

May 14, 1935.

K. W. PETERSEN

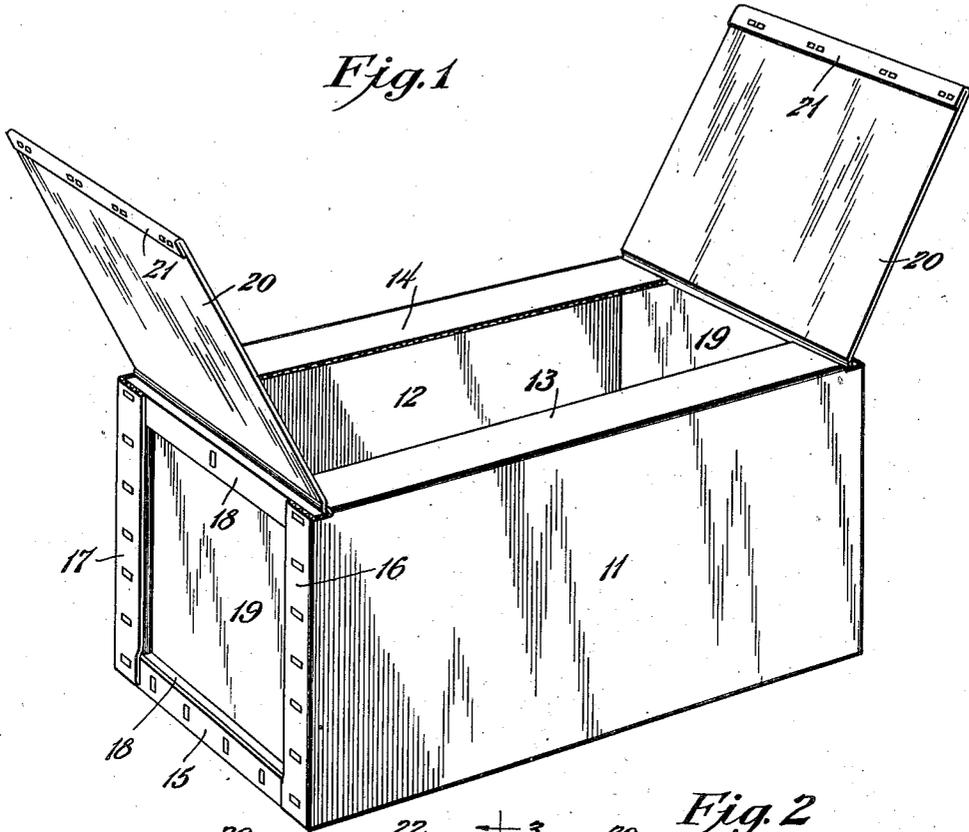
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REINFORCED FIBER BOARD BOX

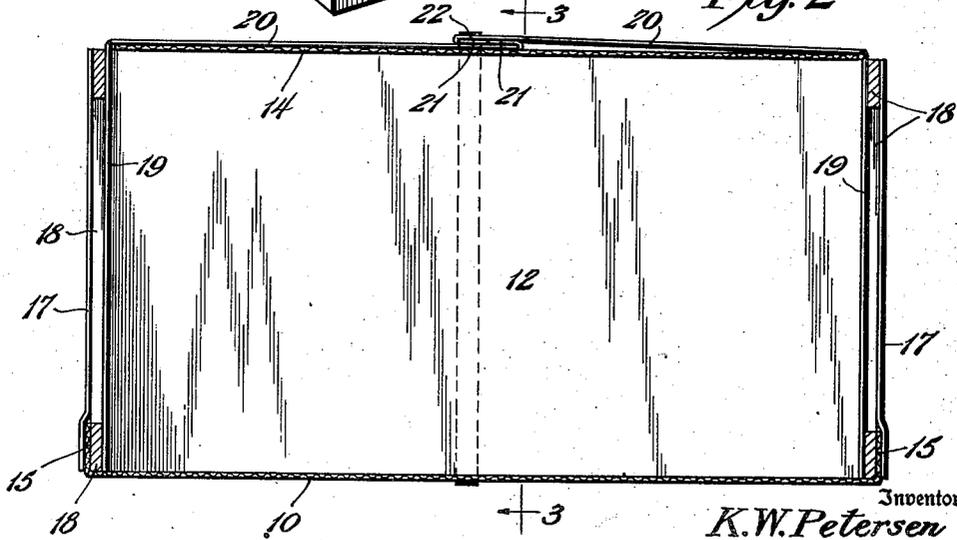
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*Fig. 1*



*Fig. 2*



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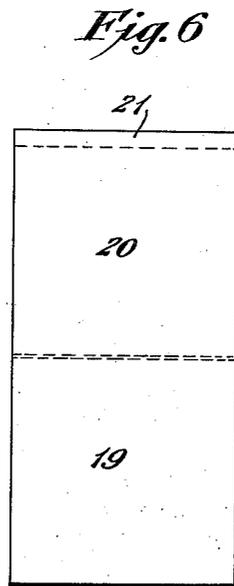
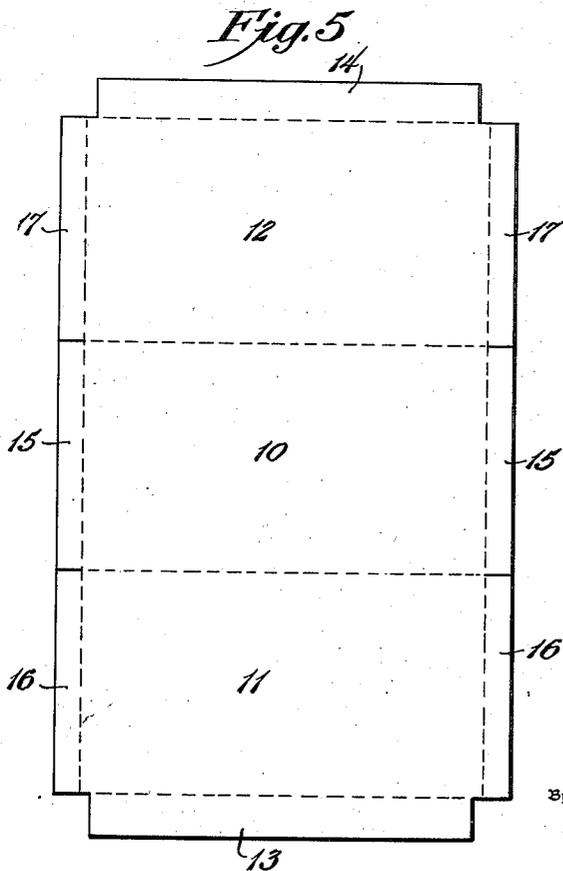
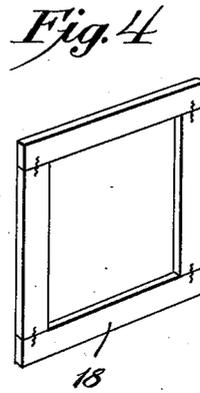
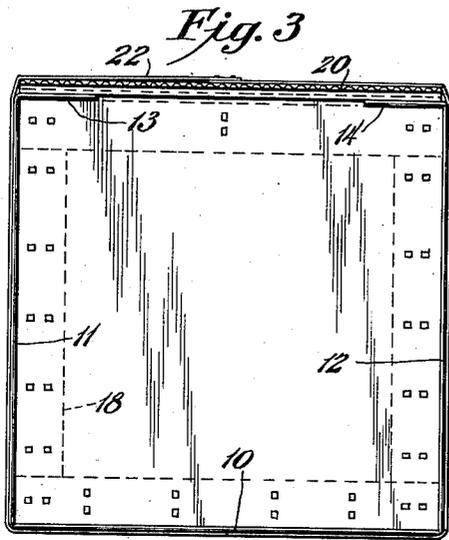
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REINFORCED FIBER BOARD BOX

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2 Sheets-Sheet 2



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## UNITED STATES PATENT OFFICE

2,000,982

## REENFORCED FIBER BOARD BOX

Karl W. Petersen, Keokuk, Iowa, assignor of one-half to Iowa Fiber Box Company, Keokuk, Iowa, a corporation of Delaware, and one-half to South West Box Company, Sand Springs, Okla., a corporation of Delaware

Application November 22, 1932, Serial No. 643,900

5 Claims. (Cl. 229—23)

This invention relates to reenforced fiber board boxes, and among other objects, aims to provide an especially strong, light-weight box which is so constructed that it may be closed tightly by a single strap, band or wire, and when once closed, cannot be opened without so disfiguring the box that the fact of its having been opened is immediately apparent. A further object is to construct the box so that, even when filled with heavy goods, it will not be twisted out of shape when picked up at one corner. Another object is to make a box from wood reenforcements and pieces of fiber board which will be satisfactory when used in the shipment of goods too heavy for a box made wholly of fiber board. Other objects will appear in the following description of the preferred embodiment of the invention shown in the accompanying drawings.

In said drawings:—

Fig. 1 is a perspective of the box shown open; Fig. 2 is a vertical longitudinal section through the box shown closed;

Fig. 3 is a cross-section on line 3—3 of Fig. 2;

Fig. 4 is a perspective of one of the two wooden end reenforcements used in the construction of the box;

Fig. 5 is a plan view of the fiber board blank forming the principal part of the box body; and

Fig. 6 is a plan view of one of the fiber board blanks which are used to form the end walls and lid of the box.

Referring particularly to the drawings, the box is made from the corrugated fiber board body blank shown in Fig. 5, two end blanks shown in Fig. 6 and two end reenforcements shown in Fig. 4, plus a band or strap of some sort, together with the desired number of staples or the like. The blank in Fig. 5 is shaped and creased to provide a bottom 10, front and rear walls 11, 12, top flaps 13, 14 and end flaps 15, 16, 17, attached respectively to the bottom, front and rear walls. This blank, when set up, is secured, as by staples, to the square wooden frame reenforcements 18 of Fig. 4, there being one at each end, as shown in Fig. 2. The manner in which the wooden reenforcements or frames 18 are secured to the blank is shown in Figs. 1 and 3. Each frame 18 is set inside the three end flaps 15, 16, 17, which are then secured by staples driven by a stapling machine. As said end flaps are each as wide as the sides of the square frame 18, each frame is covered by the end flaps on three sides, only the top being exposed, as shown in Fig. 1. The top of each frame 18 is flush with the top of the box,

to be described, being slightly above the tops of the frames.

To close the openings in the frames 18 and to provide cover flaps, two end blanks as shown in Fig. 6 are employed. Each end blank is creased to provide an end wall 19, a cover flap 20 and a locking flange 21, the end wall having the dimensions of the end frame 18, to which it is attached on the inside as by staples. Each cover flap 20 is of a length slightly greater than one-half the length of the box, so that the two cover flaps overlap when the box is closed. The locking flanges 21 are bent outwardly on one cover flap and inwardly on the other, as clearly shown in Fig. 1, and then are stapled down, the arrangement being such that when both cover flaps are closed, one of the locking flanges 21 engages the other edgewise, as shown in Fig. 2. The natural tendency of the cover flaps to spring outwardly causes the locking flanges to lock and to remain locked unless disengaged by some instrument, such as a screw driver. To secure the box for shipment, a steel strap 22 or the like is stapled or otherwise secured around the outer of the two cover flaps adjacent the interlocked flanges; and when this is done, the box cannot be tampered with without so injuring the flanges 21 as to make the tampering apparent at once.

Another advantage of the locking action of the flanges resides in the fact that the box is considerably strengthened intermediate its ends. As the two flanges 21 are in contact throughout their entire length, and as both flanges are very stiff, being of doubled and united sections of fiber board, the box is strongly resistant to twisting stresses, and though heavily loaded, may be picked up at either end and turned, without getting out of shape. The flaps 14 hold up the cover flaps 20 and facilitate locking or unlocking them.

Obviously, the present invention is not restricted to the particular embodiment thereof herein shown and described.

What I claim is:—

1. A reenforced fiber board box comprising a bottom, front and rear walls; end flaps on the bottom, front and rear walls; wooden frames at each end of the box set inside the aforesaid end flaps; means securing the aforesaid end flaps to the wooden frames; an end wall of fiber board secured inside each wooden frame; a cover flap integral with and hinged to each end wall, the two cover flaps overlapping and together completely closing the top of the box; each cover flap having a locking flange on its free end with which

- the other locking flange automatically engages when both cover flaps are closed down, thereby to lock the cover flaps together; each locking flange being made from a doubled-back portion of the cover flap, one of the flanges being underneath, the other being outside, its cover flap, and both flanges engaging edgewise throughout their length.
- 5 2. A fiber board box comprising a body and 10 folding cover flaps hinged to the body and overlapping each other to close the top of the body; and a locking flange extending crosswise of each flap at the end, the extent of the overlapping being such that said locking flanges engage each 15 other edgewise only and hold by friction, so that the flaps lock when the box is completely closed.
3. A fiber board box comprising a body and 20 folding cover flaps overlapping each other to close the top of the body; and a locking flange extending crosswise of each flap at the end, said locking flanges being formed by end portions of the cover flaps doubled back and secured to the cover flaps so as to lie flat against opposite faces of the cover flaps and engaging each other edge- 25 wise only and holding by friction, so that the flaps lock when the box is completely closed; said locking flanges stiffening the box intermediate its ends against torsional stresses.
4. A fiber board box comprising a body, and a pair of folding cover flaps hinged to the body and overlapping each other to close the top of the body; each flap having a flange contacting edge- 5 wise with the flange on the other flap when both flaps are pushed down into box-closing position; and a pair of longitudinal flaps on the body so positioned as to support the cover flaps so that they tend to spring upwardly to be interlocked automatically.
5. A fiber board box comprising a bottom, two 10 side walls, two end walls; cover flaps hinged to the tops of the end walls; flaps hinged to the side walls and bent inwardly to extend over the top of the box at such an elevation as to support 15 the cover flaps; said cover flaps overlapping at the middle of the box and each having a flange on its free end doubled back and secured to the cover flap to provide a shoulder extending transversely of the box; the cover flap which is under- 20 neath having its shoulder on the outside, and the cover flap which is outside having its shoulder underneath, and the parts being so constructed and arranged that when the cover flaps are pushed down, said shoulders engage and hold by 25 friction, thus keeping the box closed.

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