No. 618,468. Patented Jan. 31, 1899.

F. KNOBELOCH.

PAPER BOX.

(Application filed June 24, 1898.)

(No Model.) 2 Sheets—Sheet 1.

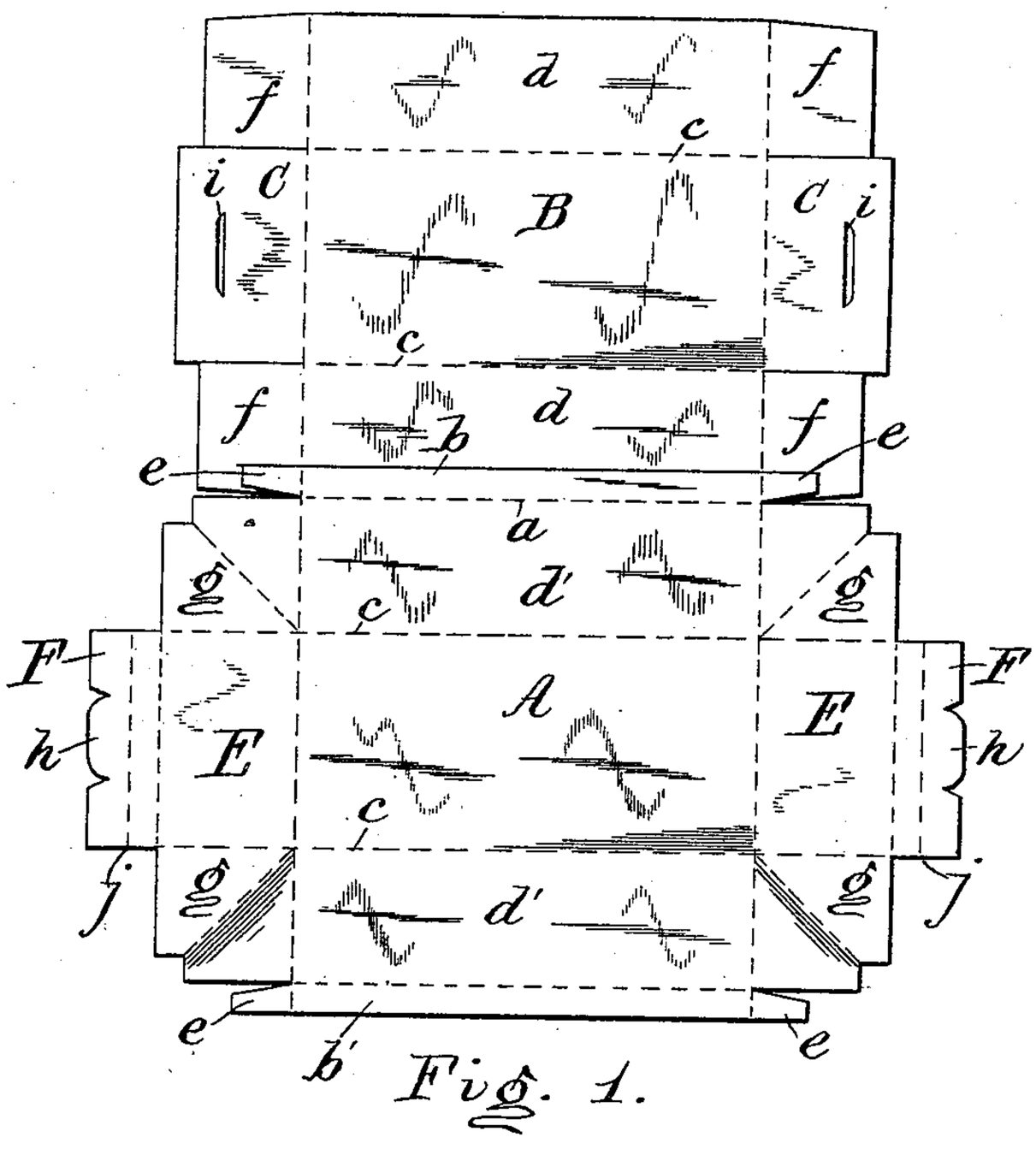

Fig. 1.

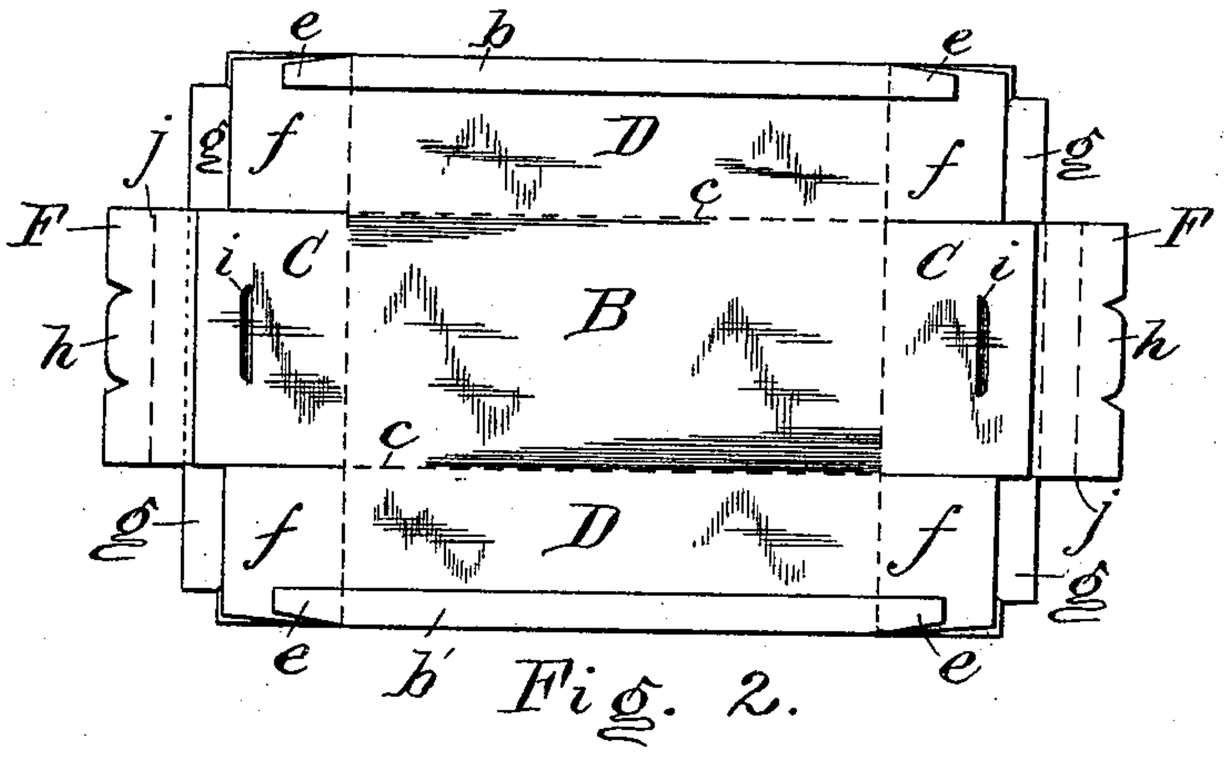

Fig. 2.

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Fig. 3.

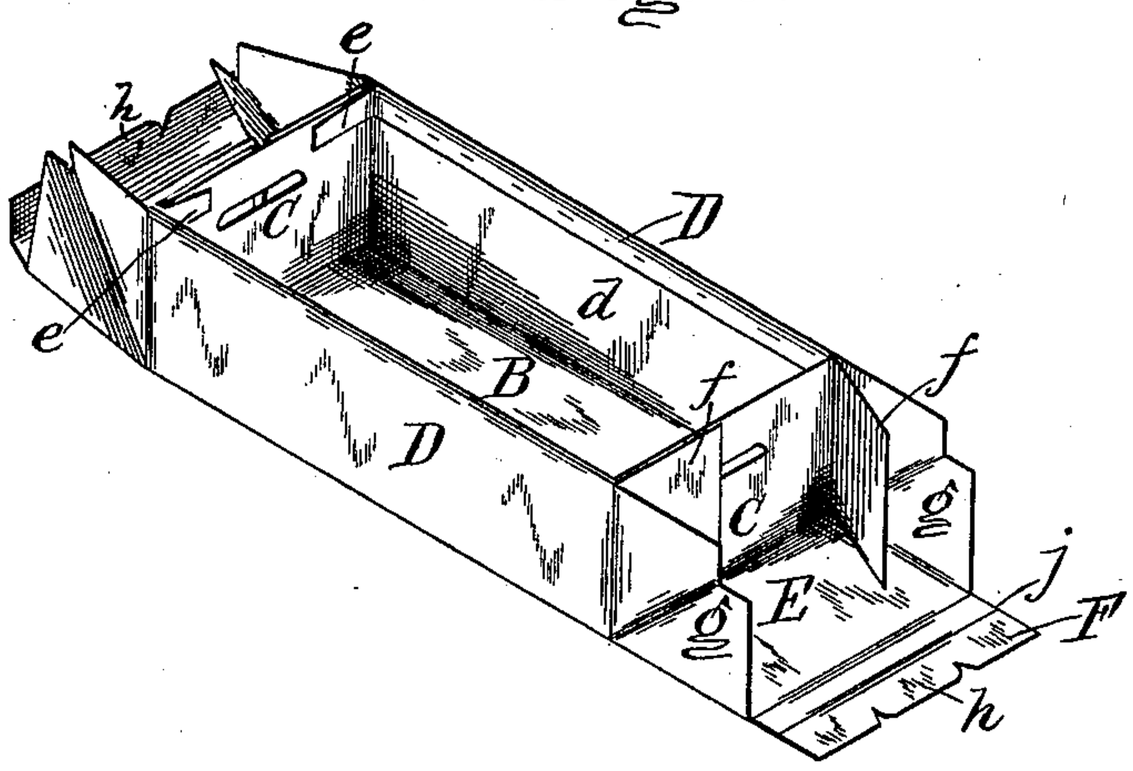
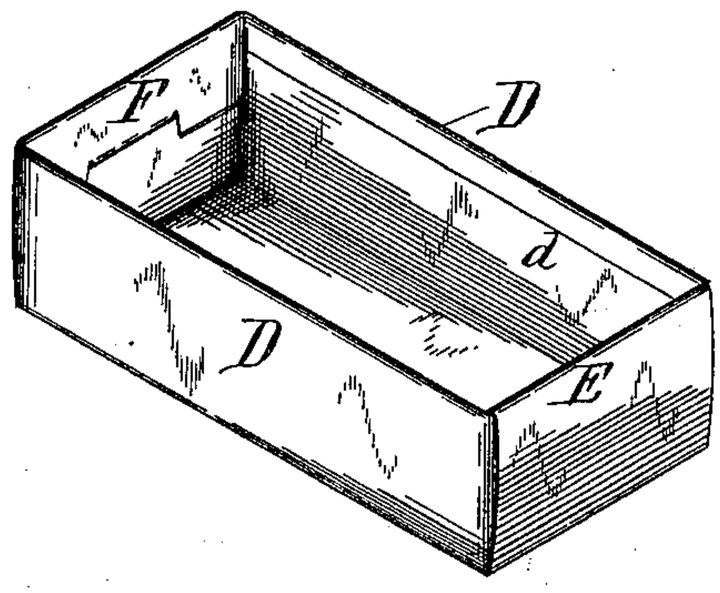


Fig. 4.



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UNITED STATES PATENT OFFICE.

FRANK KNOBELOCH, OF DAYTON, OHIO, ASSIGNOR TO THE KINNARD MANUFACTURING COMPANY, OF SAME PLACE.

PAPER BOX.

SPECIFICATION forming part of Letters Patent No. 618,468, dated January 31, 1899.

Application filed June 24, 1898. Serial No. 684,404. (No model.)

To all whom it may concern:

Be it known that I, FRANK KNOBELOCH, a citizen of the United States, and a resident of Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Paper Boxes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

My invention relates to certain new and useful improvements in collapsible paper boxes which may be shipped and stored in their collapsed condition until ready for use, when they can be readily constructed or folded into box shape by the user, and has for its object to provide a box of the collapsible style, which shall at the same time be very strong and stiff and be easy of construction.

The nature of my improvements will be best understood as described in connection with the accompanying drawings, which form a part of this specification, in which—

Figure 1 is a plan view of a blank cut and scored or creased to be folded into a box of double thickness throughout. Fig. 2 is a plan view of the blank, representing the first folding operation. Fig. 3 is a perspective view of the box in process of construction. Fig. 4 is a perspective view of the box complete.

Like letters of reference indicate identical parts in all the figures.

In the blanks as illustrated the dotted lines indicate the scores or creases and the black lines indicate the cuts.

I have shown in the drawings the box formed of two blanks as a preferred form, though, of course, it is readily understood that the same may be formed of one blank cut and scored as indicated.

A is the portion of the blank which forms the outer bottom, while B is the inner or false bottom. When it is desired to form the box of two blanks, the outer bottom or portion A is provided with side flaps *b b'*, which are folded over the portion B, to which they may be glued, leaving their ends *e* free. To form the box, the portion of the blank B is folded back and onto the portion A at the crease *a*, and the side flap *b'* is folded over the portion B, to which it is preferably glued, thus producing the folded blank, as shown in Fig. 2, in which the blank which forms the inside of the box appears on top, and it really is a reversal of the sides, as shown in Fig. 1. It will be seen, Fig. 2, that the inner wall B is slightly smaller than the wall A, which must necessarily be the case to enable the enfolding of the inner wall B by the outer wall A. This difference is so slight that it is not apparent in the lines in Fig. 1, the difference, of course, varying according to the thickness of the board used to make the box. The side walls D D, which are composed of the sides *d d* of the inner blank and *d' d'* of the outer blank, are then folded up at the scores *c c* at right angles to the bottom A B, as shown in Fig. 3, and the end flaps C C are brought up at right angles between the sides D D, with the side extensions *e* on the side flaps *b b'* overlapping the ends C C on either side thereof, as shown in Fig. 3. The sides D D are provided with end flaps *f f*, which are bent in at right angles to the sides and lie adjacent to the ends C C, as seen in Fig. 3, thus forming a second or inner end. The outer blank A is provided with end flaps E, having side wings *g* integrally formed therewith, these wings *g* being diagonally scored, as shown in Fig. 1, thus producing a bellows fold which folds inwardly when the end flaps E are folded up at right angles to the bottom, thus again reinforcing the ends and producing an intermediate and outside end wall, whereby a box with ends of several thicknesses is produced, making them very strong.

In order that the tips of the bellows folds formed by the wings *g* may not overlap each other, and thus produce a bulgy appearance, I prefer to cut out the corners of the side wings *g*, as shown. If desired, these side wings *g* instead of being integral with the end flaps E may be severed from the end flaps E and merely made integral with the sides *d'* in the same manner as the extension *f*, in which case, of course, the diagonal score need not be made in the wings *g*. In this case the wings *g* would be folded in at right angles in the same manner in which the extensions *f* are folded.

The end flaps E have extensions F, with tongues *h*. These extensions F are brought down over the end C and, embracing the in-

termediate folds or ends and the tongues *h*, are inserted in slits *i* in the ends C, thus locking the ends and holding the box in shape. In order that the tongue may be more easily inserted in the slit *i*, I prefer to provide the extensions F with intermediate scores *j*, where they may be bent to enable the user to more quickly and easily insert the tongues *h* in the slits *i*.

It will be seen that a complete box with inner or false bottom and side walls, as shown in Fig. 4, is produced, one that is reinforced throughout, having the outer blank provided with the tongues that enter and lock in slits made in the inner blank, thereby locking the inner and outer blanks together. It will of course be understood that the number of tongues and slits for forming the lock is immaterial. One or more may be used.

I have thus shown and described the box as being formed of two blanks, the one provided with side flaps *b b'*, which have extensions *e*, and these side flaps *b b'* being glued in place. It is obvious that these flaps *b b'*, with their extensions *e*, may be done away with and the box formed of a single blank of cardboard or other suitable material cut and scored in the manner above described, thus obviating the necessity for any gluing, though for purposes of appearance I prefer to construct it as at first described.

It will of course be understood that where the extensions *b b'* are used to fold over the edges of the sides and produce a more finished appearance the blank illustrated in Fig. 1 consists of two pieces, the edge of one glued to the edge of the other.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A collapsible box formed from a rectangular or square blank of cardboard or other suitable material, cut and scored to fold upon itself and form bottom, sides and ends of double thickness, in combination with flaps and wings integral with the bottom and sides to fold in at right angles thereto and form intermediate ends, said side wings being infolded by the end flaps on the inner and outer bottom, substantially as shown and described.

2. In a collapsible box formed from a rectangular or square blank of cardboard or other suitable material, cut and scored so that the bottom sides and ends are formed of double thickness by folding the blank upon itself, the combination of side wings integral with the sides, said wings cut and scored to fold into bellows folds, with end flaps integral with the double bottom to fold up at right angles to the bottom and infold the bellows folds, substantially as and in the manner shown and described.

3. In a collapsible box formed from two blanks of cardboard or other suitable material of unequal dimensions, the combination of reinforcing side flaps integral with one of said blanks, scored to overlap the other blank, with side wings scored to be folded in at right angles to the sides and be infolded by end flaps on the inner and outer blank, substantially as and in the manner shown and described.

4. In a collapsible box formed from a rectangular or square blank of cardboard or other suitable material cut and scored so that the bottom, sides and ends are formed of double thickness by folding the blank upon itself, the combination of side wings cut and scored to fold in at right angles to the sides, with end flaps arranged to fold up at right angles to the bottom and infold the side wings, one of said end flaps having an integrally-formed tongue or tongues arranged to enter a slit or slits in the other end flap to lock and hold the box in shape, substantially as and in the manner shown and described.

5. In a collapsible paper box having double sides and bottom, the combination of end flaps integral with the inner and outer bottom, and side wings, one set of which scored to fold into bellows folds, with reinforcing side flaps having extensions, said side wings and extensions cut and scored to fold in at right angles to the sides and arranged to be infolded by end flaps provided with tongues and slits to lock the same in place, substantially as and in the manner shown and described.

FRANK KNOBELOCH.

Witnesses:
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GEORGE HARTLING.