

Dec. 14, 1948.

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2,456,419

FOLDING BOX

Filed Feb. 24, 1948

FIG. 1

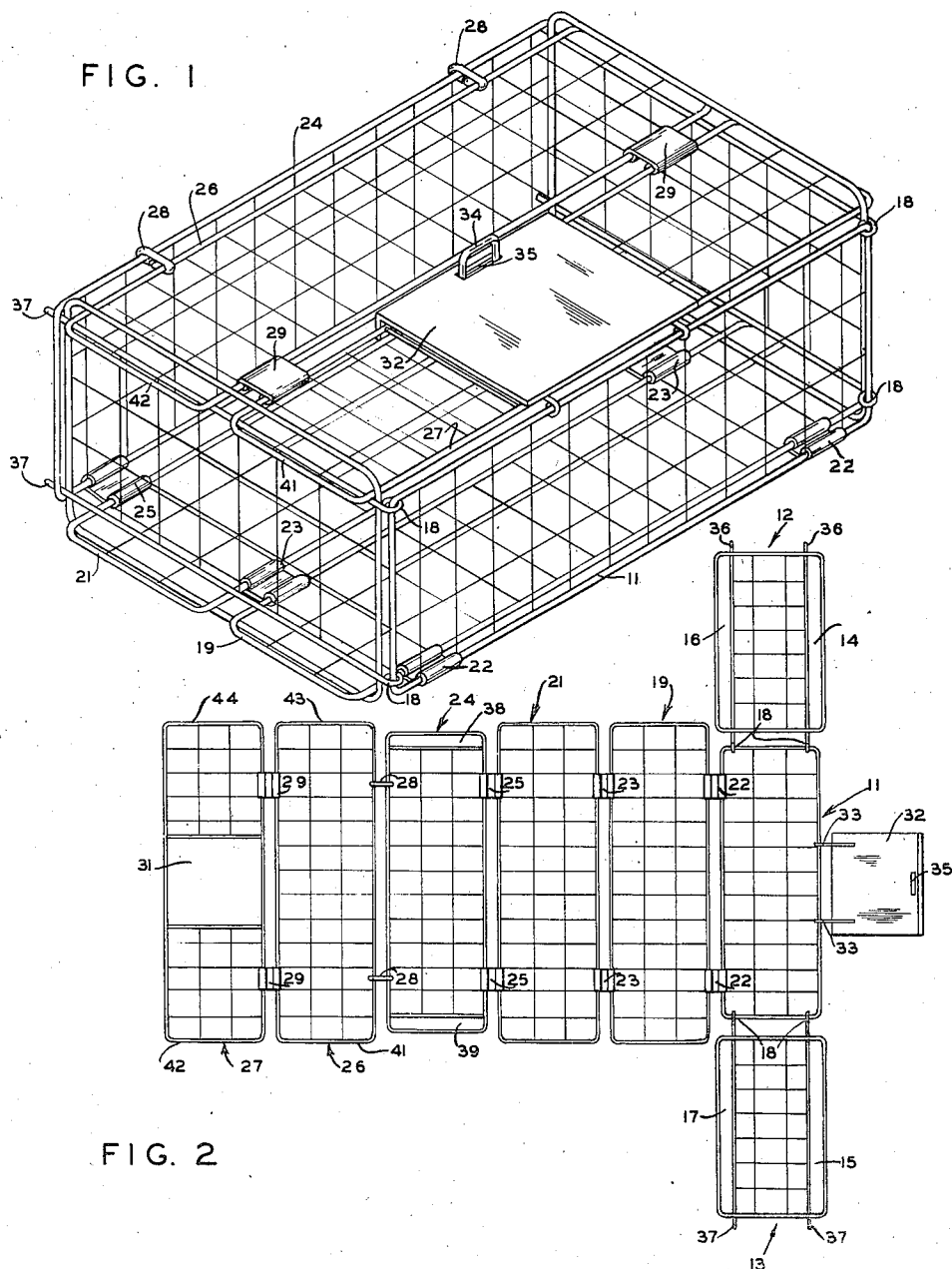


FIG. 2

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2,456,419

FOLDING BOX

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Application February 24, 1948, Serial No. 10,388

3 Claims. (Cl. 220-6)

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This invention relates to folding boxes.

It has as its general object the provision of a box which may be folded compactly in its "knocked down" position, one which requires no clasps, hooks, bent wires, or the like that must be manipulated as fasteners to hold the box in its folded position, one which is sturdy and strong, can be manufactured economically and one which can be folded and unfolded quickly and easily.

Other objects and advantages will become apparent as the specification proceeds and a more comprehensive understanding of the invention will be afforded from the following detailed description when considered in conjunction with the accompanying drawing, in which

Fig. 1 is an isometric view of a folding box illustrating the invention in its preferred embodiment and showing the same in its folded position, and

Fig. 2 is a plan view of the box showing the same unfolded and as flattened out.

For the purpose of illustration and description the box is shown as being made from mesh wire which is brazed onto wire frames. It is conceivable, of course, that the box may be made of other material which may of itself be folded to obviate the necessity of hinges. However, as illustrated in Fig. 2, the box comprises a side section 11 to which is hinged at the opposite ends thereof two end sections 12 and 13. Each of the end sections 12 and 13 are formed so as to provide slots 14, 15, 16 and 17 which extend substantially throughout their lengths. When in its folded position, the slots 14 and 15 are at the top, and the two slots 16 and 17 are at the bottom of the box. The hinges 18, by means of which the end sections 12 and 13 are connected to the side section 11, are merely bent portions of the wire rods which form a part of the end frames.

To the side section 11 there is also connected a bottom for the box which comprises a first section 19 and a second section 21. The first bottom section 19 is hinged to the side section 11 by means of two strap hinges 22 and the second bottom section 21 is hinged to the first section 19 by means of two strap hinges 23.

A second side section 24 is hinged to the second bottom section 21 by means of two strap hinges 25 and to the second side section 24 is attached a top for the box comprising a first section 26 and a second section 27. The section 26 is hinged to the section 24 by means of two wire hinges 28 which provide for lateral movement of the top

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sections 26 and 27 with respect to the second side section 24.

In a similar manner to the bottom section, the two top sections 26 and 27 are hinged together by means of two strap hinges 29 and the second top section is provided with an opening 31 which is covered by a lid or top 32 hinged to the first side section 11 by means of two hinges 33. A latch 34 is fixed to the frame of the top section 27 and passes into an opening 35 in the lid 32 to fasten the latter element in its closed position. The fastener 34 also serves an additional purpose which will be described later.

In bringing the box to its folded position as is shown in Fig. 1, the side section 11 is moved upwardly about the hinges 22, the end sections 12 and 13 being maintained in their extended position. Next the end sections 12 and 13 are moved inwardly about their hinges 18 until two of the ends of the bottom sections 19 and 21 pass into the slot 16 and the other two ends of these sections pass into the slot 17. In the latter position, the two end sections 12 and 13 will be moved into positions where two projections 36 on the end section 12 and two projections 37 on the end section 13 are aligned to pass respectively into a slot 38 and a slot 39 formed in the ends of the side section 24 when this latter section is moved upwardly about the hinges 25.

At this particular stage of the folding operation, the box will take the form where it has two sides, two ends and a bottom. Next the top sections 26 and 27 are swung over the box by moving the same about the hinges 28. The top sections 26 and 27 are then moved laterally with respect to the side section 24 until the ends 41 and 42 of the top sections 26 and 27 can be moved into the slot 15 of the end section 13. The degree of lateral movement is such that these ends of the sections 26 and 27 can be moved far enough into the slot 15 to permit the sections to drop down in the box to a point where the ends 43 and 44 thereof may be passed by reverse lateral movement into the slot 14 of the end section 12. The top or lid 32 is then moved about its hinges 33 to cover the opening 31, the fastener 34 passing upwardly through an opening 35 in the top, as is shown in Fig. 1. Although the dimensions of the slots 14 and 15 are so chosen as to fit tightly over the ends of the sections 26 and 27 so as to hold them rigidly therein, the fastener 34 when passed into the slot 35 in the top 32 which latter element is hinged to the side section 11, prevents unwarranted lateral movement of the two top sec-

tions 26 and 27 to prevent these sections from becoming displaced out of the slots 14 and 15.

The box may be made to any desired dimensions and will serve a number of different purposes such as a live bait box or a chicken coop. It possesses the desirable feature of being adaptable for folding, in its "knocked down" position, into a compact unit. This may be accomplished by folding the same in a manner which will now be described with the aid of Fig. 2. Thus, the top 32 may be folded from the position which it occupies in the figure until it overlies the side section 11. Thereafter, the end section 12 is folded over the top 32 and the end section 13 is folded over the end section 12. The bottom section is next folded under the side section 11 and the remaining sections of the box are similarly underfolded until the section 21 underlies the section 19, the section 24 underlies section 21, the section 26 underlies the section 24 and the section 27 underlies the section 26.

As previously mentioned, the box may be constructed of other materials than those described. For example, the same may be made from cardboard which may be folded along creased lines at the various points where hinges are used in the illustrated embodiment. In such case the top may be sprung or bowed to insert the ends thereof in the top slots of the end sections. Moreover, it is to be understood that the bottom and the top need not necessarily be made in two sections. This expedient has been resorted to in order to provide for compactness when the box is folded in its "knocked down" position. Other modifications and changes may likewise be made, and, insofar as these changes fall within the scope of the appended claims, they are considered to be covered as if described.

What is claimed is:

1. In a folding box, a first side for said box, two ends for said box one each of which is hinged to said first side at the ends thereof, first and second slots extending substantially throughout the length of each of said ends at the tops and bot-

toms thereof, a bottom for said box comprising two sections, the first of which is hinged to the said first side and the second of which is hinged to the first, a second side for said box hinged to the second section of said bottom, a slot formed at each end of said second side each extending substantially from its top to bottom, a top for said box comprising two sections, the first of which is hinged to said second side and the second of which is hinged to the first, a projection on each of said box ends adapted to pass into one of the slots in the ends of said second side, means for slidably hinging the first of said box top sections to said second box side whereby both box top sections may be moved laterally with respect to said second side, and a cover hinged to the top of said first side for closing an opening in the second section of said box top.

2. In a folding box, a first side section for said box, two end sections for said box having slots at the top and bottom thereof extending substantially throughout their length, a bottom section for said box connected to the said first side section, said first side section being movable with respect to said bottom section and said end sections being movable with respect to said first side section to carry the ends of said bottom section into the bottom slots of said end sections, a second side section having slots at the ends thereof and movable with respect to said bottom section to carry an extension formed on each of said end sections into the slots of said second side section, and a top section for said box movable with respect to said second side section, said top section being adaptable to have the ends thereof moved into the top slots of said end sections.

3. In a folding box the combination claimed in claim 2 including a lid connected to said first side section and movable to cover an opening in said top section.

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No references cited.