

No. 697,355.

Patented Apr. 8, 1902.

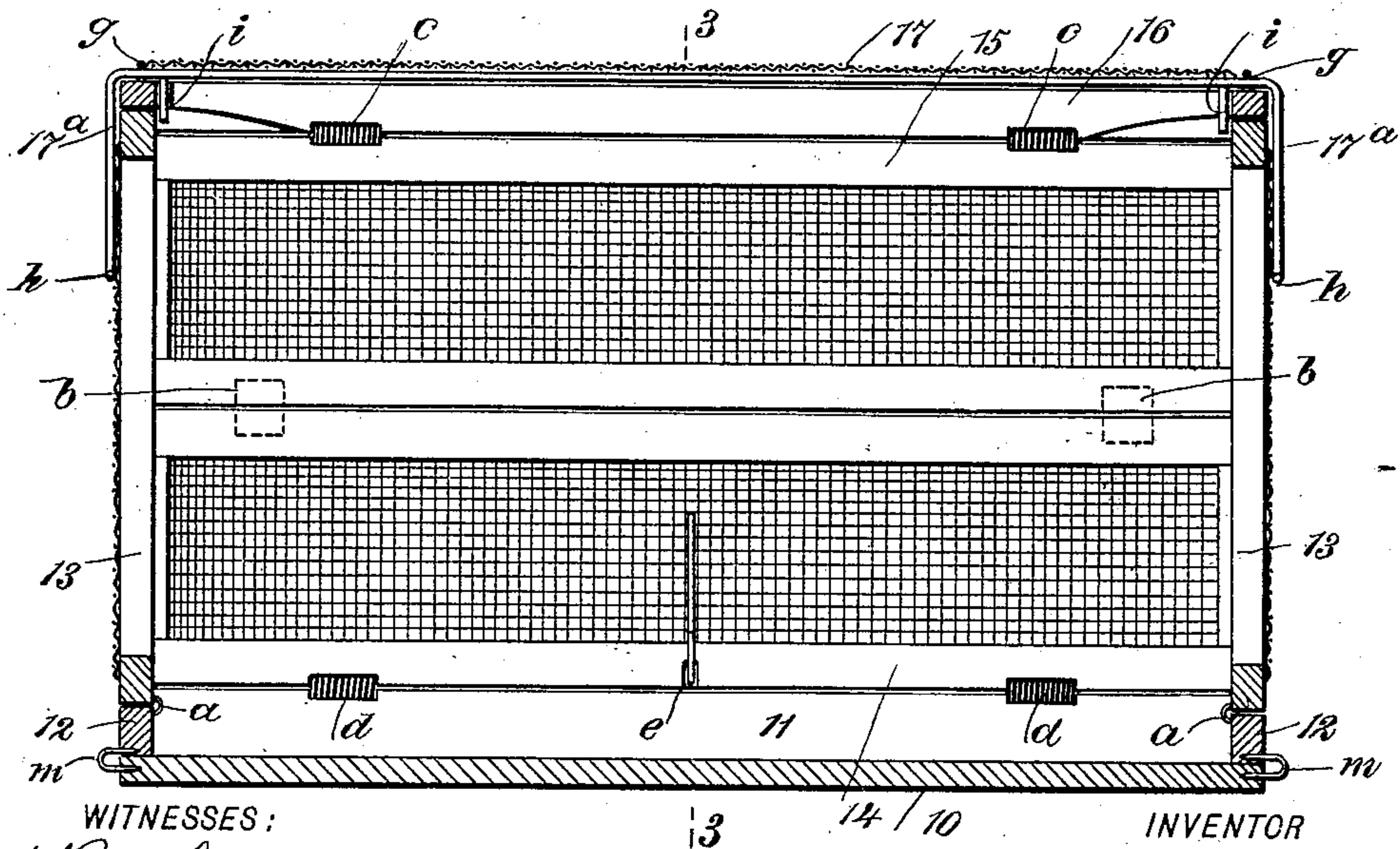
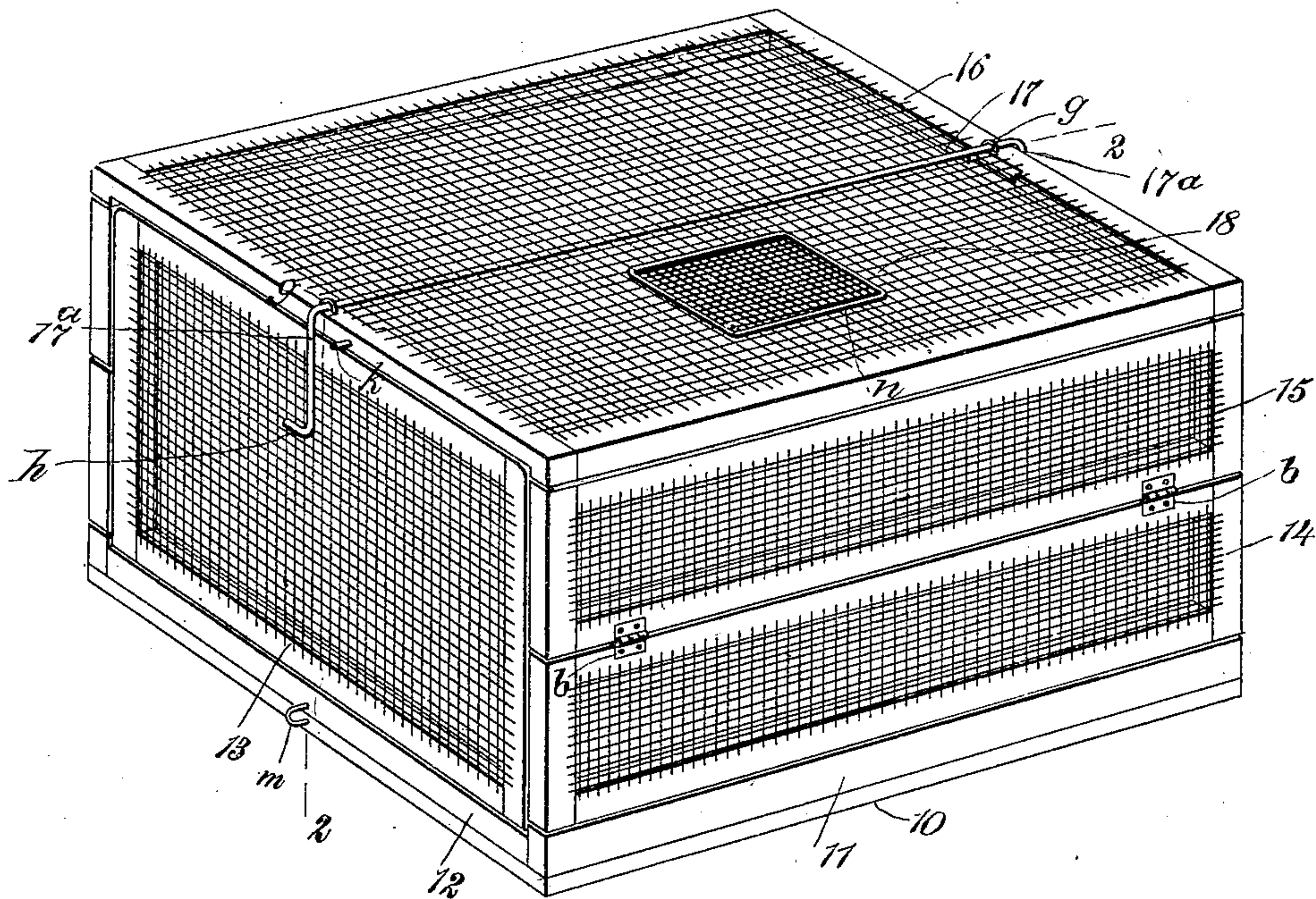
A. J. NOLTY.
FOLDING CRATE.

(Application filed Aug. 14, 1901.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1



WITNESSES:

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Fig. 2

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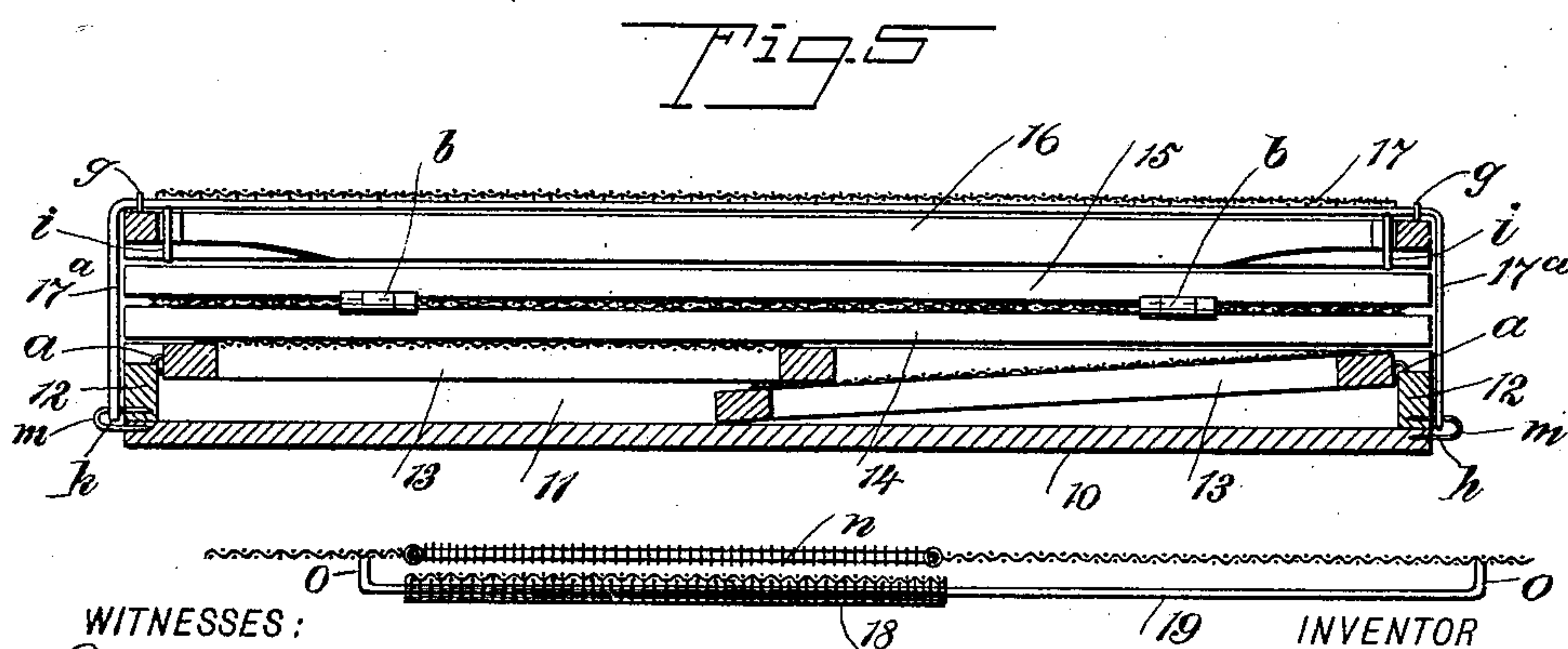
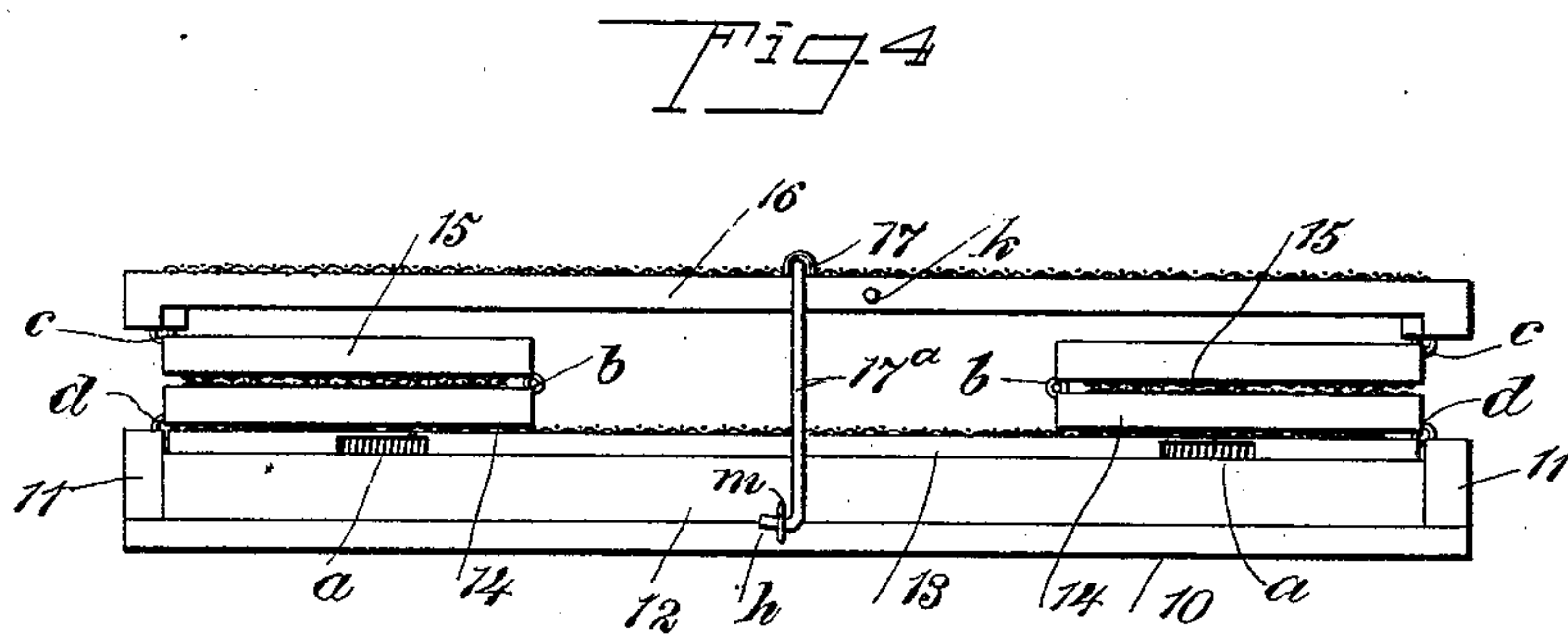
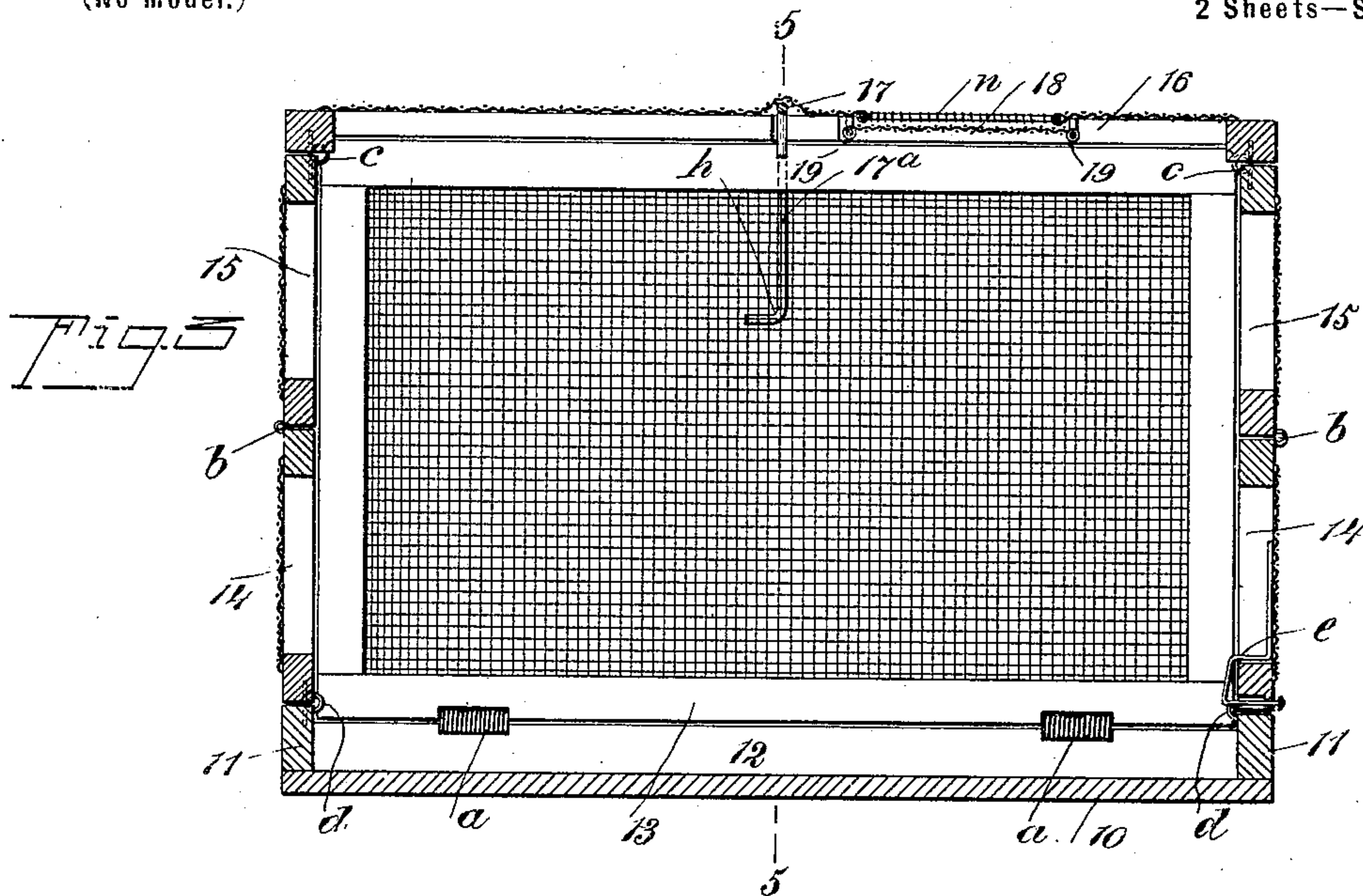
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UNITED STATES PATENT OFFICE.

AUGUSTUS JOHN NOLTY, OF MEMPHIS, TENNESSEE.

FOLDING CRATE.

SPECIFICATION forming part of Letters Patent No. 697,355, dated April 8, 1902.

Application filed August 14, 1901. Serial No. 71,987. (No model.)

To all whom it may concern:

Be it known that I, AUGUSTUS JOHN NOLTY, a citizen of the United States, and a resident of Memphis, in the county of Shelby and State of Tennessee, have invented a new and Improved Folding Crate, of which the following is a full, clear, and exact description.

This invention relates to folding crates or coops, and has for its object to provide a simple folding or "knockdown" crate having novel features of construction that adapt it for quick erection into a commodious receptacle for poultry, live game, fruits, or other products usually transferred to market in such inclosures, the improved crate being furthermore adapted for speedy collapse and close-folded adjustment of parts that are all connected together, thus affording a compact package for the return to the shipper.

The invention consists in the novel construction and combination of parts, as is hereinafter described, and defined in the appended 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.

Figure 1 is a perspective view of the improved crate in erected condition. Fig. 2 is a longitudinal sectional elevation substantially on the angular line 2 2 in Fig. 1. Fig. 3 is a transverse sectional view substantially on the line 3 3 in Fig. 2. Fig. 4 is an end view of the crate in folded adjustment. Fig. 5 is a longitudinal sectional view substantially on the line 5 5 in Fig. 3, but showing all parts of the crate in folded condition; and Fig. 6 is an enlarged detached detail view showing a slidable door on the top wall of the crate and means to support the door for sliding adjustment.

The bottom wall 10 of the crate may be of wood or other preferred material and is rectangular, having a suitable area proportioned to the dimensions the entire structure is to have. Around the four edges of the bottom piece 10 the ledges 11 12 are secured, the ledges 11 being erected at the opposite side edges of said bottom and the ledges 12 at the ends of the same, the side ledges 11 being preferably of greater height than those at the opposite ends of the bottom. Upon the ledges

12 end walls 13 are hinged by their lower edges, so that said end walls may be folded inwardly, and if the height of the crate necessitates it said end walls may lap one upon the other at and near their normal upper edges, as shown in Fig. 5.

In some constructions of the improved crate the entire structure may have solid walls of wood or metal, this depending upon the nature of the material to be held therein for transportation.

In case poultry, live birds, or small animals are to be carried in the crate the sides, ends, and top wall may with advantage be constructed with a border-frame for each of said parts, covered with woven-wire cloth or other similar fabric, and the drawings represent the walls of the crate so constructed.

The hinges *a*, provided for connecting the lower edges of the end walls 13 with the upper edges of the ledges 12, are in the form of resilient-wire coils that are so connected at their ends with the parts mentioned as to adapt the torsional force of the spring-hinges to effect an elevation of the end walls 13 into parallel vertical planes when they are free to assume such relative positions.

The sides of the crate are each composed of two half-sections 14 15, said sections being each in the form of a border-frame having a covering of wire-cloth. The two sections 14 15 of each side wall are hinged together, and said hinges *b* are so located and arranged on adjacent edges of these parts as to permit the two sections of each side wall to fold closely together.

The top wall 16 of the crate in this construction of the improvement is of similar area to that of the bottom piece 10, so that its edges will respectively lap upon the upper edges of the side walls and end walls of the crate and be flush with the outer sides of the same.

Spring-hinges *c*, similar with the hinges *b*, are provided for connection of the upper edge of each top section 15 of the two-part side walls with a corresponding side bar of the border-frame on the top piece 16, and like spring-hinges *d* are employed for an attachment of the lower edges of respective lower side sections 14 upon the upper edges of the ledges 11.

It will be seen that the coiled-spring hinges

c d are at the inner edges of the ledges 11, and the hinges *b* are so arranged that the sections 14 15 of each side wall will be adapted for flexure inwardly, whereby the two opposite sides of the crate may be folded inwardly and flat upon the end walls 13, that have previously been folded inwardly, so as to respectively contact with the bottom 10 and top of the end wall first folded, as is clearly shown in Figs. 4 and 5.

A spring-catch *e* is secured upon the lower section 14 of one side of the crate, and the hook-nose of said catch projects inwardly from the lower edge of the same, so as to lie in the path of one end wall 13, preferably the one that is last folded and that seats upon the free edge portion of the one first folded, so that the act of folding the end walls 13 toward the bottom 10 will cause a latching engagement of the catch *e*, which will retain the end walls folded until released by manipulation of the catch that projects exterior of the side wall on which it is held sufficiently to permit it to be released from the end wall with which it engages.

A rockable shaft 17 is journaled in staple-loops *g* on the border-frame of the top piece 16 and extends longitudinally thereof at or near the transverse center. Upon each end of the rockable shaft 17 a depending arm 17^a is formed or secured, and these similar arms each have a hook *h* formed thereon and projected laterally in the same direction.

The arms 17^a, being exterior of the border-frame on the top piece 16 and projecting at right angles downward in the same plane from the horizontal shaft 17, are each adapted for manual adjustment as occasion may require. Upon the shaft 17 at or near each inner edge of the border-frame for the top 16 a keeper-toe *i* is formed or affixed, these toes projecting in the same place with that of the arms 17^a, and from their relative positions the keeper-toes *i* when rocked downwardly will loosely contact with the upper edges of the end walls 13 to hold them erect, said edges of the upright end walls being held between the toes *i* and rock-arms 17^a when the latter are depending, as represented in Fig. 2. Stop-pins *k* may be projected from the edges of the top piece 16 to limit the vibration of the arms 17^a.

As shown, the side walls of the crate extend longitudinally the entire length of the bottom 10 and top 16; but the end walls 13 are of such proportionate width as will adapt them to have contact at their side edges with the inner surfaces of the side walls at the ends of the latter when the crate is erected for use. It will be obvious that by this construction and arrangement of parts the side walls of the crate will be held erect when they are disposed vertically, and the end walls are subsequently erected and held so by depending adjustment of the arms 17^a, as before explained.

Upon each of the transverse ledges 12, near

the center thereof, a staple *m* is fixed, which the hook end *h* of an arm 17^a may be engaged with when the crate is in folded condition, as shown in Figs. 4 and 5, and it will be seen that if the end walls 13 are first folded inwardly and then the side walls folded toward and upon the end walls, the flexure of the hinges *b*, which connect the sections of the side walls, together with the yielding of the hinge-joints *c d*, will dispose the top piece 16 close to the folded side walls and permit the arms 17^a to be hooked upon the staples, thus producing a very compact package without objectionable projections.

When the crate which has been folded and secured in folded condition, as explained, is to be erected for use as a coop for fowls or for the transportation of other material, it may be quickly erected into a rectangular form, as shown in Fig. 1, by simply unhooking the arms 17^a from the staples *m*, which will permit the spring-hinges *a*, *c*, and *d* to throw up the end walls and erect the sides of the coop, which may then be held in erected condition by turning the arms 17^a down, so as to dispose the toes *i* as shown in Fig. 2.

In order to permit the introduction of poultry or the like into the crate or coop and enable a removal of the same, a door 18 is held to slide on the inner side of the top piece 16 and by its adjustment open or close an aperture *n* therein. As represented in Figs. 1, 3, and 6, the aperture *n* is rectangular, and the door 18 is of like form, but somewhat larger than the aperture.

On each side of the aperture *n* a guide-bar 19, formed of a wire rod, is secured, said guide-bars which are positioned within the crate having at each end thereof a portion bent at a right angle, and the ends of these short arms *o* are affixed upon the material of the top piece 16, so that the body portions of the guide-bars are held below and parallel with said material. The door 18 is loosely held in engagement with the guide-bars 19 by any suitable means, so that the door may be moved on the guide-bars to open or close the aperture *n*.

It is of course intended that suitable provision be made for locking the door and also for securing the arms 17^a in depending condition when the crate is employed as a shipping-receptacle for fowls or the like, and thus prevent theft of the contents of the crate; but as this is not a feature of the invention it has been omitted from the drawings.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a folding crate a rectangular bottom wall, a like top wall, two side walls each formed of two sections hinged together, hinges connecting edges of the side walls with edges of the top wall, two end walls hinged at lower edges on projections from the bottom wall at opposite edges said end walls being adapted to hold the side walls from flexure at

their hinges, a rock-shaft loosely mounted on the top wall, arms on the rock-shaft which may be rocked toward the bottom wall and be secured thereto, and keeper-toes on said shaft that may engage inner sides of the end walls to hold them erect.

2. In a folding crate, a rectangular bottom wall, a similar top wall, two side ledges thereon, two end ledges, two side walls each comprising two half-sections hinged together, spring-hinges connecting the lower edges of the side walls with corresponding ledges on the bottom wall, spring-hinges connecting the upper edges of the side walls with corresponding edges of the top wall, end walls, spring-hinges connecting the lower edges of said end walls with the corresponding ledges

on the bottom wall, the end walls working between the side walls so as to keep the side walls erect, a rock-shaft on the top wall having depending two keeper-toes, and two depending arms terminating in hooks, staples on the end walls or ledges and hinged thereto, said staples receiving the hooks when the crate is completely folded, and the keeper-toes which are spaced from the arms coacting therewith to hold the end walls erected.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

AUGUSTUS JOHN NOLTY.

Witnesses:

H. Y. COX,

B. M. SPICER.