

J. BIRO.  
FOLDING BOX AND CRATE.  
APPLICATION FILED JULY 16, 1910.

997,739.

Patented July 11, 1911.

2 SHEETS—SHEET 1.

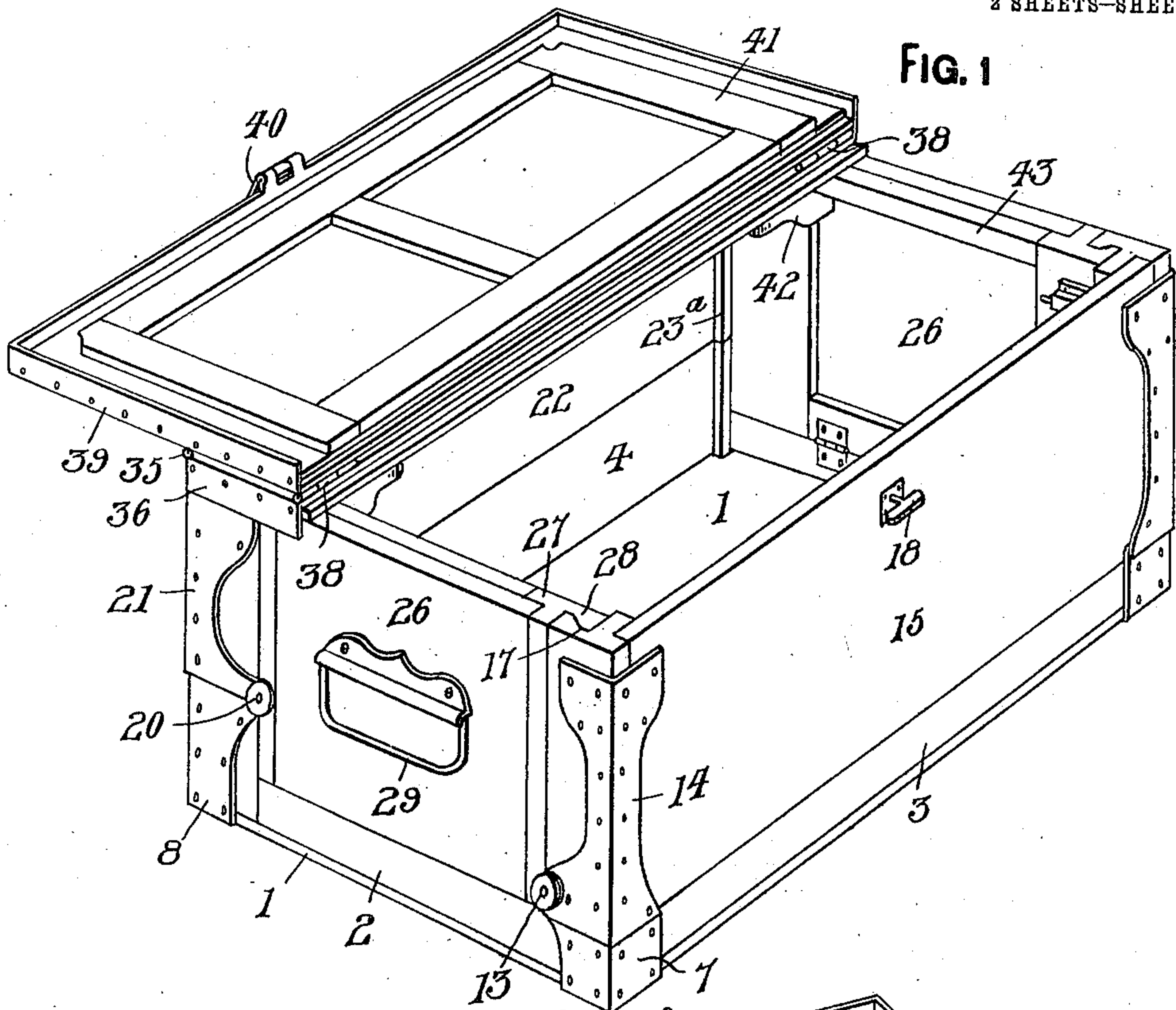
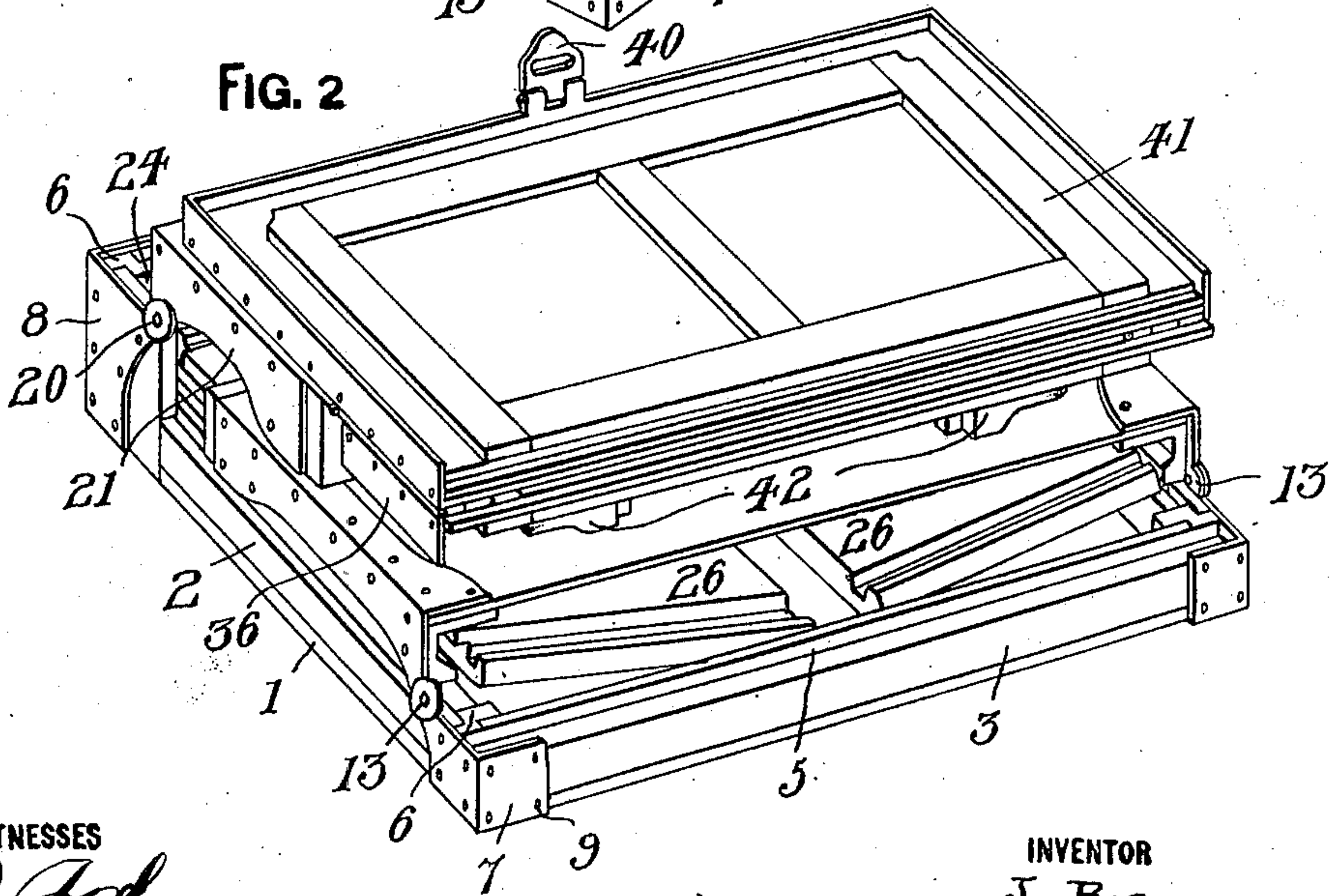


FIG. 2



WITNESSES

*J. O. Hoffman,*  
*K. H. Luttel*

INVENTOR

*J. BIRO,*

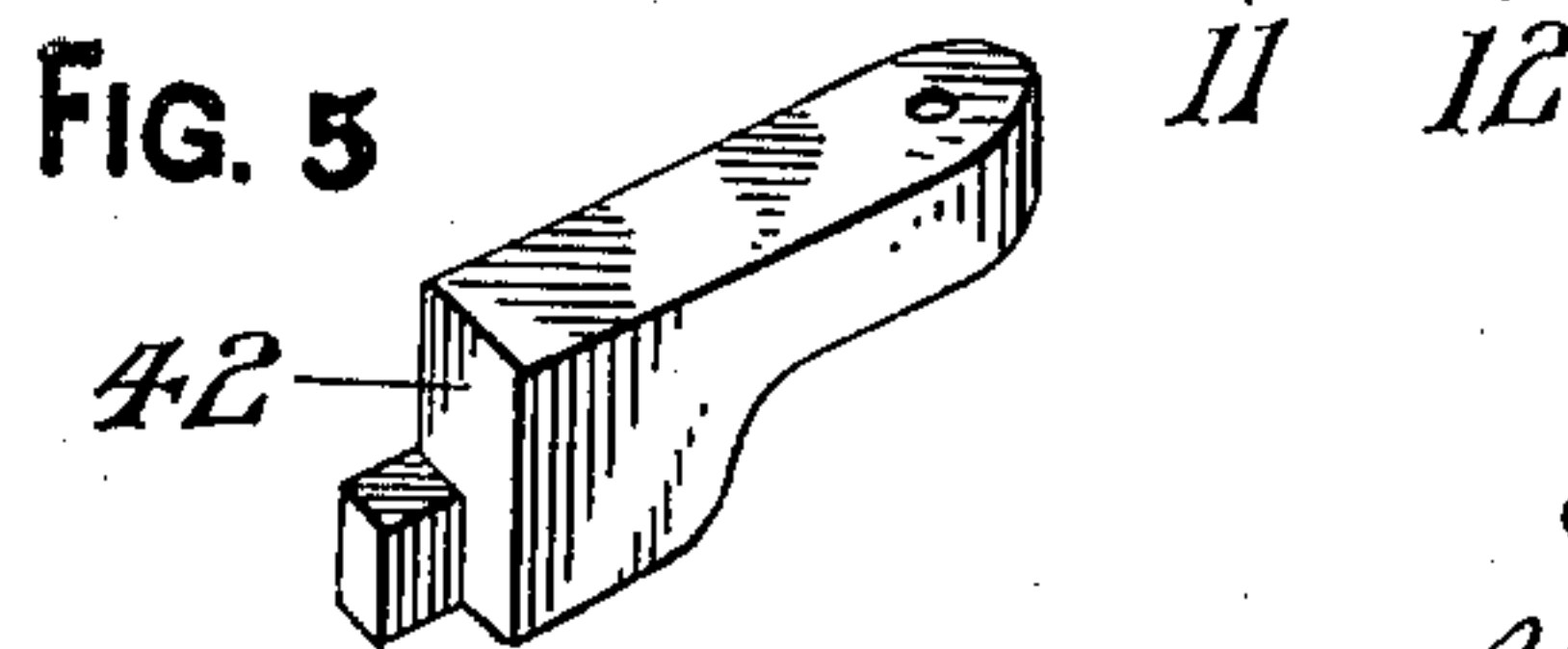
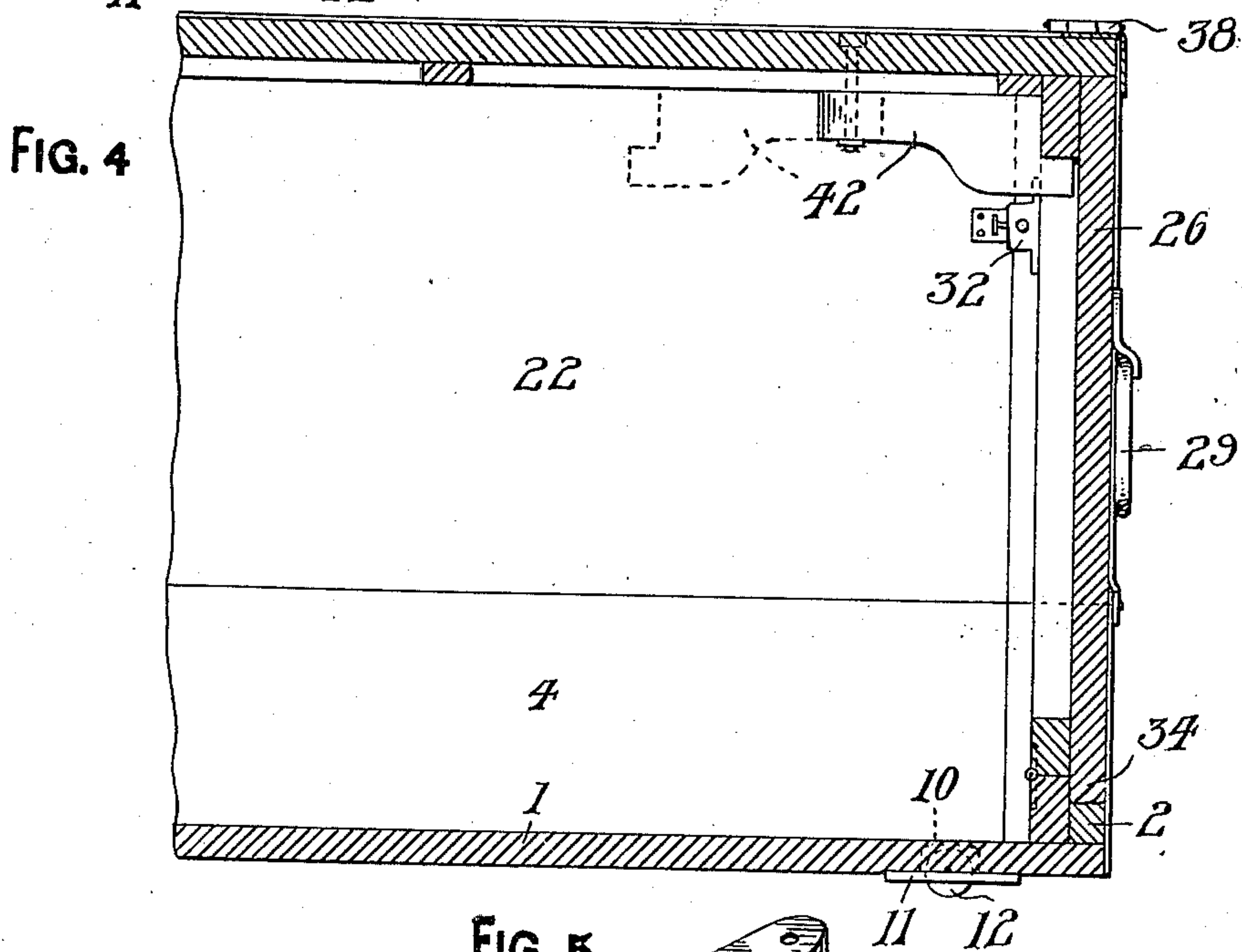
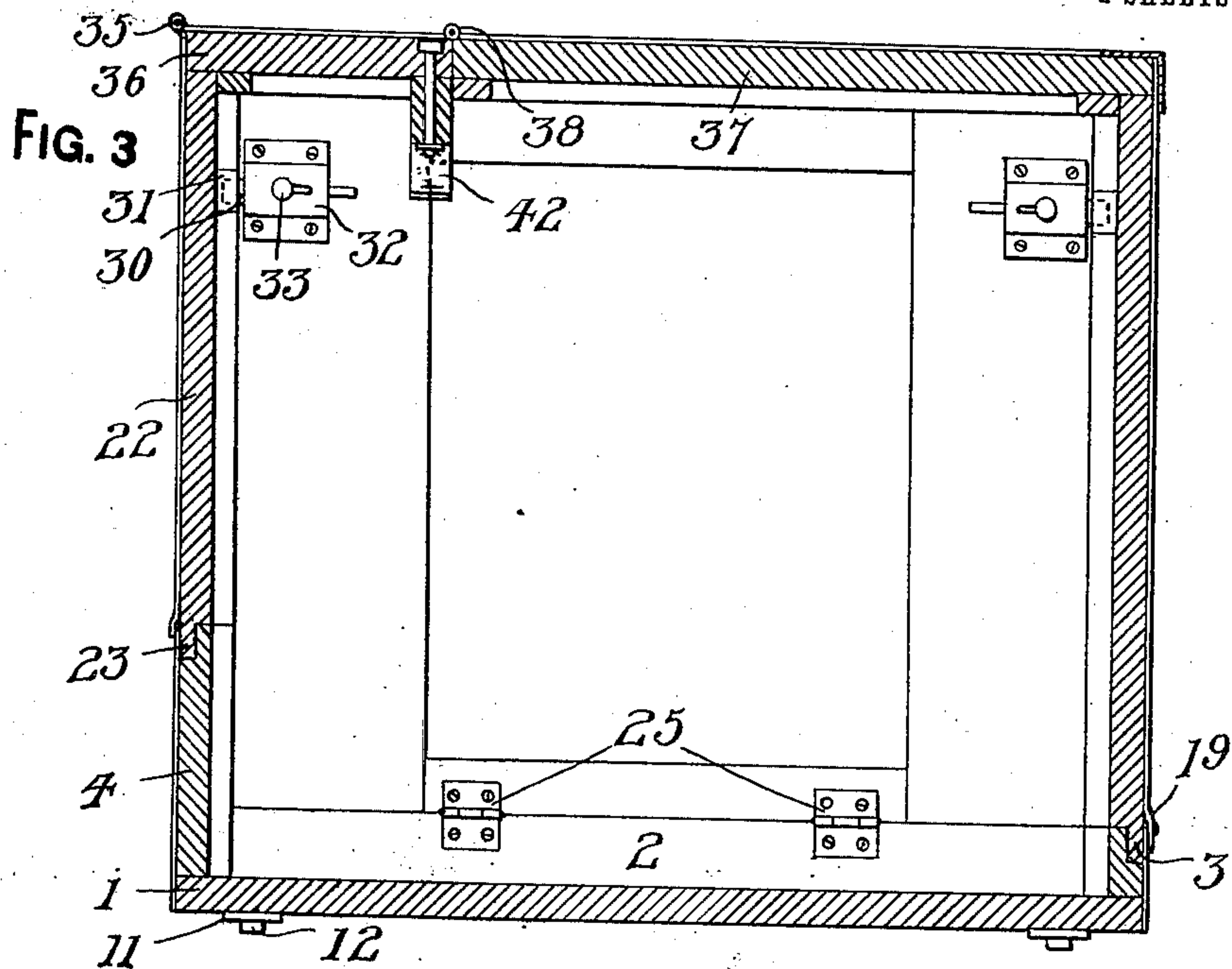
By *A. C. Ewert & Co.*  
ATTORNEYS.

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2 SHEETS-SHEET 2.



WITNESSES

*J. C. Appelman*  
*R. H. Butler*

INVENTOR

J. BIRO.

By *A. C. Dyer*

ATTORNEYS.



# UNITED STATES PATENT OFFICE.

JULIUS BIRO, OF NEW YORK, N. Y.

## FOLDING BOX AND CRATE.

997,739.

Specification of Letters Patent.

Patented July 11, 1911.

Application filed July 16, 1910. Serial No. 572,228.

*To all whom it may concern:*

Be it known that I, JULIUS BIRO, a subject of the King of Hungary, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Folding Boxes and Crates, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to folding boxes and crates, and the objects of my invention are to provide a folding or collapsible box that can be advantageously used for transporting various kinds of merchandise, and to furnish a box with simple and effective means whereby it can be collapsed to occupy a comparatively small space in storage or when transported to the original owner after having been used.

Further objects of the invention are to furnish a folding or collapsible box with novel means for retaining the parts thereof rigid when in a set up position, and to provide a box of the above type that is durable, strong, inexpensive to manufacture, and efficient for the purposes for which it is intended.

These and such other objects as may hereinafter appear are attained by the novel construction, combination and arrangement of parts to be hereinafter specifically described and then claimed.

Reference will now be had to the drawings forming part of this specification, wherein there is illustrated a preferred embodiment of the invention, but it is to be understood that the structural elements thereof can be varied or changed, as to the size, shape and manner of assemblage without departing from the spirit and scope of the invention.

In the drawings:—Figure 1 is a perspective view of the box with the lid thereof open, Fig. 2 is a similar view of the box collapsed or folded, Fig. 3 is an enlarged vertical cross sectional view of the box, Fig. 4 is a vertical longitudinal sectional view of a portion of the same, and Fig. 5 is a perspective view of a detached latch adapted to form part of the box.

A folding box in accordance with my invention comprises a bottom, end walls hinged thereto and adapted to fold upon said bottom, a front wall hinged to said bottom and adapted to fold upon said end walls, a rear wall supported by said bottom

and adapted to fold upon the outer side of said front wall, a sectional lid hinged to the upper rear edge of said rear wall and adapted to fold upon the outer side of said rear wall, and devices for retaining the various walls in an upright and rigid position while the box is being used.

The bottom comprises a plate 1 provided with auxiliary end walls 2, an auxiliary front wall 3 and an auxiliary rear wall 4. The auxiliary walls have the upper edges thereof mortised or grooved, as at 5 and the ends of these walls are reinforced by interior Z-shaped corner pieces 6 and exterior metallic corner pieces 7 and 8, the latter being secured to the auxiliary walls and to the bottom plate 1 by nails or other fastening means 9. The bottom plate 1 has the under side thereof recessed, as at 10 and provided with bearing plates 11 for revolvable rollers 12, these rollers facilitating the movement of the box over a surface.

Hinged to the corner pieces 7, as at 13 are the exterior metallic corner pieces 14 of the front wall 15, said front wall having interior corner pieces 16 provided with grooves 17. The outer side of the front wall 15 adjacent to the upper edge thereof is provided with a pivoted staple or latch 18 for a purpose that will hereinafter appear. The lower edge of the front wall 15 is provided with a tongue 19 adapted to enter the mortise or groove of the auxiliary wall 3.

Hinged to the exterior metallic corner pieces 8, as at 20 are the exterior metallic corner pieces 21 of the rear wall 22, this rear wall having a depending tongue 23 adapted to enter the mortise or groove of the auxiliary rear wall 4. The rear wall 22 is also provided with corner pieces 23<sup>a</sup> and these corner pieces have vertical grooves similar to the grooves 17 of the corner pieces 16, the grooves of the corner pieces 23<sup>a</sup> vertically alining with grooves 24 formed in the corner pieces 6 of the auxiliary rear wall 4.

Hinged to the inner edges of the auxiliary end walls 2, as at 25 are the end walls 26. These end walls have the vertical edges thereof provided with corner pieces 27 having tongues 28 adapted to enter the grooves 17 and 24 of the corner pieces 16, 23 and 6. The outer sides of the end walls 26 are provided with handles 29 and the inner sides thereof adjacent to the upper edges are provided with spring pressed latches 30 adapted



to enter keepers 31 carried by the corner pieces 16 and 23 of the front and rear walls 15 and 22 respectively. The spring pressed latches 30 are of a conventional form and are housed within casings 32 and provided with knobs 33 whereby said latches can be easily shifted to release the end walls 26 and allow said walls to be folded upon the bottom plate 1. The lower edges of the end walls 26 are provided with depending tongues 34 adapted to enter the mortise or grooves of the auxiliary end walls 22.

Connected to the upper rear edges of the rear wall 22 by strap hinges 35 are the sections 36 and 37 of a lid, these sections being hinged, as at 38 by a continuation of the strap hinges 35. The lid sections 36 and 37 are bound by metallic straps 39 adapted to engage the outer upper edges of the end walls 26 and the front wall 15. The front edge of the lid section 37 is provided with a hinged hasp 40 adapted to be held by the staple or latch 18 of the front wall 15, whereby the lid will be retained in a closed position upon the box. The inner side of the lid sections 36 and 37 are provided with frames 41 and these frames are adapted to brace the inner upper edges of the walls 26, 15 and 22.

The lid section 36 at the forward edge thereof is provided with pivoted cleats 42 and these cleats are adapted to be swung under transverse braces 43 arranged at the upper inner edges of the end walls 26 between the corner pieces 27 thereof, the pivoted cleats 42 retaining the lid section 36 in a closed position while the lid section 37 is in an open position, as best shown in Fig. 1 of the drawings.

After the pivoted cleats 42 have been swung to an open position, the spring pressed latches 30 can be easily shifted to release the end walls 26. These walls can then be folded inwardly upon the bottom plate 1. The front wall 15 can then be folded upon the end walls 26, the rear wall 22 upon the outer side of the front wall 15, and then the lid section 37 folded rearwardly upon the outer sides of the lid section 36 and the rear wall 22.

It is preferable to make the box of wood, while the trimmings thereof are made of metal, and it is in this connection that I reserve the right to provide the walls 15, 22 and 26 with openings or to construct the

same of slats, whereby the box can be used as a crate for poultry or other stock.

What I claim is:—

1. A folding box comprising a bottom plate, auxiliary front, rear and end walls carried by said plate, exteriorly arranged angle-shaped corner pieces connected to said auxiliary walls, end walls hinged to said auxiliary end walls, a front wall mounted upon the auxiliary front wall, angle-shaped corner pieces secured to the ends of the front wall, a rear wall adapted to be seated upon the auxiliary rear wall, angle-shaped corner pieces carried by the ends of the rear wall, means for hinging the corner pieces of the front and rear walls to the corner pieces secured to the auxiliary walls, grooved interior corner pieces for the ends of the front wall, said interior corner pieces seated against the exterior corner pieces of the front wall, said end walls provided with tongues and grooves interlocking the interior corner pieces of the front walls, and a lid hinged to the rear wall and adapted to be coupled to the front wall.

2. A folding box comprising a bottom plate, auxiliary front, rear and end walls carried by said plate, exteriorly arranged angle-shaped corner pieces connected to said auxiliary walls, end walls hinged to said auxiliary end walls, a front wall mounted upon the auxiliary front wall, angle-shaped corner pieces secured to the ends of the front wall, a rear wall adapted to be seated upon the auxiliary rear wall, angle-shaped corner pieces carried by the ends of the rear wall, means for hinging the corner pieces of the front and rear walls to the corner pieces secured to the auxiliary walls, grooved interior corner pieces for the ends of the front wall, said interior corner pieces seated against the exterior corner pieces of the front wall, said end walls provided with tongues and grooves interlocking the interior corner pieces of the front walls, a lid hinged to the rear wall and adapted to be coupled to the front wall, and latches carried by the end walls and engaging with the front and rear walls.

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

JULIUS BIRO.

Witnesses:

ANDREW SZENDREY,  
STEPHEN CSENSDES.