No. 663,238. Patented Dec. 4, 1900.

# T. L. NEUMANN.

## PAPER BOX.

(Application filed July 21, 1900.)

(No Model.)

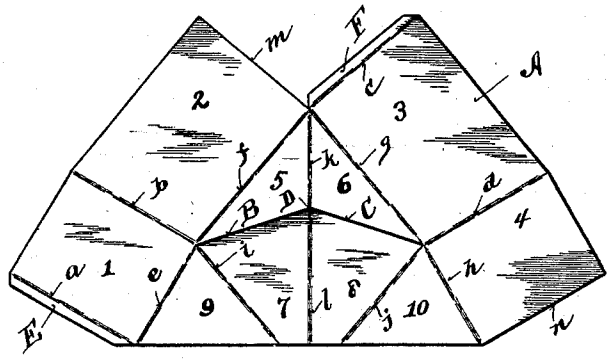



Fig. 1.

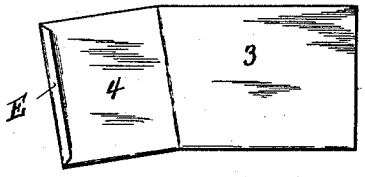



Fig. 2.

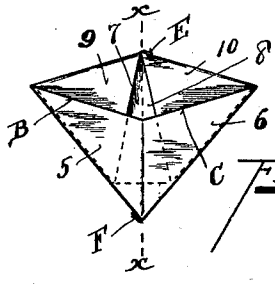



Fig. 3.

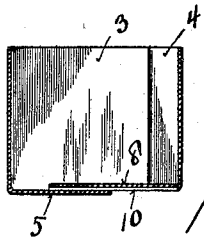



Fig. 4.

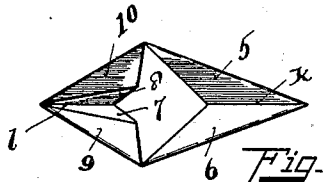



Fig. 5.

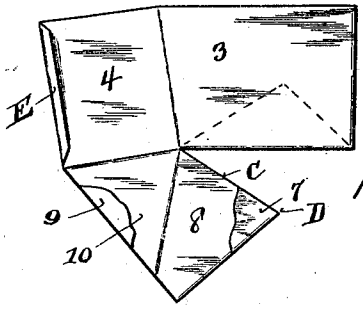



Fig. 6.

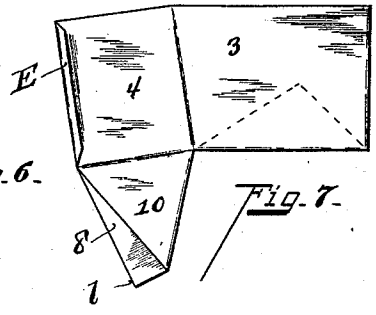



Fig. 7.

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

# UNITED STATES PATENT OFFICE.

THEODORE L. NEUMANN, OF DAYTON, OHIO, ASSIGNOR OF ONE-HALF TO THE DAYTON PAPER NOVELTY COMPANY, OF SAME PLACE.

## PAPER BOX.

SPECIFICATION forming part of Letters Patent No. 663,238, dated December 4, 1900.

Application filed July 21, 1900. Serial No. 24,361. (No model.)

*To all whom it may concern:*

Be it known that I, THEODORE L. NEUMANN, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Paper Boxes, of which the following is a specification.

The object of my invention is to provide a strong and durable collapsible paper box which can be shipped "knocked down" and easily expanded into form.

The features of my invention will be more fully set forth in the description of the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a plan view of the blank. Fig. 2 is a plan view of the blank folded into its "knockdown" position. Fig. 3 is a plan view of the bottom when the box is formed. Fig. 4 is a section on line *x x*, Fig. 3. Fig. 5 is a view of one of the steps of folding. Fig. 6 is a view of another step of folding. Fig. 7 is a view of the next successive step of folding.

A represents the blank, in which the outer sections 1, 2, 3, and 4 represent the sides or the body of the box, while the interior divisions 5, 6, 7, 8, 9, and 10 represent the bottom-sections, which overlap when folded. These sections are defined by the scored lines *a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, and *l*.

B C represent slits through the blank bisecting the bottom-sections.

D represents the point of the intersecting lines *b c k l*.

E F represent flaps on the outer edges of the sides 1 and 3, respectively, which are pasted to the opposing edges *m n* of the sides of the body 4 and 2, respectively, when the blank is folded into form, thus bringing the pasted edges upon the opposite sides of the box, as shown in Fig. 5.

The blank is cut, scored, and slit as shown in Fig. 1. It is then folded in the following manner: The side-sections 1 and 2 are bent over the side-sections 3 and 4, the bend being along the scored lines *k l*. Then the bottom-sections 5 and 6 are bent inwardly up into the box, occupying the position shown in Fig. 5. The blank is then bent in the shape shown in Fig. 6, this inward bend being on the scored line *k* and the outer scored lines *f g*. Next the bottom-sections 7 and 8 (see Fig. 6) are bent inwardly by opening out the sections 9 and 10. This portion of the bottom-section will then be in position shown in Fig. 7. The folded sections 7 8 along the scored lines *l* will project past the sections 9 and 10, as shown at 8, Fig. 7. This figure shows the body-sections folded down upon each other. Next the body-sections are opened out into the box form. This allows the double-V-shaped sections 7 and 8 and 9 and 10 to be bent inwardly. Then they are tucked under the sections 5 and 6, which brings them into the position shown in Fig. 3. This tucking under of the folded sections 7, 8, 9, and 10 is for the purpose of supporting the free end upon the bottom-sections 5 and 6 approximate toward the box F, as shown in Fig. 3, so that they serve as a brace against the side walls of the box, as well as being supported by the bottom-sections, the bottom being formed of two thicknesses of material when thus folded and three thicknesses along the folded sections 9 and 10.

It will be observed that the dotted line *x x*, Fig. 3, runs across the bisecting lines *k l* of the bottom when the box is folded, and this allows the box to be folded down flat, as shown in Fig. 2, Fig. 3 showing the manner in which the bottom folds down to allow the box to be collapsed, and Fig. 5 showing the bottom when the box is partly in a collapsed position. When it is desired to open out the box, the sides are spread apart, the overlapping sections 7, 8, 9, and 10 of the bottom dropping into the position shown in Fig. 4, which shows the position of the bottom-sections 5, 8, and 10, the other sections 6, 7, and 9 occupying the same relative position on the opposite side of the box.

It will be observed that the box as shown in the preferred form of construction is a trapezium. The shape or relative dimensions of the sides of the box and the bottom may be variously modified by changing the location of the scored lines *b d* and changing the position of the slit B C, the outer end of which must intersect the lines *b d*, which form the corners of the box.

There are several advantages to be derived by constructing the box in this manner. It is cheap and of easy construction. It is read-

ily collapsed for shipping and easily brought into the box form, one section of the bottom forming a brace to hold the sides of the box apart, as well as assisting in forming a double-bottom box.

Having described my invention, I claim—

1. A blank for a paper box having a substantially equilateral triangular shaped bottom-section, two body-sections upon each of the opposite sides of said equilateral triangular bottom-section, a transverse slit across said bottom-section, scored lines in said bottom-section subdividing it into duplex folding sections, scored lines between said body-sections, and scored lines between the body and bottom sections, substantially as specified.

2. A blank for a paper box consisting of a substantially equilateral triangular shaped interior bottom-section, upon the opposite equilateral sides of which are extended duplex body-sections, scored lines subdividing the bottom-section and a transverse slit across said bottom-section forming a folding and a collapsing line, and adapting the bottom edge of said bottom-section to be turned in and tucked onto the other section, substantially as specified.

3. A blank for a paper box, consisting of an equilateral triangular shaped bottom-section, two body-sections upon each of its opposite equilateral sides, a scored line bisecting said triangular-shaped bottom, pasting-flaps on the edges of said body-sections adapted to overlap adjacent sections when the blank is folded on said scored lines, a slit across said bottom-section transverse to said bisecting lines, and scored folding-lines, subdividing said bottom-sections, substantially as specified.

4. A blank for a paper box, having an equilateral triangular shaped bottom-section, two body-sections upon its opposite equilateral sides, a scored line bisecting said triangular-shaped bottom-section, scored lines subdividing said bottom into folding divisions, a transverse slit in said bottom-section for tucking and overlapping one of said bottom-sections upon the other, substantially as specified.

5. A blank for a paper box, consisting of ten folding sections, defined by scored lines, six of said sections forming an equilateral triangular shaped bottom subdivided by a transverse folding-line, a transverse slit dividing said bottom-sections on the line of the box, body division and folding lines to allow said bottom-sections to be folded upon each other and overlapping the opposite body-sections, substantially as specified.

6. A blank for a paper box consisting of a body-section formed on the two outer sides of the blank, a triangular-shaped bottom-section formed integral therewith, a central folding-line subdividing said bottom-section, a transverse slit intersecting said line and the intersecting box-corner lines with scored folding-lines whereby the box may be folded across the central bottom line and the bottom-sections folded, tucked through said slit and overlap so as to be employed in either the collapsed or folded position, substantially as specified.

7. A substantially triangular shaped blank, having an equilateral-shaped bottom-section, intermediate of the body-sections upon its equilateral sides, a bisecting scored line on the bottom-section, a slit across said section transverse to said bisecting scored line, and scored lines between the body and bottom sections respectively, substantially as described.

In testimony whereof I have hereunto set my hand.

THEODORE L. NEUMANN.

Witnesses:
OLIVER B. KAISER,
VIOLA T. GEORGI.