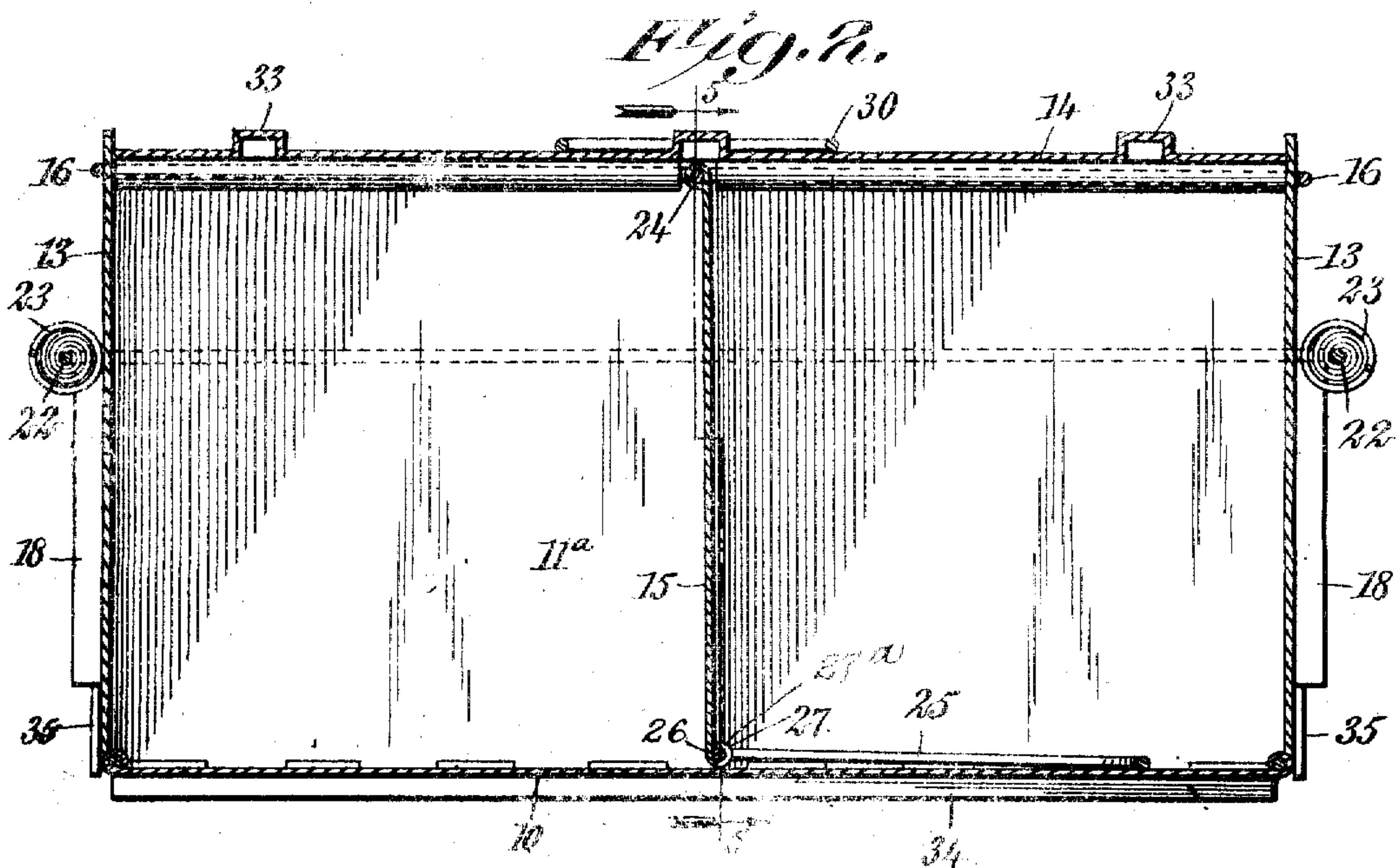
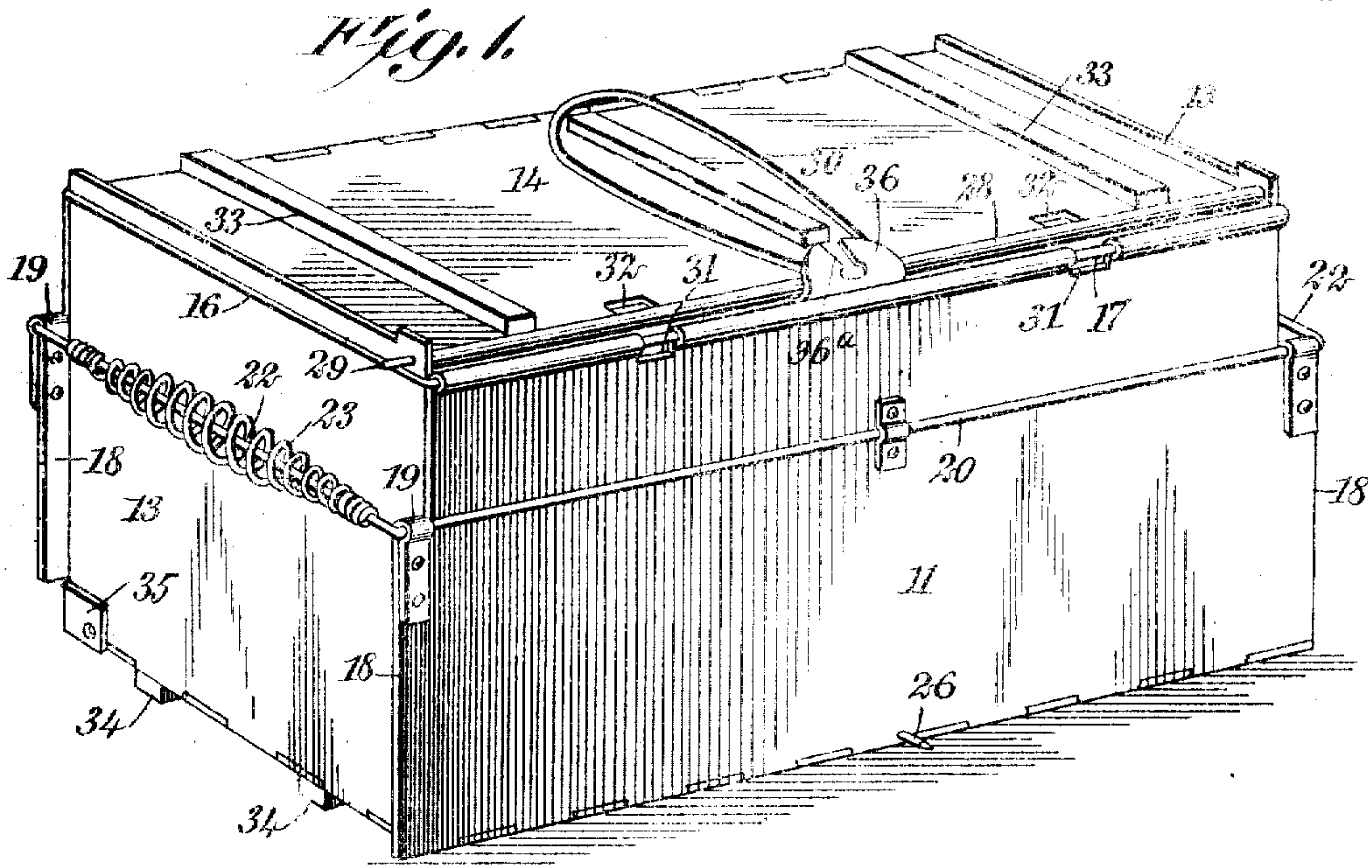


G. O. HELVIG & A. W. EWING.  
 COLLAPSIBLE SHIPPING CASE.  
 APPLICATION FILED JULY 3, 1907.

908,362.

Patented Jan. 5, 1909.

2 SHEETS—SHEET 1.



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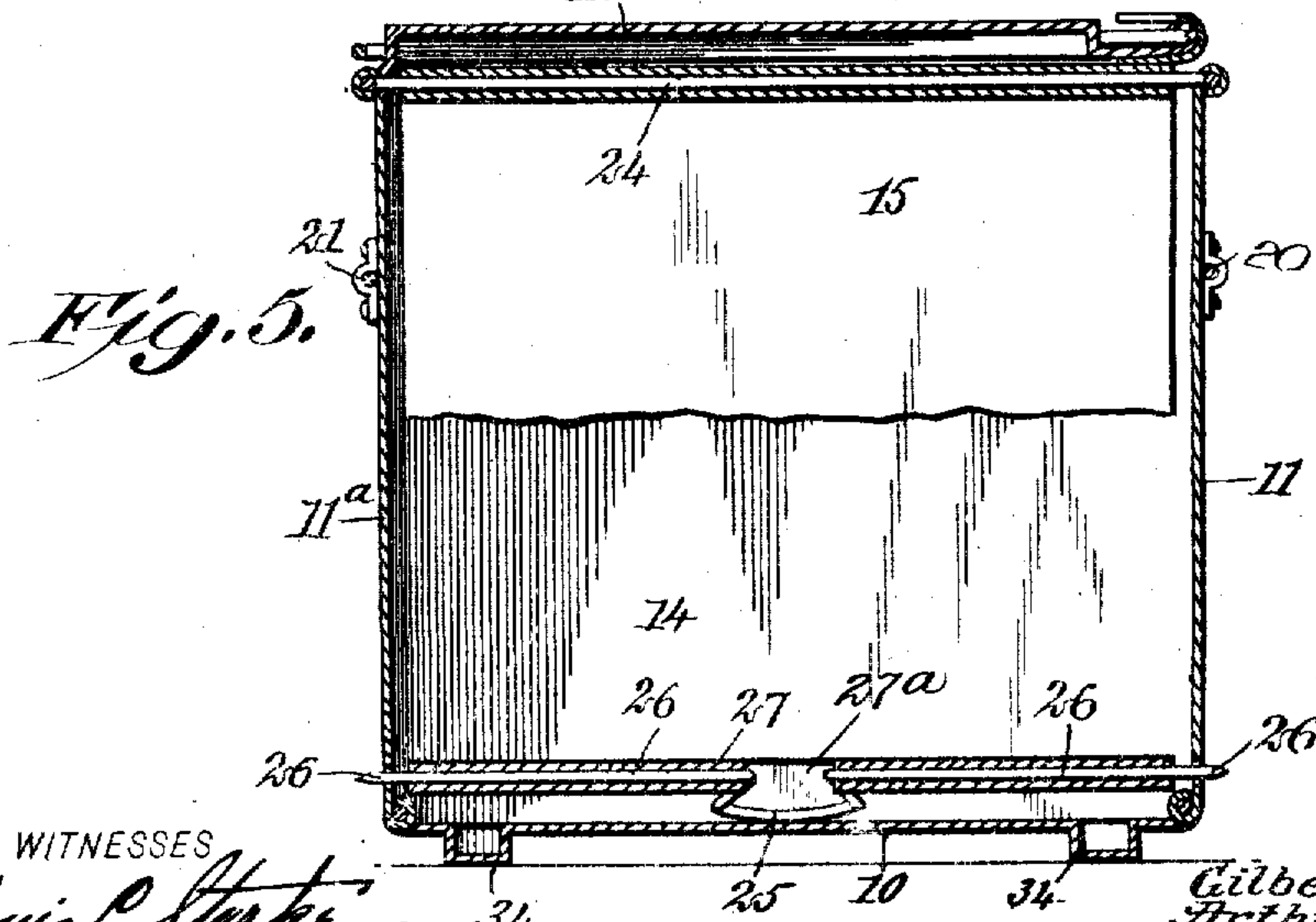
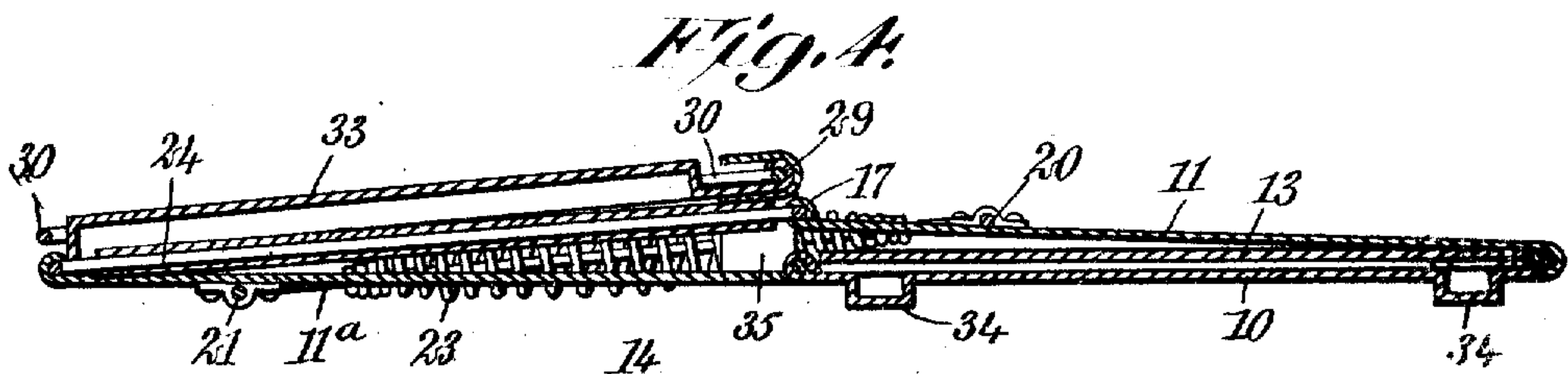
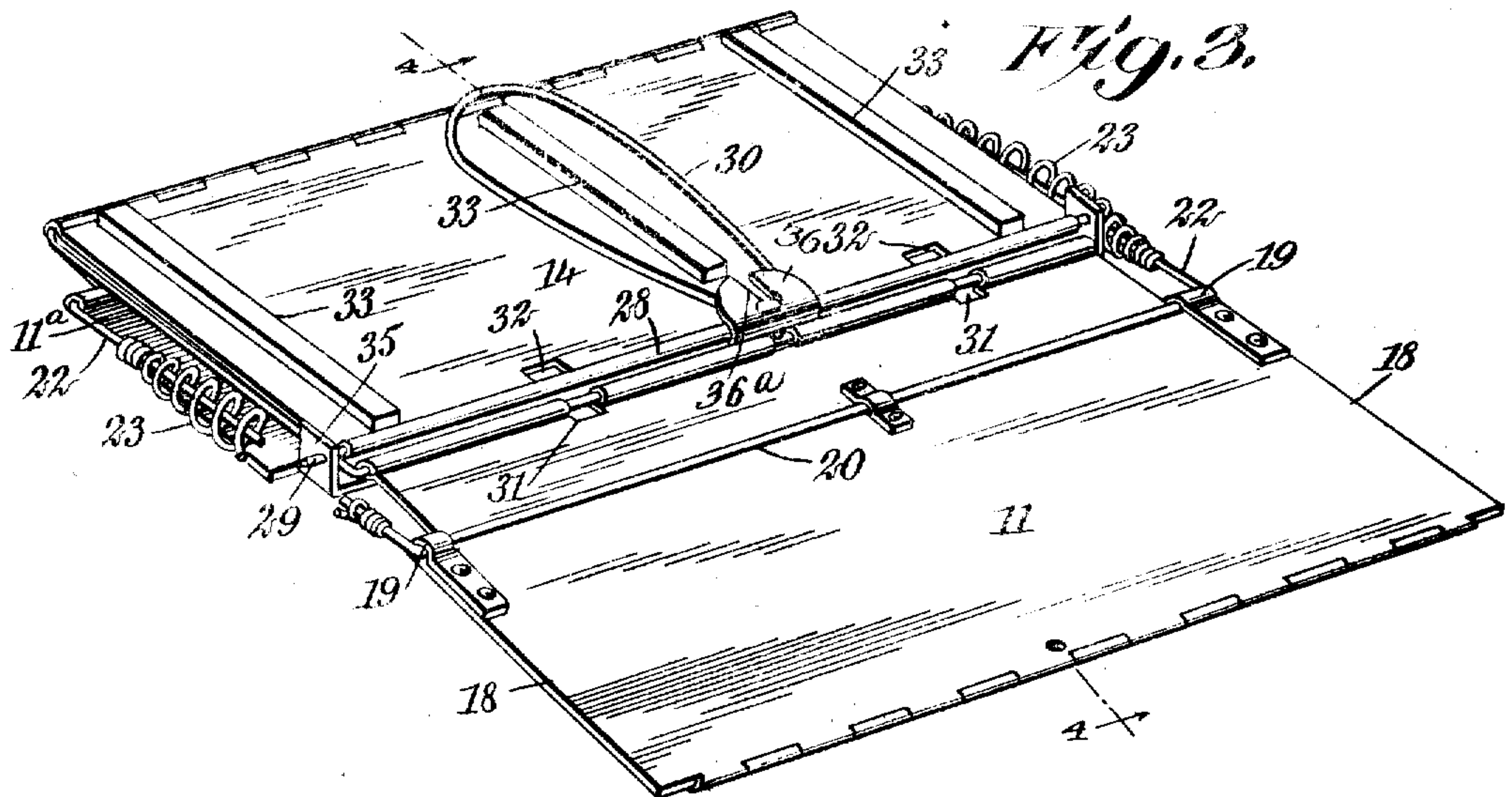
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G. O. HELVIG & A. W. EWING.  
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Patented Jan. 5, 1909.

2 SHEETS--SHEET 2.



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# UNITED STATES PATENT OFFICE.

GILBERT O. HELVIG AND ARTHUR W. EWING, OF DAWSON, MINNESOTA.

## COLLAPSIBLE SHIPPING-CASE.

No. 908,862.

Specification of Letters Patent.

Patented Jan. 8, 1909.

Application filed July 2, 1907. Serial No. 382,054.

*To all whom it may concern:*

Be it known that we, GILBERT O. HELVIG and ARTHUR W. EWING, both citizens of the United States, and residents of Dawson, in the county of Lac qui Parle and State of Minnesota, have invented a new and Improved Collapsible Shipping-Case, of which the following is a full, clear, and exact description.

This invention relates to certain improvements in shipping cases, and more particularly to an improved construction whereby the case when empty may be folded to occupy the minimum amount of space, and rigidly locked in position so that the parts going to make up the case may be held rigid in respect to each other when the case is in its open or extended position.

The invention consists in certain features of construction and combinations of parts, all of which will be fully set forth hereinafter and particularly pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures, and in which—

Figure 1 is a perspective view of a case constructed in accordance with our invention; Fig. 2 is a central vertical section through the case; Fig. 3 is a perspective view of the case in its collapsed or knocked-down position; Fig. 4 is a transverse section through the folded case taken at the line 4—4 of Fig. 3 and with the partition swung toward the left-hand end from the position indicated in Fig. 2; and Fig. 5 is a section on the line 5—5 of Fig. 2.

Our improved knock-down case may be constructed of any material and of any suitable size or form, but, as illustrated, is constructed of sheet metal and especially adapted for use as an egg-shipping case. In the construction illustrated, the case is formed of a bottom 10, front and rear walls 11 and 11<sup>a</sup>, oppositely-disposed end walls 13, a cover 14, and a vertical partition 15. All of these parts are connected together by suitable hinges and are so constructed that they may be rigidly locked in the open or the collapsed position. The two end walls 13 are hinged to the bottom and are unattached to the sides or top. The ends are adapted to fold inward into engagement with the bottom of the case, but are prevented from folding inward when the case is in its extended position, by the engagement of the cover 14 with the inner sur-

face of the ends at their upper edges. The ends are held from swinging outward beyond a position at right angles to the bottom, by bars pivotally connected to the side members, as will be hereinafter described. The two oppositely-disposed sides 11—11<sup>a</sup> are also hinged to the bottom but are connected together so as to remain at all times in positions parallel to each other.

The cover 14 is hinged to the upper edge of the rear side 11<sup>a</sup> by the hinge rod, which is located at the intersection of the rear side and the cover, and is extended to form stays 16 lying in engagement with the outer surface of the ends adjacent their upper edge, and also a stay 17 extending along the front side of the case and connected to the latter at its upper edge by the rolling over of the metal going to make up said front side. The stays being integral with the hinge rod carried by the rear side of the case, and being integral with the stay 17 extending across the front of the case, serve to maintain the two sides in parallelism at all times. The sides are also held in parallelism by a band encircling the case intermediate the top and bottom thereof and pivotally connected to both the front side and the rear side. To support this band the lower portions of the ends of the case are provided with extensions 18 beyond the plane of the ends 13, and adjacent the upper edge of these extensions are provided bearings 19 for this band. The band comprises a front bar 20 extending across the front side 11, a bar 21 extending across the rear side 11<sup>a</sup> of the case, and connecting bars 22 adjacent but spaced from the ends 13 and rigidly connected to or integral with the front and the rear bars 20 and 21. The bars 22 being spaced from the ends of the case form handles, and to facilitate the use thereof said bars may be provided with encircling coils of wire 23, the operation of which will be clearly understood.

Integral with the hinge rod of the cover and the front stay 17, or rigidly connected to said hinge rod and stay, there is provided a cross bar 24 intermediate the ends of the case and substantially parallel to the cross stays 16. This cross bar serves to support the partition 15, and the partition serves to hold the front and rear sides in position at right angles to the bottom, save when the partition is moved upon the cross bar 24 as a pivot and out of engagement with said



front and rear sides. The lower edge of the partition is provided with means for locking it in position and preventing the partition from swinging upon its pivotal support, said means preferably comprising a loop of wire 25 having its end portions 26 longitudinally movable within a bead 27 at the lower edge of the partition. The end portions 26 constitute locking pins which engage in recesses of the case, as is clearly indicated in Fig. 5, and the loop 25 constitutes not only laterally-extending portions from said locking pins, whereby the pins may be withdrawn from the recesses, but also serves as a spring for holding the pins in their operative position. The loop is disposed intermediate the two pins, and the bead 27 is cut away at its center portion to provide an opening 27<sup>a</sup>, through which the loop extends from the pins.

The cover 14, as previously described, is hinged to the rear side 11<sup>a</sup> at the upper edge thereof and when closed it lies between the upper edges of the ends to prevent the latter from moving inward. The cover is prevented from swinging into the case, by its engagement with the upper edge of the partition and the cross bar 24. The front edge of the cover is provided with a bead 28 for the reception of longitudinally-movable locking pins 29. The two pins are preferably formed of a single piece of wire, and each has a laterally-extending portion constituting one side of a spring loop 30 normally lying in engagement with the upper surface of the cover. By pressing the loop together adjacent its base, the two pins are drawn inward, while upon releasing the loop the pins are forced outward beyond the ends of the cover. The ends of the case adjacent their upper front corners, are provided with openings for the reception of these locking pins, and the cover is thus securely held in its closed position as shown in Fig. 1.

For locking the case, portions of the front side adjacent the stay 17, and portions of the cover adjacent the locking pins 29 at the front edge may be cut away to form recesses 31 and 32, respectively, for the reception of any suitable form of padlock or other locking means. The walls of the case may be reinforced by stamping in the metal beads or grooves, which tend to prevent the metal from bending save in one direction, as is well known in the art. As illustrated, the top of the case is provided with two upwardly-stamped transverse beads 33, and the bottom of the case is provided with two downwardly-stamped longitudinally-extending beads 34. The lower beads also serve to support the bottom of the case out of engagement with the floor, and the upper beads also serve to space the cases apart should they be piled in stacks.

For holding the locking pins 29 in their

innermost position and out of engagement with the ends of the case, to facilitate the opening and closing of the top, we preferably provide a retaining plate 36 soldered or secured in any suitable manner to the cover at its front edge and having a slot 36<sup>a</sup> extending into it from the rear side. The height of the space beneath the plate is substantially equal to the thickness of the material forming the pins and the loop 30, so that the plate normally holds the loop in engagement with the cover. Upon compressing the loop at its base, the sides of the loop are brought beneath the slot in the plate and the loop may then be raised to a vertical position. When so raised the sides of the slot prevent the expansion of the loop and thus retain the pins.

For locking the case in its folded position, we employ the same locking pins as are employed for holding the cover in its closed position, namely, the longitudinally movable pins 29. The rear side 11<sup>a</sup> of the cover adjacent the bottom thereof, is provided with two forwardly-extending flanges or projections 35, engaging with the outer surfaces of the ends of the case when the latter is in its open position. To collapse the case, the cover 14 is first opened to a vertical position, the locking pins 26 at the lower edge of the partition 15 are withdrawn, and the partition is swung forward out of engagement with the front and rear side walls. The ends are then swung inward into engagement with the bottom, and the front side of the case is pushed rearwardly, so that it folds down upon the two inwardly-folded ends. The cross bar 24 thus comes to a position substantially parallel with the rear side 11<sup>a</sup> and the partition is folded into engagement with said rear wall. The cover 14 is then swung forward and over the partition and rear wall to bring the front edge of the cover adjacent the lower rear side of the bottom. The locking pins 29 are then moved outward into engagement with the perforations in the lugs or projections 35, and all parts of the case will be rigidly held against movement of any sort whatever.

Various changes may be made in the construction and operation of the device within the scope of the appended claims, without departing from the spirit of our invention.

Having thus described our invention, we claim as new and desire to secure by Letters Patent:

1. A collapsible case having a bottom, sides hinged to the bottom, means connecting one of the sides to the other and pivotally secured to both for holding said sides in parallelism, ends movable inward between said sides, and a hinged cover serving in its closed position to prevent said inward movement of the ends.

2. A collapsible case having a top, a bottom, sides and ends, the sides being hinged



to the bottom, and means connecting one of the sides to the other and pivotally secured to both intermediate their tops, said means holding the sides in parallelism and spaced 5 from the ends to form handles.

3. A collapsible case having a top, a bottom, sides and ends, the sides and ends being hinged to the bottom and the top being hinged to the upper edge of the rear side, and 10 the end walls being movable inward into engagement with the bottom, and means connecting the sides to retain them in parallelism and extending across the ends and spaced therefrom, said connecting means having 15 coil wires inclosing the same to serve as handles.

4. A collapsible case having a top, a bottom, sides and ends, the sides and ends being hinged to the bottom and the top being 20 hinged to the upper edge of the rear side, the end walls being movable inward into engagement with the bottom and the sides being held in parallelism, the ends being provided with perforations adjacent their upper front corners and the rear side being provided with 25 perforated lugs adjacent its lower corners and extending forwardly, and the top being provided with outwardly-movable locking pins adapted for insertion in the first-mentioned 30 perforations when the case is in its working position and adapted for insertion in the perforations of the lugs when the case is in its collapsed position.

5. A collapsible case having a cover, a bottom, sides and ends, the cover being hinged 35 to the upper edge of one side, and the ends being provided with perforations adjacent their upper front corners and two longitudinally-movable spring-pressed locking pins 40 carried by said cover adjacent its front edge and adapted for insertion within said perforations, both of said locking pins being formed of a single piece of metal and having a spring loop intermediate its ends, whereby 45 the locking pins may be withdrawn.

6. A collapsible case having a cover, a bottom, sides and ends, the cover being hinged

to the upper edge of one side, and the ends being provided with perforations adjacent their upper front corners, two longitudinally- 50 movable locking pins carried by said cover adjacent its front edge and adapted for insertion within said perforations, each of said locking pins having a laterally extending 55 portion intermediate the ends of the cover, whereby the locking pins may be withdrawn, and a plate having a slot therein for the reception of said laterally-extending portions to retain the pins in their withdrawn position.

7. A collapsible case having a bottom, 60 sides hinged thereto, means connecting said sides to hold them in parallelism, hinged ends movable inward to permit the collapsing of the case, a cross bar connecting said sides at their upper edges intermediate the ends thereof, 65 a partition parallel to the ends of the case and suspended from said cross bar, and spring-pressed outwardly-movable locking pins carried by said partition at its lower edge, said partition and ends when in opera- 70 tive position serving to prevent the collapsing of the case.

8. A collapsible case having a top, a bottom, sides and ends, the top being hinged to the rear side at its upper edge, stays pivotally 75 connected to the front and rear sides adjacent their upper edges and holding said sides in parallelism, a cross bar connecting said sides at their upper edges intermediate the ends thereof, a partition parallel to the 80 ends of the case and suspended from said cross bar, and outwardly-extending spring-pressed pins carried by said partition at the lower edge thereof and adapted for engagement with the sides adjacent their lower 85 edges for holding said partition in position.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

GILBERT O. HELVIG.  
ARTHUR W. EWING.

Witnesses:

EDWARD BERGENDALE,  
P. A. HALVORSON.