

A. W. OFFINEER.
FOLDING EGG CRATE.
APPLICATION FILED NOV. 14, 1908.

929,162.

Patented July 27, 1909.
2 SHEETS—SHEET 1.

Fig. 1.

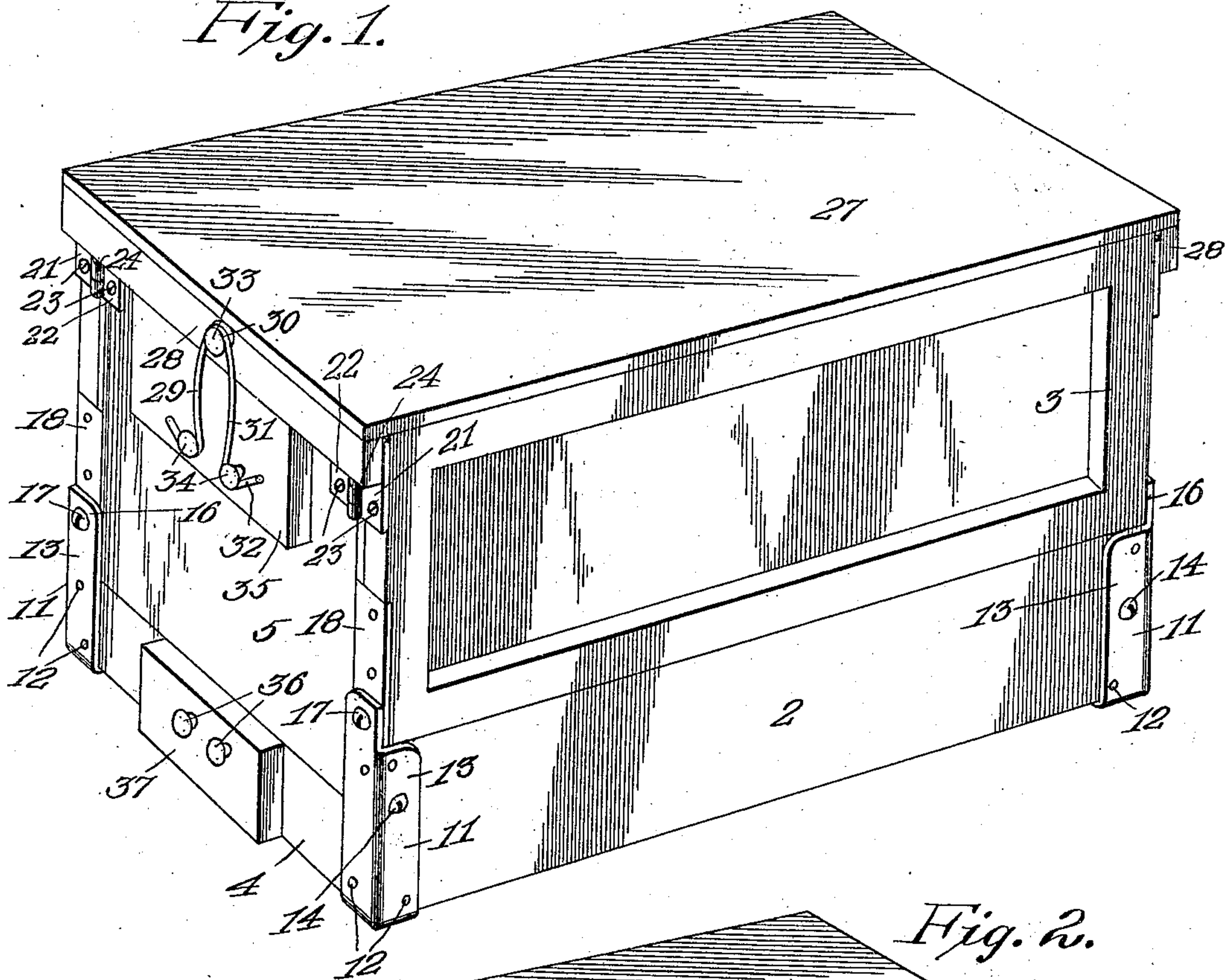
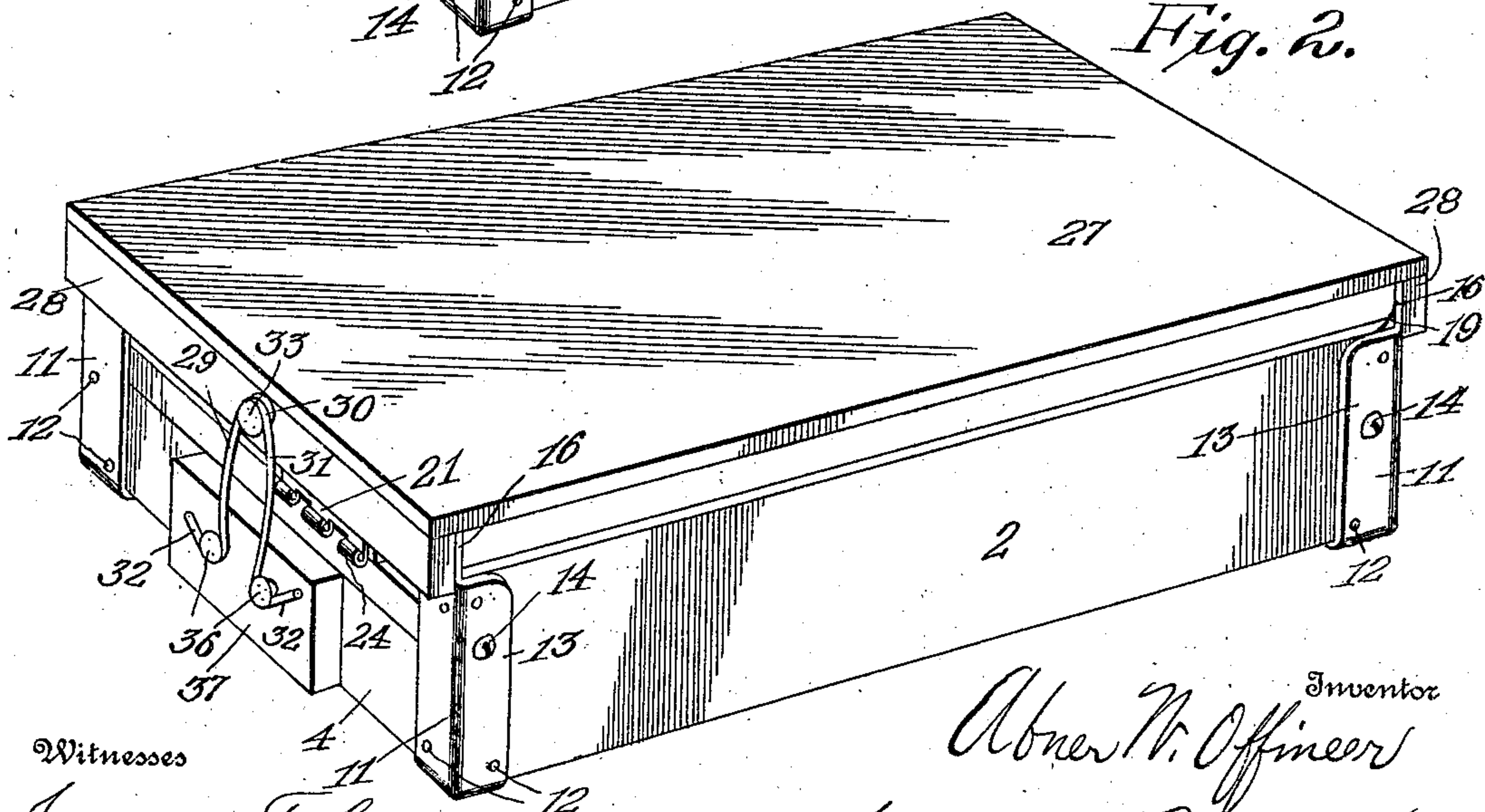


Fig. 2.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 3.

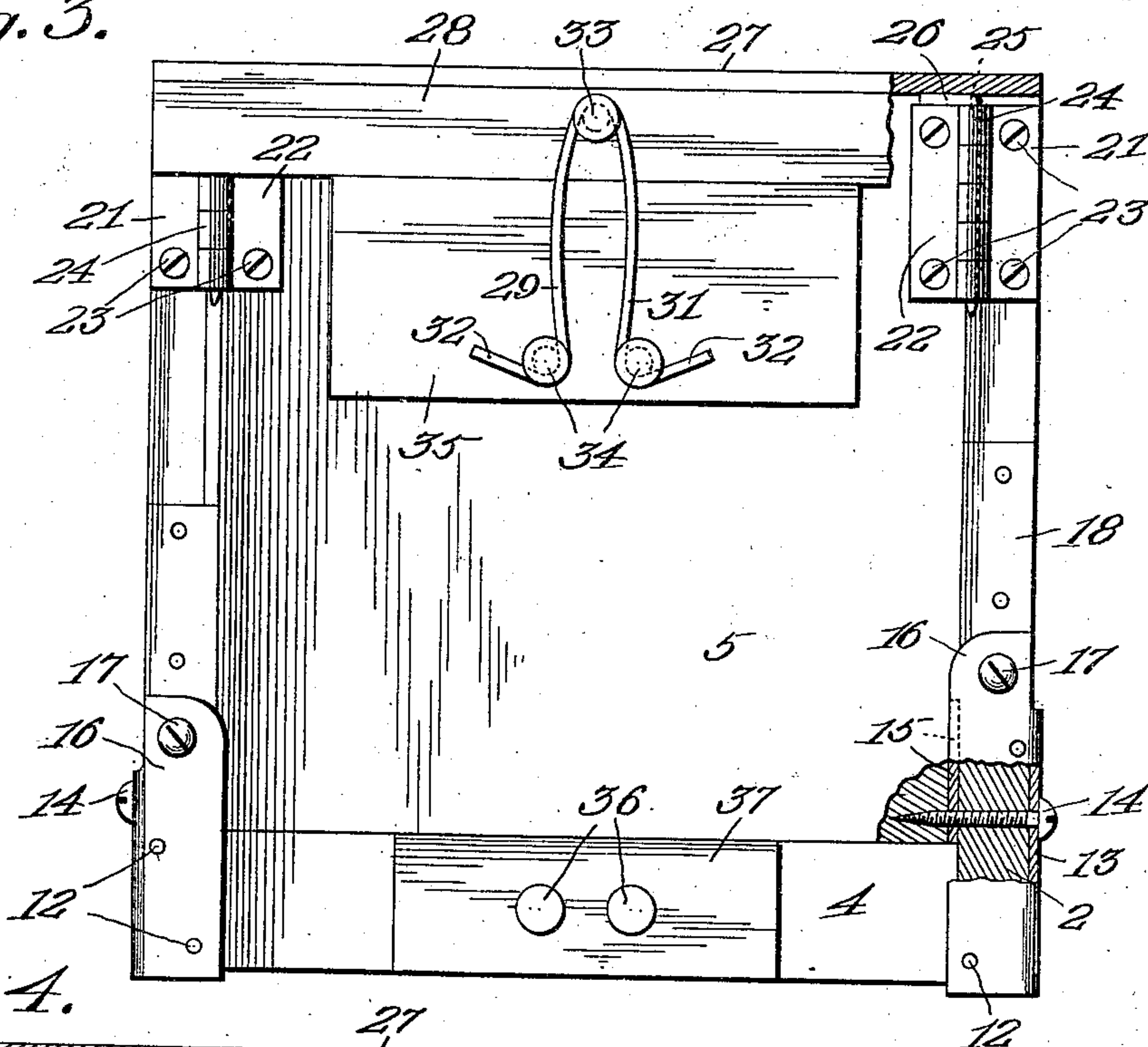


Fig. 4.

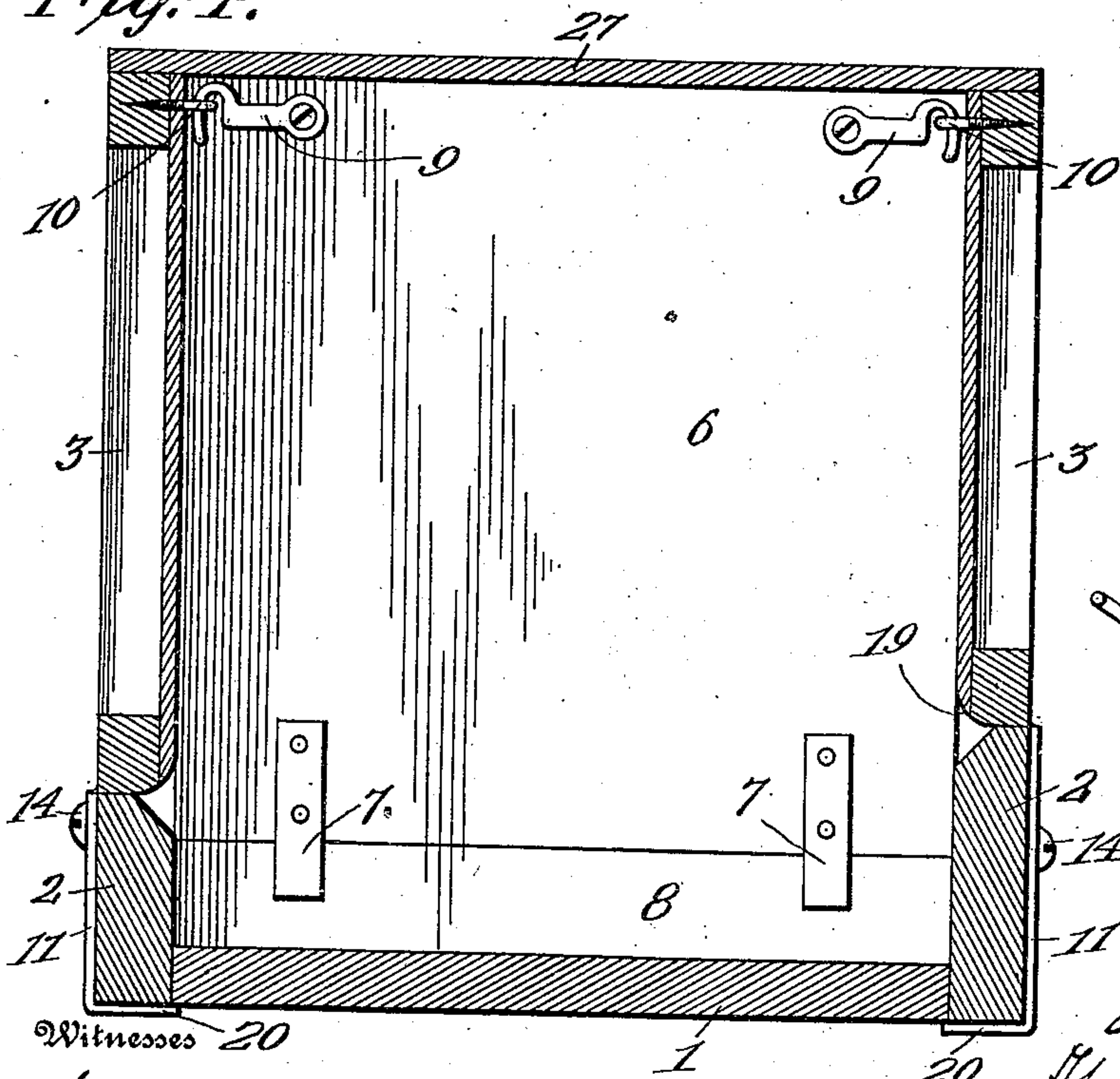


Fig. 5.

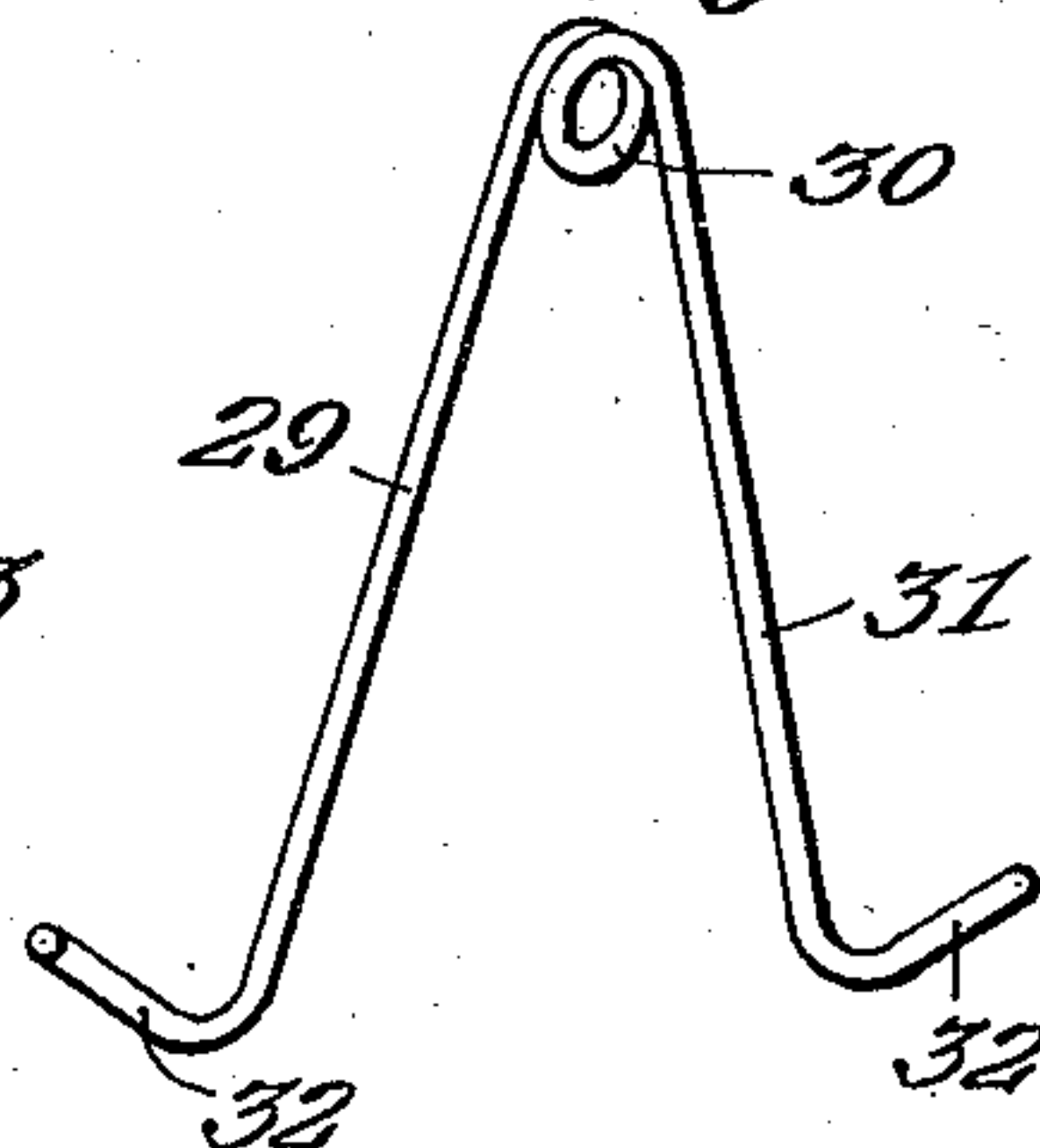
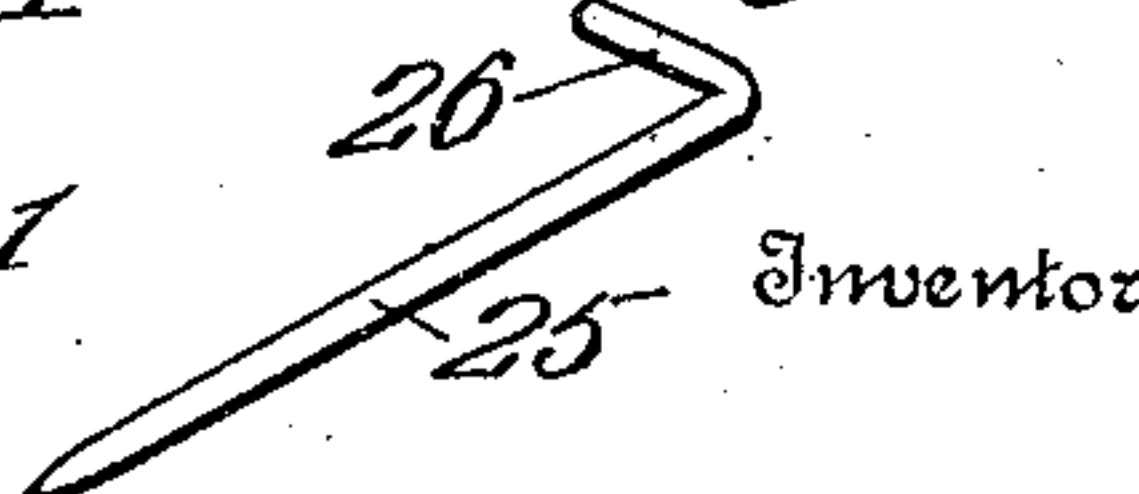


Fig. 6.



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UNITED STATES PATENT OFFICE.

ABNER W. OFFINEER, OF VERSAILLES, MISSOURI.

FOLDING EGG-CRATE.

No. 929,162.

Specification of Letters Patent.

Patented July 27, 1909.

Application filed November 14, 1908. Serial No. 462,717.

To all whom it may concern:

Be it known that I, ABNER W. OFFINEER, a citizen of the United States, residing at Versailles, in the county of Morgan and State of Missouri, have invented certain new and useful Improvements in Folding Egg-Crates, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to improvements in folding crates for eggs, merchandise and the like and also to devices for fastening the covers of crates or boxes.

One object of the invention is to simplify and improve the construction of folding crates and thereby render them less expensive and more durable and convenient.

Another object of the invention is to provide an improved cover fastening means which will effectively secure the cover of the crate when the body of the latter is either open or folded.

With the above and other objects in view, the invention consists of the novel features of construction and the combination and arrangement of parts hereinafter fully described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of the improved crate in its set up position; Fig. 2 is a similar view of the same in its knocked down or folded position; Fig. 3 is an end view of the crate with parts broken away and in section; Fig. 4 is a transverse sectional view; Fig. 5 is a detail perspective of the resilient cover fastening member; and Fig. 6 is a similar view of the removable pin of one of the fasteners which unite the sides and ends of the crate.

The body of the improved crate comprises a rectangular bottom 1, two side walls each composed of a stationary lower section 2 and an inwardly folding upper section 3, and two ends each of which latter is similarly composed of a stationary lower section 4 and an inwardly folding upper section 5. The stationary sections of the sides and ends are rigidly secured to the edges of the bottom 1 and one of the two sections 2 is of greater height than the other section 2 and the last mentioned section is of greater height than the two end sections 4, whereby the upper side sections 3 will fold over in different horizontal planes above the two upper end sections 5. The bottom 1 is of greater length than the combined height of the upper

end sections 5 and said lower end sections 4 project sufficiently above the upper surface of the bottom 1 to permit the usual cardboard filler sections to be placed in a folded position upon the bottom 1 beneath the inwardly folded end sections 5.

A removable partition 6 is preferably provided between the two sides and adapted to be placed upon the bottom of the crate when it is folded. Said partition has secured to its opposite sides depending straps 7 adapted to receive between them a transverse cleat 8 secured to the bottom 1 between the side sections 2. Hooks 9 are pivoted to the upper portions of the partition 6 and are adapted to engage eyes 10 upon the upper side sections 3 for the purpose of holding said partition in an upright position and assisting in bracing the crate when set up for use.

11 denotes angle metal corner plates secured to the lower corners of the body of the crate by fastenings 12. Each of said corner plates 11 has an upstanding side flange 13 apertured to receive a screw or other pivot 14 which passes through a metal plate 15 and into one of the upper end sections 5, said plate 15 being secured to the edge of such end section. The screws 14 form the pivots for said upper folding end sections 5 and are clearly shown in Fig. 3 of the drawings. Each of said angle corner plates 11 is also formed with an end flange 16, the upper end of which extends above the top of the side flange 13 and is apertured to receive a screw or other pivot 17, which latter passes through a plate 18 and into one of the upper side sections 3 so as to pivot or hinge such side section. Said plates 18 are similar to the plates 15 and are secured to the edges of the folding side sections 3. To permit the folding upper sections of both the sides and ends to fold inwardly the inner corners of their bottom edges are rounded, as shown at 19 in Fig. 4. It will be seen that the angle metal corner plates not only serve to effectively unite the parts 1, 2, 8 of the bottom but also serve as hinge members to receive the pivots or pintles of the folding side and end sections. Said angle corner plates 11 are also provided with bottom flanges 20 which project below the plane of the lower surface of the bottom 1 and serve as spacing feet to prevent said bottom from contacting with the floor and thereby reducing wear.

In order to detachably connect the upper

portions of the folding side and end sections 3, 5, improved fasteners are provided. Said fasteners are shown more clearly in Fig. 3 and each consists of two plates 21, 22 apertured to receive fastening screws 23, the plates 21 being arranged upon the end edges of the side sections 3 and the plates 22 upon the outer faces of the end sections 5. The adjacent edges of the plates 21, 22 are formed with spaced eyes or loops 24 which register or aline with each other to receive a removable pin 25. Said pin, as shown in Fig. 6, has a pointed lower end to permit it to be readily passed through the alining loops or eyes 24 and at its upper end is a right angularly bent finger piece 26. The removable fastening pins 25 are adapted to be retained in the plates 21, 22 by a removable cover consisting of a rectangular top portion 27 and two transverse end cleats 28, the latter being secured to its ends and depending from the same. The top portion 27 of the cover is adapted to engage the outer ends of the pins 25 to retain them in the plate 21, 22 and the end cleats or strips 28 are adapted to press the finger pieces 26 of said pins inwardly against the end sections 5, as will be readily understood upon reference to Fig. 3. While the fastenings just described serve to effectively unite the folding side and end sections of the body of the crate, it will be understood that any other suitable fastening devices may be substituted for them.

The improved cover fastening device comprises a member 29 adapted to be secured to either the cover or the crate body and provided with resilient hook-shaped ends or arms to engage keeper pins or studs upon either the body or cover. As illustrated in the drawings, said fastening members are substantially V-shape and constructed of resilient wire, each member being formed from a single piece by bending the same at its center to form a coil or eye 30 and two diverging spring arms 31 having bent or hook-shaped ends 32. The eye 30 is adapted to receive a screw or other fastening 33 which attaches said member to the center of one of the end cleats 28 of the cover. The hook-shaped arms 31 are adapted to be sprung into engagement with headed keeper studs 34 arranged in spaced relation upon one of the folding end sections 5 and preferably upon a block 35 secured to said end section and adapted to be engaged by the cleat 28 when the cover is in position upon the body of the crate. By springing the arms 31 together they may be readily engaged with and disengaged from the headed keeper pins or studs 34 and when engaged with the latter they will effectively retain the cover upon the body. In order to permit the fastening member to be used for securing the cover upon the crate body when the latter is fold-

ed, as shown in Fig. 2, similar keeper studs 36 are provided upon a block 37 secured to one of the end sections 4.

From the foregoing it will be seen that the invention provides a folding crate or box for eggs, merchandise and the like which is exceedingly simple in construction and, consequently, inexpensive to produce, strong and durable. It may be quickly and easily set up for use and as readily knocked down or folded for storage or transportation.

Having thus described the invention what is claimed is:

1. The hereindescribed folding crate or box comprising a bottom, sides and ends, each composed of stationary lower sections secured to the side and end edges of the bottom and inwardly folding upper sections, metal plates secured upon the lower portions of the vertical end edges of the folding sections of both the sides and ends, said plates being formed with openings, angle metal corner plates, each having a horizontal bottom flange to engage the bottom face of the body, an upright side flange secured upon the stationary lower section of one side of the crate and an upright end flange secured upon the stationary lower section of one of the ends of the crate, said upright side and end flanges of the angular corner plates being formed with openings to register with said openings in the metal plates upon the folding sections of the sides and ends, screws passed through said registering openings in the corner plates and the first mentioned plates, whereby the upper sections of said sides and ends are pivoted to fold inwardly and means for detachably uniting the upper portions of said folding side and end sections.

2. The hereindescribed folding crate or box comprising a bottom, sides and ends, each composed of stationary lower sections secured to the side and end edges of the bottom and inwardly folding upper sections, metal plates secured upon the lower portions of the vertical end edges of the folding sections of both the sides and ends, said plates being formed with openings, angle metal corner plates, each having a horizontal bottom flange to engage the bottom face of the body, an upright side flange secured upon the stationary lower section of one side of the crate and an upright end flange secured upon the stationary lower section of one of the ends of the crate, said upright side and end flanges of the angular corner plates being formed with openings to register with said openings in the metal plates upon the folding sections of the sides and ends, screws passed through said registering openings in the corner plates and the first mentioned plates, whereby the upper sections of said sides and ends are pivoted to fold inwardly, co-acting fastening plates secured upon the upper portions of the end edges of the upper side sections and

upon the upper portion of the outer faces of the upper end section, said plates being formed with a plurality of spaced eyes adapted to enter between and register with each other
5 when the crate is set up, removable fastening pins passed through the registering eyes of said fastening plates and having right angularly bent upper ends disposed substantially in the horizontal plane of the upper edges of
10 the sides and ends of the crate, a cover adapted to engage the angular upper ends of the fastening pins and to retain them in said registering eyes, said cover having at its ends depending transverse cleats adapted to overlap
15 the upper portions of said fastening plates and means for retaining said cover upon the crate.

3. A folding crate or box comprising a bottom, inwardly folding sides and ends connected thereto, means for securing said sides
20 and ends in open position, blocks secured to the ends of the crate adjacent to its top and

bottom, pairs of spaced headed studs arranged on each of said blocks, a cover having at its ends depending transverse cleats, headed pins upon said cleats, and resilient
25 keeper members, each formed from a single piece of wire coiled at its center to receive one of the headed pins on the cleats of the cover, the ends of said resilient keeper member being bent angularly in opposite direc-
30 tions to provide hooks adapted to enter between and to be sprung into and out of engagement with said headed studs on the blocks, whereby the cover may be fastened
35 to the crate in its opened or folded position.

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

ABNER W. OFFINEER.

Witnesses:

C. W. KAVANAUGH,
J. E. BONTOR.