T. J. POWERS, dec'd.

ANNA POWERS, Executrix.

Paper-Boxes.

No. 156,591. Patented Nov. 3, 1874.

Fig 1.

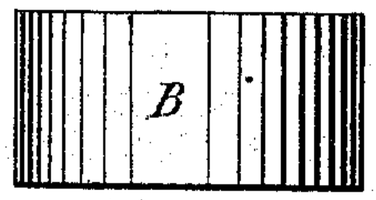


Fig 2.

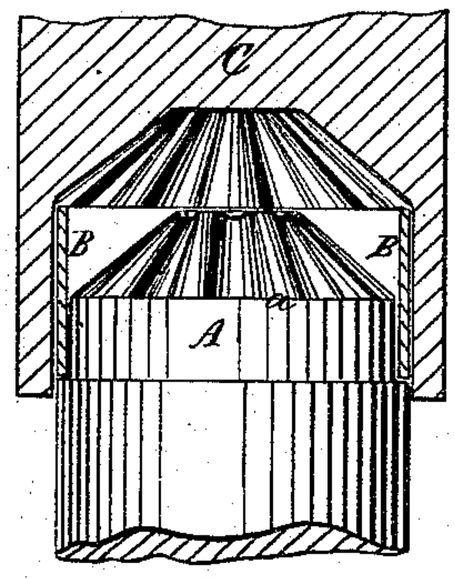


Fig 3.

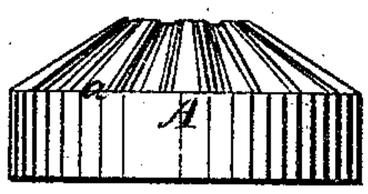


Fig 4.

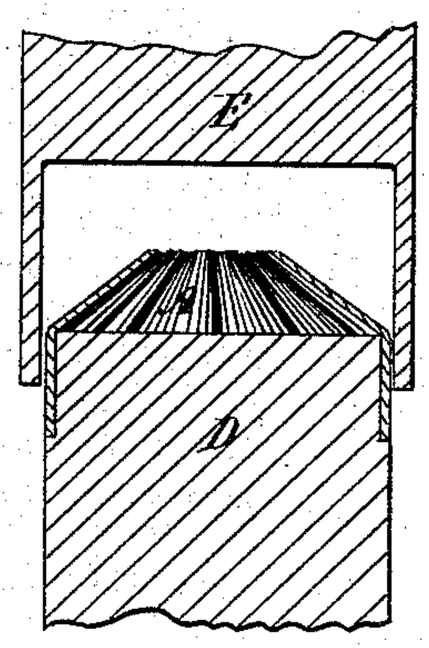


Fig 5.

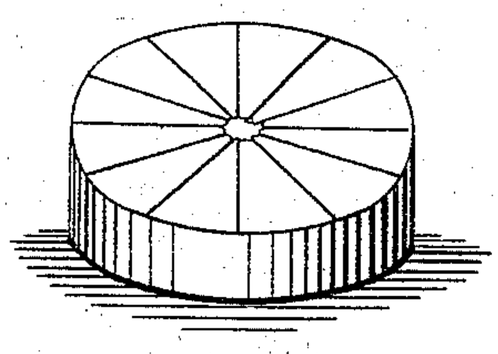
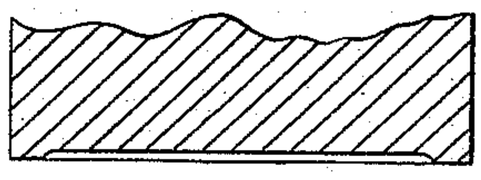


Fig 6.



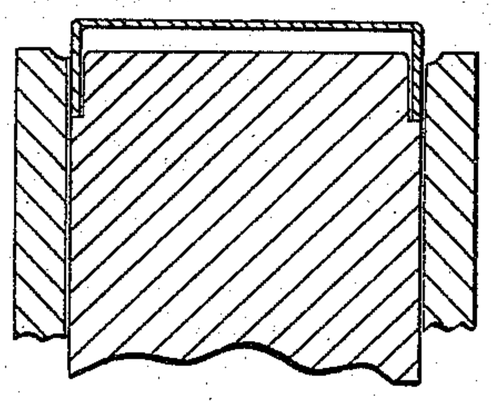


Fig 7.

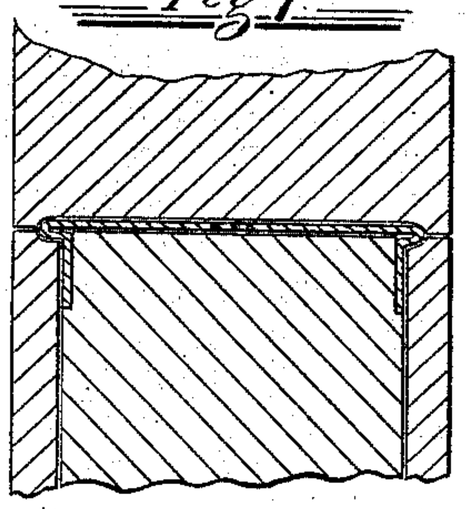


Fig 8.

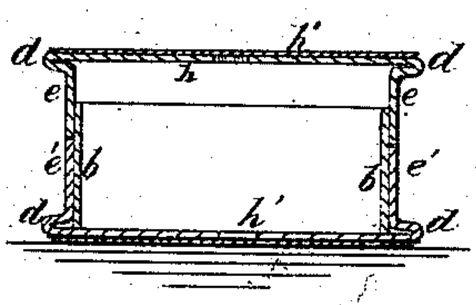
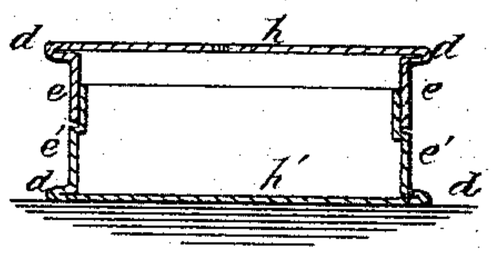


Fig 9.



Witnesses.

B. F. Clark.

A. M. Edwards

Inventor

Anna Powers
administratrix of the Estate of
T. J. Powers - deceased.

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

UNITED STATES PATENT OFFICE.

ANNA POWERS, OF NEW YORK, N. Y., EXECUTRIX OF TIMOTHY J. POWERS, DECEASED.

IMPROVEMENT IN PAPER BOXES.

Specification forming part of Letters Patent No. **156,591**, dated November 3, 1874; application filed July 30, 1874.

To all whom it may concern:

Be it known that TIMOTHY J. POWERS, deceased, late of the city of New York, county and State of New York, did invent a Paper Box, the same being a new manufacture, of which the following is a specification:

This invention relates to pasteboard boxes, consisting of a body or base and cover, the latter shutting over or upon the former, the peculiarity of the box embodying the invention being, first, that the bodies and the bottom and top of the two parts, respectively, consist of a single piece of pasteboard, as hereinafter particularly described; and, second, that around the closed rim of one or both parts there is a projecting annular flange formed of such single piece of pasteboard.

Pasteboard boxes, of the class referred to, as commonly made, consist of a base and cover, each composed of a body formed of one piece of pasteboard, and a top or bottom, as the case may be, formed of a separate piece, attached in some way to the body, usually by gluing or pasting the two pieces together, and strengthening the connection by pasting thin paper over it; and in boxes that have an annular projection around the upper and lower edges. Such projection is formed by such separate top and bottom extending beyond the body, and leaving a sharp raw edge, unless covered by pasting on additional paper.

The box constituting the subject of this invention is formed of two parts, each of which is composed of a single piece of pasteboard, the same cylinder or tube that constitutes the sides or body being folded over and pressed down to form the top or bottom, as the case may be, and a projecting rim or flange is formed around the top or bottom, one or both, by folding outward the walls of the same cylinder or tube at the line where such projecting flange is desired.

In the accompanying drawings there are shown both a box embodying this invention and the tools by which the same may be made.

The method of fabricating this new box, which has been found most convenient, is to take common paper, cover one side thinly with paste, and form it into a tube or cylinder having walls of sufficient thickness, by winding it around a mandrel of suitable size, corresponding to the diameter of the box designed to be made. A side elevation of such a cylinder is seen at Figure 1. This cylinder is then placed upon a die, shown in elevation at A, Fig. 2, having a shoulder to support the lower edge of the cylinder, shown in section, and the upper end above the line *a*, being made conical and grooved or fluted to match the die A, fits down over the latter. It is evident that when the die C is pressed down upon the paper cylinder, its upper portion above the line *a* will be folded inward, and made to assume the form represented by Fig. 3. It is then transferred to another die, D, with a plane surface at the upper end, and also a shoulder to support the paper cylinder, as shown in section in Fig. 4. By pressing the upper plane-faced die E down upon the lower die D, the folding process will be completed, and, a severe pressure being applied, a smooth plane top will be formed, as shown in Fig. 5. Then, by pasting a disk of paper, *h'*, over the face of the closed end, both inside the box and out, the folds and the small aperture that may be left at the center will be entirely concealed. This constitutes one part, top or bottom, as the case may be, of the intended box. A similar closed cylinder is made for the other part of the box. The process or method of forming the projecting rim or flange *d* around the top and bottom of the box, shown in Figs. 8 and 9, is a well-known one, as practiced in forming the flanged-headed metallic cartridge-cases. The tools by which it may be performed are shown in Figs. 6 and 7; in the latter the said flange being represented as completed. Fig. 8 shows, in section, the completed box, a supplemental cylinder, *b*, being inserted in the usual way to form a neck for the cover. In place of using this supplemental cylinder, a neck may be formed on the base or bottom portion of the box, as represented in Fig. 9. The process and tools by which this neck may be formed do not differ from those usually employed in reducing the ends of metal tubes, as, for example, metallic cartridge-cases.

In folding down the wall of the cylinder to form the bottom or top, as above specified, it is recommended that the folds be carried inward, so that, after being subjected to pressure, whatever unevenness there is shall be on the inside of the box, leaving the outer surface smooth and plane. This result may be accomplished by a suitable construction of the folding-dies, the corrugations or spines on the face of the dies being made thin and short, and sufficiently prominent for the purpose.

In making paper cartridge-cases and shells, the end of the tube has been swaged or turned inward to partially close the said end, as set forth in the patent to T. J. Powers, May 17, 1870, No. 103,079.

The box thus formed may be labeled or ornamented, as desired.

A mode of proceeding and tools, whereby the box which is the subject of the present invention may be fabricated, are above described; but any other may be employed for the purpose which the manufacturer may find to be convenient.

It is not intended to make any claim here for the process or tools, as such, herein described—reserving for a separate application whatever patentable inventions there may be in such process and tools.

What is claimed as the invention of TIMOTHY J. POWERS, and for which Letters Patent are desired, is—

As a new manufacture, a box, the two parts of which are severally composed of a single piece of pasteboard in the form of a hollow cylinder, closed at one end by the same being folded inward, and pressed without being cut, and covered with a disk of paper, as described.

ANNA POWERS,
Administratrix of the estate of T. J. Powers, deceased.

In presence of—
B. F. CLARK,
W. M. EDWARDS.