June 19, 1928. 1,674,502

M. J. DAVIS

VALVE FORMING DEVICE FOR PAPER BAGS

Filed Dec. 17, 1927

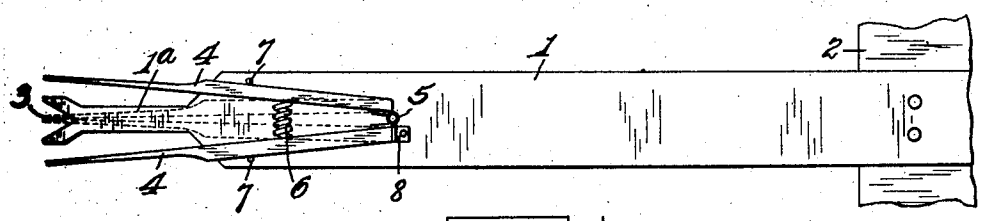


FIG 1

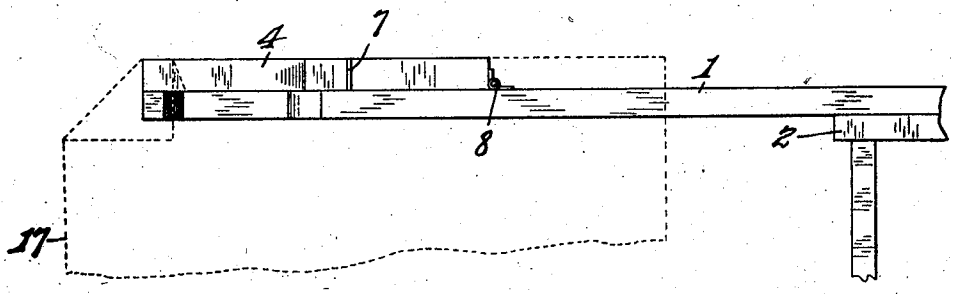


FIG 2

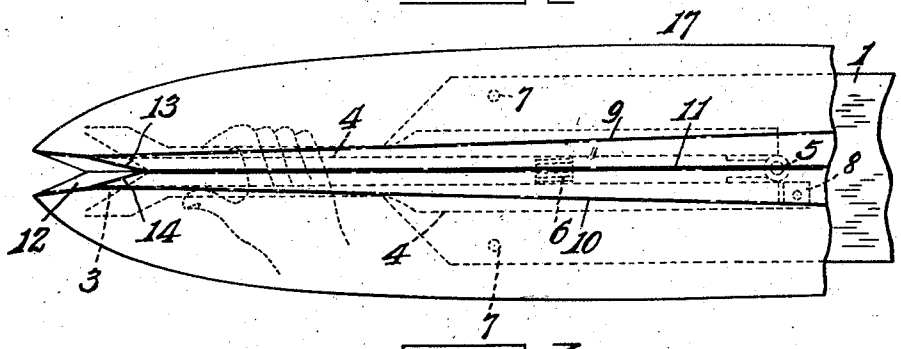


FIG 3

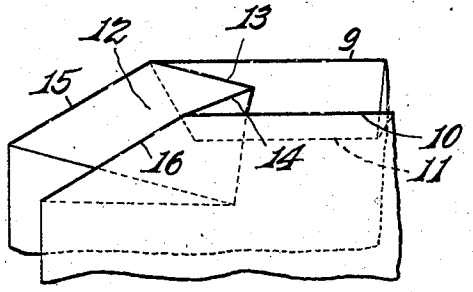


FIG 4

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VALVE-FORMING DEVICE FOR PAPER BAGS.

Application filed December 17, 1927. Serial No. 240,784.

This invention relates broadly to valve-forming devices for paper bags, and it has for its primary object to provide a simple and inexpensive device by means of which may be produced the bellows-like folds employed in the top ends of collapsible bellows edge multi-wall paper bags.

A further object is to provide a form upon which, in the process of manufacture of paper bags, bellows-like valve folds may readily be shaped and by means of which the fold is held while its form-retaining creases are applied by hand or mechanically.

In describing the invention in detail, reference is herein had to the accompanying drawings, in which—

Figure 1 is a top plan view of the invention;

Figure 2 is a side elevation of the same;

Figure 3 is an enlarged top plan view showing the movable jaws of the invention partially closed into the position in which they grip the fold while the creases are being formed; and—

Figure 4 is a perspective view of a portion of a paper bag, showing the valve folds formed therein.

Referring to said drawings, 1 designates a bar which has one end rigidly mounted upon a table, bench, or other suitable support 2, and which projects horizontally from such support throughout a suitable distance, which distance is at least equal to the length of the paper bag which is to be formed.

The forward, or outer, end portion 1^a of the bar 1 is suitably reduced in width and has provided in the end thereof a V-shaped recess 3, the purpose of which will hereinafter be explained.

Suitably mounted upon the bar 1 at a point rearward of the reduced end portion 1^a are the rear ends of a pair of pivotally related fingers 4, a hinge 5 being herein shown as forming a pivotal connection between said fingers. Said fingers are normally held by an interposed compression spring 6 in relatively separated positions in which their front ends are disposed on opposite sides of, and laterally outward with respect to, the recessed end of the bar 1. Upright pins 7 are fixed in the bar at suitable points and serve as stops for limiting the extent of relatively expanding movement of said fingers, as shown in Fig. 1.

While other suitable means of mounting the fingers upon the bar may be employed, the means herein shown consists of a hinge 8 which has one leaf fixed to the bar and the other fixed to the adjacent end of one of said fingers, as shown in Figs. 1 and 2.

In practice, a length of paper tubing 17, from which the paper bag is to be formed and which is of the usual collapsed flat form, having formed in each of the opposite lateral edges thereof an inwardly directed longitudinally extending fold defined by parallel creases 9 and 10 and having therein a bottom crease 11, is slipped lengthwise upon the bar throughout the required distance, with one of its said folds overlying the bar and the fingers. The tube is thus supported with its outer end projecting outwardly from the crotch of the recess 3 of the bar a distance equal to the depth of the bellows fold 12 which is to be formed in the tube as an initial step in the formation of the top end of the bag. So positioned, the points of the fingers are received within the parallel creases 9 and 10 of the uppermost fold. Then, with the bag thus supported, the projecting end of the said fold is drawn downwardly by hand until the bottom crease 11 thereof seats closely in the crotch of the recess 3, in which position said crease has a substantially vertical disposition, as shown in Figs. 2 and 4. Then, holding the said turned down end in place with one hand, the fingers 4 are drawn toward each other with the other hand in the manner indicated in broken lines in Fig. 3, until the outer end of said lateral fold of the tube is fully closed. In the last mentioned figure, the fingers 4 are shown but partially closed for purposes of illustration.

In the fully closed position of the fingers, the downturned end portion of the tube is thereby compressed to form the divergently related creases 13 and 14 of the bellows fold, and the paper is caused to be rudimentarily creased in parallel downwardly and outwardly inclined lines at opposite sides of said fold 12, and, while still holding said fingers closed in the position in which it grips the upper portion of the bellows, the

rudimentary creases are compressed between the thumb and a finger of the hand of the operator which is passed downwardly thereover to form the permanent creases 15 and 16.

What is claimed is—

1. In a device of the character described, the combination with a support, of a horizontal bar carried by said support, the forward end of said bar having therein a V-shaped recess, a pair of pivotally related fingers mounted on said bar, and resilient means whereby said fingers are normally held in spread relation with their ends disposed laterally with respect to said recess.

2. In a device of the character described, a rigidly supported horizontal bar having a V-shaped recess in the front end thereof, a pair of pivotally related fingers mounted upon said bar, and means normally holding said fingers with their free ends located adjacent to and laterally with respect to said recess, said fingers being adapted to be closed into gripping relation to a portion of a paper tube received within said recess.

3. In a device of the character described, a rigidly supported horizontal bar having a V-shaped recess in the front end thereof, a pair of pivotally related fingers mounted upon said bar, and means normally holding said fingers with their free ends located adjacent to and laterally with respect to said recess, said fingers being compressible against said holding means into creasing and gripping relation to a fold of a paper tube received within said recess.

4. In a device of the character described, a rigidly supported horizontal bar having a V-shaped recess in the front end thereof, a pair of pivotally related fingers mounted upon the upper face of said bar, a compression spring interposed between said fingers and normally holding the latter in spread relation wherein their forward ends are disposed laterally of the recessed end of the bar, and means limiting the extent of separation of said fingers, said fingers being compressible into creasing and gripping relation to a fold of paper inserted in said recess.

In testimony whereof I affix my signature.

MERRITT J. DAVIS.