May 7, 1946. F. A. MARX 2,399,649

CARTON

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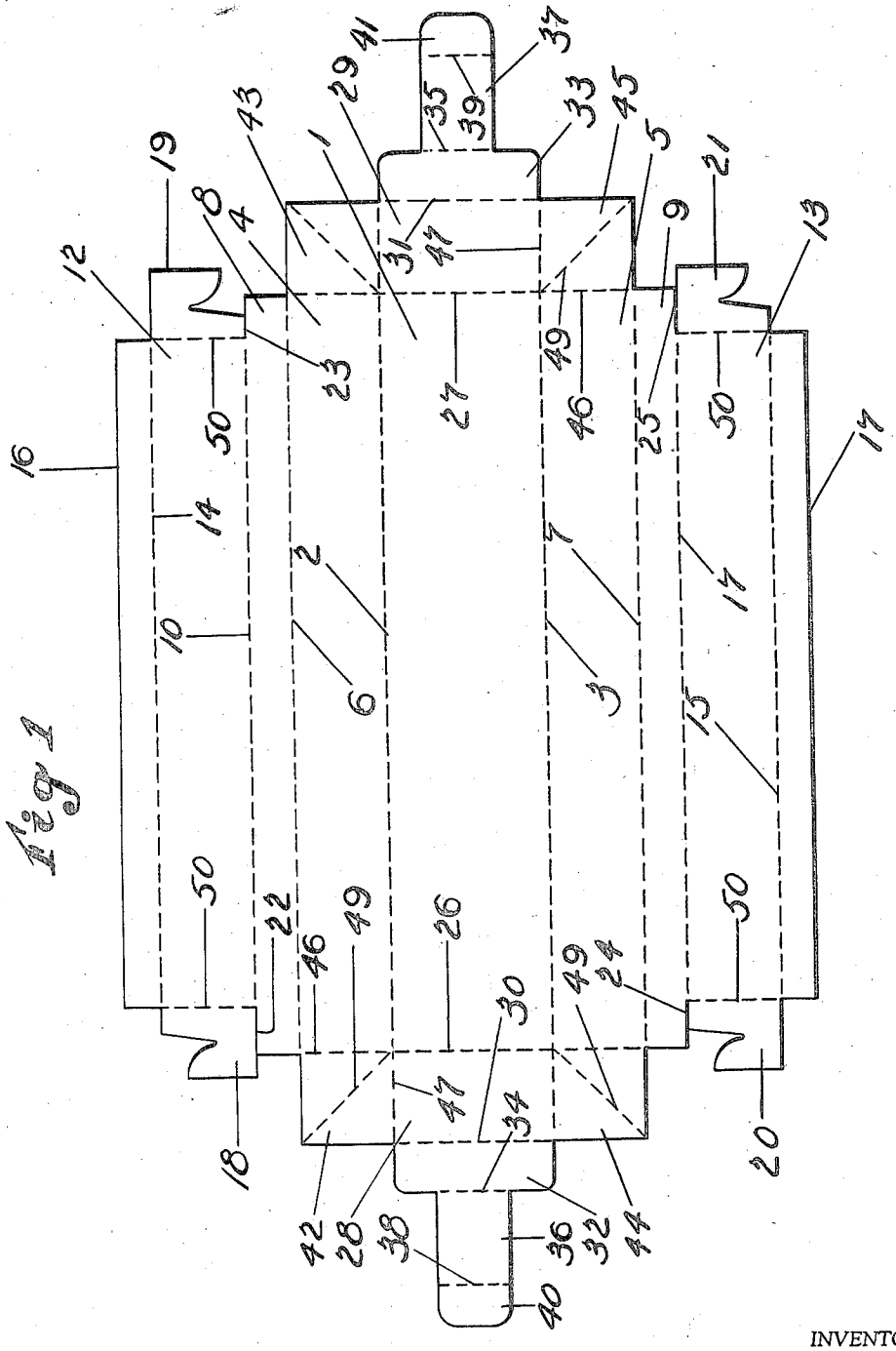


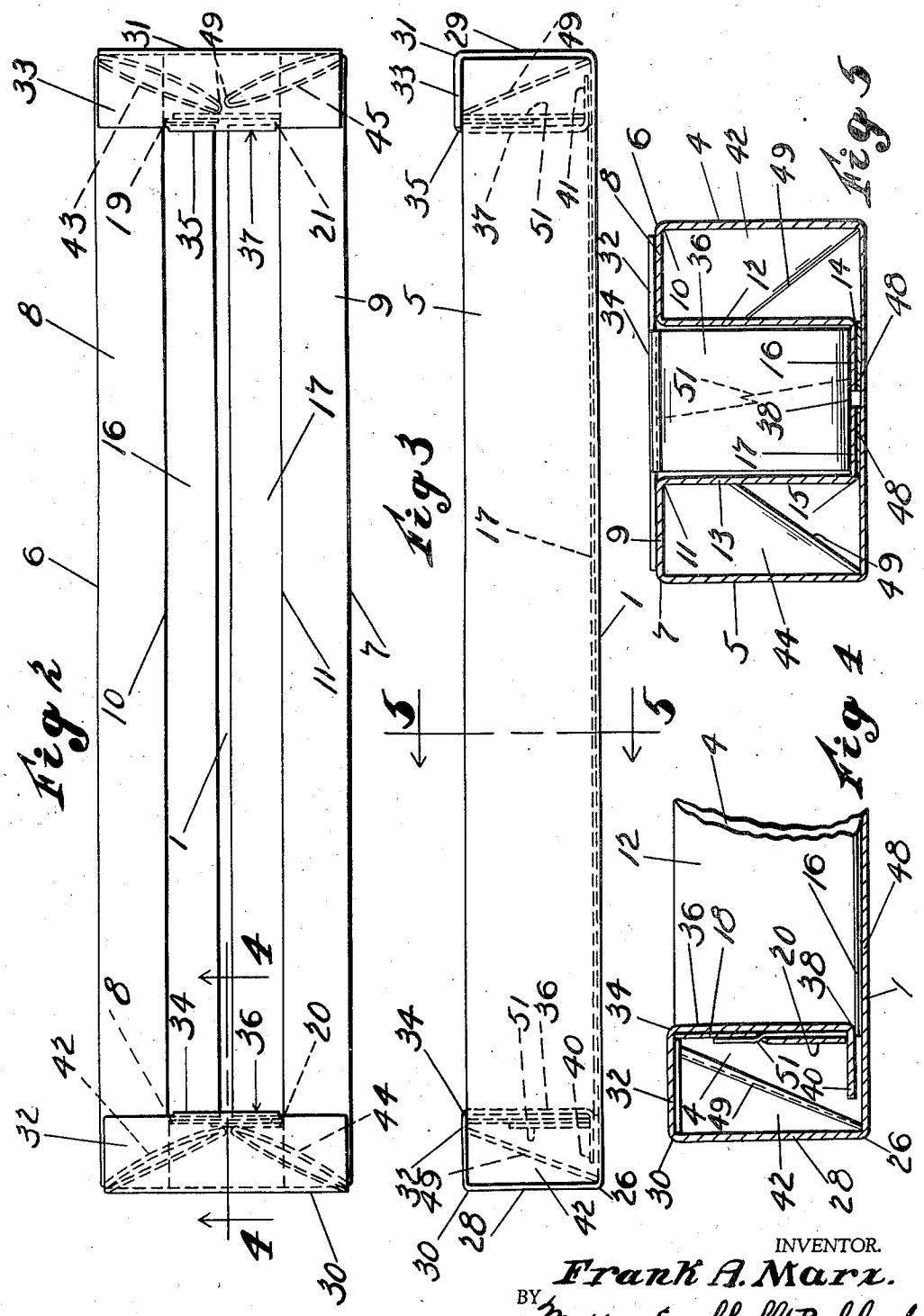
Fig. 1

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2,399,649

CARTON

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2 Claims. (Cl. 229—31)

This invention relates to a cardboard carton of the knock-down type adapted to be shipped and stored flat and erected by the user into operative position.

An object of the invention is to provide such a carton having integral means for firmly locking the carton in operative position.

Another object is to provide such locking means in a carton of the kind described, positioned at only two opposite portions of the carton and adapted to be placed instantaneously into non-yielding operative position.

Another object is the production of a carton of this kind adapted to be produced efficiently and at a minimum of expense.

These and other objects are attained by the means described herein and illustrated in the accompanying drawings, in which:

Fig. 1 is a plan view of the formed blank from which the carton of this invention is erected.

Fig. 2 is a top plan view of the erected carton.

Fig. 3 is a side elevational view of the same.

Fig. 4 is an enlarged cross-sectional view taken on line 4—4 of Fig. 2.

Fig. 5 is a cross-sectional view taken on line 5—5 of Fig. 3.

In greater detail and with reference to the drawings:

A blank of suitable material such as flexible cardboard is cut and scored to provide a bottom 1 having attached thereto, along score lines 2 and 3, the outer side walls 4 and 5. The latter have connected thereto, along score lines 6 and 7, the narrow top walls 8 and 9. These, in turn, have connected thereto, along the score lines 10 and 11, the inner side walls 12 and 13 to the longitudinal edges of which are connected, along score lines 14 and 15, the glue flanges 16 and 17.

The said inner side walls 12 and 13 have connected to their ends the locking flaps 18, 19, 20 and 21 which are cut clear of the associated top walls 8 and 9, as indicated at 22, 23, 24 and 25, and which are connected by score lines 50 with the ends of the inner side walls 12 and 13. It will be noted in this connection that the said inner side walls are shorter than the outer side walls 4 and 5 for a purpose to be later described.

The bottom 1 has attached to its ends, along score lines 26 and 27, the outer end walls 28 and 29 with which are connected, along score lines 30 and 31, the top end walls 32 and 33. To these are hingedly connected, along the score lines 34 and 35, the inner end walls 36 and 37, of reduced width and these have hingedly attached thereto, along lines 38 and 39, the lock tabs 40 and 41.

Between the side walls 4 and 5 and the outer end walls 28 and 29 the corner sections 42, 43, 44 and 45 are provided, being attached with said side and end walls along score lines 46 and 47, respectively. The said corner sections are each provided with a diagonally extending score line 49 which facilitates inward doubling of these corner sections upon themselves as will be further described.

The process of manufacturing the carton normally includes the folding inwardly of the lateral portions of the carton, along the score lines 6 and 7, and attaching the glue flanges 16 and 17 to the inner face of the bottom 1, as seen in Figs. 2, 4 and 5, the adhesive being indicated at 48. In this condition the carton is usually shipped to the user.

The carton is erected for use by pressing the outer side walls 4 and 5 upwardly into vertical position, which automatically raises the inner side walls 12 and 13 and places the narrow top walls 8 and 9 in parallel relation with the bottom of the carton. The raising of the inner side walls 12 and 13 to vertical position automatically raises the locking flaps 18, 19, 20 and 21 which are now turned inwardly of the container and the flap 18 interlocked with the flap 20 and the flap 19 interlocked with the flap 21, as indicated at 51 (Figs. 4 and 5). The raising of the lateral portions of the carton, as above described, automatically raises to vertical position the corner sections 42, 43, 44 and 45. The end walls of the carton are now erected by folding the corner sections inwardly upon themselves along the score lines 49 and at the same time bringing the outer end walls 28 and 29 upwardly into proximity with the corner sections and with the ends of the outer side walls 4 and 5 and of the narrow top walls 8 and 9. The top end walls 32 and 33 are now bent down upon the ends of the associated side top walls 8 and 9 and serve to reinforce these parts and the adjacent corner portions of the carton, which are subjected to the greatest stresses and abrasions. The inner end walls 36 and 37 are projected downwardly between the inner side walls 12 and 13, the width of the inner end walls 36 and 37 being slightly less than the distance between the erected inner walls 36 and 37. The final operation in the erection of the carton is the insertion of the lock tabs 40 and 41 beneath the joined pairs of locking flaps 18—20 and 19—21, respectively. The locking tabs are thus frictionally tensioned between these locking flaps and the adjacent bottom portions of the container,

as seen in Fig. 4, whereby the whole carton is firmly secured in its erected position.

It will be seen, particularly in Fig. 2, that the infolded corner sections 42—44, 43—45, in the erected carton, are adapted to bear against the rear of the interengaged lock flaps 18—20, 19—21, respectively, to aid in preventing disengagement thereof, a result that might otherwise occur, due to the rearward pressure exerted against the lock flaps by inner end walls 36 and 37.

A further function of said corner sections should be noted. In Figs. 2–5, it will be seen that the corner sections 42—44, 43—45, have their upper edges disposed immediately beneath the ends of the top side walls 8 and 9 and the top end walls 32 and 33, whereby all of said parts are strengthened and prevented from collapsing inwardly or downwardly.

What is claimed is:

1. A carton of flexible material formed to provide a bottom, inner and outer side walls attached to the bottom, said inner side walls of shorter length than the outer side walls, a lock flap at each end of the inner side walls and interengaging across said bottom with the lock flap opposite thereto, an outer end wall attached to said bottom, a top wall on each of said outer end walls, an inner end wall connected with each of said top walls, each of said inner end walls projecting downwardly between said inner side walls and embracing the engaged lock flaps, and corner sections hingedly connecting the adjacently disposed ends of said outer side walls and outer end walls, the corner sections being doubled upon themselves and projected inwardly between said inner and outer end walls, said corner sections when so folded bearing endwise against the interengaged lock flaps for maintaining said flaps in engaged relationship.

2. A carton of flexible material formed to provide a bottom, inner and outer side walls attached to the bottom, said inner side walls of shorter length than the outer side walls, a lock flap at each end of the inner side walls and interengaging across said bottom with the lock flap opposite thereto, an outer end wall attached to said bottom, a top wall on each of said outer end walls, an inner end wall connected with each of said top walls, each of said inner end walls projecting downwardly between said inner side walls and embracing the adjacent lock flaps, and corner sections hingedly connecting the adjacently disposed ends of said outer side walls and outer end walls, the corner sections being doubled upon themselves and projected inwardly between said inner and outer end walls, said corner sections upon inward folding thereof extending diagonally across the space between said inner and outer end walls and the top edges of the corner sections being at this time disposed directly beneath said top end wall to preclude inward collapsing thereof.

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