G. MAIER.

FOLDING BOX.

APPLICATION FILED NOV. 25, 1913.

**1,126,246.**

Patented Jan. 26, 1915.

2 SHEETS—SHEET 1.

Fig 1

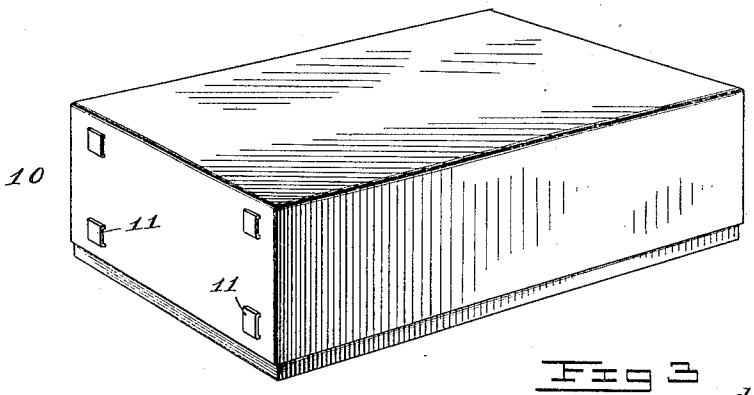



Fig 2

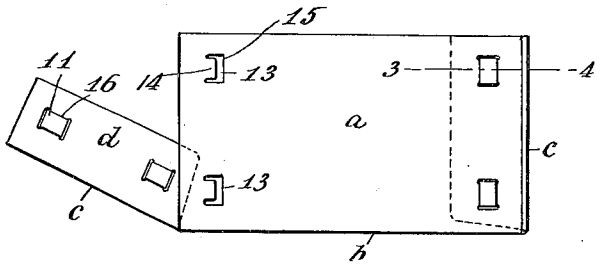



Fig 3

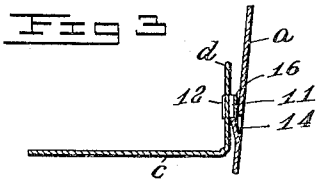



Fig 4

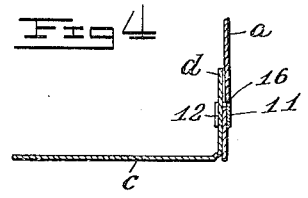



Fig 5

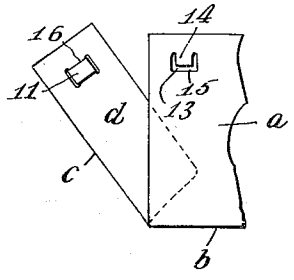



Fig 6

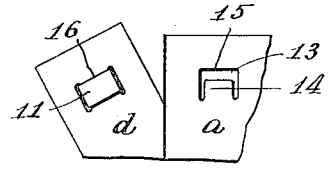
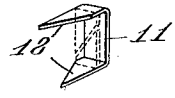



Fig 7




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2 SHEETS—SHEET 2.

Fig 8

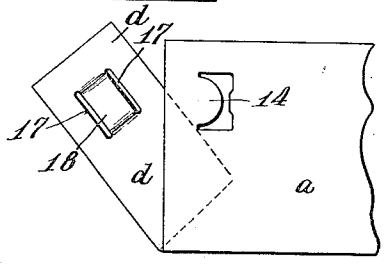



Fig 9

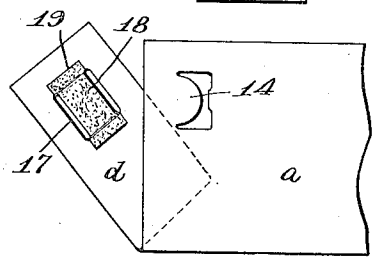



Fig 10

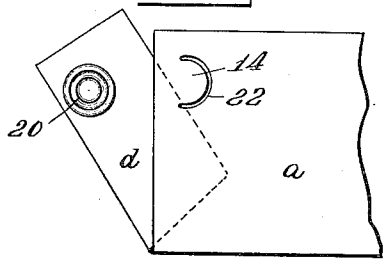



Fig 11

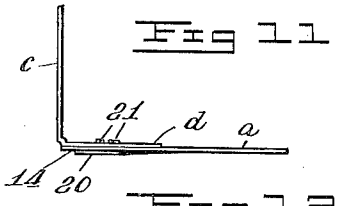



Fig 12

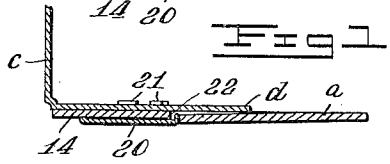



Fig 13

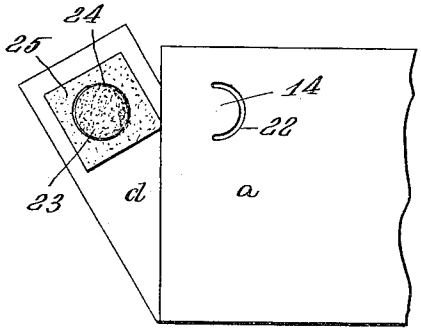
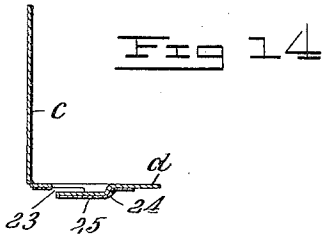



Fig 14




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# UNITED STATES PATENT OFFICE.

GUSTAV MAIER, OF SCHRAMBERG, GERMANY.

## FOLDING BOX.

1,126,246. Specification of Letters Patent. Patented Jan. 26, 1915.

Original application filed October 4, 1910, Serial No. 585 228. Divided and this application filed November 25, 1913. Serial No. 802,965.

*To all whom it may concern:*

Be it known that I, GUSTAV MAIER, a subject of the Emperor of Germany, residing at Schramberg, in the Empire of Germany, have invented new and useful Improvements in Folding Boxes, of which the following is a specification.

This invention relates to folding boxes and the like made preferably of paper board, card board or similar material, which may be collapsed into a small compass, by folding the sides, for the purpose of storing and when desired for use said sides may be erected and quickly connected to a novel fastening secured thereon or forming a part thereof, which fastening holds said box firmly in open position without liability of the sides separating under the most severe usage to which boxes of this type are subjected.

To this end the invention comprises a fastening device both simple and inexpensive, by means of which the sides of a box and also of its cover may be set up quickly for use and as readily collapsed, said devices lying flush with the surface of the box and being free of projections of any kind, a neat appearance is presented to view and the manner of fastening the box sides difficult to detect.

This is a division of my application for flat folding boxes, Serial No. 585,228, filed Oct. 4, 1910, and which has matured into Patent No. 1,083,114.

To more clearly illustrate the novel features of this invention, attention is directed to the accompanying drawings in which—

Figure 1 is a perspective view of a box and its cover and the improved fastening means applied thereto. Fig. 2 is a side elevation of the box partly set up to illustrate more clearly the fastening device. Figs. 3 and 4 are horizontal sectional views each on the line 3—4, Fig. 2, showing respectively in two positions the manner of securing the fastening. Figs. 5 and 6 are detail views of slight modifications of the construction. Fig. 7 is a perspective view of a portion of the fastening device. Figs. 8, 9 and 10 are detail views showing further modifications. Fig. 11 is a plan view, and Fig. 12 a horizontal sectional view of the modified form of the fastening illustrated in Fig. 10. Fig. 13 is an elevation and Fig. 14 a horizontal sectional view of a still further modified form of the fastening means.

In the drawings, 10 indicates a box or other receptacle and its cover made preferably of card-board, paper-board or the like, from a blank cut the proper size and folded in a manner well known to those skilled in the art.

In the form of box illustrated in the drawing there are two opposite parallel sides *a* which fold at right angles to the bottom *b* and two other sides *c* perpendicular to the sides *a* said sides *c* being provided with end flaps *d* that are turned at right-angles to the sides on which they are attached and lie within the sides *a* as shown. The flaps *d* in the construction shown in Figs. 1 to 7 are provided each with one or more clips or loops 11 made of a relatively broad strip of thin sheet metal bent into U-shape as clearly shown in Fig. 7. The ends 12 of said clip being inserted through the flaps *d* or through slots in said flaps and bent downwardly on the inner sides, a space being left between each loop and the outer side of the flap of a width equal to the thickness of the material of which the box is made.

At suitable points in the sides *a* within the margins are cut U-shaped slots 13 to form tongues 14 which are so placed relatively to the clips or loops 11 that when the sides *a* and *c* are folded into vertical position at right angles one to the other, the tongues 14 may, by slightly depressing them, enter the clips or loops 11 for the purpose of fastening said sides together. The parts are locked by the edges 15 of said slots extending over and engaging the inner edges 16 of the loops 11, as clearly represented in Fig. 4. The sides of the box as thus fastened together are very secure and may be subjected to a great deal of rough usage and interior or exterior strain or compression without the sides separating.

The fastening is very simple and may be quickly and easily made, is neat in appearance and does not project beyond the outer face of the box and thus offers no impediment to slipping a cover upon or removing the same therefrom.

In the form of fastening illustrated in Figs. 1 to 4 the sides *c* with their loops 11 are folded inwardly beyond the perpendic-

ular sufficiently far for the tongue 14 to engage the loops 11 from the outer sides. Then by pushing the sides *c* outwardly a short distance they are raised to the perpendicular and the tongues 14 engage the loop 11 while the shoulders 13 and 16 abut against one another. If desired the tongues 14 instead of projecting horizontally may extend downwardly as in Fig. 5, or upwardly as in Fig. 6, engaging respectively the upper or lower portion of the clip 11 which in this instance will be disposed in a horizontal direction.

As a further means for locking the flaps *a* and *b* the edge 15 of the slot 13 may have a slight projection $14^a$, see Figs. 8 and 9, extending into the slot which passes under the loop when the edge 13 is pressed downward behind said loop. When thus constructed it is necessary to press the side *c* with its flap *d* outwardly in order to disengage the projection $14^a$ from the loop before the shoulder 15 can be lifted over said loop.

Instead of the metal clip 11 heretofore described the flap *d* may have two parallel slots 17 cut therein as in Fig. 8 and the strip 18 therebetween pressed outward to form a clip or loop. The tongue 14 may, if desired, be made with a semi-circular outline instead of the rectangular outline shown in Fig. 2. The clip or loop 18 when made integral with the material of the box, as in Fig. 8, may be strengthened when desired by cementing, gluing, or otherwise attaching a piece of thin leather, textile, or other material on the outer side of the flaps *d* in such position as to overlie the loop 18 when the slots 17 are cut therein, see Fig. 9.

In Figs. 10, 11 and 12 the clip or loop 20 is shown to be of thin sheet metal but instead of the rectangular form previously illustrated, it is made of circular or disk like shape, from the inner edges of which project feet or prongs 21 that extend through the flaps *d* and are bent downwardly on the inner sides thereof, space being left between the clips and the flaps for the insertion of the tongues 14. In this form of the device the tongue 14 is made by cutting a semi-circular slot in the side *a* to provide a curved-shoulder 22 to bear against the curved periphery of the clip 20. This form of the device may be further modified by making a semi-circular cut in each fold *d* and pressing outwardly from said fold a circular button 23 of the material, to form a clip or loop, the circular cut forming the opening, after the button has been pressed out, to receive the tongue 14. The connecting portion 24 between the button or loop 23 and the flap *d* forms a shoulder against which the shoulder 22 on the flap *a* bears when the two sides are connected. If desired, a strip of thin leather, textile or other suitable material 25 may be cemented on the fold *d* over that portion where the clip or button 25 is to be formed.

Fastening devices such as above described may be applied to boxes at very little expense and are so simple that boxes when folded may be connected together with extreme quickness and loss of little time and with little trouble. A single fastening may be used for each corner, as in Figs. 8, 9, 10 and 13, or two or more may be used, as in Figs. 1 and 2, the number depending upon the size of the box and the usage to which it is to be put.

I claim—

1. A folding box made of a cut blank, the margins of which are bent erect to form sides, on two of which sides are flaps adapted to fold within the edges of the adjacent sides to form corners, and coöperating fastening means for said corners comprising a tongue on one member disposed in the plane of said member and a clip or loop on the other member projecting beyond one side of said member and lying in a plane parallel thereto and in position to receive said tongue and hold said members in erect position.

2. A folding box made of a cut blank, the margins of which are bent erect to form sides, on two of which sides are flaps adapted to fold within the edges of the adjacent sides to form corners, and coöperating fastening means for said corners comprising a tongue on one member disposed in the plane of said member and integrally formed therewith, and a clip or loop on the other member projecting beyond one side of said member and lying in a plane parallel thereto and in position to receive said tongue and hold said members in erect position.

3. A folding box, made of a cut blank, the margins of which are bent erect to form sides, on two of which sides are flaps adapted to fold within the edges of the adjacent sides to form corners, and coöperating fastening means for said corners comprising a tongue on one member in the plane of said member and integral therewith, and a clip or loop on the other member integral with said member and projecting beyond one side thereof and lying in a plane parallel thereto and in position to receive said tongue and hold said members in erected position.

4. A folding box made of a cut blank the margins of which are bent erect to form sides, on two of which sides are flaps adapted to fold within the edges of the adjacent sides to form corners, and coöperating fastening means for said corners comprising an integral tongue on one member formed by cutting a U-shape slot therein back from the margins thereof, and a loop on the other member projecting from the face thereof to receive said tongue and itself simultaneously

enter said slot to lock said members in erect position.

5. A folding box made of a cut blank the margins of which are bent erect to form sides, on two of which sides are flaps adapted to fold within the edges of the adjacent side to form corners, and coöperating fastening means for said corners comprising an integral tongue on one member formed by cutting a U-shape slot therein back from the margins thereof, and an integral loop on the other member formed by cutting parallel slots in said member and pressing the strip therebetween beyond the plane of the side of said member, said loop adapted to receive said tongue and simultaneously enter said U-shaped slot to lock said members in erected position.

6. A folding box made of a cut blank, the margins of which are bent erect to form sides, on two of which sides are flaps adapted to fold within the edges of the adjacent sides to form corners and coöperating fastening means for said corners comprising an integral tongue on one member formed by cutting a U-shape slot therein back from the margins thereof, and a loop on the other member projecting from the face thereof a sufficient distance to receive said tongue and itself enter said U-shaped slot, the edges of said slot and loop engage and lock said members in erect position.

7. A folding box made of a cut-blank, the margins of which are bent erect to form sides, on two of which sides are flaps adapted to fold within the edges of the adjacent sides to form corners, and coöperating fastening means for said corners, comprising an integral tongue on one of said members formed by cutting a U-shape slot therein back from the margin thereof, and an integral loop on the other member formed by cutting two parallel slots in said member and pressing the material between said slots beyond the plane of the side thereof, that it may enter said U-shaped slot and itself receive said integral tongue.

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

GUSTAV MAIER.

Witnesses:
FRIDO KLAIBER,
ERNEST ENTENMANN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."