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Fig. 1

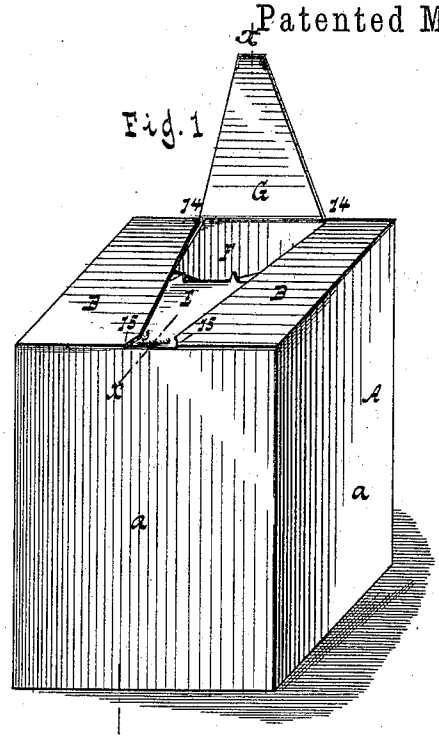


Fig. 2.

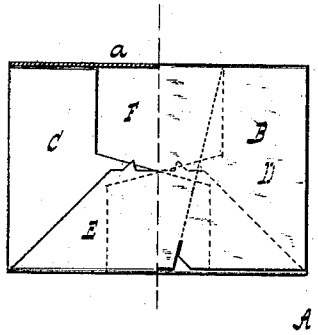


Fig. 3.

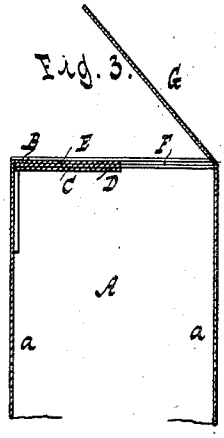


Fig. 4.

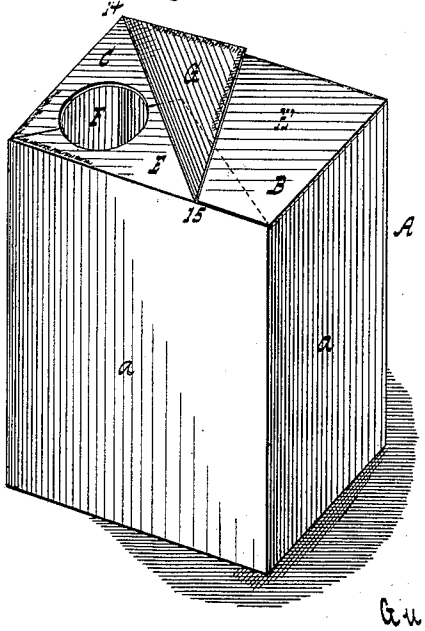


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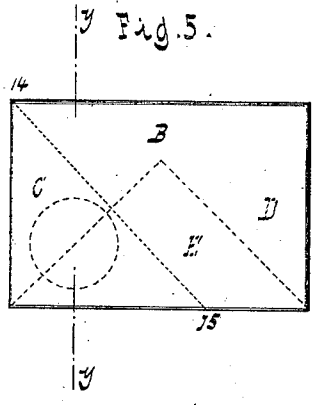
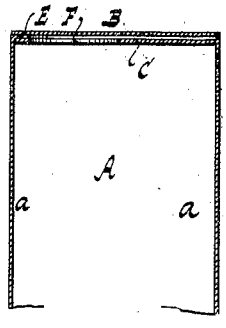


Fig. 6.



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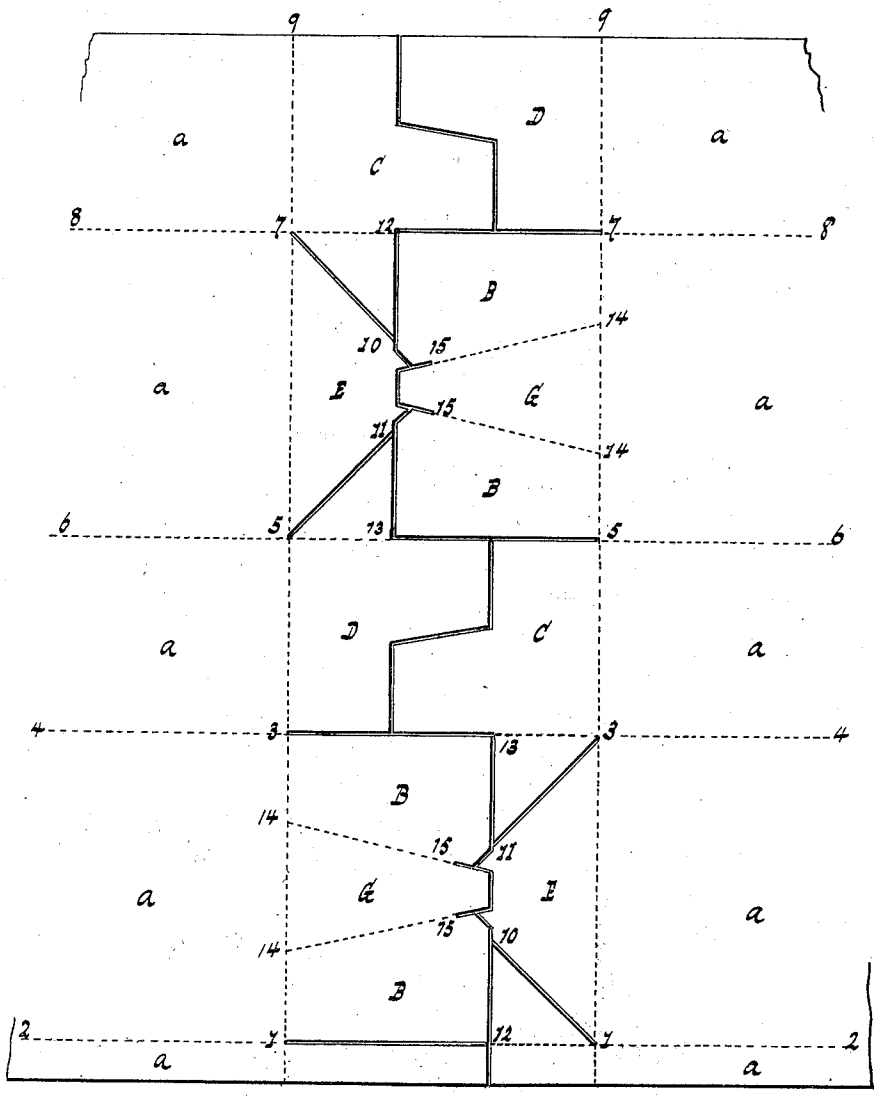
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Fig. 7.



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Fig. 8.

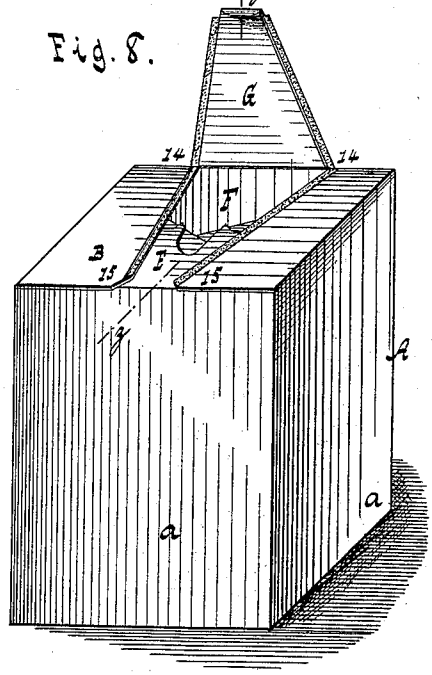


Fig. 9.

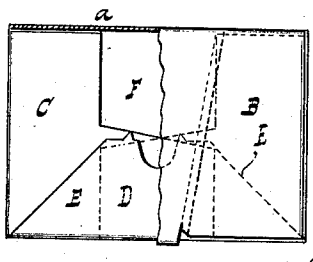


Fig. 10.

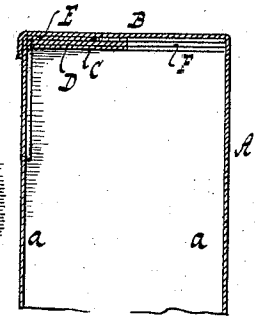
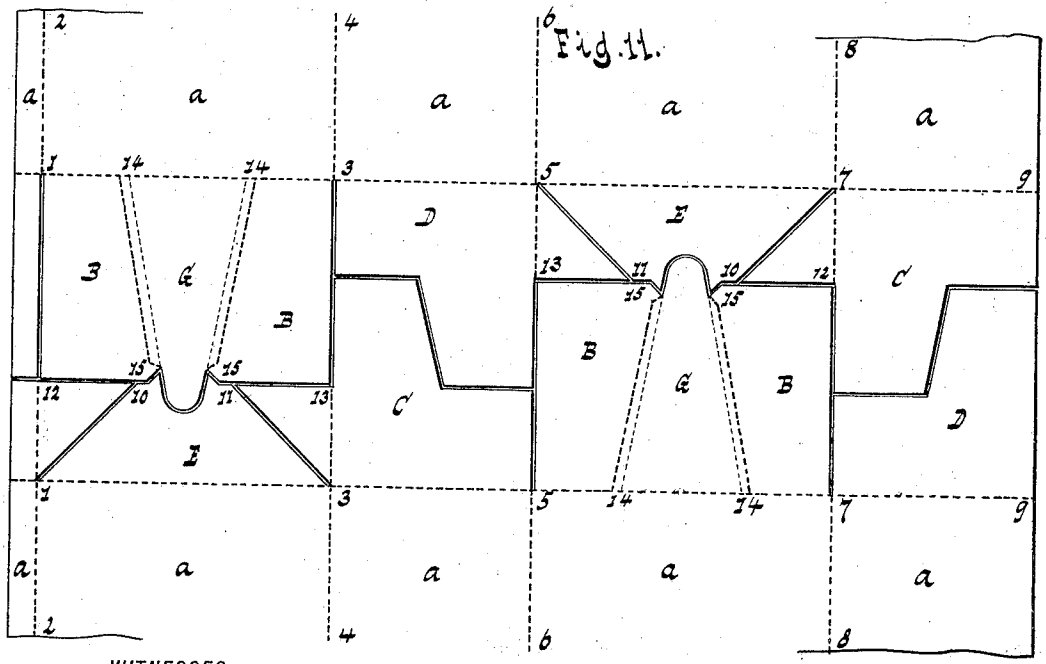


Fig. 11.



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Fig. 12.

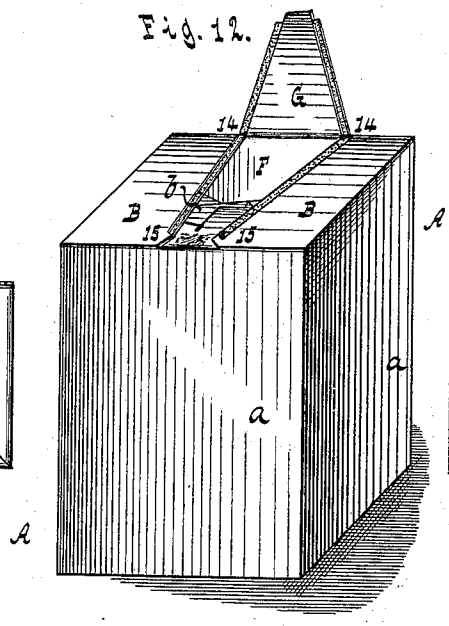


Fig. 13.

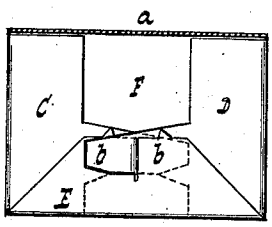


Fig. 14.

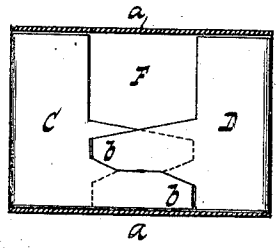
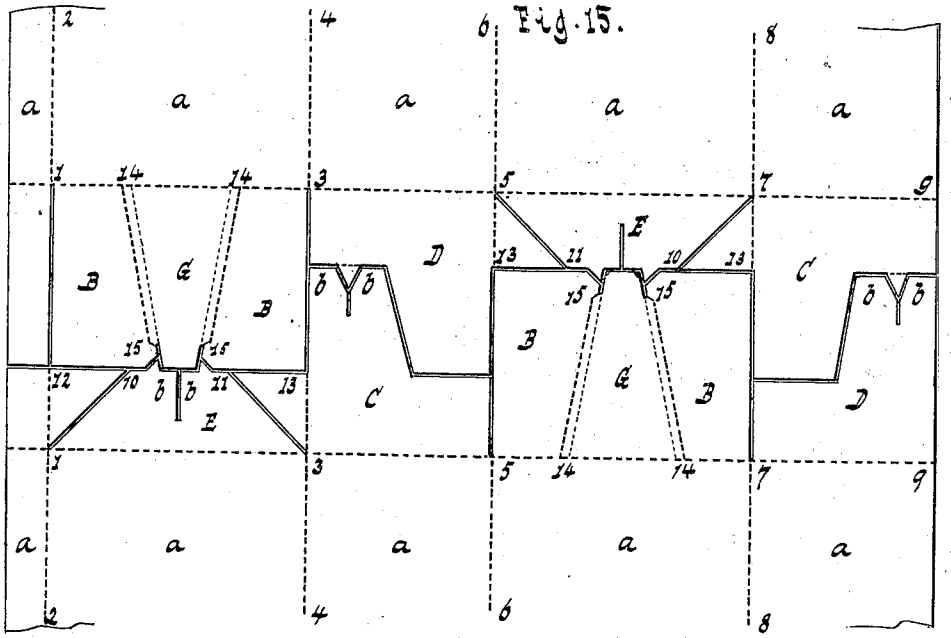


Fig. 15.



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Fig. 16.

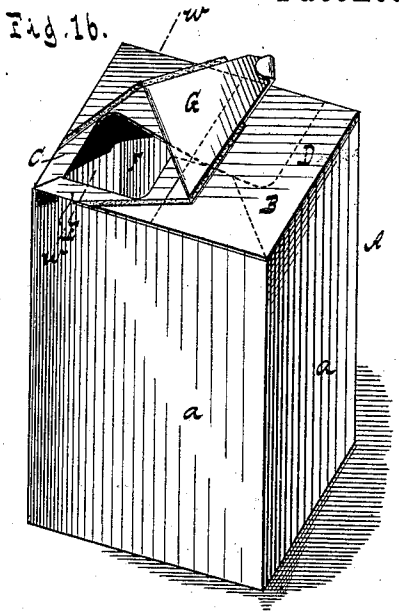


Fig. 17.

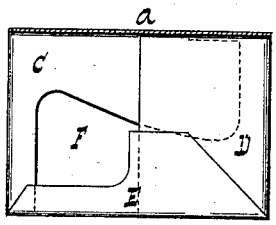


Fig. 18.

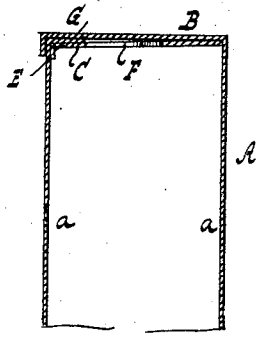
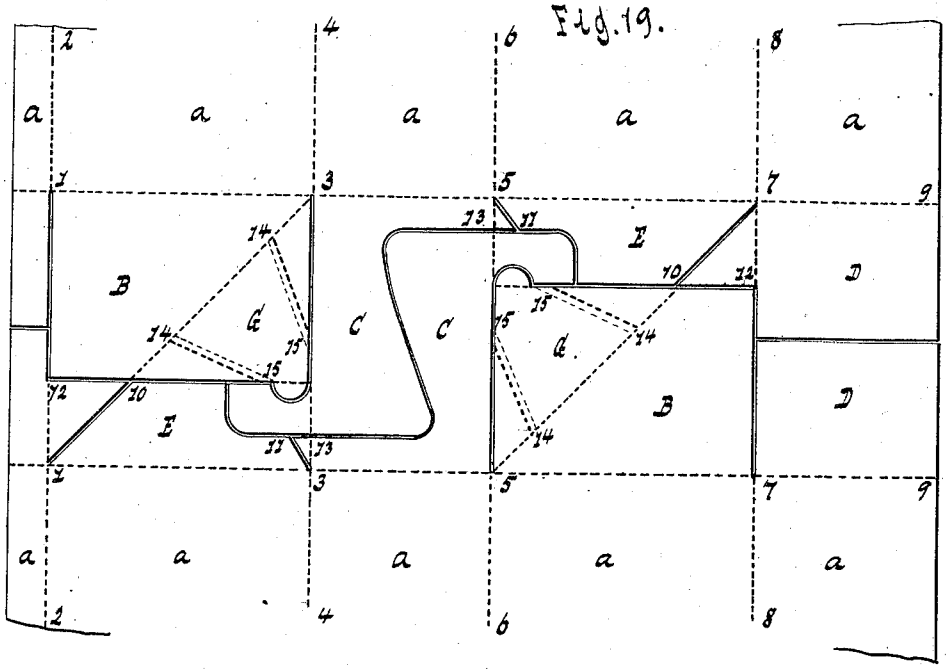


Fig. 19.



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Fig. 20.

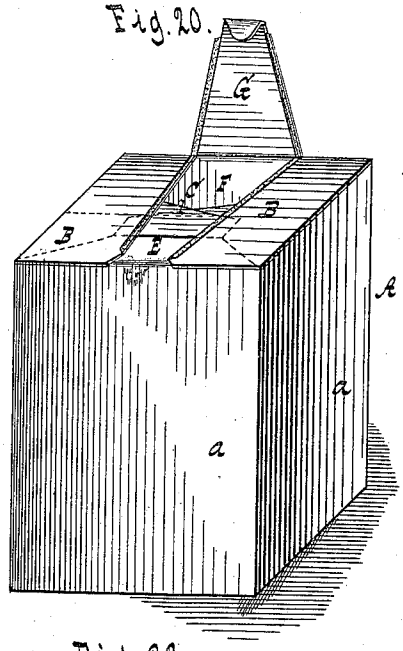


Fig. 21.

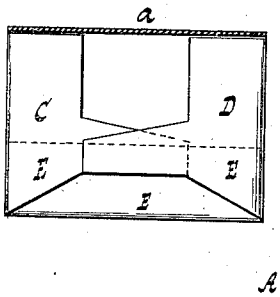


Fig. 22.

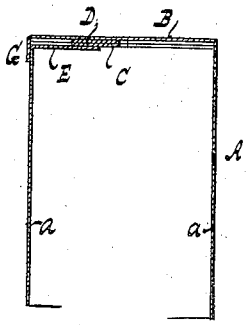
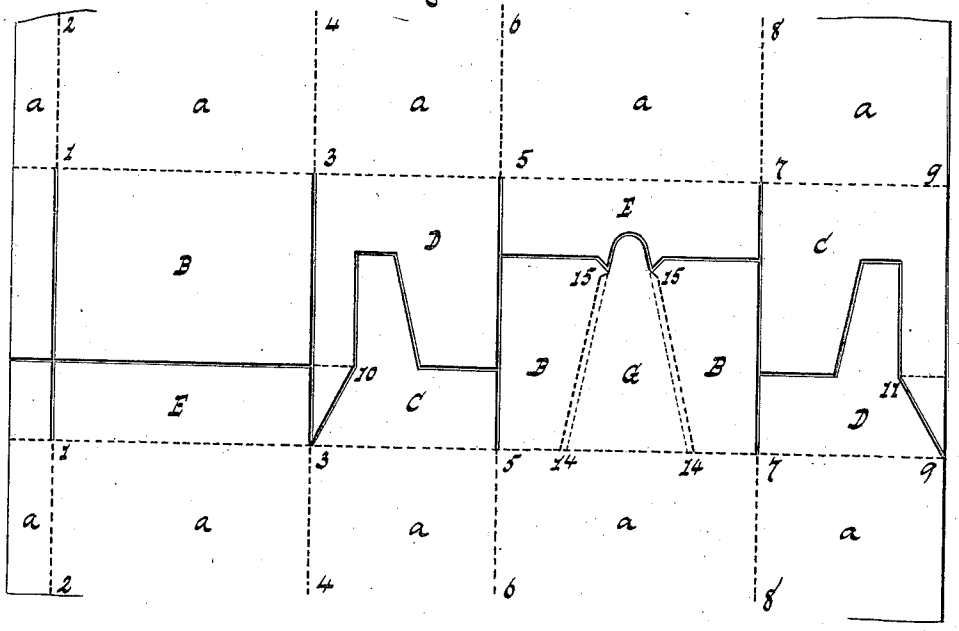


Fig. 23.



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Fig. 24.

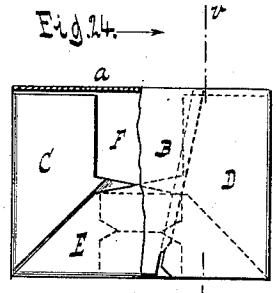


Fig. 25.

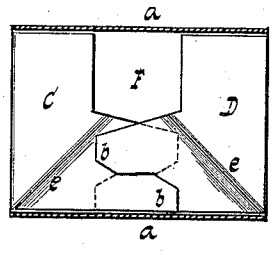


Fig. 26.

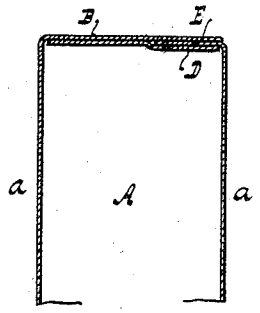
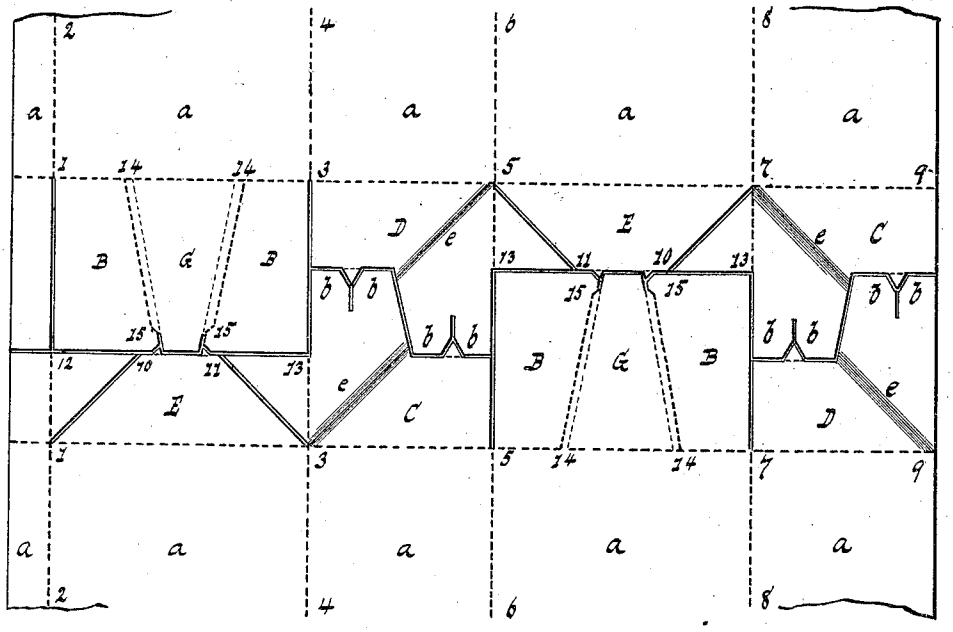


Fig. 27.



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Fig. 28.

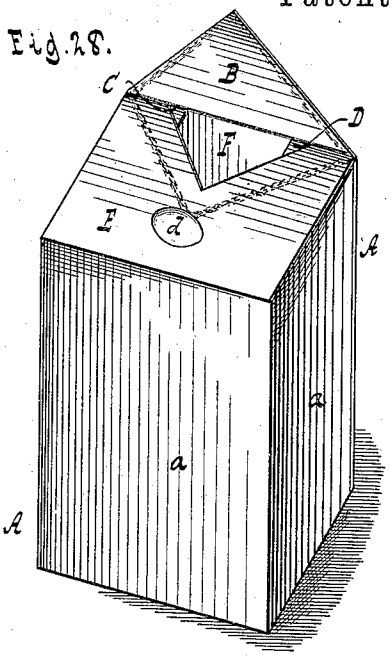


Fig. 29.

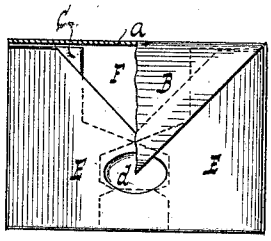


Fig. 30.

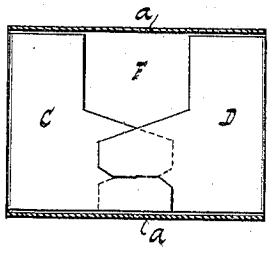
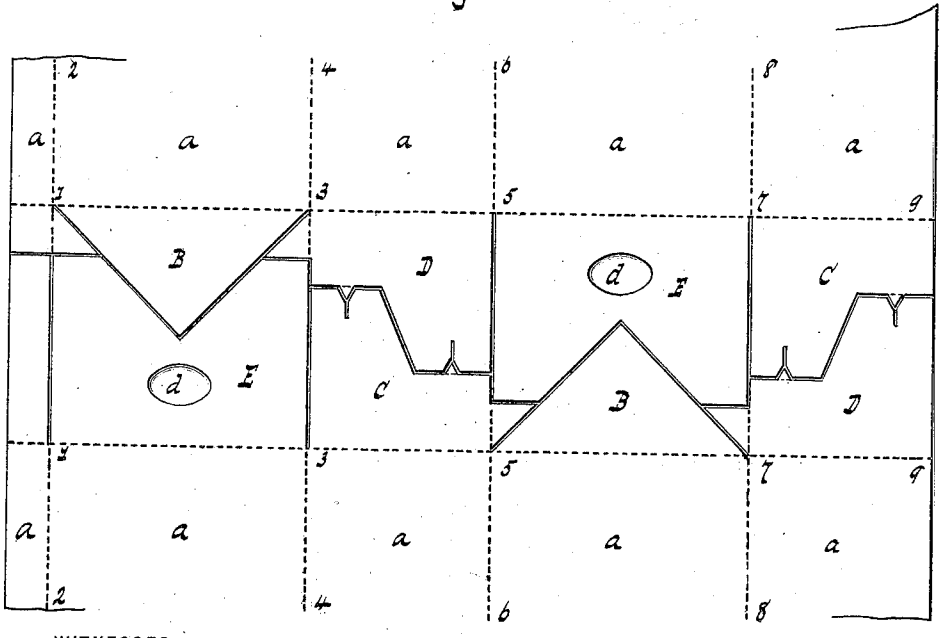


Fig. 31.



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UNITED STATES PATENT OFFICE.

GUSTAV L. JAEGER, OF NEW YORK, N. Y.

PAPER BOX.

SPECIFICATION forming part of Letters Patent No. 358,671, dated March 1, 1887.

Application filed October 21, 1886. Serial No. 216,848. (No model.)

To all whom it may concern:

Be it known that I, GUSTAV L. JAEGER, a citizen of the United States, residing at New York, in the county and State of New York, have invented new and useful Improvements in Paper Boxes, of which the following is a specification.

This invention relates to paper boxes; and it consists in the construction and combination of parts as hereinafter described and claimed, reference being made to the accompanying drawings, illustrating my invention, in which—

Figure 1 is a perspective view of a box containing my invention. Fig. 2 is a plan view thereof, partly in section. Fig. 3 is a section in the plane *x x*, Fig. 1. Fig. 4 is a perspective view of a modification. Fig. 5 is a plan view of Fig. 4, the box being closed. Fig. 6 is a section in the plane *y y*, Fig. 5. Fig. 7 is a view on a plane of the edges of two box-blanks, such as used for the construction of box shown in Fig. 1. Fig. 8 is a perspective view of another modification. Fig. 9 is a plan view, partly in section, of Fig. 8. Fig. 10 is a section in the plane *z z*, Fig. 8. Fig. 11 is a view on a plane of the edges of two box-blanks, such as used for the construction of the box shown in Fig. 8. Fig. 12 is a perspective view of another modification. Fig. 13 is a plan view of Fig. 12, the closing-flap being removed. Fig. 14 is a plan view of Fig. 12, the closing-flap and the front flap being removed. Fig. 15 is a view, on a plane, of the edges of two box-blanks, such as used for the construction of box shown in Fig. 12. Fig. 16 is a perspective view of another modification. Fig. 17 is a plan view of Fig. 16, the closing-flap being removed. Fig. 18 is a section in the plane *w w*, Fig. 16. Fig. 19 is a view on a plane of the edges of two box-blanks, such as used for the construction of box shown in Fig. 16. Fig. 20 is a view of another modification. Fig. 21 is a plan view of Fig. 20, the closing-flap being removed. Fig. 22 is a vertical central section of Fig. 20. Fig. 23 is a view on a plane of the edges of two box-blanks, such as used for the construction of box shown in Fig. 20. Fig. 24 is a plan view of another modification, partly in section. Fig. 25 is a plan view of Fig. 24, the closing-flap and front flap being removed. Fig. 26 is a section in the plane *v v*, Fig. 24. Fig. 27 is a view on a plane of the edges of two blanks, such as used for the construction of box shown in Fig. 24. Fig. 28 is a view of another modification. Fig. 29 is a plan view, partly in section, of Fig. 28. Fig. 30 is a plan view of Fig. 28, the front and closing flaps being removed. Fig. 31 is a view on a plane of the edges of two box-blanks, such as used for the construction of box shown in Fig. 28.

Similar letters indicate corresponding parts.

The letter A designates the box, made of paper or other similar suitable material. The walls or sides of the box are formed by folding the portions *a a a a a* of the blank along the scores 1 2, 3 4, 5 6, and 7 8, to form such walls or sides of the box. The portion or lip *a* formed by the score 1 2 and the edge of the blank near to and parallel with said score can be provided with adhesive and pasted or otherwise attached to the portion *a* formed by the score 7 8 and the edge of the blank near to and parallel to said score 7 8. The walls of the box are thus prevented from coming apart. The blank has now been brought into the form of a tube open at both ends. In this condition the blanks can be readily folded into a flat position because of the flexibility of the material along the scores 1 2, 3 4, 5 6, 7 8, and when thus flattened the blanks can be readily shipped for transportation.

When it is desired to form a box, the blank is restored to the tube-like form. Then the side flaps, C D, are folded over along the scores 3 5 and 7 9, and then the front flap, E, is folded over along the score 1 3 or 5 7, as the case may be. By now folding the closing-flap B over along the score 5 7 or 1 3, as the case may be, the box is closed. By providing the front flap, E, with receding cuts 1 10 and 3 11 or 7 10 and 5 11, as the case may be, said front flap, E, when folded onto the side flaps, C D, will leave the entire outer edges of said side flaps, C D, exposed, as seen in Figs. 2, 9, 13, and 17. The closing-flap B is thus enabled to sit directly upon the side flaps, C D, as well as upon the front flap, E, and when the closing-flap is fastened to the flaps C, D, and E by a strip of adhesive applied along the free edges of the closing-flap B said closing-flap will be joined di-

rectly to the outer edges of the flaps C, D, and E. No space is thus left between any of the flaps B, C, D, or E through which any of the contents of the box will sift out. At the same time one strip of paste or adhesive along the three free edges of the closing-flap will serve to securely close the box, and this strip of adhesive can be applied at one operation, thus saving time.

As seen in the drawings, opening-cuts are made either in the side flaps, C D, or in a side flap and in the front flap, E, which cuts when the flaps are folded into position to close the box will leave an opening, F. This opening F is closed by the closing-flap B. In order to uncover the opening F to remove the contents or part of the contents of the box, it is not necessary to raise the entire closing-flap B. Said closing-flap B is provided with a closing-tongue, G, to cover the hole F. This closing-tongue is formed by a score or dents, 14 15, or by several such scores or dents in the closing-flap B. The score or scores 14 15 either form a hinge on which the closing-tongue can swing, as seen in Fig. 4, or said scores form a weak spot along a part of the closing-flap B, and on tearing or breaking open the closing-flap along said scores the tongue G is formed, as seen from Figs. 1 and 7. The tongue G is preferably provided with a string or a slight projection, by which the tongue can be readily grasped.

As seen in Figs. 8, 11, 12, 15, 16, and 19, by making two sets of scores, 14 15, and by making one set of said scores on the interior of the closing-flap and one set on the exterior of said flap and placing said sets of scores approximately to one another; but not in corresponding relative positions, when the edges of the closing-tongue G are torn away from the closing-flap B the material composing said flap and tongue will part along said several sets of scores, whereby a rim or ledge is formed on the tongue G and flap B, as seen in Figs. 8, 12, and 16. This rim or ledge prevents any portion of the tongue G from being readily forced into the hole F. As it frequently happens that when the box is opened all the contents of the box are not removed therefrom at once, but part of said contents are kept in said box for future use, the tongue G is very useful as a cover for the opening F to protect the contents of the box, and by providing said tongue G with a rim or ledge, as just described, the tongue G sits snugly upon the box and forms a secure closing device for the opening F.

In Figs. 7, 11, 15, and 19 the full lines indicate cuts and the dotted lines indicate dents or scores.

It will be noticed that by cutting or stamping the blanks, as shown in Figs. 7, 11, 15, and 19, the cut will form edges for two box-blanks, and this cutting can be done very rapidly, as a die or suitable knife can be used for this purpose.

It will also be noticed that in the manner of cutting shown in Figs. 7, 11, 15, and 19 no waste occurs—that is to say, no portion of the material is entirely cut off or severed from the box-body.

In former methods of cutting or stamping box-blanks pieces or chips of the material used frequently were cut off or entirely severed from the main portions of the material. Said pieces or chips frequently get into portions of the apparatus used in the manufacture of the boxes, and said apparatus thus may become clogged. By avoiding any waste or cutting off of pieces or chips the machine is not liable to become clogged, and at the same time the material of the box remains stronger than if pieces or chips are cut off.

Locking-tongues *b b* may also be formed on the side and front flaps, C D E, as seen in Fig. 15, and by causing said locking-tongues to interlock or to engage one another, as seen in Figs. 13 and 14, the side and front flaps will be held in position. If desired, the locking-tongues on the front flap may be dispensed with and the side flaps only provided with locking tongues.

In order to join the closing-flap B directly to the edges of the side flaps, C D, and of the front flap, E, it is not necessary to provide the front flap with receding cuts; but said front flap, E, may be cut as shown in Fig. 23, and the receding cuts 1 10 and 3 11, which, in the case shown in Fig. 11, were formed on the front flap, E, can, as shown in Fig. 23, be formed on the side flaps, C D, forming the cuts marked in said Fig. 23, as 3 10 and 9 11. By now folding the front flap, E, into position, as shown in Fig. 21, and then folding the side flaps, C D, onto said front flap, edges of the flaps C, D, and E will again be left free for direct contact with the closing-flap B.

Instead of providing the closing-tongue G with a projection, (shown in Figs. 20 and 23,) I can leave the free end of the closing-tongue G remain flush with or lie within the edge of the box, as seen in Figs. 12 and 15, and by cutting recesses in the closing-flap B adjacent to the free end of the closing-tongue said closing-tongue will still remain free to be grasped when the box is to be opened.

It should also be noticed that underlying flaps—as, for example, the side flaps, C D—can be provided with dents or depressions *e e*, Figs. 24 to 27, into which depressions passes an overlying flap—as, for example, the front flap, E, as seen in Fig. 26. The side flaps and front flaps then have their upper surfaces flush or on a level, so that the closing-flap can sit snugly onto such flush surfaces and be securely and tightly pasted or attached to such flush surfaces.

Of course, in place of having the side flaps, C D, underlying and provided with depressions or dents *e*, to receive the overlying front flap, the front flap can be made underlying and provided with dents to receive the side

flaps, C D, which can be made overlying or overlapping.

It should also be noticed that a depression or recess, *d*, can be formed adjacent to the free edge of the closing-flap B, as seen, for example, in Figs. 29 to 31. Such depression *d* prevents the free edge of the closing-flap B from being pasted onto the box, and such free edge is left in position to be readily grasped when it is desired to open the box.

The recesses or depressions *d e* can be formed during the process of forming the blanks. By having, for example, suitable projections formed on the dies or cutting-rollers by which the blanks are formed such depressions *d e* can be formed while the formation of the blank is going on.

It should also be noticed that, in place of forming an opening-cut in only one or two of the front and side flaps, all of said flaps can be provided with opening-cuts, as seen in Fig. 31, which, on the formation of the box, will form the opening F.

By forming the blanks without waste a series (two or more) of box-blanks can be simultaneously formed to match at opposite ends, said matching ends being formed with irregular outlines adapted to form flaps, which flaps, on the formation of the box, are adapted to form, respectively, front, side, and closing flaps, and to leave an opening in a side of the box. Said irregular outline may also be so formed that on the formation of the box the front flap overlaps the side flaps or the side flaps overlap the front flap, and that the overlapping flap or flaps have receding edges, so that the closing-flap can be caused to rest firmly or in close contact with the entire edges of the front and side flaps. The contents of the box are thus prevented from escaping or sifting out between or beneath any of the flaps. When the contents of the box are of a fine character—for example, in the shape of a powder or meal—a secure closing of the box is required to prevent such powder or meal from sifting out or escaping.

In Fig. 15 the tongues *b b* are separated by a slot having a flaring mouth. By having the flaring mouths the various tongues can be readily slipped into engagement with one another or interlocked with one another; also, by having the slots separating the tongues *b b* pass completely through the edges of the blanks, the tongues *b b* can be separated, so as to allow ready interlocking of the tongues.

What I claim as new, and desire to secure by Letters Patent, is—

1. A paper box provided with a hole in one of its sides, a closing-flap, and a score mark or dent in said closing-flap, substantially as set forth.

2. A paper box provided with a hole in one of its sides, a closing-flap, B, a closing-tongue, G, and a score mark or dent in said closing-flap, substantially as set forth.

3. A paper box provided with outer and inner scores or dents in one of its sides, the outer scores or dents being placed in approximate positions to but not corresponding with the inner scores or dents, substantially as set forth.

4. A box having its sides *a a* flexibly or movably joined together, and provided with an opening, F, with a closing-flap, and with a score or dent in said closing-flap, substantially as set forth.

5. A series of box-blanks (two or more) formed at opposite ends to match, said matching ends being formed with irregular outlines constituting flaps, which flaps, on the formation of the box, form, respectively, front, side, and closing flaps and leave an opening in a side of the box covered by the closing-flap, substantially as set forth.

6. A series of box-blanks (two or more) formed at opposite ends to match, said matching ends being formed with irregular outlines forming flaps, which flaps, on the formation of the box, constitute, respectively, front and side flaps and leave an opening piercing the side and front flaps, substantially as set forth.

7. A series of box-blanks formed at opposite ends to match, said matching ends being severally formed with irregular outlines of a closing-flap, a front flap, and side flaps of such construction that in the folded condition the entire outer edges of the front and side flaps are exposed to contact with the closing-flap, substantially as described.

8. A series of box-blanks formed at opposite ends to match, said matching ends being formed with irregular outlines to form a closing-flap, a front flap, and side flaps, the entire outer edges of the front and side flaps exposed to contact with the closing-flap, and an aperture covered by the closing-flap, substantially as set forth.

9. A box provided with side flaps and a front flap, one of said flaps overlapping the others, and the overlapping flap being provided with a receding edge or edges, said box being also provided with a closing-flap, substantially as set forth.

10. A box provided with side flaps, C D, and with locking-tongues *b b* in said side flaps, said tongues being separated by slots passing through the edges of the blank or flaps, substantially as set forth.

11. A box provided with side flaps, C D, and with locking-tongues *b b* in said side flaps, said tongues being separated by slots having flaring mouths, substantially as set forth.

12. A box provided with side flaps, C D, and a front flap, E, locking-tongues *b b* on said side and front flaps, and a closing-flap, B, substantially as set forth.

13. A box provided with a closing-flap and a depression in the side of the box at a distance from the edges of the box and at the free edge of the closing-flap, substantially as set forth.

14. A box provided with a closing-flap, B,

and a closing-tongue, G, and recesses in said closing-flap adjacent to the free end of the closing-tongue, substantially as set forth.

15. A box provided with a closing-flap, B, and a closing-tongue, G, having its free end flush with or within the edge of the box, and recesses in said closing-flap adjacent to the free end of the closing-tongue, substantially as set forth.

16. A box provided with flaps and a recess or depression in one or more of said flaps and an overlapping flap or flaps placed within said recess or depression, substantially as set forth.

In testimony whereof I have hereunto set my hand and seal in the presence of two subscribing witnesses.

GUSTAV L. JAEGER. [L. S.]

Witnesses:
W. C. HAUFF,
E. F. KASTENHUBER.