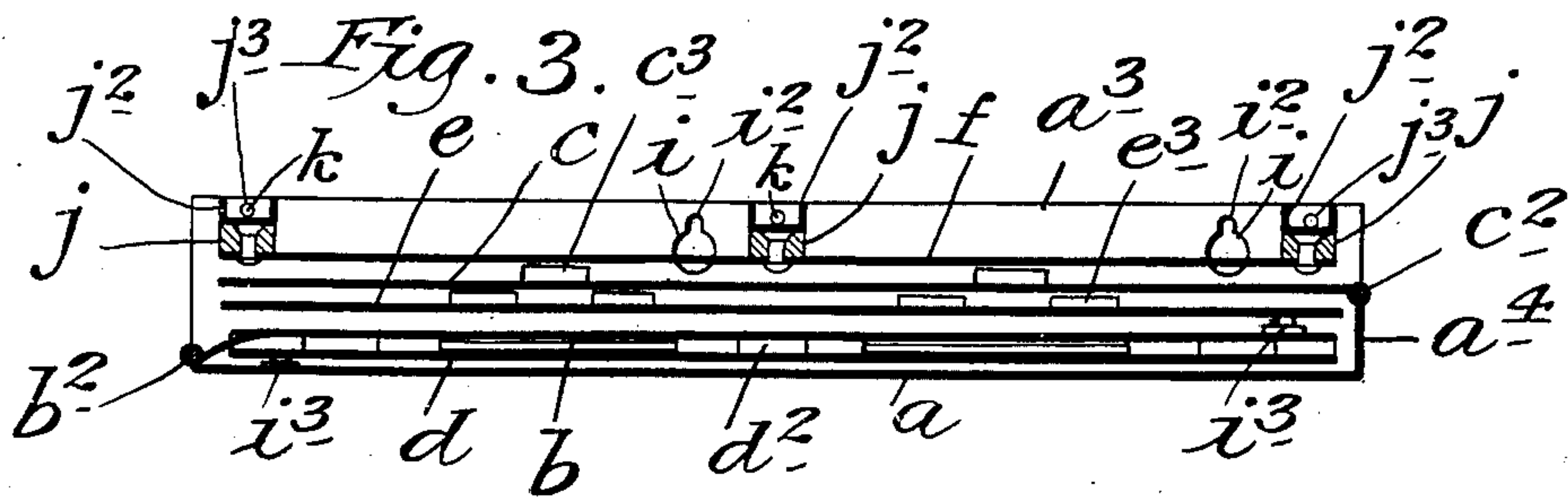
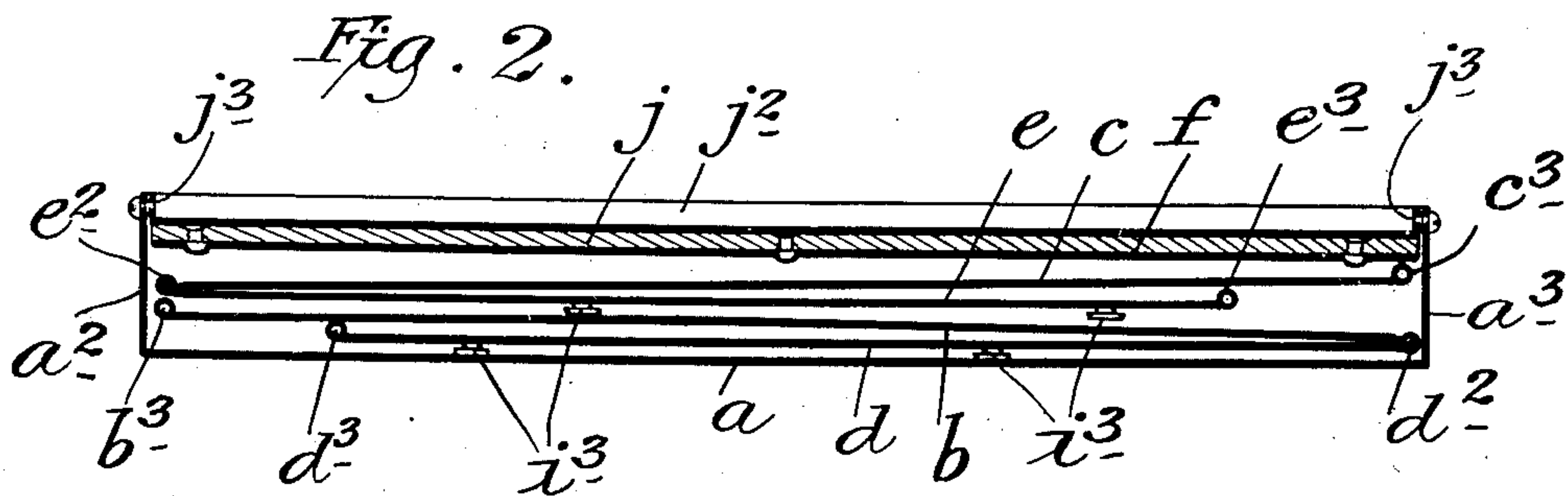
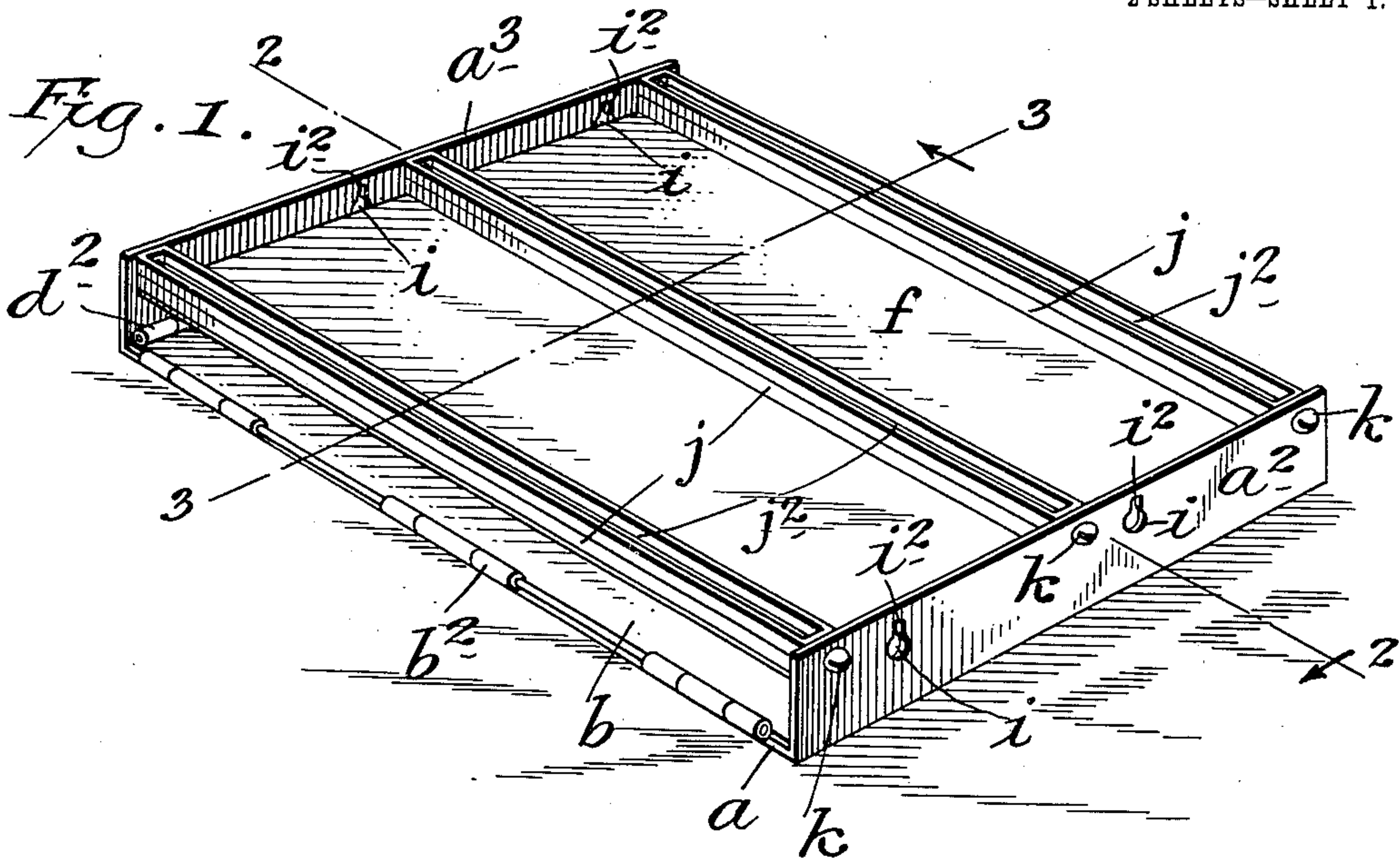


J. F. ADAMS.
KNOCKDOWN BOX.
APPLICATION FILED SEPT. 19, 1908.

930,112.

Patented Aug. 3, 1909.

2 SHEETS—SHEET 1.



WITNESSES

A. Appleman
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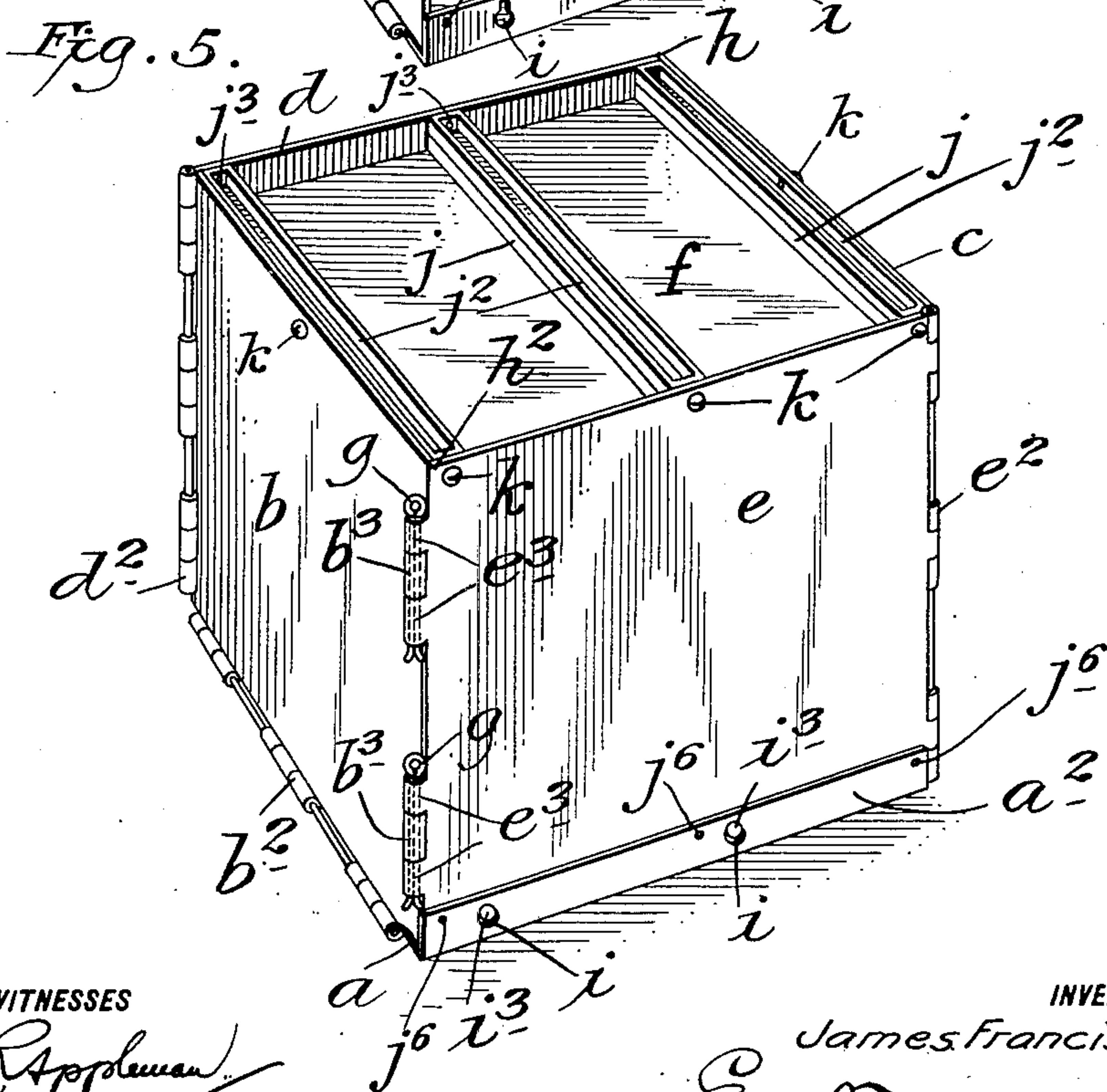
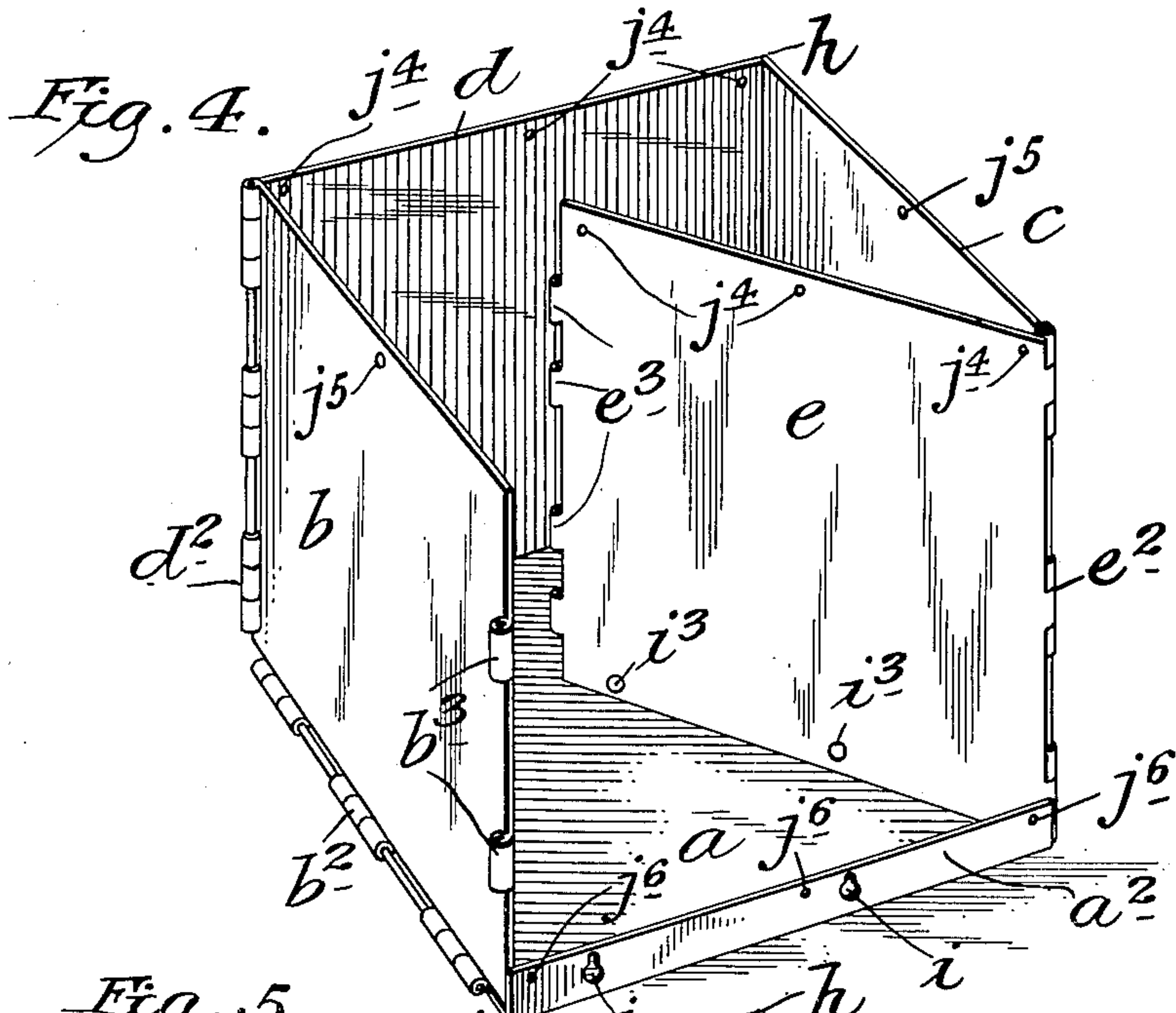
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UNITED STATES PATENT OFFICE.

JAMES FRANCIS ADAMS, OF PHILLIPSBURG, NEW JERSEY.

KNOCKDOWN BOX.

No. 930,112.

Specification of Letters Patent.

Patented Aug. 3, 1909.

Application filed September 19, 1908. Serial No. 453,729.

To all whom it may concern:

Be it known that I, JAMES FRANCIS ADAMS, a citizen of the United States, and residing at Phillipsburg, in the county of Warren and State of New Jersey, have invented certain new and useful Improvements in Knockdown Boxes, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to "knockdown boxes", and the object thereof is to provide an improved device of this class which is particularly designed for use as a packing-crate for the shipment of articles of various kinds and classes and which also may be made of any desired size or capacity.

The invention is an improvement on that described and claimed in U. S. Letters Patent granted to me March 27, 1906, No. 815,670, and is fully disclosed in the following specification of which the accompanying drawings form a part, in which the separate parts of my improvement are designated by suitable reference characters in each of the views, and in which:—

Figure 1 is a perspective view showing my improved knockdown box or crate in a knocked down position with all the parts thereof compactly folded together, Fig. 2 a section on the line 2—2 of Fig. 1, Fig. 3 a section on the line 3—3 of Fig. 1, Fig. 4 a perspective view of the box with all the parts in position for use except the cover, and showing one side folded inwardly and also showing a box slightly smaller or shorter than that shown in Figs. 1 to 3 inclusive, and;—Fig. 5 a view similar to Fig. 4 but showing the box complete with the cover in position.

In the practice of my invention, as shown in the drawings, I provide a box comprising a bottom a , two side members b and c , two end members d and e and a cover f .

My improved knockdown box is preferably made of sheet metal, and the end portions of the bottom a are provided with upwardly directed flanges a^2 and a^3 and one side thereof with a similar flange a^4 , the vertical width of which is slightly less than that of the flanges a^2 and a^3 .

The side b is hinged to the bottom a as shown at b^2 , and the side c is hinged to the flange a^4 as shown at c^2 in Fig. 3. The end d is hinged to the side b as shown at d^2 , and the end e is hinged to the side c as shown at e^2 .

The side b and end e are also provided with keepers b^3 and e^3 which interlock as shown in Fig. 5 and through which are passed headed and split pins g to connect the parts b and e when set up ready for use, and the parts d and c are provided with similar keepers d^3 and c^3 as shown in Fig. 2 and the headed and split pins g are passed through these keepers to connect the parts d and c at the corner h when said parts are set up ready for use.

The flanges a^2 and a^3 at the opposite ends of the bottom a are provided with circular apertures i having upwardly directed extensions i^2 , and the ends d and e are provided with headed pins i^3 adapted to pass through said apertures, and when the parts are swung into the position shown in Fig. 5 the headed pins i^3 pass through the apertures i , and the parts d and e are raised so that the shanks of said pins will enter the upwardly directed extensions i^2 of said apertures, and this locks the parts d and e to the flanges a^2 and a^3 of the bottom a , and this raising of the parts d and e also permits of the connection of the end d with the side c , and the end e with the side b at the corners h and h^2 .

The cover f is provided with transverse bars j which are secured thereto as shown in Figs. 1, 2, 3 and 5, and these bars are provided at the top thereof, in the form of construction shown, with channel members j^2 which may be secured thereto or independent thereof, and the ends of the channel members j^2 are provided with screw-holes j^3 . The top edge portions of the ends d and e are also provided with screw-holes j^4 , and the top edge portions of the sides b and c are provided with similar screw-holes at j^5 , and the end flanges a^2 and a^3 on the bottom a are also provided with screw-holes j^6 .

The operation will be readily understood from the foregoing description when taken in connection with the accompanying drawings and the following statement thereof. When the box is set up for use as shown in Figs. 4 and 5 and has been filled with the desired contents the cover f is pressed downwardly thereinto as shown in Fig. 5, and the bars j are placed in position and screws k are employed to secure the ends d and e to the ends of said bars and the sides b and c to the two side bars. When it is desired to empty the box the bars j are removed and the cover f taken out and the box emptied in the usual manner, and when it is desired to fold the separate parts of the box together as shown

in Figs. 1 to 3 for shipment or other purposes, the parts *b* and *e* are disconnected at the corner *h*², and the parts *d* and *c* are disconnected at the corner *h*. The part *d* is then folded inwardly into the part *b*, and said parts are folded on the bottom of the box. The part *e* is then folded onto the part *c*, and said parts are folded onto the part *b* all as clearly shown in Figs. 1 to 3 inclusive, after which the cover *f* is laid on the part *c* and the bars *j* are placed thereon as shown in said figures and secured in place by passing screws *k* through the holes *j*⁶ in the flanges *a*² and *a*³ of the bottom *a* as clearly shown in Figs. 1 to 3 inclusive.

Although the bars *j* are described herein as composed of two parts it will be apparent that said bars may be made in any desired manner, and other changes in and modifications of the construction herein described, may be made, within the scope of the appended claims, without departing from the spirit of my invention or sacrificing its advantages.

Although I have described the parts *b* and *c* as side, and the parts *d* and *e* as end members, and the bottom *a* as provided at its end and one side with flanges *a*², *a*³ and *a*⁴, all the parts *b*, *c*, *d* and *e* may be considered as side members and the flanges *a*², *a*³ and *a*⁴ on the bottom *a* may be considered as formed on three of the side edges of said bottom for the purpose of this specification.

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

1. A box or crate of the knockdown class comprising a bottom *a*, side members *b*, *c*, *d* and *e*, and a top member *f*, the bottom *a* having upwardly directed flanges *a*², *a*³ and *a*⁴ at three of its sides and the flange *a*⁴ being of less height than the flanges *a*² and *a*³, the side member *c* being hinged to the flange *a*³, the

side member *b* being hinged to the bottom *a*, the side member *d* being hinged to the side member *b*, and the side member *e* to the side member *c*, means for connecting the side members *d* and *c*, and means for connecting the side members *b* and *e* when said side members are in an upright position, means for connecting the side members *d* and *e* with the flanges *a*³ and *a*² of the bottom *a*, and means for securing the top *f* in position when the box or crate is filled, and devices for securing the top *f* to the flanges *a*² and *a*³ of the bottom *a* when the parts of the box or crate are in a knocked down or folded position.

2. A box or crate of the knocked down class having upright flanges at two of its ends and one of its sides, a side member hinged to the side flange of the bottom, another side member hinged to the bottom opposite said last named flange, and two end members hinged to each of said side members, means for connecting one of said end members with the side member opposite that to which it is hinged, means for connecting the other end member with the side member opposite that to which it is hinged, means for connecting the end members with the corresponding flanges on the bottom member, a cover, means for securing said cover in position to close the box or case when in use, and means for securing said cover to the end flanges on the bottom when the parts of the box or case are in a knocked down or folded position.

In testimony that I claim the foregoing as my invention I have signed my name in presence of the subscribing witnesses this 16th day of September 1908.

JAMES FRANCIS ADAMS.

Witnesses:

W. J. REYNOLDS,
PHILIP OSBORN.