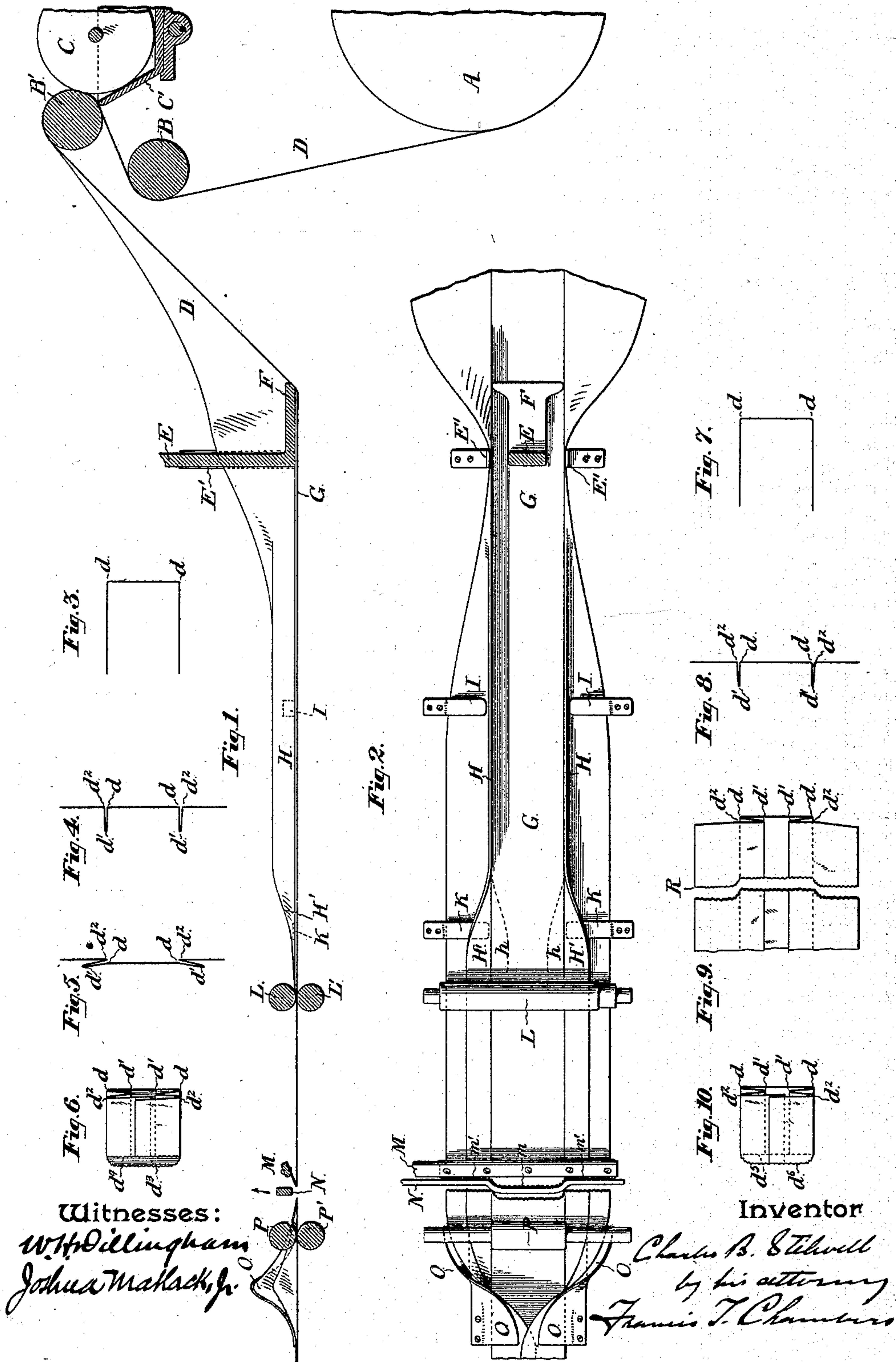


(No Model.)

C. B. STILWELL.  
PAPER BAG MACHINERY.

No. 410,124.

Patented Aug. 27 1889.





# UNITED STATES PATENT OFFICE.

CHARLES B. STILWELL, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO  
THE UNION PAPER BAG MACHINE COMPANY, OF SAME PLACE.

## PAPER-BAG MACHINERY.

SPECIFICATION forming part of Letters Patent No. 410,124, dated August 27, 1889.

Application filed January 26, 1889. Serial No. 297,600. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES B. STILWELL, of the city and county of Philadelphia, State of Pennsylvania, have invented a new and  
5 useful Improvement in Paper-Bag Machinery, of which the following is a true and exact description, reference being had to the accompanying drawings, which form a part of this specification.

10 My invention relates to the construction of those parts of a paper-bag machine which form the tube and sever it into blanks; and my object is to provide improved mechanism for forming bellows-sided bag-blanks.

15 My new device can best be described with reference to the drawings, in which—

Figure 1 is a sectional elevation of my improved mechanism, taken along the center line thereof. Fig. 2 is a plan view; Figs. 3, 4,  
20 5, and 6, views showing the folding and cutting of the paper-web in the apparatus shown; and Figs. 7, 8, 9, and 10, views showing the mode in which the paper web is folded and cut when the ends of the folder-plates H are  
25 curved in instead of out, as shown.

A is the roll of paper, B B' guide-rolls, C a paste-roll, and C' the paste-trough.

D is the web of paper.

30 E is a standard, to which is secured a former-plate G, F being a curved edge over which the web passes to the former G.

E' E' are fingers which press the edges of the web upward as it passes beneath the former-plate, so as to define the folds  $d$   $d$ .

35 H and H are former-plates placed close to the edges of the former-plate G, and of a breadth equal to half the bellows-folded side of the tube to be made. The ends H' of these plates are curved down and fingers K K provided to insure the paper following their  
40 curvature. The said ends H' may either curve outwardly, as shown, or inwardly, as is indicated by the dotted lines  $h$   $h$ .

L L' are pressure-rolls which press out the  
45 flattened tube; M, a knife, which, where blanks with a lip are to be formed, has, in case the plates H curve outwardly, a projecting center  $m$ , which severs the under side of the folded web, and side cutters  $m'$   $m'$ , which  
50 sever the bellows folds and upper side. Where

the folders H curve inwardly, the center of the knife should be recessed, so as to sever the bellows folds and bottom of the web, and the sides extended to sever the edges of the web which form the upper side of the tube, the  
55 edge of the knife having then the outline shown at R, Fig. 9.

N is the striker, which acts in connection with the knife M to sever the blanks from the web.  
60

O O are curved folder-plates which act to fold the opened blanks into the form of a tube, P P' being feed-rolls to feed the blanks along.

The web in passing under the former G is  
65 folded on the lines  $d$   $d$ , as is shown in Fig. 3. It is then passed up alongside of the plates H and folded over their top edges and down their outer faces and again creased at the lower edge of said plates, the fingers I I serving  
70 to press it into shape, and the action of the plates H and fingers I being to fold the web into the form shown on Fig. 4, thus defining the folds  $d'$   $d'$  and  $d^2$   $d^2$ . As the paper thus folded reaches the outwardly-curved ends H'  
75 H' of plates H H, the action of these ends, in connection with fingers K K, is to spread out the folded tube in the form shown in Fig. 5. Having reached this stage, the web is preferably passed through presser-rolls L L', to  
80 straighten it and sharply define the folds  $d'$   $d^2$ , and then beneath a knife M, which severs it, when the web is struck by the striker N. The blanks then pass to the curved folder-plates O O, which fold them up, as shown, in-  
85 to the bellows-sided shape shown in Fig. 6.

Where the folder-plates curve inward, as is indicated at  $h$   $h$ , the web is folded, as before, into the forms shown in Figs. 7 and 8, and then into the form shown in Fig. 9, which, by  
90 the modification of the cutting-edge of the knife, is cut, as shown in Fig. 9 at R. Where the folder-plates H curve outward, the lip  $d^3$ , Fig. 6, is formed on the under side of the blank,  $d^4$  indicating the line on which the up-  
95 per side and bellows-folded sides are cut. In the other case the lip is formed on the upper side, as is indicated at  $d^6$ , Fig. 10, the other sides being cut on line  $d^5$ .

Having now described my invention, what I 100

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

In a paper-bag machine, a device for forming a bellows-folded tube and severing it into bag-blanks, having a former G, around which the web is folded on the lines which define the under side of the tube, folder-plates H H, with curved ends H' H', fingers I I and K K, coacting with the folder-plates H H to form the bellows fold and spread the folded web

flat, a knife M and striker N, to sever the folded and flattened web into blanks, and curved plates O O, arranged to fold the flattened web into a tube, all substantially as and for the purpose specified.

CHAS. B. STILWELL.

Witnesses:

WILLIAM H. DOERING,  
LISLE STOKES.