

No. 639,269.

Patented Dec. 19, 1899.

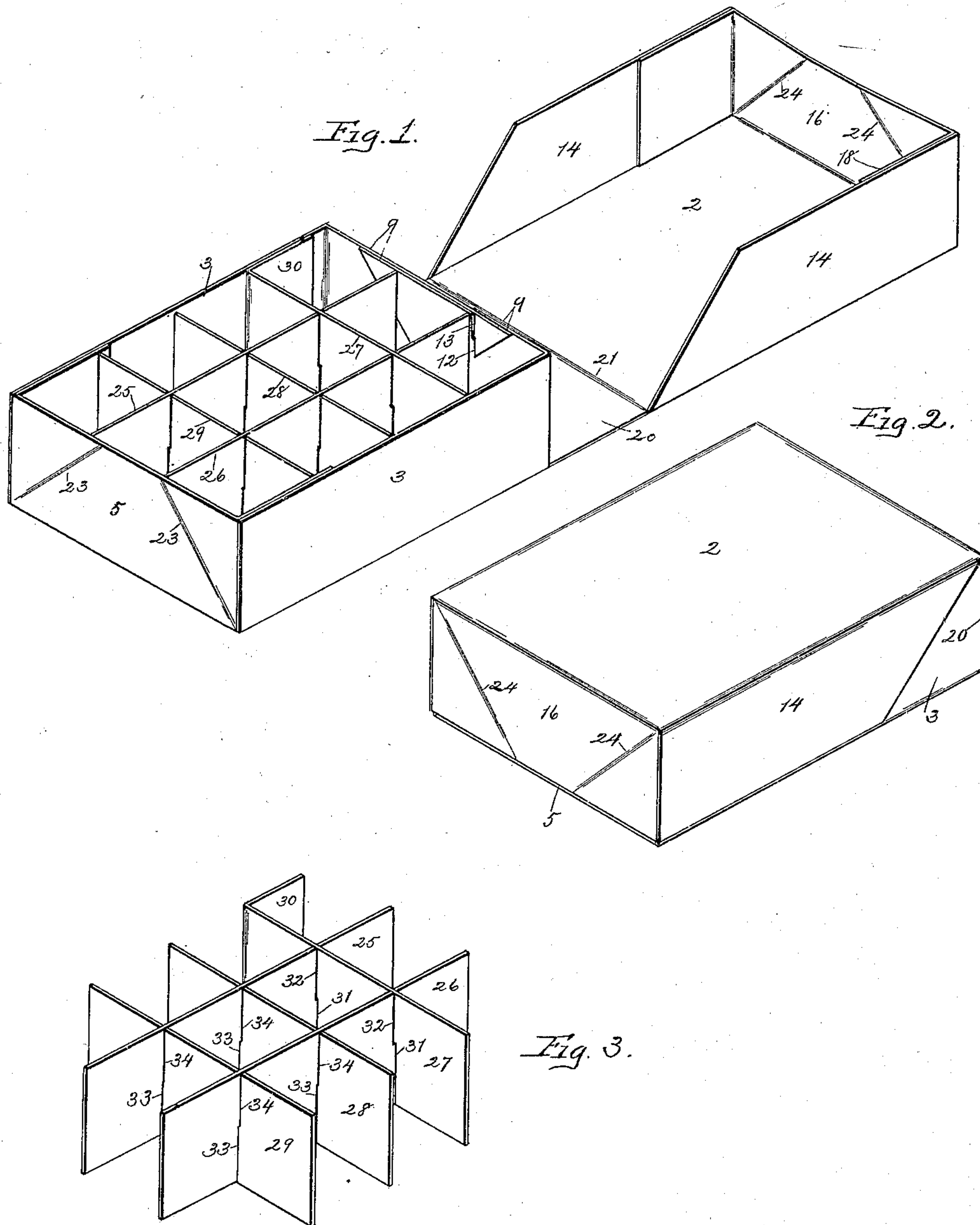
E. A. McMILLIN.

PAPER BOX.

(Application filed Mar. 25, 1899.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:

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G. L. Curtis.

Inventor:

Edward A. McMillin.

By Mosher & Curtis.

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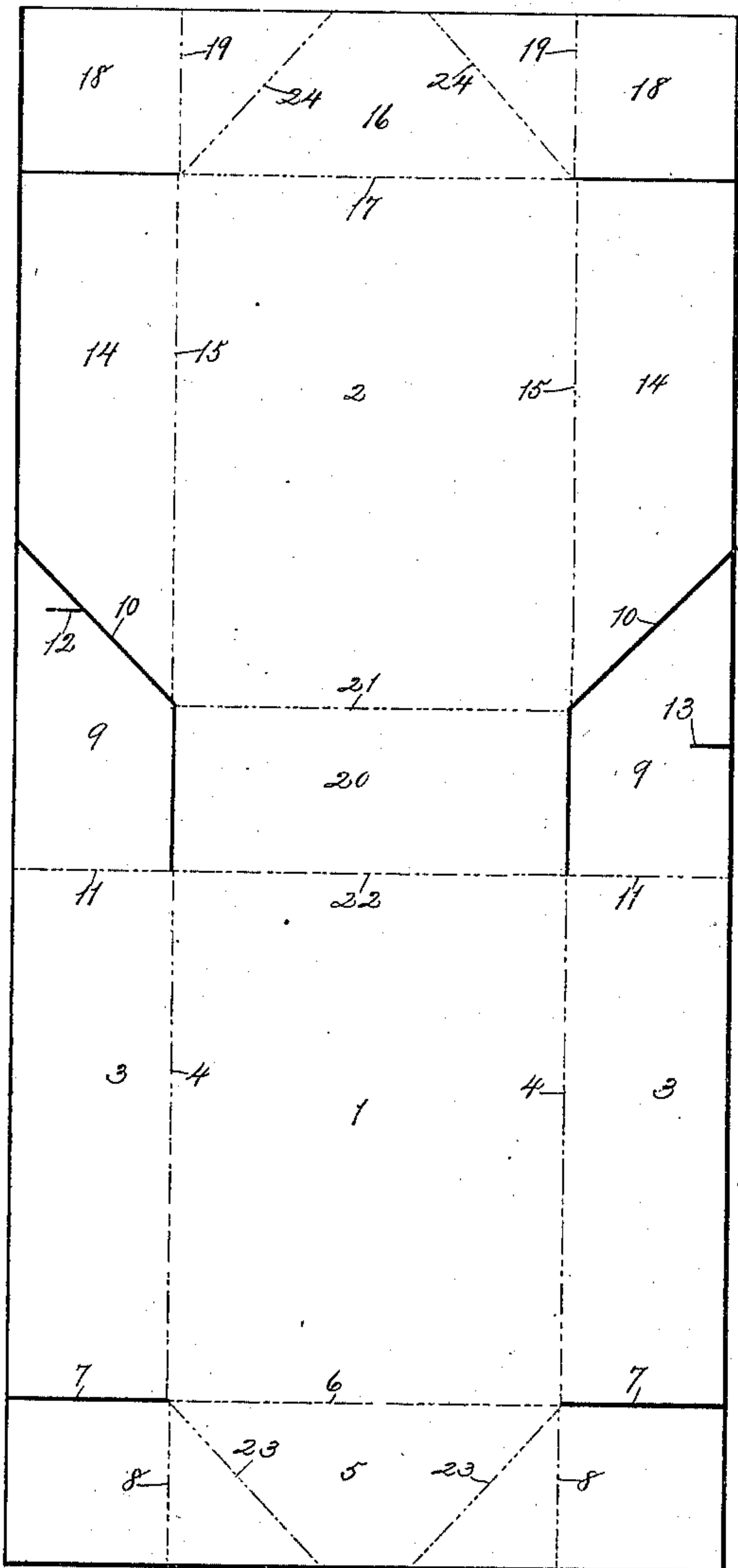


Fig. 6.

Fig. 5.

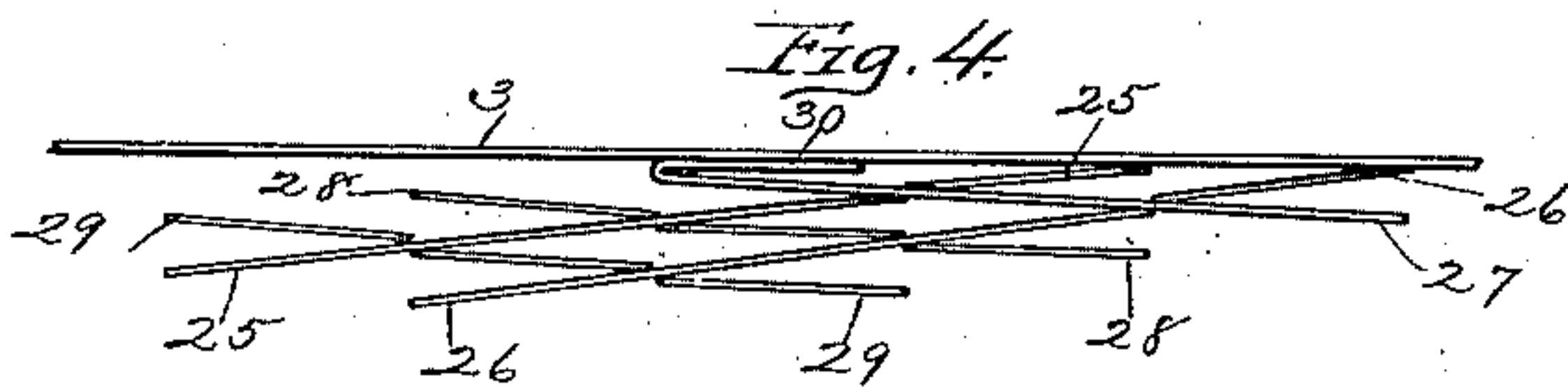
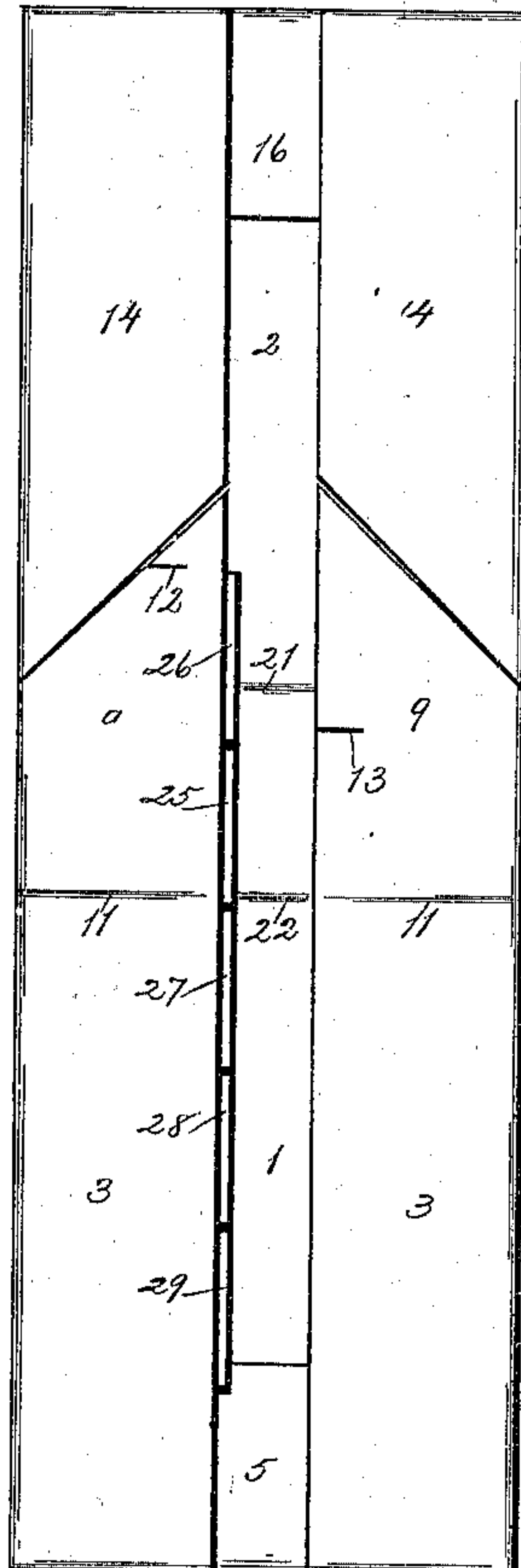


Fig. 4.

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UNITED STATES PATENT OFFICE.

EDWARD A. McMILLIN, OF NORTH ADAMS, MASSACHUSETTS.

PAPER BOX.

SPECIFICATION forming part of Letters Patent No. 639,269, dated December 19, 1899.

Application filed March 25, 1899. Serial No. 710,460. (No model.)

To all whom it may concern:

Be it known that I, EDWARD A. McMILLIN, a citizen of the United States, residing at North Adams, county of Berkshire, and State of Massachusetts, have invented certain new and useful Improvements in Paper Boxes, of which the following is a specification.

The invention relates to such improvements; and it consists of the novel construction and combination of parts hereinafter described and subsequently claimed.

Reference may be had to the accompanying drawings, and the numerals of reference marked thereon, which form a part of this specification.

Similar numerals refer to similar parts in the several figures.

Figure 1 of the drawings is a view in isometrical perspective of my improved collapsible egg-box set up ready for use with the cover swung back into the same plane with the box-body. Fig. 2 is a similar view of the box closed. Fig. 3 is a similar view of the compartment-frame. Fig. 4 is a plan view of the compartment-frame secured to the box-wall and partly folded against the same. Fig. 5 is a plan view of the collapsed box having the collapsed compartment-frame contained within the confines of the box. Fig. 6 is a plan view of the integral blank from which my improved box is made.

The object of my invention is to provide an inexpensive and serviceable pasteboard-box which may be made collapsible, if desired, and more particularly to provide a collapsible egg-box having a collapsible compartment-frame secured to the box-body.

In carrying out my invention I take a blank of pasteboard or like material of elongated rectangular form, as shown in Fig. 6, and divide or cut the same along the solid lines shown in said figure and crease the same to form fold-lines along the dotted lines in said figure. The blank is thus subdivided into numerous parts, of which 1 is adapted to form the bottom of the box-body and 2 the top of the cover.

In forming the body of the box the side portions 3 3 are bent up along the dotted lines 4 4 to form the side walls of the box-body, and the end 5 is in like manner bent up along the dotted line 6 to form an end wall of the

box, the corners, which are cut away along the solid lines 7 7, being bent inwardly along the dotted lines 8 8 and secured to the adjacent lapping ends of the sides 3 3, as by glue or cement. The flaps 9 9, formed by dividing the blank along the solid lines 10 10, are introverted along the dotted lines 11 11, and their lapping ends are detachably interlocked with each other by means of the edgeslits 12 13 in the manner as shown in Fig. 1 to complete the box-body. The cover is similarly formed by bending the sides 14 14 upwardly along the dotted lines 15 15 and the end 16 along the dotted line 17, the corners 18 18 being introverted along the dotted lines 19 19 and glued to the neighboring lapped ends of the sides 14 14, respectively. The part 20 forms a direct hinge connection between the bottom of the box-body and the top of the cover, being folded upon both of the dotted lines 21 and 22 when the cover is applied to close the box. When the cover is so applied, the hinge portion 20 folds up against the end flaps 9 9 to reinforce the same and wholly close the box, as shown in Fig. 2.

The portions of the box along each of the dotted lines 4, 4, 6, 8, 8, 11, 11, 15, 15, 17, 19, 19, 21, and 22 form hinge connections between the top and bottom of the box and the sides and ends of the box body and cover, respectively.

The end 5 of the box-body is further provided with the oppositely-inclined fold-lines 23 23 and the end 16 of the cover with similarly-inclined fold-lines 24 24, whereby the middle portions of the box and cover ends, respectively, inclosed between such oppositely-inclined fold-lines, are adapted to be folded inwardly upon the bottom of the box and top of the cover, respectively, at the same time that the side walls of the box and cover are also folded inwardly upon said top and bottom, permitting the box and cover to be collapsed to the elongated rectangular form shown in Fig. 5.

In collapsing the box from the form shown in Fig. 2 to that shown in Fig. 5 the cover is first swung back into the same plane with the box-body and the end flaps 9 9 are unlocked from each other and swung into the same plane with the respective side walls of the box body and cover, after which the parts

can be folded in the manner above described to the form shown in Fig. 5.

If a permanent box is desired, the fold-lines 23 23 and 24 24 may be omitted and the end flaps 9 9 may be permanently secured together in any known manner, as by glue.

For the purpose of adapting my improved box for the transportation of eggs or other small fragile articles I provide the same with a compartment-frame adapted to be set up within the body of the set-up box and to collapse with the same and when collapsed to be contained within the confines of the collapsed box. The compartment-frame is made up of a plurality of partitions made of pasteboard or the like and comprising two sets, the members of each set being parallel with each other, and those of one set extending transversely of those of the other set and being interlocked therewith by means of edge slits in the respective partitions in the usual manner.

I have shown a compartment-frame adapted to subdivide the interior of the box into twelve compartments or chambers and formed by interlocking at regular intervals the two partitions 25 and 26 comprising one set with the three partitions 27, 28, and 29 comprising the other set. One of these partitions, as 27, is permanently secured to the box-wall, as by the hinged extension 30 thereof, which may be glued to the side wall 3 of the box-body, as shown in Fig. 1, whereby the compartment-frame is so connected to the box as not to interfere with the collapsibility of either the box or frame. The several partitions are made to interlock one with each of those in the other set by means of edge slits in much the same manner that collapsible egg-compartment frames are now commonly made, except that the edge slits are formed in the under side of the connected partition 27, as shown at 31 in Fig. 3, and the cooperating slits 32 are formed in the upper side of the partitions 25 and 26 of the other set, thereby causing the partition 27 to overlap each of the partitions of the other set, while the remaining edge slits in the partitions 25 and 26 are formed in the bottom edge thereof, as at 33, and the cooperating slits 34 are formed in the upper edge of the partitions 27 and 28, causing each of said partitions 27 and 28 to be overlapped by the partitions 25 and 26, which in turn are overlapped by the partition 27, which is secured to the box-wall, as above described. It will thus be seen that all of these partitions are secured in series to the box-wall by overlapping one with another, so that the escape or accidental displacement of any of the partitions is prevented, and that the frame thus formed is adapted to be folded up or collapsed after the manner of a lazy-tongs construction, as shown in Fig. 4, wherein the frame is shown partly folded up against the side wall of the box to which it is secured.

When it is desired to fold up the box provided with my improved compartment-frame, the frame is first folded up against the side

wall of the box, as shown in Fig. 4, after which the box is folded or collapsed in the manner above described, the folded frame being inclosed between the side wall to which it is connected and the bottom of the box, as shown in Fig. 5. I am thus able to permanently secure the frame to the box and to have the same when collapsed lie wholly within the confines of the collapsed box, as shown in Fig. 5.

My improved box is adapted to be supplied to the trade in the collapsed or folded form shown in Fig. 5, wherein it occupies a minimum of space, its novel construction permitting it to be easily and quickly set up for use when desired. When set up, it forms a light and strong construction especially adapted for the protection and transportation of fragile articles.

By cutting and folding the blank in the manner described I provide for the construction of the box body and cover from a single integral piece of pasteboard or the like of rectangular form and without any waste of material.

By securing one of the compartment-partitions to a side wall which is hinged to the bottom of the box and adapted to fold over thereupon and having the partitions overlap one another in a continuous series, as described, I am able to inclose the collapsed compartment-frame between said wall and bottom of the collapsed box, as shown in Fig. 5, whereby the inner edges of the partitions are inclosed within the fold or hinge which connects said side wall with the bottom and are thereby secured against displacement.

What I claim as new, and desire to secure by Letters Patent, is—

1. A collapsible box formed from a single integral piece of pasteboard or the like, comprising a hinge-connected body and cover, said body having two side walls hinge-connected with its bottom and adapted to fold inwardly upon the bottom, and an end wall hinged to the bottom and both side walls at one end, and having oppositely-inclined fold-lines whereby it is adapted to fold inwardly upon the bottom, said cover having two side walls hinge-connected with its top and adapted to fold inwardly upon the top, and an end wall hinge-connected with both side walls and the top and having oppositely-inclined fold-lines whereby it is adapted to fold inwardly upon the top; and a hinge-section hinged to both top and bottom of the box and adapted to fold up against the adjacent end of the box-body when the cover is applied thereto, substantially as described.

2. A collapsible box formed from a single integral piece of pasteboard or the like, comprising a hinge-connected body and cover, said body having two side walls hinge-connected with its bottom and adapted to fold inwardly upon the bottom, and an end wall hinged to the bottom and both side walls at one end, and having oppositely-inclined fold-lines whereby

it is adapted to fold inwardly upon the bottom, and a pair of end flaps introverted from the opposite ends of the respective side walls; said cover having two side walls hinge-connected with its top and adapted to fold inwardly upon the top, and an end wall hinge-connected with both side walls and the top and having oppositely-inclined fold-lines whereby it is adapted to fold inwardly upon the top, and a hinge-section hinge-connected to both the top and bottom of the box and adapted to fold up against the flap-closed end of the box when said cover is applied thereto, substantially as described.

3. A collapsible box formed from a single integral piece of pasteboard or the like, comprising a hinge-connected body and cover, said body having two side walls hinge-connected with its bottom and adapted to fold inwardly upon the bottom, and an end wall hinged to the bottom and both side walls at one end, and having oppositely-inclined fold-lines whereby it is adapted to fold inwardly upon the bottom, and a pair of end flaps introverted from the opposite end of the respective side walls and provided with detachable interlocking mechanism; said cover having two side walls hinge-connected with its top and adapted to fold inwardly upon the top, and an end wall hinge-connected with both side walls and the top and having oppositely-inclined fold-lines whereby it is adapted to fold inwardly upon the top, and a hinge-section hinge-connected with both the top and bottom of the box and adapted to fold up against the flap-closed end of the body when the cover is applied thereto, substantially as described.

4. In a collapsible egg-box, the combination with a collapsible covered receptacle having a bottom, and a side wall hinged to and adapted to fold over upon the bottom, of a collapsible compartment-frame located within and

secured to the receptacle, and adapted to be contained in collapsed form within the confines of the collapsed receptacle and in the fold connecting said side wall and bottom, substantially as described.

5. In a compartment-box, the combination with a receptacle, of a compartment-frame located within the receptacle and comprising two sets of edge-slitted partitions, the members of each set being parallel with each other and extending transversely of those of the other set, said partitions overlapping one another in a continuous series, and a connection between the receptacle-body and the final overlapping partition in the series, whereby all the partitions are secured in series to the receptacle by means of said connection, substantially as described.

6. In a compartment-box, the combination with a collapsible covered receptacle having a bottom, and a side wall hinged to and adapted to fold over upon the bottom; of a compartment-frame located within the receptacle and comprising two sets of edge-slitted partitions, the members of each set being parallel with each other and extending transversely of those of the other set, said partitions overlapping one another in a continuous series; and a connection between the receptacle-body and the final overlapping partition in the series, whereby all the partitions are secured in series to the receptacle by means of said connection, said frame being collapsible and adapted to be contained in collapsed form in the fold connecting said side wall and bottom of the box, substantially as described.

In testimony whereof I have hereunto set my hand this 22d day of March, 1899.

EDWARD A. McMILLIN.

Witnesses:

H. T. CADY,
JAMES W. HARDENBERGH.