

(No Model.)

2 Sheets—Sheet 1.

W. B. HOWE.
KNOCKDOWN PAPER BOX.

No. 556,675.

Patented Mar. 17, 1896.

Fig. 1

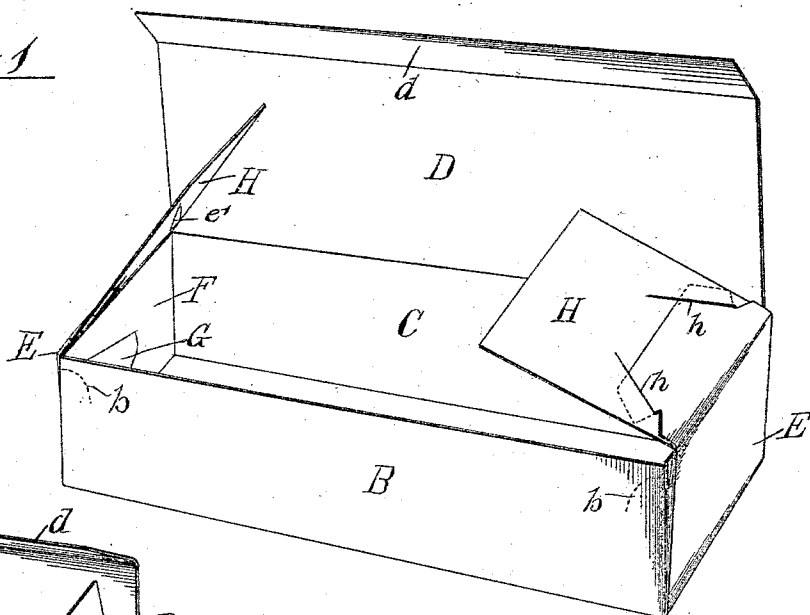


Fig. 2

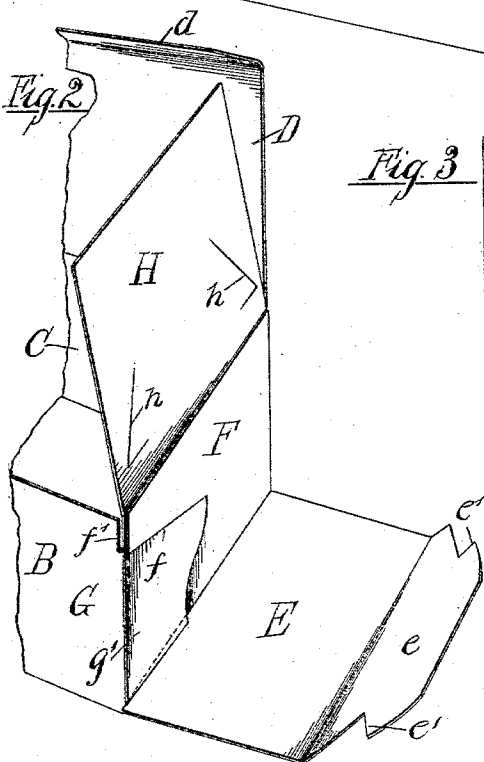
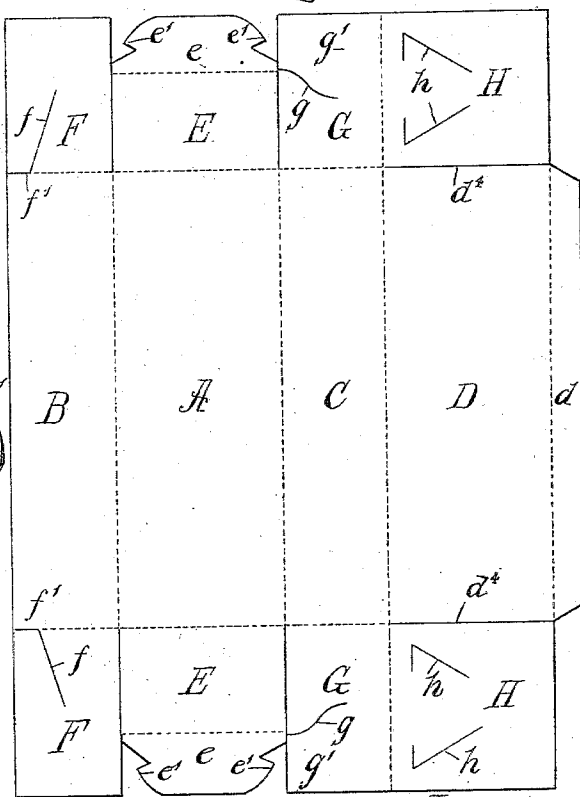


Fig. 3



Witnesses

Clinton Hamilton
John W. Adams

Inventor

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his Attorneys

2 Sheets—Sheet 2.

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Fig. 4

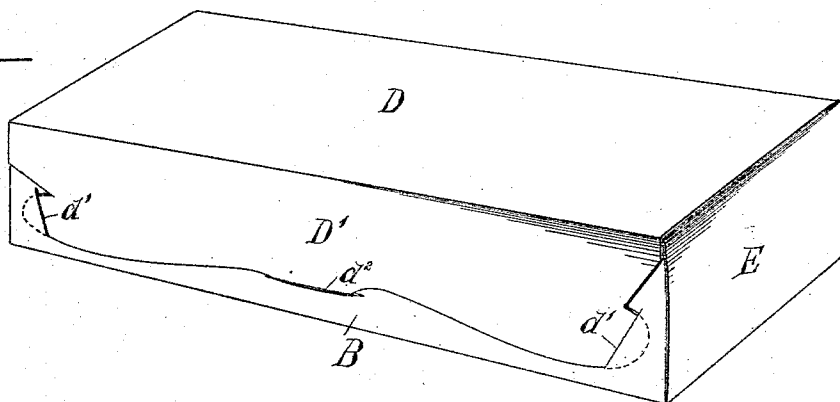


Fig 5

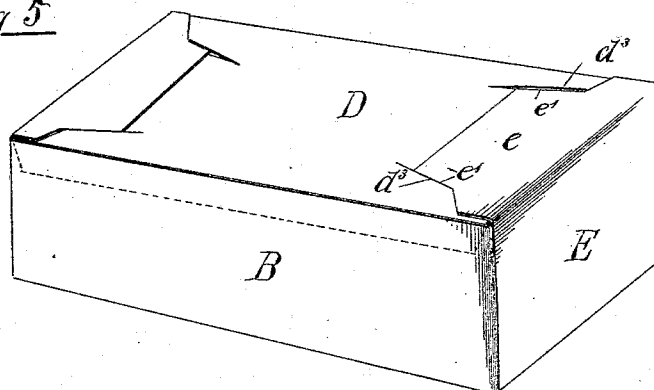
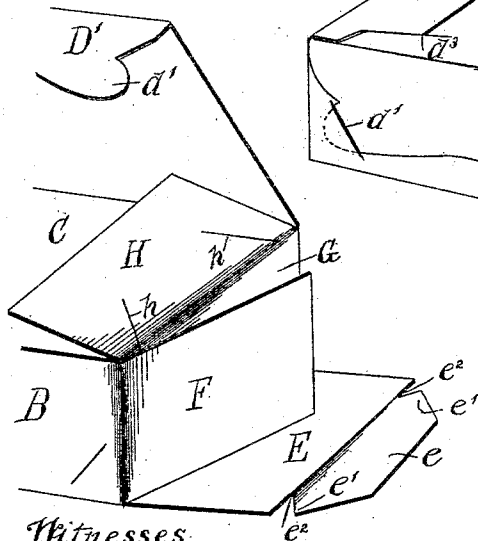


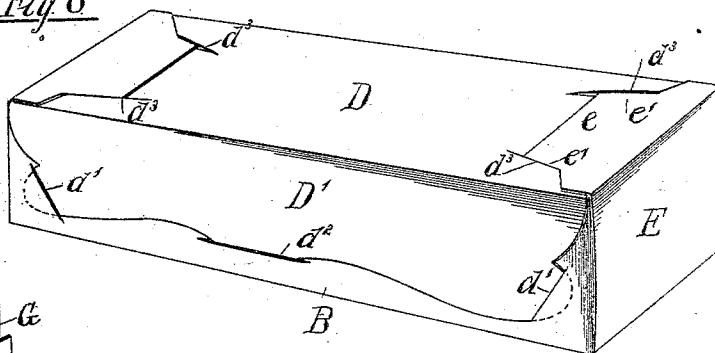
Fig. 7



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Fig. 6



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UNITED STATES PATENT OFFICE.

WARREN B. HOWE, OF CHICAGO, ILLINOIS.

KNOCKDOWN PAPER BOX.

SPECIFICATION forming part of Letters Patent No. 556,675, dated March 17, 1896.

Application filed May 6, 1895. Serial No. 548,282. (No model.)

To all whom it may concern:

Be it known that I, WARREN B. HOWE, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Knockdown Paper Boxes; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to an improved paper box of that kind known as a "knockdown" box, or one in which a flat blank is used, which may be shipped in its flat or unfolded state and set up when desired for use by the folding or interlocking of its parts.

The invention consists in the matters hereinafter described and pointed out in the appended claims.

In the accompanying drawings, illustrating my invention, Figure 1 is a perspective view of a box embodying my invention, the same being shown in readiness for filling. Fig. 2 is a perspective view of one end of the box in a partially-folded state. Fig. 3 is a plan view of a blank for making the box shown in Figs. 1 and 2. Fig. 4 is a perspective view of a box slightly different from that shown in Fig. 1. Fig. 5 is a similar perspective view of still another modification of said box. Fig. 6 is a perspective view of a box combining the features shown in Figs. 4 and 5. Fig. 7 is a view of one end of a box partially folded, illustrating a construction slightly different from that shown in Fig. 1.

The construction of the illustrated box will be best understood by description of the blank, which is seen unfolded in Fig. 3.

Referring to the parts of said blank, A indicates the central part thereof, which forms the box-bottom.

B and C are side parts, which form the front and rear walls of the box.

D is a part which is attached to the rear wall C and which forms the top of the box, and *d* is a flap or tuck at the free edge of the part D. At the end of the part A are two flaps E E, made of the same width as the bottom and which form the exterior surface of the box ends when the box is folded. At the

outer end of said flaps E E are tongues *e e*, having lateral projections or tucks *e' e'*. At the ends of the front wall B are rectangular flaps F F, made of the same width as the said front wall, and at the ends of the rear wall C are similar rectangular flaps G G. Said flaps F and G are preferably made of the same width as the front and rear walls, or, in other words, of a width equal to the height of the box. At the outer side edges of the flaps G G are provided two flaps H H, which are severed from the top wall D by transverse cuts *d' d'*, so that they are joined to the rear side edges of the flaps G, the said flaps H being made equal in width to the length of the said side flaps G. The width of said flaps H will be made practically equal to the width of the top of the box, and commonly the length of the flaps G will also be made equal to the width of the box; but said flaps G may be made shorter than the width of the box without affecting the operation of the parts, although preferably the ends of the flaps G are arranged on a straight line with the sides of the flaps H, as shown in the drawings. Said flaps H are provided each with slots or slits *h h*, adapted for engagement with lateral projections or tucks *e' e'* of the tongues *e*.

When a blank constructed as described is folded, the front and back sides B and C are bent at right angles to the bottom A, and the end flaps F and G are overlapped, thereby bringing the flaps H H in a vertical position across the end of the box, as seen in Fig. 2. The end flaps E E of the bottom are then folded upwardly and the projections *e' e'* of the flaps *e* tucked into the slits *h h*. The flaps H H and the tongues *e e* are then folded inwardly over the open top of the box and the top D then folded down over the flaps H. The flap *d* may then be secured by insertion within the upper edge of the front wall B or otherwise—as, for instance, by the insertion of its corners into slits *b b*, as indicated in dotted lines in Fig. 1. Preferably the end flaps F and G are interlocked with each other, the device for this purpose illustrated consisting of an oblique slit *f* in the flap F and a curved slit *g* in the flap G, said slit *g* forming a lateral tongue *g'*, which is adapted to enter through the slit *f*, and thus interlock the parts together

by the engagement of the inner end of the slit *f* with the inner end of the slit *g*, as clearly shown in Fig. 2. To facilitate the connection of the parts the slit *f* is shown as extended to the free or top edge of the flap by means of a transverse slit *f'* extending along the line of fold at the base of the flap F. This construction, however, is merely used for convenience, and the slit *f* may be located entirely in the body of the flap.

The process of folding the blank is clearly illustrated in Figs. 1 and 2. Fig. 2 shows the parts after the flaps F and G have been interlocked and before the flap E is folded upwardly against the same. The interlocking of the flaps F and G is readily accomplished at the time the sides B and C are folded upwardly, the tongue *g'* being inserted into the slit *f* and thrust downwardly therein until the flaps completely overlap each other, the engagement of the inner ends of the slits *f g* at such time holding the flaps together and the side walls B and C parallel with each other. In folding said flaps F and G together the flap F, attached to the front wall, will preferably be folded outside of the flap G, so that the body of said flap F will rest between the flaps G and E and its free upper edge will be confined by the flap E when the latter is turned up and its tongue *e* connected with the flap H. The said tongue *e* will preferably be connected with the flap H when the latter flap is in its unfolded or vertical position, so that when the said flap H and tongue *e* are together folded inwardly the bending of the tongue over the flap H and the edge of the flap F will result in drawing the body of the flap E tightly across or over said flap F, thus securing a smooth, flat and square end to the box when folded.

It will be observed that the box end, formed by the three overlapping flaps E, F, and G, will not only be very strong and rigid, but the interlocking of the tongue *e* with the flap H and the unfolding of the side flap and tongue together will offer a strong support for the end of the top D when the latter is folded down to close the box. While I prefer to fold the end flaps F and G together in such manner that the flap E is outside of the flap G, yet they may be reversely folded, in which case the end flap E will be in immediate contact with the flap G, and the tongue *e* being engaged with the slit *h* when the flap H is upright the end flap E will be drawn or strained tightly when the flap H is bent inwardly, owing to the tongue *e* being drawn or folded over the angle at the junction of the flaps G and H, as before described. I prefer, however, to fold the flap F outside of the flap G, as the end is thereby made very strong and rigid, and the parts are drawn or held tightly together by reason of the presence of the flap F between the flaps G and E, as hereinbefore stated.

The box shown in Fig. 4 is like that shown in Fig. 1, with the exception that instead of

the flap *d* is employed a flap D', which forms an extension of the outer edge of top D and which is provided with tucks *d'* *d'* at its ends, and, if desired, a tuck *d²* at its middle part, which tucks are inserted in suitable slits formed in the front wall D of the box.

In Fig. 5 is shown a box in its folded condition, which is made from a blank like that illustrated in Fig. 3, with the following slight modification, viz: The slits *h h* in the flaps H are omitted and other slits *d³ d³* are formed in the top wall D near the end of the same in proper position to receive the tucks *e' e'* of tongue *e*. In this case the folding of the parts is accomplished in a manner slightly different from that before described. The end flaps F and G being first folded together and interlocked, the flaps H are then turned in over the open part of the box. The top D is then folded over and its flap *d* inserted within the front wall, and the end flaps E are then finally bent upwardly and their tongues *e* carried over the top wall D and secured by the insertion of the tucks *e' e'* in the slits *d³ d³*.

The last-described construction has the advantage of making a very tight box, the folding of the tongues *e e* over the ends of the cover D serving to tightly close the joints at this place, it being obvious that the cover in this construction will be supported at its ends by resting on the infolded flaps H and will be held or confined against said flaps H by the tongues *e e*.

The box shown in Fig. 6 combines the features illustrated in Figs. 4 and 5, the top D in this instance not only having the slit *d³* to permit the interlocking of the tongue *e* therewith, but having a front flap D' having tucks *d'*, *d'*, and *d²*, by which the said flap D' is secured to the front wall B.

In Fig. 7 I have shown a construction in which the end flaps F and G are merely folded together and are not actually interlocked with each other. I this instance, however, I provide a special construction for holding the said flaps together or in their overlapped position during the folding of the box, the same being as follows: In this instance the slits *h h* of the flap H are extended downwardly to the crease or line of fold between the flaps G and H, while the tucks *e' e'* of the tongue *e* are formed by notches *e² e²* located at the fold or crease by which the said tongue *e* is joined to the flap E. In this construction of the parts the flaps F and G are folded together with the flap F outside of the flap G, and while the parts are held in this position with the flap H upright the tucks *e' e'* are inserted in the slits *h h*. The notches *e²* being at the upper margin of the flap E when the tucks are inserted in the slits *h h*, they will bind against the lower edges of said slits, and thus serve to confine the flap F, the upper edge of which will be engaged and held by the lower edges of the tucks *e' e'* where the same enter the said slits *h h*. The said flap F being thus held from movement relatively to the flap G,

the side walls will obviously be confined so that they cannot spread apart at their upper edges and will be held in place sufficiently to permit the proper folding of the box. I prefer, however, in connection with the box thus made to use a front flap D' having tucks to engage the front wall of the box in the manner shown in Figs. 4 and 6.

All of the forms of boxes described have the advantage of possessing flat, smooth and square ends and of having generally a smooth and neat appearance. This is especially desirable in those kinds of cartons which are used without external wrappers—such, for instance, as those used for the delivery of merchandise or for packing articles like crackers, which are sold to customers in the original packages. Such boxes are, however, owing to their smooth and uniform shape, especially also adapted for use in connection with external paper wrappers, and this is especially true of the form shown in Fig. 1, which, when the top is folded and its tuck inserted within the front wall, has the appearance of perfect exterior uniformity with continuous flat surfaces on all sides, and without any visible tucks, slits or other irregularities. Such a box may be covered by a paper wrapper pasted thereon, and when so covered will make a package practically as square and clean as though constructed of wood or of cut and pasted strawboard.

The form of the blank employed is highly advantageous because it is of practically rectangular form and may be made practically without waste of material. In other words, the double end flaps E and H, while adding greatly to the strength, rigidity and smoothness of appearance of the box, involve no loss of material, because the external flaps H are formed from a part of the sheet, which would need to be cut off or removed in case such flaps were not used.

I claim as my invention—

1. A box comprising connected bottom, side and top walls, which bottom and side walls have end flaps; the end flaps on one of the side walls having lateral flaps, which are folded inwardly over the open top of the box beneath the top wall thereof, and the flaps in the bottom wall being bent upwardly outside of the other flaps and secured at their free or outer ends to the body of the box, substantially as described.

2. A box comprising connected bottom and side walls, provided with end flaps, the end flaps on one of the side walls having lateral flaps with which the end flaps of the bottom

wall are constructed to interlock, substantially as described.

3. A box comprising connected bottom and side walls; said bottom walls having opposite flaps provided with tongues and the side walls having end flaps, which end flaps on one of the walls are provided with lateral flaps having slits with which the said tongues on the bottom walls are adapted to interlock, substantially as described.

4. A box comprising connected bottom and side walls, the said bottom wall having end flaps provided with tongues having lateral tucks and the side walls having end flaps of which those on one of the side walls are provided with lateral flaps, which lateral flaps are provided with slits for engagement with the said tucks in said tongues, substantially as described.

5. A box comprising connected bottom and side walls and having end flaps on its bottom wall and having also end flaps on its side walls, which are provided with interlocking means, said end flaps on one of the side walls being provided with lateral flaps, with which the said end flaps on the bottom wall are adapted to interlock at their free edges, substantially as described.

6. A box comprising connected bottom, side and top walls, and in which the bottom wall is provided with end flaps and the side walls are also provided with end flaps of which those on one of the side walls have lateral flaps adapted to be interlocked with the flaps on the bottom wall; said top wall having a flap at its free edge adapted for engagement with the opposite side wall, substantially as described.

7. A box comprising connected bottom and side walls and having at the ends of its bottom wall end flaps, and on its side walls end flaps, which latter are provided with longitudinal and transverse slits by which they may be interlocked together said end flaps on one of said side walls having lateral flaps connected therewith, which lateral flaps and the end flaps of the bottom wall are provided with interlocking means, by which they may be secured together, substantially as described.

In testimony that I claim the foregoing as my invention I affix my signature, in presence of two witnesses, this 3d day of May, A. D. 1895.

WARREN B. HOWE.

Witnesses:

TAYLOR E. BROWN,
ALBERT H. GRAVES.