

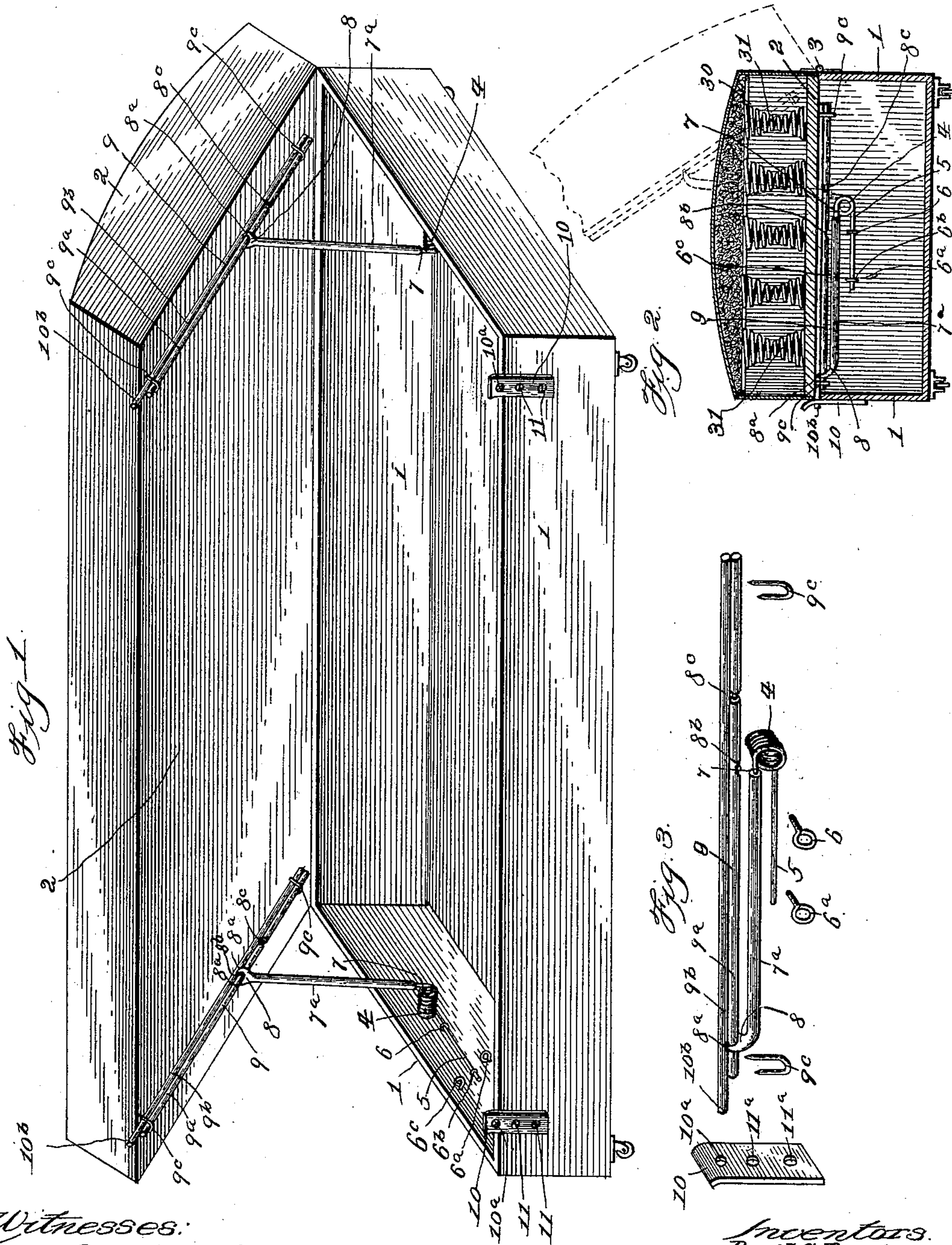
(No Model.)

3 Sheets—Sheet 1.

D. G. & G. E. PROCTOR.
BOX COUCH.

No. 594,557.

Patented Nov. 30, 1897.



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(No Model.)

3 Sheets—Sheet 2.

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Fig. 4.

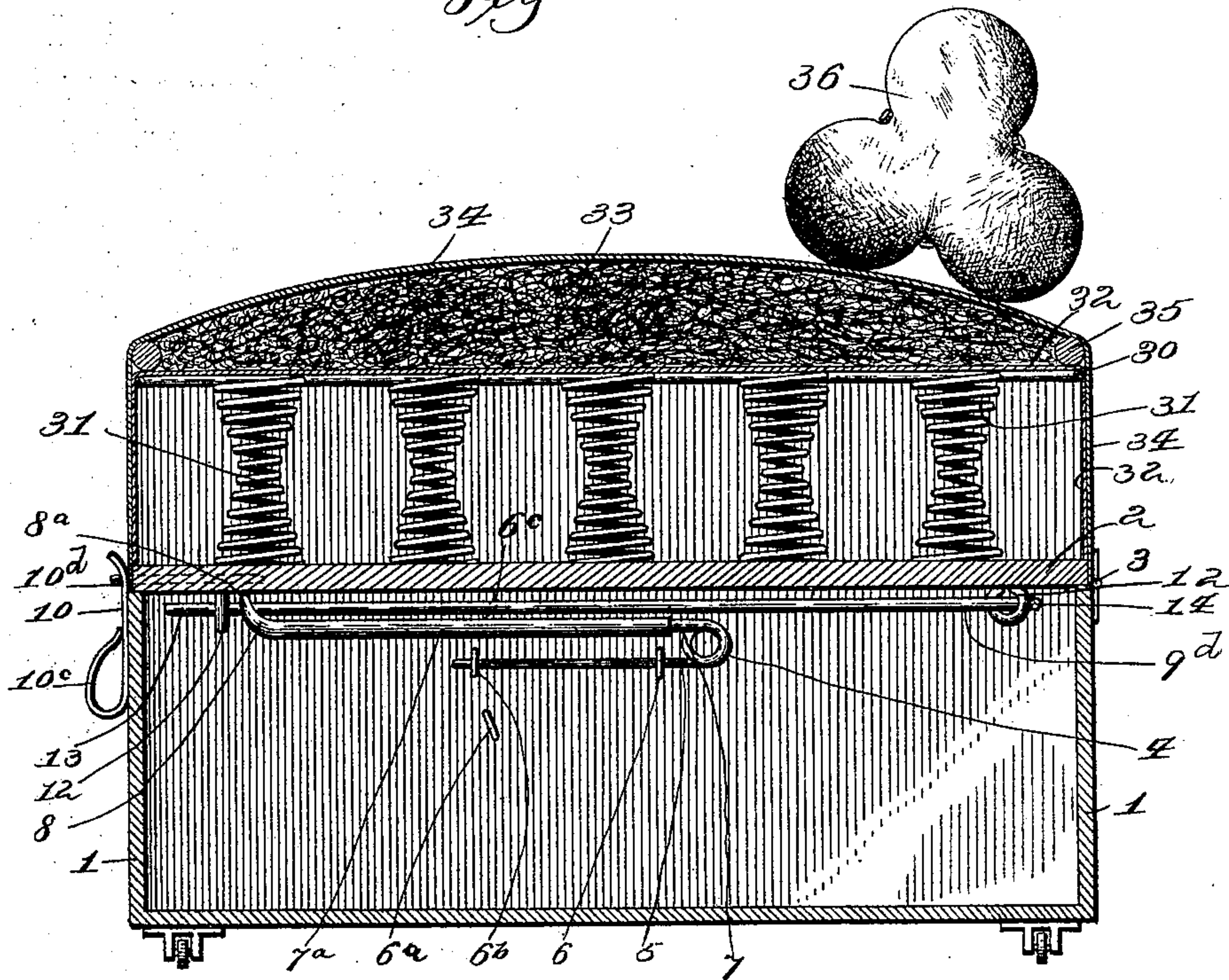
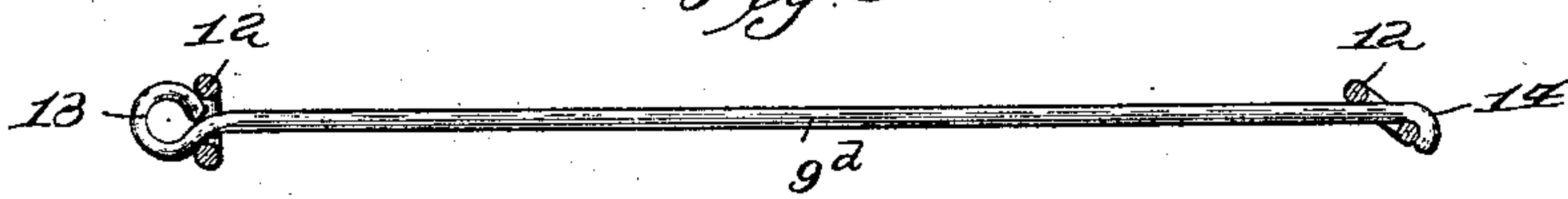


Fig. 5.



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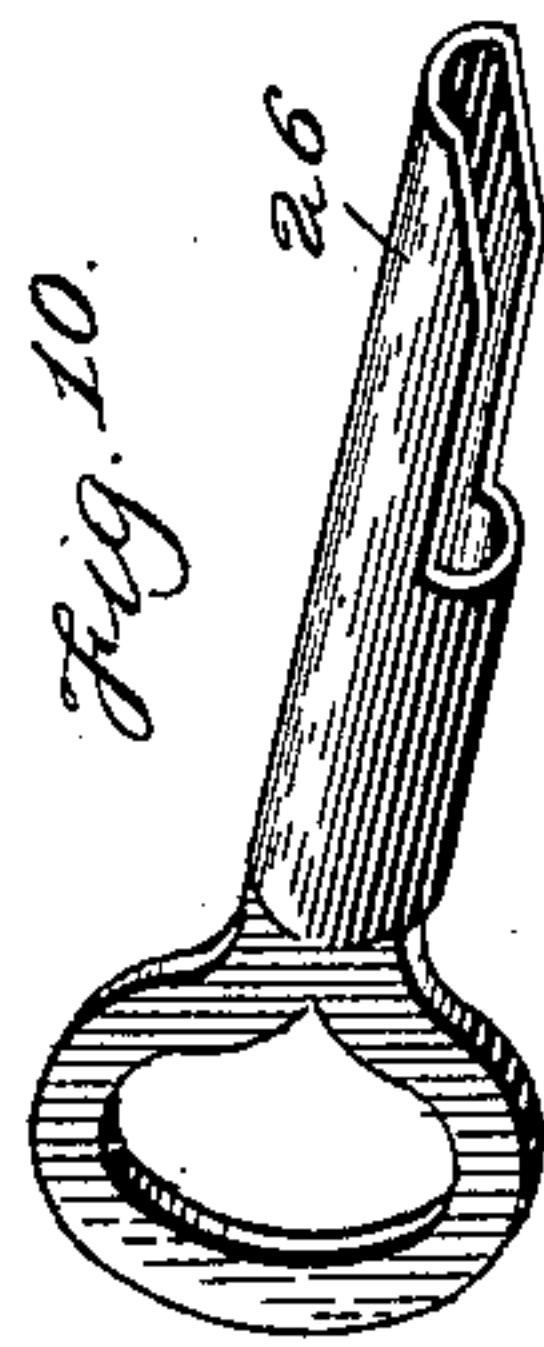
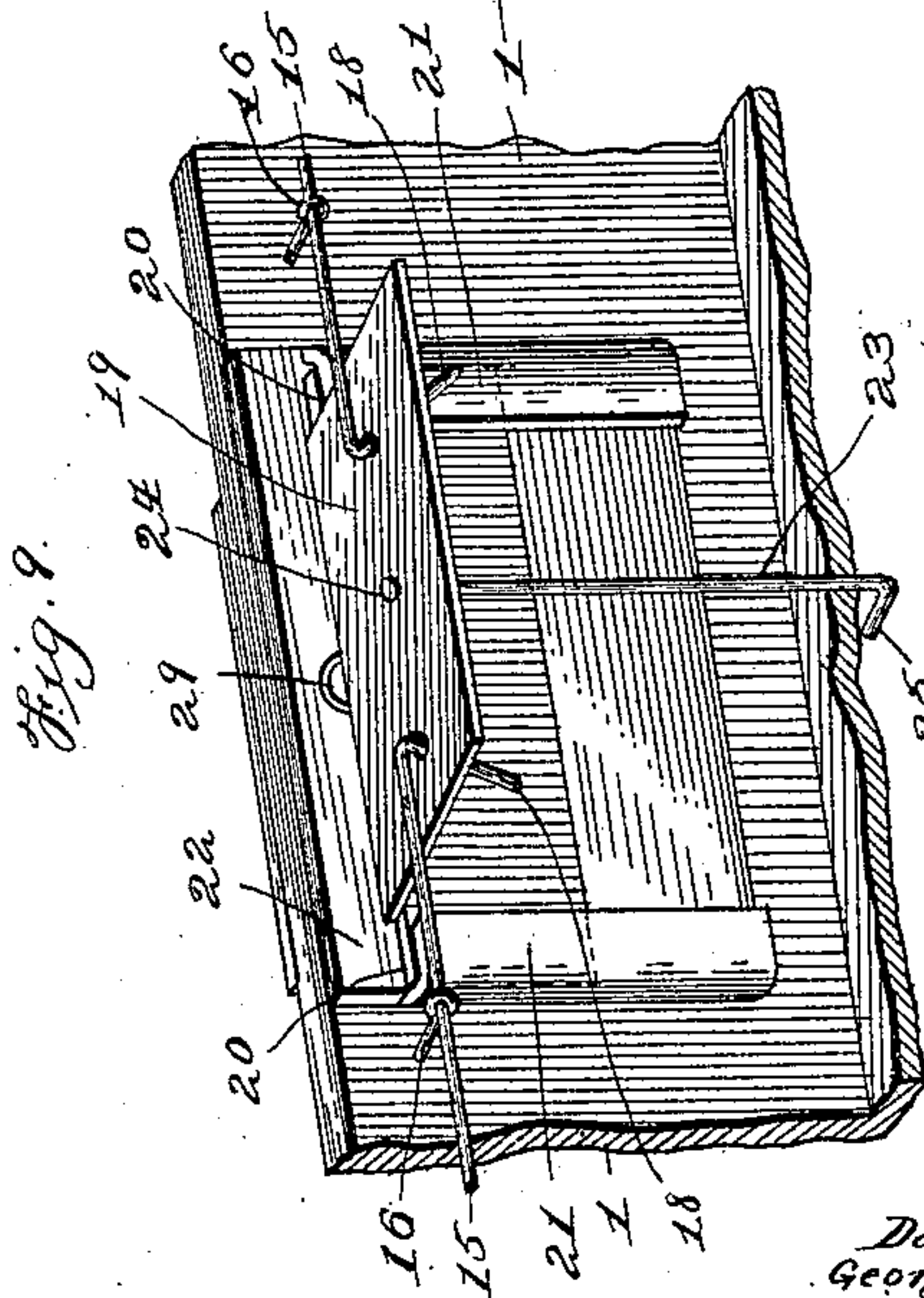
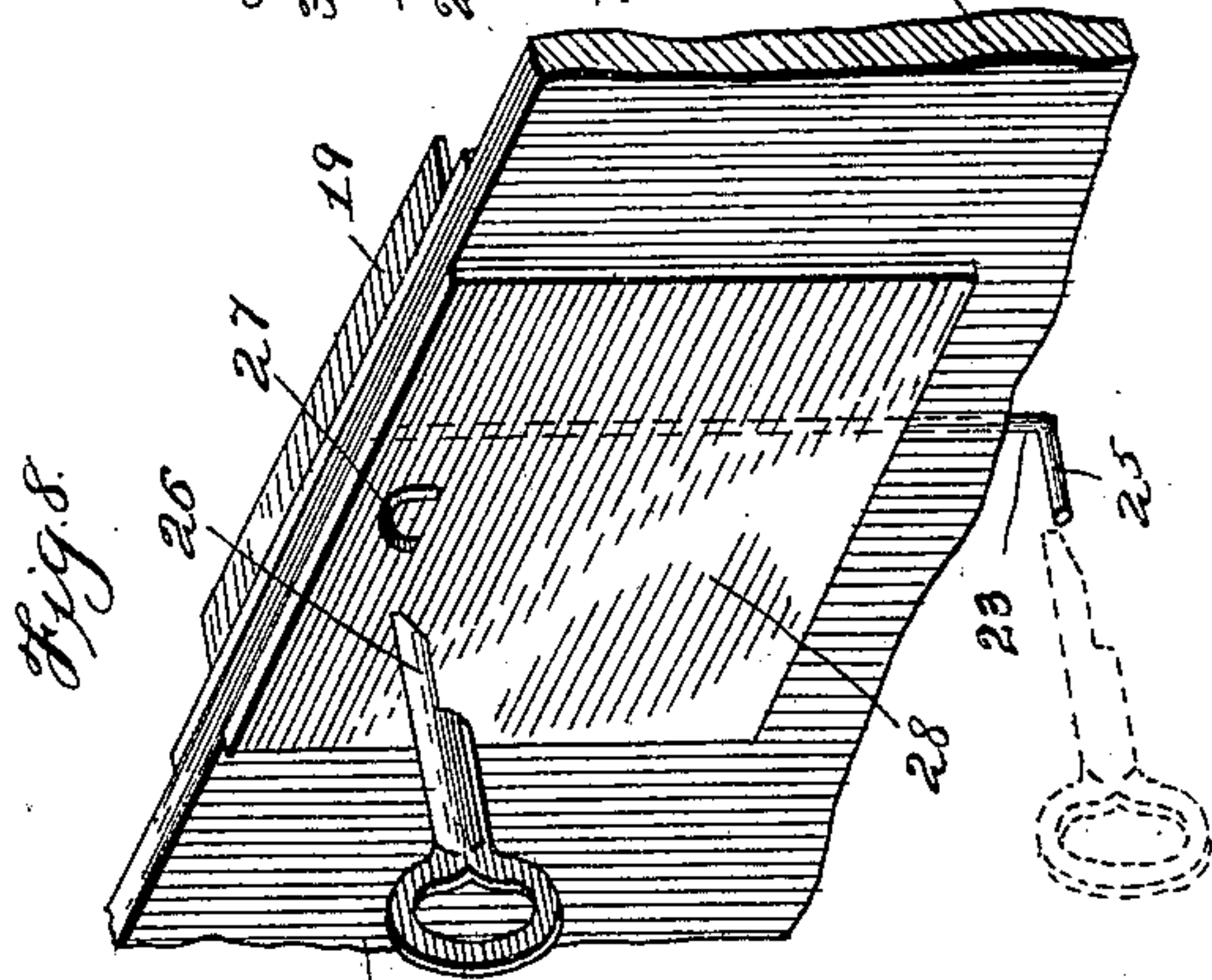
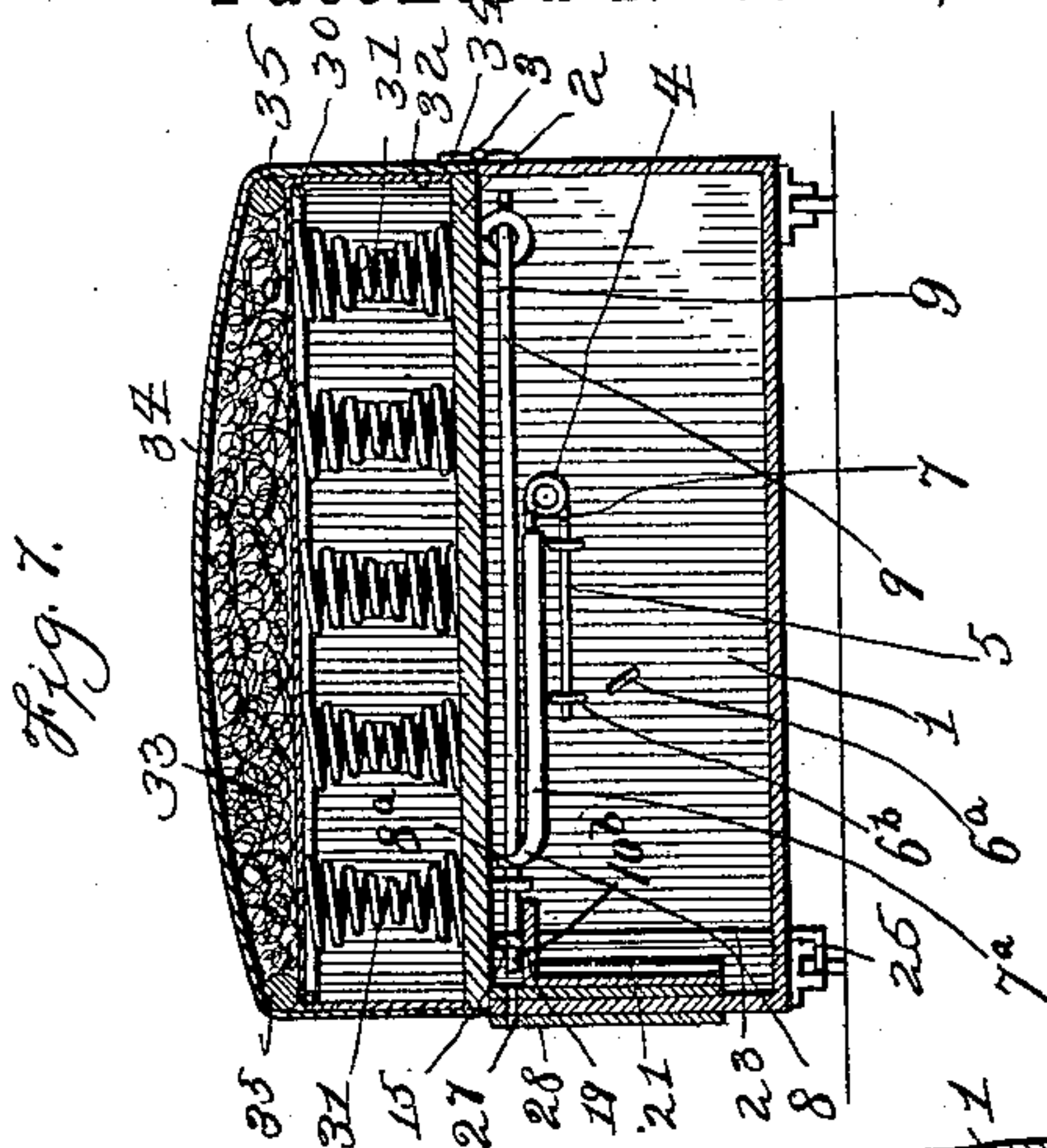
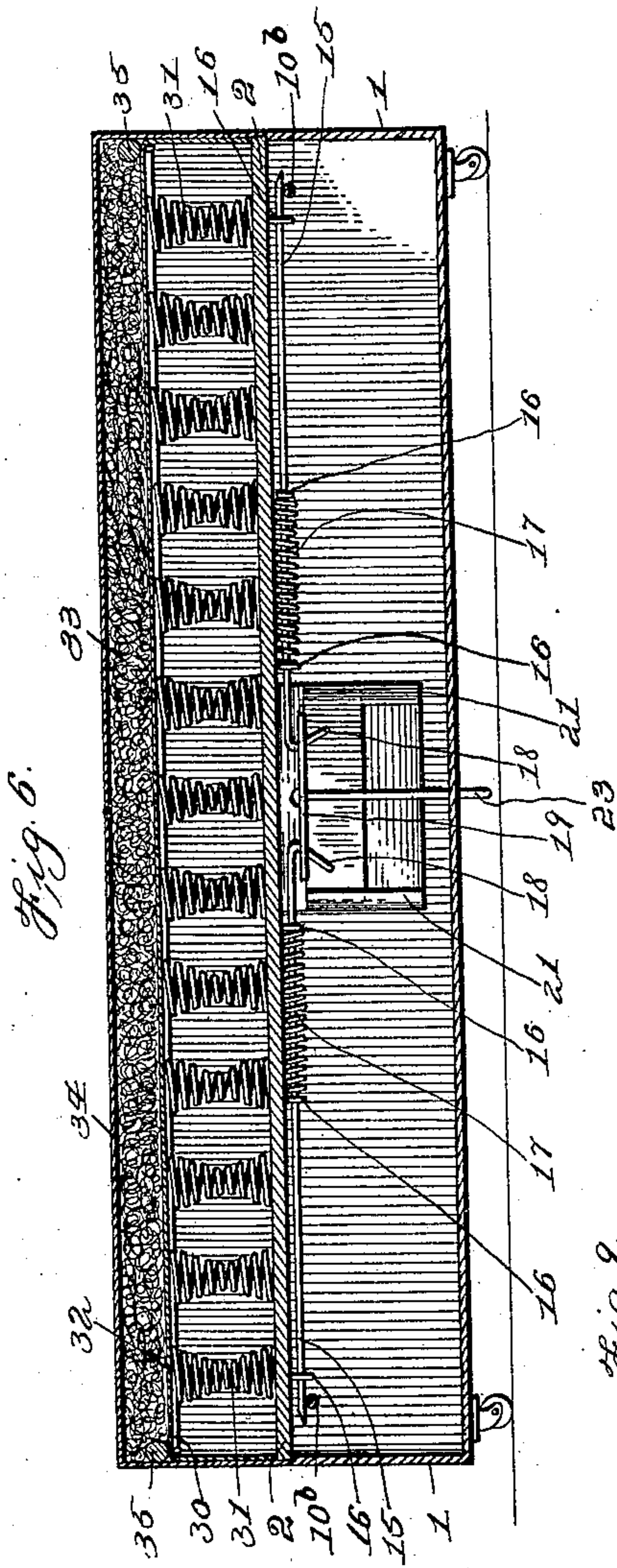
(No Model.)

3 Sheets—Sheet 3.

D. G. & G. E. PROCTOR.
BOX COUCH.

No. 594,557.

Patented Nov. 30, 1897.



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UNITED STATES PATENT OFFICE.

DAVID G. PROCTOR AND GEORGE EDWARD PROCTOR, OF WASHINGTON,
DISTRICT OF COLUMBIA.

BOX-COUCH.

SPECIFICATION forming part of Letters Patent No. 594,557, dated November 30, 1897.

Application filed July 10, 1896. Serial No. 598,668. (No model.)

To all whom it may concern:

Be it known that we, DAVID G. PROCTOR and GEORGE EDWARD PROCTOR, citizens of the United States, and residents of Washington, in the District of Columbia, have invented certain new and useful Improvements in Box-Couches, of which the following is a specification.

Our invention has for its object to improve the construction of box-couches, also to provide box-couches with certain attachments which render them more conveniently operated in opening and closing, and also in securely locking them.

One feature of our invention consists in providing a box-couch with a pair of lifting-springs constructed and applied in a novel manner, whereby the weight of the top is largely counterbalanced and the labor required to open the couch reduced to a minimum.

A further feature is to provide the ends of the couch-top with suitable locking devices which will hold the top in closed position in opposition to the springs.

A still further feature is to combine with such end locking devices means located at an intermediate point on the front of the couch, having connections whereby said locking devices may be simultaneously released, such releasing or lock-controlling mechanism being itself under control of a suitable key, so as to prevent unauthorized opening of the couch, if desired.

Our invention consists in certain novel features of construction and arrangement of the several parts, to be hereinafter fully described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of our improved box-couch partly open and showing the preferred form of springs, together with one form of the connection between said springs and the couch-top and one form of the end locking devices. Fig. 2 is a vertical transverse section, on a smaller scale, of a couch having the same forms of devices applied thereto. Fig. 3 is a detail perspective view of several parts employed in Figs. 1 and 2. Fig. 4 is a vertical transverse section of a couch, showing an im-

proved form of construction for building up and supporting the stuffing in the top and showing a form of pillow for use on couches, also showing another form of end locking device and of the connection between the spring-arm and the top. Fig. 5 is a detail view of a part shown in Fig. 4. Figs. 6, 7, 8, 9, and 10 are views illustrating a modification in the form of end locking devices and means whereby they are controlled simultaneously from an intermediate point in the front of the couch, Fig. 6 being a vertical longitudinal section looking at the inside of the front of the couch, Fig. 7 being a vertical transverse section looking at the inside of one end of the couch, Figs. 8 and 9 being respectively an outside view and an inside view of the intermediate controlling mechanism, and Fig. 10 being a perspective view of a key which may be employed in gaining access to and operating the controlling mechanism.

Referring to Figs. 1, 2, and 3, 1 represents the body of the couch; 2, the top thereof, which is mounted thereon and secured thereto by means of hinges 3, and 4 lifting-springs partly or wholly counterbalancing the weight of the top. These springs 4 are constructed and applied in a peculiar manner, as will now be described.

The spring 4 is in the form of a cylindrical coil having one of its supporting ends straightened to provide a fixed arm, as shown at 5, and connected to the inside of the couch by means of screw-eye or equivalent sockets 6^a, 6^b, or 6^c, the said sockets 6^a, 6^b, and 6^c being arranged in concentric or circumferential relation to the socket 6 in order that the arm 5 may pass into either one of them for the purpose of adjusting the angle of the arm 5, and consequently the force or strength with which the spring 4 will act through the medium of its other supporting end, which is also straightened and provides a moving arm 7, which extends upward and bears against the under side of the top 2, where it has sliding bearing in order that the top may be raised and lowered while the pressure of the spring remains constantly beneath it. By locating the spring in the position shown and by its peculiar bearing upon the cover the spring exercises its greatest efficiency in the most

economical way, because when the cover is down and the arms of the spring are folded the end of the moving arm is in the forward position, as shown in Fig. 2, so that by reason
 5 of the increased distance from the hinge 3 the leverage of the spring-arm upon the top is greatest and the power of the spring is greatest while the top imposes the greatest load upon the springs. For convenience the
 10 greater portion of the moving arm of the spring is formed with a sleeve 7^a, of tubing, which receives the integral arm 7 of the spring 4, and the moving member thus formed is provided with a sliding grip 8 at its upper end,
 15 formed with inturned projections 8^a, which partly surround a cylindrical track 9 and prevent displacement of the arm 7 in any way.

8^b represents a notch in the track 9 into which grip 8 settles as the top reaches the upper limit of the intended movement, and this
 20 notch by reason of the load being then imposed in a direction almost longitudinal upon the arm 7 is sufficient to prevent the sliding of said arm which takes place at the dropping
 25 of the top. The notch 8^b is so shaped, however, that a slight increase of pressure upon the top will displace the grip 8 and the top is lowered with ease to closed position.

8^c represents an annular reduction in the diameter of the track 9. When the grip 8 is
 30 pressed back to this point, it may leave the track 9 and the arm be then manipulated to permit the spring to be moved and the arm 5 adjusted in the manner hereinbefore referred
 35 to. In order to space the track 9 away from the under side of the cover, it may be formed of two rods 9^a 9^b, which by reason of their shape leave a groove between them to receive the projections 8^a on the grip 8. Rods 9^a 9^b
 40 are held in place in any convenient manner—as, for instance, by staples 9^c. Two such counterbalancing-springs are employed, one being located at each end of the couch.

It will be seen that the body of the spring
 45 is wholly supported by its arms, as the body of the spring is independent of the ends of the couch.

It is found in practice that a single locking connection at an intermediate point on the
 50 front of the couch is not sufficient to prevent the ends of the couch from buckling up or gaping open, and for this reason it is desirable to have locking devices or catches at the ends to oppose the respective springs in holding
 55 the couch shut. We have shown one of a number of convenient forms of locks or catches in Figs. 1, 2, and 3. Each of these consists of a spring-plate 10, having a perforation 10^a, into which a stud on the top enters when the
 60 latter is closed. Plate 10 is attached to the front of the couch by any suitable means, such as screws 11, while a convenient way of providing a stud on the top is to form an extension 10^b on the rod 9^b of the track. With
 65 this form of locking device it is simply necessary to force the couch-cover down until the extensions 10^b snap into the opening 10^a.

If the couch is to be opened, the plates 10 are sprung outward successively to release the
 extensions 10^b, and each spring immediately
 70 lifts its end of the top slightly to hold them out of engagement until the cover is raised.

A modified form of locking attachment and track is shown in Figs. 4 and 5, wherein the
 plate 10 is provided with upturned reinforcing
 75 end 10^c and the stud 10^d is simply driven into the top, as in this form the inner track-rod 9^b is omitted and the stud 10^d substituted
 80 for the extension 10^b on the inner track-rod 9^b. The track 9^d consists of a single rod supported upon and spaced apart from the top by screw-eyes or sockets 12, the track being
 prevented from displacement longitudinally by a bend 13 at one end and a hook 14 at the
 85 other end. As shown in Fig. 5, the hook 14 is such that it may be engaged by the screw-eye when turned to a certain position, but when the screw-eye is turned square the end
 14 will pass through it to permit the rod to be inserted or removed. 90

We will now describe another modification.

To provide for controlling the locking device at the ends simultaneously from an intermediate point, we employ longitudinally-
 95 projected spring-rods 15, which engage over the extensions 10^b of the tracks 9, being held in position by screw-eyes 16 and projected by springs 17, said rods having downwardly-
 100 turned cam ends 18, which engage in retracting-plate 19. The retracting-plate 19 has lateral extensions 20, which slide in guides 21, formed on a base-plate 22, fixed to the inside
 105 of the front of the couch. By this construction when the plate 19 is depressed it draws the rods 15 toward each other sufficiently to release the extensions 10^b of the tracks 9 and permit the top of the couch to be raised. By
 reason of the beveled ends of the rods 15 the catches snap into locking position by the closing of the top. To provide for depressing the
 110 plate 19, we employ a vertical rod 23, which is threaded at 24 into said plate and passes down through the bottom of the couch and is there provided with the forward extension 25. By engaging the projection 25 with the finger
 115 or with a suitable key or other device and pressing downward upon it the unlocking may be effected. If, however, it is desirable to make the locking more secure and prevent
 unauthorized opening of the couch, the rod 120 23 is readily unscrewed and removed, and when this is done we accomplish the unlocking by a wedge-shaped key 26, which engages above the edge of the plate 19 and depresses
 125 it. To prevent the insertion of any piece of thin metal other than the key, the latter is preferably made upon the basis of a tube having its forward end cut away, as shown, and a semicircular keyhole 27 is formed in an
 130 outer escutcheon-plate 28, while a similar keyhole 29 is formed in the base-plate 22. By this means it would be impossible to introduce anything with a wedging end, except it be in substantially the shape of the key.

30 represents the wire frame which forms the outline of the cushion, and which is connected with and supported by the springs 31, resting upon the top 2 of the couch. 32 is the inner fabric covering over the springs and wire frame and extending down to the top, and which forms the support for the stuffing or filling 33, and 34 is the outer covering, extending down to the top. In order to confine the stuffing 33 in place and prevent its working down between the inner covering 32 and outer covering 34 around the sides of the couch, a rope 35 is placed on top of the frame 30 above the inner fabric 32 and firmly stitched in place by cords, which are sewed through the covering 32 and around the wire frame 30. By this means a ridge or projection is formed entirely around the couch and the stuffing 33 is prevented from becoming displaced, as it otherwise would in course of time.

36 represents a pillow or back-rest formed substantially of trefoil section. This pillow is of special advantage in that it will not roll out of place and offers, however placed, an inclined side for supporting the head or back.

Having thus described our invention, the following is what we claim as new therein and desire to secure by Letters Patent:

1. A box-couch comprising a top hinged to one side thereof, tracks having notches and secured within the top adjacent to the ends thereof, loosely-mounted springs for supporting the weight of the top in opening and closing the couch, each spring consisting of a cylindrical coil having its ends straightened so as to provide lower and upper arms, and means whereby the lower arms are removably secured to the ends of the couch for supporting the coils and upper arms of the springs while the extremities of the upper arms are adapted to engage the tracks to seat in the notches thereof and to travel thereon, substantially as described.

2. A box-couch comprising a top hinged to one side thereof, tracks having reduced portions and secured within the top adjacent to the ends thereof, loosely-mounted springs for supporting the weight of the top in opening and closing the couch; each spring consisting of a cylindrical coil having its ends straightened so as to provide lower and upper arms, and means whereby the lower arms are removably and adjustably secured for regulating the tension of the springs while the extremities of the upper arms are adapted to engage the tracks to be disengaged at the reduced portions thereof and to travel thereon, substantially as described.

3. In combination with a couch or other receptacle and the top hinged thereto; the herein-described counterbalancing-spring secured to the receptacle at a point away from the side containing the hinges, and having its free end provided with a sleeve bearing upon the under side of said top, and a track secured to the under side of said top and form-

ing a bearing for the free end of the sleeve, substantially as explained.

4. A box-couch comprising a body, a top hinged to the body along one side thereof, a track secured to the top, and the counterbalance-spring having an arm, and a sleeve on the arm formed with a grip having inturned projections adapted to slide on the track; substantially as described.

5. A box-couch comprising a top hinged to one side thereof, tracks secured within the top adjacent to the ends thereof, springs for supporting the weight of the top in opening and closing the couch, each spring consisting of a cylindrical coil having its ends straightened so as to provide lower and upper arms, means whereby the lower arms are removably secured to the ends of the couch for supporting the coils and upper arms of the springs, and the sleeves, into which the upper arms are inserted, having their upper ends adapted to travel on the tracks, substantially as described.

6. In combination with a couch or other receptacle, and the top hinged to one side thereof; the counterbalancing-spring formed of a coil having one end fixed to the end of the couch and having upon its other end the sleeve 7^a formed at its outer end with a grip 8, said top being provided with a track which receives the grip in substantially the manner explained.

7. In combination with a couch or other receptacle, and the top hinged to one side thereof; the counterbalancing-spring having a free arm making sliding contact with the top and having an attaching-arm for securing it to the end of the couch, the socket 6, and the sockets 6^a, 6^b, 6^c symmetrically arranged about the socket 6 and receiving the attaching end to provide for securing the spring adjustably to the receptacle, as set forth.

8. In combination, with a couch or other receptacle and the hinged top thereof; tracks located on the top, the longitudinally-reciprocating rods located on the receptacle in position to engage the tracks and terminating at their meeting ends in the cam ends 18, the plate 19, having perforations to receive the said cam ends, and means for depressing said plate at will, substantially as described.

9. In combination, with a couch or other receptacle and the top hinged thereto; the locking-rods 15 having the cam ends 18, tracks located on the top with which the rods engage, the plate 19 controlling said rods through the medium of their cam ends, the base-plate 22 providing a mounting for the plate 19 and having a keyhole located to bring a wedging-key into contact with the plate 19, substantially as described.

10. In combination, with a couch or other receptacle and the top hinged thereto; the locking-rods 15 tracks located on the top with which the rods engage, the plate 19 having working connection with said rods, the base-

plate 22 providing a mounting for said plate,
and the tubular key having a wedging end;
said base-plate having a semicircular open-
ing located to direct the wedging end of the
5 key upon the plate 19 when the key is intro-
duced, substantially as described.

11. In combination, with a couch or other
receptacle and the top hinged thereto; the
locking-rods 15, tracks located on the top with
10 which the rods engage, the actuating-plate

19, the rod 23 threaded at its upper end into
the plate 19 and having its lower end pro-
jecting through the bottom of the couch for
manipulation, substantially as described.

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