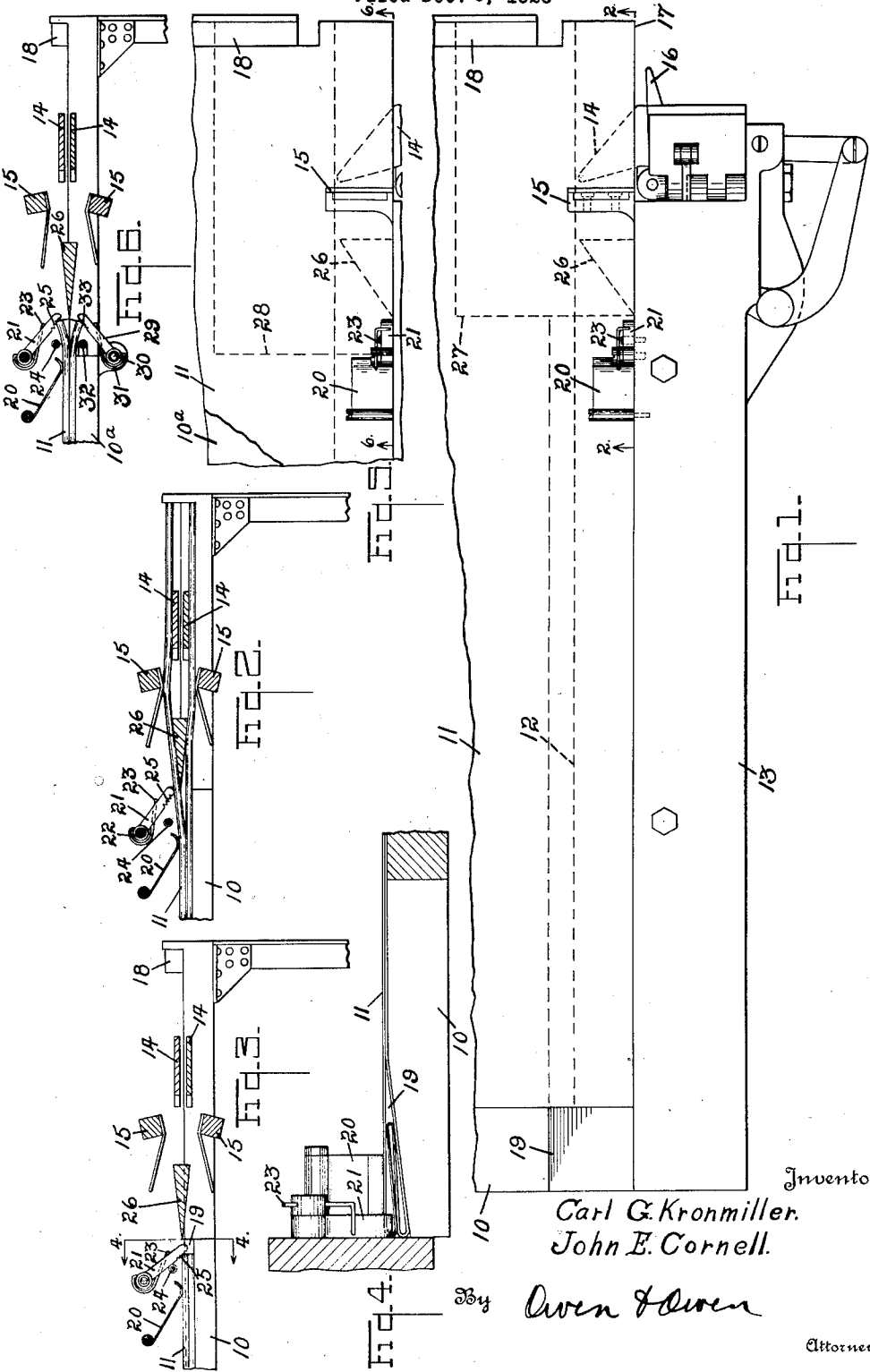


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GUIDE FOR BAG VALVING APPARATUS

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GUIDE FOR BAG-VALVING APPARATUS.

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This invention relates to a guide for bag valving apparatus, and has for its purpose to guide the bag into proper position to be acted upon by the valving apparatus. Details of the invention will appear as the description proceeds.

In the accompanying drawing forming a part of this specification, Figure 1 is a plan view of a device embodying the invention; Fig. 2 is a detail section on the line 2—2 of Fig. 1; Fig. 3 is a view similar to Fig. 2, but showing the bag in a different position; Fig. 4 is a section on the line 4—4 of Fig. 3; Fig. 5 is a plan view of a modified form of device; and Fig. 6 is a view similar to Fig. 3, but showing the modified form of device illustrated in Fig. 5.

The apparatus shown in the drawings comprises a table 10 upon which there may be positioned a bag 11 having along one side thereof a gusset-fold 12. Along one side of the table there is a valver casing 13, which may enclose suitable devices for operating valve-forming apparatus. In the form of device shown, the valving apparatus comprises spreaders 14 adapted to enter the gusset-fold of the bag, clamps 15 adapted to hold the gusset-fold collapsed adjacent the spreaders, and a tucking finger 16 adapted to tuck the end of the gusset-fold between the spread apart sides. The operation of the valving mechanism forms no part of the present invention, and need not be further described at the present time.

In the form of device shown, there is an extension 17 at the corner of the bag where the valve is to be formed. In positioning the bag for valve-forming operation, it is slid along the table until its end encounters a stop 18. The purpose of this invention is to insure that the bag will be properly positioned with the spreaders 14 enclosed in its gusset-fold, without attention other than that necessary to move the bag along the table until it encounters stop 18.

At the side of the table, next to the valver casing, the surface is bevelled off slightly, as shown at 19, for a width slightly exceeding that of the gusset-fold. A spring finger 20 is provided for insuring that the gusset-folded side of the bag shall lie flatly upon the table as it approaches the valving apparatus.

After the end of the bag passes beneath spring 20, it encounters a lifter 21. Lifter 21 is mounted on a fixed pivot 22 above the

bag, and a spiral spring 23 normally oscillates the lifter downward towards the bag until it encounters a fixed stop 24. In this position the toothed end 25 of the lifter lies in the path of the upper portion of the gusset-fold.

After the end of the bag passes lip 21, the upper and lower portions of the gusset-fold pass on opposite sides of a guide-wedge 26, and thence between the clamps 15, and outside of spreaders 14. The corner of the table is recessed, as indicated at 27, in order not to interfere with the valving mechanism or with the downward movement of the lower wall of the bag during the valving operation.

It is thought that the operation of the device will be readily apparent from the above detailed description, but a summary thereof is added for convenience.

When a bag is to be placed in position for valving operation, it is first placed on the table with its side against casing 13 and with its extension 17 directed towards spring finger 20. The bag is then moved longitudinally until its end contacts stop 18. During this movement, the end of the gusset-fold first passes under spring 20, which insures the exact vertical positioning of the walls of the fold at this point. Thereafter the upper wall of the fold encounters the toothed portion 25 of lifter 21, as shown in Fig. 4, and further movement of the bag causes this upper wall to rise with the finger, as the finger oscillates, until the wall is above guide-wedge 26. This insures that the upper wall of the gusset-fold will slide over the upper surface of guide 26. The lower wall of the gusset-fold, being well beneath the point of guide-wedge 26, proceeds beneath the wedge under normal conditions without any further attention. It will be readily apparent from observation of the parts, as disclosed in Figs. 2 and 3, that the gusset-fold is held spread by wedge 26 sufficiently to insure its passage above and below spreaders 14, thereby insuring the positioning of the gusset-fold in proper relation to the valving apparatus.

In the modified form of device shown in Fig. 5, table 10^a is recessed at 28 slightly more than table 10 is shown at 27, being cut away far enough back so as to provide for the use of a lowering device 29 similar to the lifter 21. This lowering device is shown

mounted on a fixed pivot 30 and normally swung upward by a spring 31 against a stop 32. When the lowering device is thus positioned, its toothed end 33 is in the path of the lower wall of the gusset-fold, and insures the lowering of this wall sufficiently to secure its passage beneath wedge 26. Otherwise, the operation of the form shown in Figs. 5 and 6 is the same as that shown in Figs. 1 to 4 inclusive.

Various modifications of the features of this device might be made without departing from the spirit of the invention. For example, the bevelling of the table at 19 might be omitted. This bevelling is considered an advantage to some extent, as the pressure of the side of the bag, thickened because of the gusset-fold, against this bevelled edge of the table aids in positioning the bag snugly against the valve casing. A similar result might be attained by properly forming the spring finger 20. It will be apparent also that various modifications could be made in the lifting and lowering devices respectively, without interfering with their essential operation.

What we claim is:

1. In an apparatus for valving gusset-folded bags, a member adapted to lie within the gusset-fold during the valving operation, a table in position to support the bag while it is being valved, a guide for the side of the bag as it is being positioned for valving, and a device for holding the gusset-folded edge of the bag in position against the table as it is moved longitudinally towards the valving apparatus, said member being approximately one-half of the thickness of the gusset-fold above the portion of the table supporting said gusset-fold.

2. In apparatus for valving gusset-folded bags, a member adapted to lie within the gusset-fold during the valving operation, a table in position to support the bag while it is being valved, a guide for the side of the bag as it is being positioned for valving, the surface of the table slanting downward adjacent the guide, and a spring finger above said slanting portion of the table and adapted to hold the gusset-folded edge of the bag against said slanting portion of the table.

3. In apparatus for valving gusset-folded bags and having a member adapted to lie within the gusset-fold during the valving operation, a table in position to support the bag while it is being valved, a guide for the side of the bag as it is being positioned for valving, and means for spreading apart the upper and lower walls of the gusset-fold as the end of the gusset-fold approaches the valving apparatus.

4. In apparatus for valving gusset-folded bags and having a member adapted to lie within the gusset-fold during the valving operation, a table in position to support the

bag while it is being valved, a guide for the side of the bag as it is being positioned for valving, a device for holding the gusset-folded edge of the bag in position against the table as it is moved longitudinally towards the valving apparatus, and a lifter adapted to lift the upper wall of the gusset-fold as the end of the gusset-fold moves from said holding device to the valving apparatus.

5. In apparatus for valving gusset-folded bags and having a member adapted to lie within the gusset-fold during the valving operation, a table in position to support the bag while it is being valved, a guide for the side of the bag as it is being positioned for valving, and means to lift the upper wall of the gusset-fold as the end of the gusset-fold moves in a direction longitudinally of the bag towards the valver.

6. In apparatus for valving gusset-folded bags and having a member adapted to lie within the gusset-fold during the valving operation, a table in position to support the bag while it is being valved, a guide for the side of the bag as it is being positioned for valving, and means to lower the lower wall of the gusset-fold as the end of the gusset-fold moves in a direction longitudinally of the bag towards the valver.

7. In apparatus for valving gusset-folded bags and having a member adapted to lie within the gusset-fold during the valving operation, a table in position to support the bag while it is being valved, a guide for the side of the bag as it is being positioned for valving, means to lower the lower wall of the gusset-fold and raise the upper wall of the gusset-fold as the end of the fold approaches the valver, and a guide to maintain said walls spread apart until they have passed above and below the portion of the valving device adapted to enter the gusset-fold.

8. In valving apparatus, a table having a valver casing along one side thereof and being bevelled on its side next said casing, valving means extending from the casing and adapted to enter the gusset-fold of a gusseted bag lying on the table, spring means above the bevelled portion of the table adapted to press the gusset-folded portion of the bag downward against said bevelled portion of the table, means between said spring means and valving means adapted to lift the upper wall of a gusset-fold as the end of the gusset-fold is moved towards the valving means, and a wedge-shaped guide between said lifting means and said valving means and adapted to guide the spread apart walls of the gusset-fold into position above and beneath the valving means.

In testimony whereof, we have hereunto signed our names to this specification.

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