March 7, 1944. F. C. MORGENROTH 2,343,857

POURING CARTONS

Filed July 30, 1941

2 Sheets-Sheet 1

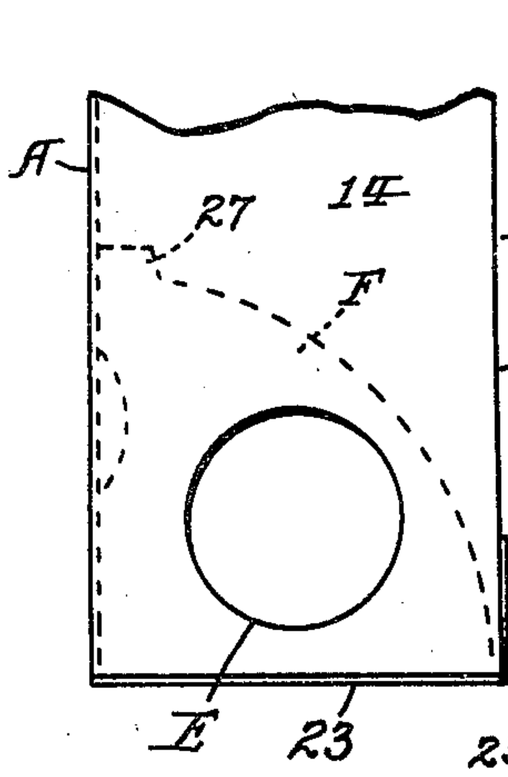

Fig. 2.

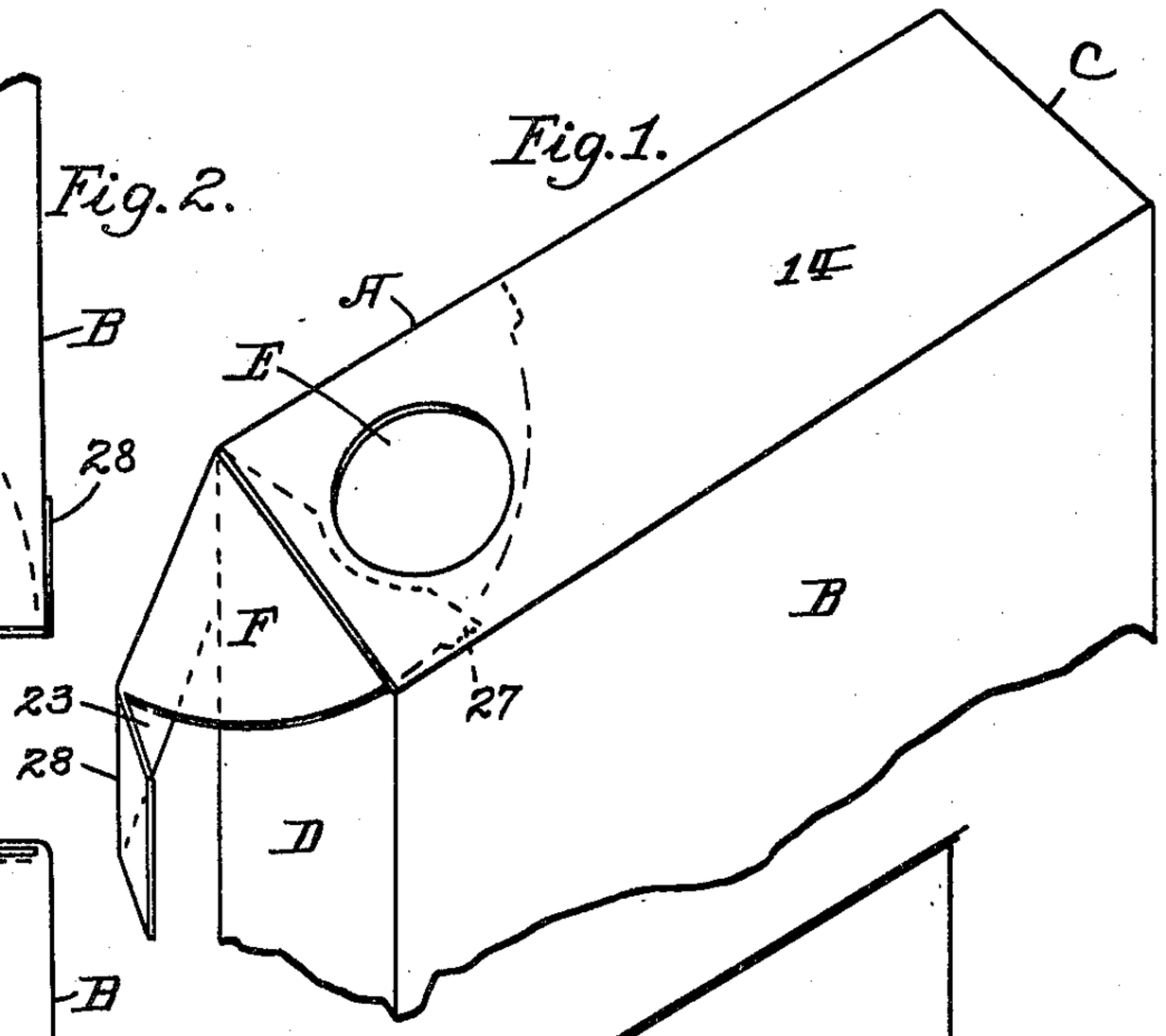

Fig. 1.

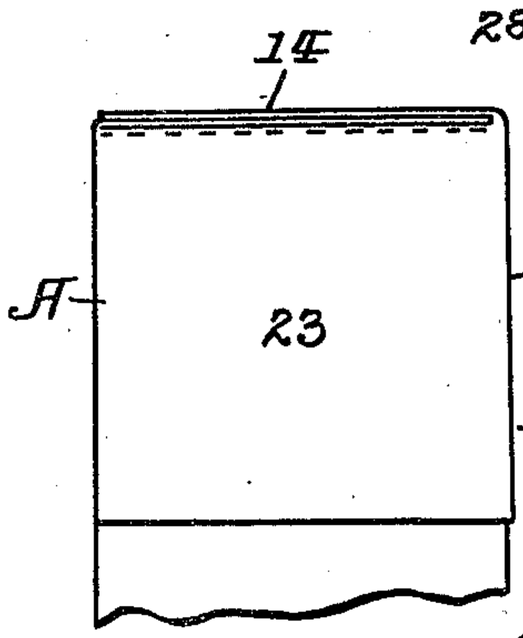

Fig. 3.

Fig. 4.

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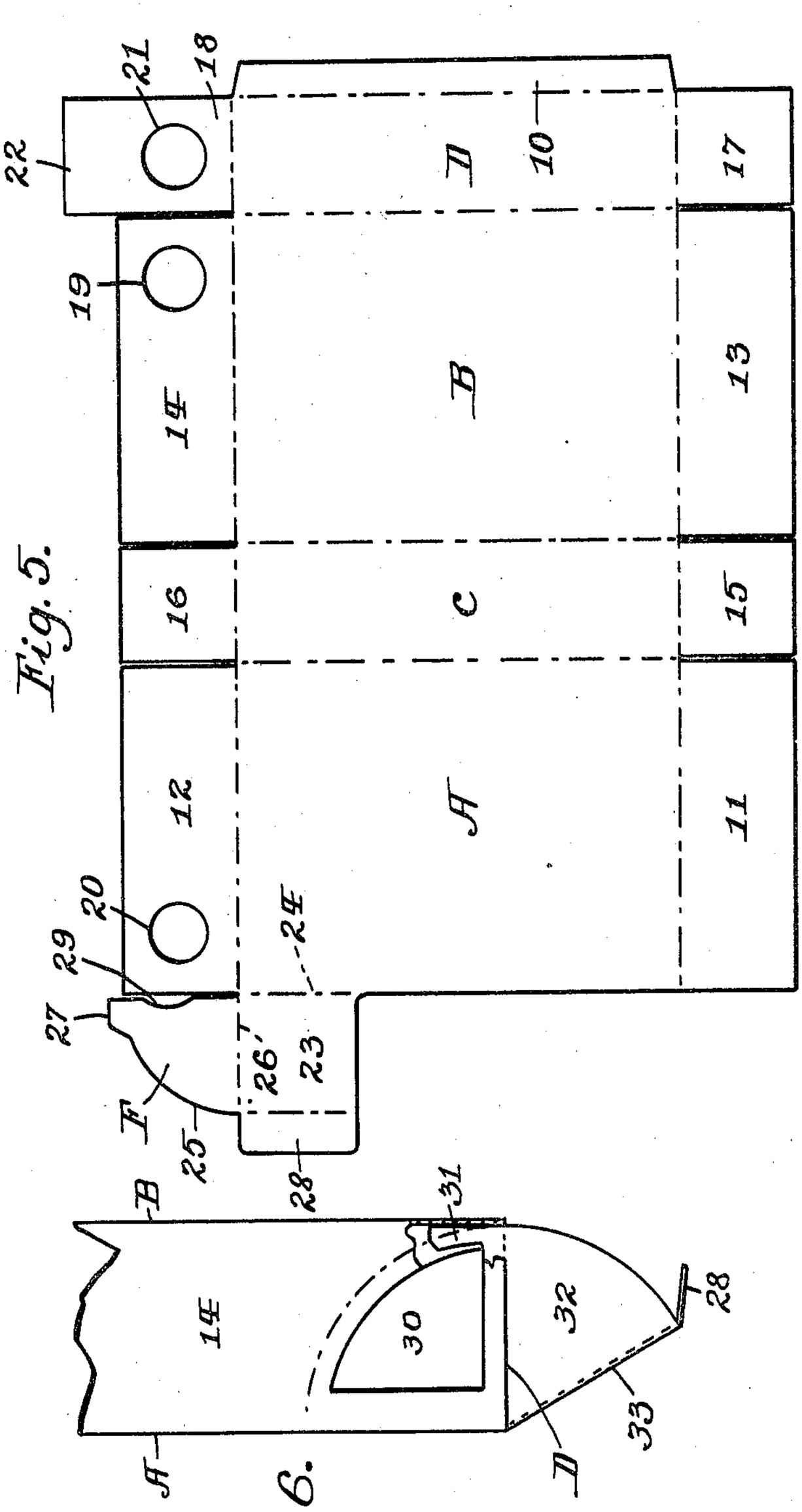

Fig. 5.

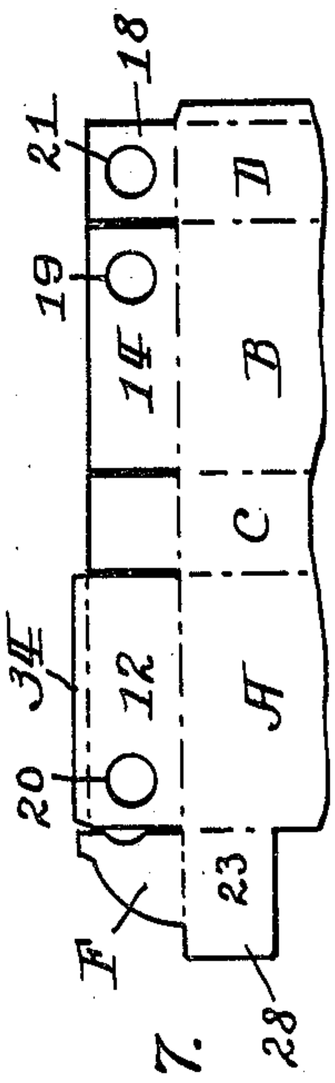

Fig. 7.

Fig. 6.

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Patented Mar. 7, 1944

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UNITED STATES PATENT OFFICE

2,343,857

POURING CARTON

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Application July 30, 1941, Serial No. 404,679

4 Claims. (Cl. 229—17)

My invention relates to improvements in containers and more particularly to the pouring feature thereof, the general type thereof being applicable for holding various commodities such as cereals, washing powder, coffee, soap flakes and many others. The principal object of the invention is to provide a valved orifice, the parts thereof being integral with the material of the carton, by which a pouring opening may when desired be employed for dispensing the contents of the receptacle. A feature of the invention which is desirable is the provision of a valved opening which normally seals the container and which may readily be released or modified to permit full or part opening of the outlet passage. When broken open the valve remains in part attached to the carton so that it can from time to time be caused to function thus keeping the contents fresh and free from the effects of outside air. The invention contemplates a carton of the customary folding blank type having a body provided with a plurality of flaps adapted to be folded one upon another and thus secured and sealed in overlapping extended arrangement to form the carton including its pouring end, certain of the flaps being formed by the usual method of scoring or creasing to provide hinge joints all of which will be fully hereinafter explained.

In the accompanying drawings forming part of this specification, Fig. 1 is a perspective view of the upper pouring end of my improved carton showing the pouring orifice and my improved valve in wide open position; Fig. 2 is a plan of a portion of the upper end of my improved carton showing the valve held fully closed; Fig. 3 is an elevation of the structure shown in Fig. 2; Fig. 4 is a fragmentary perspective view similar to Fig. 1 but showing the parts of the flaps and valve in partly unfolded condition, illustrating the process of setting up the carton during its use; Fig. 5 is a plan of the blank from which the carton of the invention is formed; Fig. 6 is a fragmentary end plan partly broken away and in section showing an alternative construction of my invention, and Fig. 7 is a fragmentary plan on a reduced scale illustrating another alternative construction.

The shape of the carton involved in this invention resembles a rectangular structure defining a parallelepiped, one end portion of which is the pouring end. Referring to Fig. 5, it will be seen that the blank from which the carton of the invention is formed comprises a piece of ordinary boxboard, pasteboard, cardboard or other suitable material cut, scored or folded to provide broad sides A and B, and narrow sides C and D. By reference to Fig. 5, the narrow side D also has provided a securing strip 10 which is attached to the broad side A by adhesive or other suitable attaching means. The broad side A is provided with flaps 11 and 12 and the broad side B is provided with flaps 13 and 14, all of which flaps when folded into overlapping engagement and secured by suitable adhesive or other suitable fastening means, assist in providing closed and sealed ends for the carton. The narrow sides C and D are provided respectively with end flaps 15 and 16 and 17 and 18, which in the formation of the carton are first folded inwardly and the end flaps 11 and 12 and 13 and 14 then folded over and secured thereto by suitable adhesive or other suitable fastening means, with the exception hereinafter described. Also in the formation of the carton the securing strip 10 is folded into the carton and secured by suitable fastening means such as an adhesive to the inner face along the outer side edge of the broad side A.

The end flaps 14 and 12, in their order are superimposed over the end flap 18 and are provided with coinciding passages 19, 20 and 21, which form a pouring opening E, through one end of the carton. The two adjacent faces between the end flap 12 and the end flap 18 remain free, no adhesive, or other fastening means being applied, whereby a thin passage is provided in which the valve flap hereinafter described functions. The outer free end 22 of the end flap 18 projects and forms an overlapping edge beyond the valve passage, said free end being secured to the adjacent surface of the end flap 12 by adhesive or other suitable means to assist in producing a substantial structure.

The flaps 11, 13, 15 and 17 on the carton opposite the pouring end thereof are also folded inwardly and secured in the usual manner by adhesive or other suitable means to complete the enclosure within the carton. The several sides and flaps referred to above are suitably de-limited by the edges of the blank and by scoring in the usual manner to provide various allowances for thickness and folding of the material.

To open and close the pouring opening E a slide valve flap F is provided which is integral with the hinged folding supporting flap 23 on the outer side edge of the broad side A adjacent to the pouring end of the carton. The hinged connection for the supporting flap is along the folding score line 24 as an axis perpendicular to the plane of the pouring end of the carton body. The supporting flap 23 is therefore in a plane perpendicu-

lar to the plane of the pouring end of the carton body. The outer edge **25** of the valve flap is an arc about the folding score line as an axis. The valve flap is folded inwardly at right angle to the folding line **26** and slides freely through the valve passage provided between the adjacent faces of two end flaps **12** and **18**. Thus when the supporting flap **23** is folded inwardly against the face of the side D of the carton body, the valve flap by a sliding movement intercepts and closes the pouring opening. When swung outwardly the pouring opening is fully or partly opened as desired. The sliding movement of the valve flap F is therefore in the plane of the pouring end of the carton. The free end of the valve flap has a stop **27** which limits the wide open position of the valve flap by impinging against the inner corner between the flaps of the carton body. The supporting flap **23** closes flat against the narrow side D of the carton when the valve is fully closed and is secured in closed position by the securing strip **28** on the outer free end of the supporting flap **23** which folds over the corner of the carton and is temporarily secured to the outer face of the narrow side wall D, by adhesive or other suitable means. It will be obvious that by releasing the strip **28** the valve can be easily opened by swinging the supporting flap outwardly. The valve flap is notched at **29** to clear the pouring opening in the wide open position of the valve. The pouring opening E has been shown of circular shape. This shape can be modified as desired. One of many contemplated modified forms is shown in Fig. 6, in which the pouring opening **30** resembles a quadrant to more readily admit a spoon and the stop **31** on the valve flap is extended sufficiently to modify the opening movement of the valve flap **32** on the supporting flap **33**. It is also contemplated to vary the number of pouring openings which are closed by the valve flap within the spirit of the invention.

In the modification shown in Fig. 7, the extension **22** on end flap **18** is omitted and a securing strip **34** is provided on end flap **12** which is adapted to be folded over and fastened by adhesive or other suitable means to the side B. A valve opening is formed between the inner adjacent faces of flap **14** and flap **12** by omitting adhesive fastening means over a sufficient area. In this construction the end flap **18** is secured to the inner surface of end flap **12** by adhesive or other suitable fastening means instead of being omitted as in the preferred construction. Otherwise the construction corresponds substantially with that of the preferred form above described.

The construction provided by my invention is particularly adapted for use with present filling machinery without changes, which is a distinct advantage.

In accordance with the patent statutes, I have described the principles of operation of my invention together with the construction thereof which I now consider to represent the best embodiment thereof, but I desire to have it understood that the invention can be carried out by other means and applied to uses other than those above set forth within the spirit thereof and within the scope of the following claims.

I claim:

1. In a pouring carton, a rectangular body having an end composed of a plurality of flaps folded into overlapping relationship, said end flaps arranged in juxtaposition in the plane of the pouring end of the carton body, each of the members of said flaps being formed with an aperture, all of said apertures coinciding to form a pouring opening in the end of the body, one of the sides of the body having an outer manually operable supporting flap foldable about an axis perpendicular to the plane of the pouring end of the body to close against a side of the body, and said supporting flap having a slide valve flap at substantially right angle thereto and slidable between the members of a pair of the overlapping end flaps, said valve flap sliding across said opening to close the latter by the folding movement of said supporting flap.

2. In a pouring carton, a rectangular body having an end composed of a plurality of flaps folded into overlapping relationship, said end flaps being arranged in juxtaposition in the plane of the pouring end of the carton body, each of the members of said end flaps being formed with an aperture, both of said apertures coinciding to form a pouring opening, one of the sides of said body having a manually operable outer supporting flap foldable about an axis perpendicular to the plane of the pouring end of the body, said supporting flap having a slide valve flap at substantially right angle thereto and movable between the members of a pair of said end flaps and intercepting said pouring opening in the folded position of said slide valve supporting flap, said slide valve flap having a stop shoulder near its inner portion adapted to engage a portion of the carton body to limit the opening movement of the valve flap when the supporting flap swung outwardly.

3. In a pouring carton, a rectangular body having an end composed of a plurality of end flaps folded into overlapping relationship, said end flaps being arranged in the plane of the pouring end of the carton body, each of said flaps being formed with an aperture, all of the apertures coinciding to form a pouring opening, one of the sides of said body having an outer supporting flap hinged about a score line perpendicular to the plane of the pouring end of the carton body, said supporting flap having a slide valve flap the outer edge of which is substantially an arc about said folding score line as an axis, whereby said valve flap is adapted to slide between said overlapping end flaps and control said pouring opening.

4. In a pouring carton, a rectangular body having an end composed of a plurality of flaps folded into overlapping relationship, said end flaps being arranged in the plane of the pouring end of the carton body, each of said end flaps being formed with an aperture, all of the apertures coinciding to form a pouring opening in an end of the carton body, one of the sides of said body having an outer supporting flap manually foldable about an axis perpendicular to the plane of the pouring end of the body, said supporting flap having a sliding valve flap at substantially right angle thereto movable between adjacent members of said end flaps, said valve flap serving to close or open said pouring opening by swinging said supporting flap, and said supporting flap having a securing strip on its free end below said valve flap by which the supporting flap is adapted to be held folded on the body of the carton with the pouring opening closed by said slide valve flap.

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