriate machinery upon tapered or wedged shaped surfaces, interior and exterior respectively, to constrict and hold the two sections together by frictional contact until separated by a similar force similarly applied in reverse direction, lugs or indentations being supplied upon the exterior of the said sections for manipulating the same, all substantially as specified.

4. The burglar proof safe herein described, consisting of two hollow massive shells or sections, fitted to each other by a close joint connection, and adapted, by means of tapered contacting surfaces, interior and exterior, to be securely locked and held together solely by frictional adhesion by means of pressure powerfully applied through suitable machinery, without apertures locks, bolts, bars, clocks, keyholes, combination dials or hinges, until separated by a similar force similarly applied in reverse direction, substantially as specified.

In testimony whereof I have affixed my signature in presence of two witnesses.

HENRY J. COLBURN.

Witnesses:

W. H. HARRIS,

CARPER W. NEILSON.