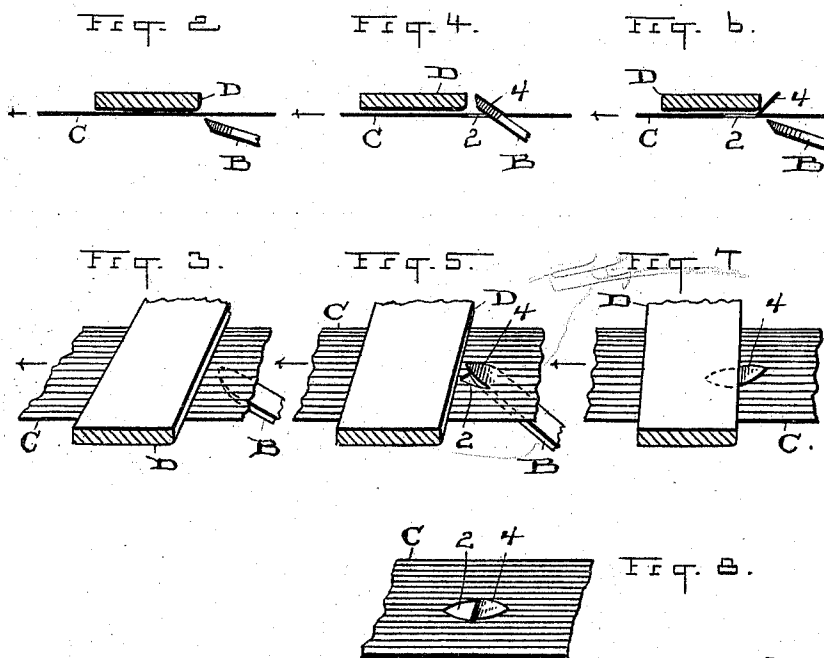
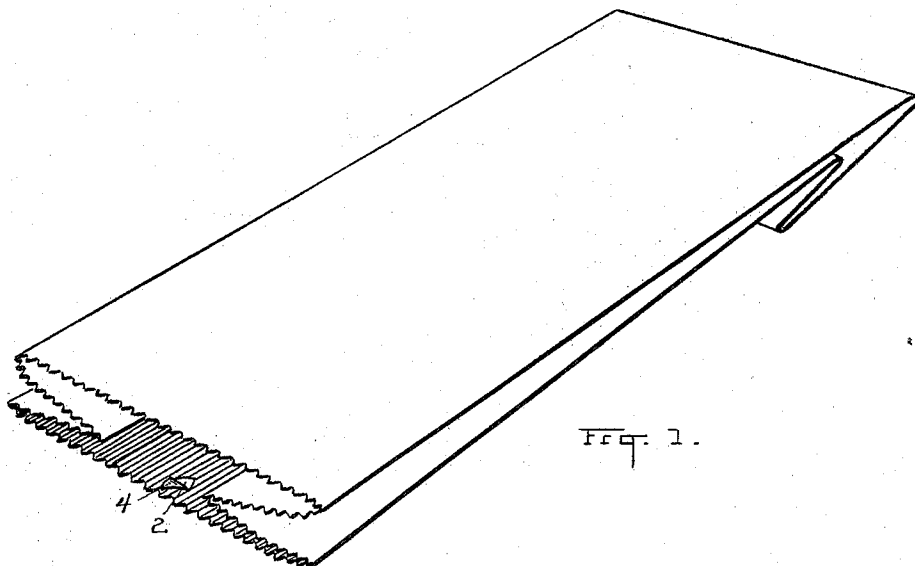


(No Model.)

D. APPEL.
PAPER BAG.

No. 584,659.

Patented June 15, 1897.



ATTEST
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PAPER BAG.

SPECIFICATION forming part of Letters Patent No. 584,659, dated June 15, 1897.

Application filed July 16, 1896. Serial No. 599,375. (No model.)

To all whom it may concern:

Be it known that I, DANIEL APPEL, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Paper Bags; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to paper bags; and the invention consists in a paper bag provided with a string-hole of the form substantially as shown and having the paper which has been removed to produce the hole intact with the top edge thereof and turned back upon the side of the bag and forming a reinforcing edge about the hole, all substantially as described, and particularly pointed out in the claim.

In the accompanying drawings, Figure 1 is a perspective view of a complete bag, showing the string-hole referred to in its open end. Figs. 2 to 7, inclusive, show steps in the process of developing the string-hole and means to do the work, as hereinafter more fully described. Fig. 8 shows a section of paper or stock in which the string-hole has been produced, and the flap taken out of the hole is folded back after the manner seen in Figs. 6 and 7 and as appears in the complete bag, Fig. 1.

The bag illustrated in Fig. 1 is designed merely to exhibit a complete bag of some kind which contains the invention, and beyond this the said figure has no importance. Any paper bag now in use would serve the purpose as well, and may be provided with a string-hole after the manner of this invention.

Two important considerations are involved in the construction of string-hole 2 with a flap 4 at its base, as shown. In the first place the turning back of the flap 4 along the base of the hole where the string is engaged and the weight of the bag is suspended forms a reinforcing transverse fold which materially increases the strength of the edge about the hole for all purposes and makes it much less liable to be torn out than a plain unsupported edge would be. In the second place the method of producing the hole is original and

novel in this, that the hole is not made with a punch or die, as formerly, which cuts the hole at once to its full size, but by the use of a blunt-pointed blade having a cutting edge fashioned to make a plain V-shaped or pointed incision and no more to start with. The manner in which this is done is clearly illustrated in the successive views, beginning with Figs. 2 and 3. In these views the paper or stock, in the shape of plicated tubing, is indicated by C and is supposed to be in motion or movement to the left, and D represents a stationary bar or plate forming a part of the machine. The blade B is arranged in this instance to operate from below and to have an up-and-down movement, timed according to the travel of the stock C and the distances apart of the holes 2, it being understood that these holes are made in the stock before the stock is severed to produce the bag.

The first position of the blade is seen in Fig. 2 and the second position in Fig. 4. In this latter case the blade has been raised and its point forced through the paper, as seen in Fig. 5, and the paper has moved on slightly and thereby severed the stock back along the sides of the hole through which the blade still projects. Now the hole has been made as large as desired, and the next step in the operation is the withdrawal of the blade, which occurs in such time and manner as not to further enlarge the hole, although the stock is still rapidly on the move. This latter position is a return to position as in Fig. 2, denoting the place of rest.

It will be noticed in Figs. 2, 4, and 6 that the paper C passes closely beneath the flat bars or plates D, and in Fig. 4 that the flap or tongue thrown up by tool B is in position, as said tool is withdrawn, to engage against the edge of plate D and be turned backward as the paper moves forward until it is speedily turned and folded down, as seen in Fig. 8. The successive steps of this operation are clearly shown in Figs. 4 to 7. The flap or tongue 4 is thus folded over onto the stock in such way as to lie substantially flat thereon and so that its point projects outward in the completed bag. The stock is thereafter cut up into bag lengths and in such way as to bring the holes at the right place in the bag. The hole thus produced is triangular in shape,

with its base parallel with the adjacent edge of the bag, and has been made by two distinct operations, the first of which is a mere thrust of a pointed instrument, which is followed by tearing the hole to the desired size at the edges of the instrument. Then to complete the novel operation the removed stock is folded on a straight line and retained as an integral and useful portion of the bag. This has also the further advantage of providing a cheap and very serviceable device for making the holes, especially as compared with the punches and dies hitherto used and which were constantly getting out of order and were difficult to keep adjusted and sharpened so as to do good work. Then, again, the punched-out bits of paper were unavoidably flying about the machine in such quantity as to really obstruct its operations, as well as being objectionable on other accounts. With my improvement all these objections are avoided, so far as the production of a bag with a string-hole is concerned, and the bag itself is decidedly improved.

The instrument B is shown as having substantially flat top and bottom sides, and its side edges are beveled from top to bottom and turned on a curve to the point of the tool. Hence when the immediate point of the instrument is thrust through the paper a mere transverse incision is produced, which

subsequently is enlarged to a V shape of the requisite depth for the hole by severing the paper at the edges of the tool as the paper is moved forward and as hereinbefore described.

Referring to the instrument B, it is essential in any case that the top thereof be flat and the extremity pointed, but of course the relation of the parts may as well be reversed, so as to bring the instrument on top and the plate D below the paper, or the plates might be arranged vertically. In any case the paper is sufficiently stretched by the action of the blade near the edge of the plate when the plate forms a backing for the thrust.

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

As a new article of manufacture, a paper bag provided with a string-hole having the stock which is cut to form said hole unsevered along the outer edge of the hole and folded back on the paper toward the mouth of the bag and forming a reinforced edge for the string, whereby the bearing edge of the string-hole is strengthened and protected from tearing, substantially as described.

Witness my hand to the foregoing specification this 15th day of June, 1896.

DANIEL APPEL.

Witnesses:

H. T. FISHER,
H. E. MUDRA.