(No Model.) 2 Sheets—Sheet 1.

W. SCHARNWEBER.

BOX COVER.

No. 401,660. Patented Apr. 16, 1889.

Fig. 1

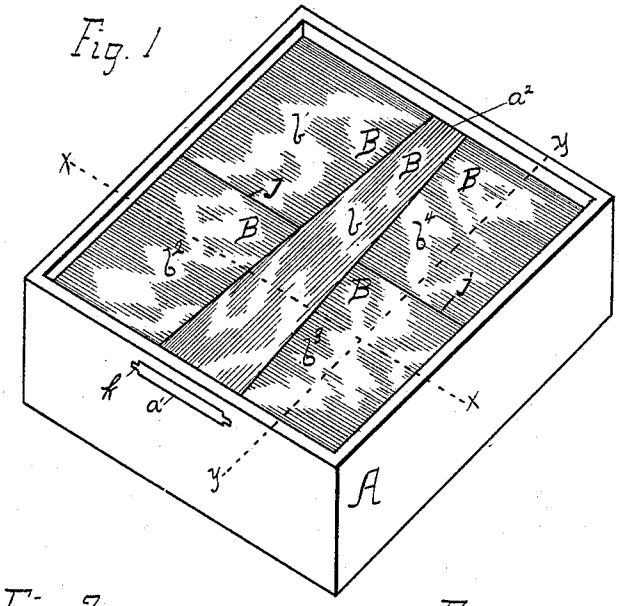


Fig. 2.

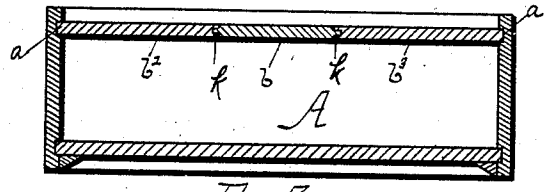


Fig. 3.

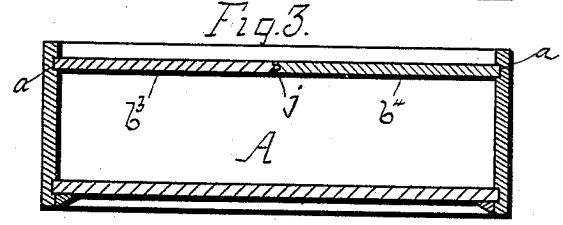


Fig. 4.

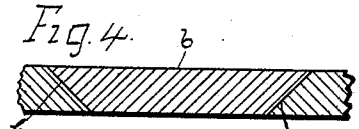
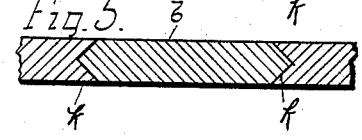


Fig. 5.



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(No Model.) 2 Sheets—Sheet 2.

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BOX COVER.

No. 401,660. Patented Apr. 16, 1889.

Fig. 6

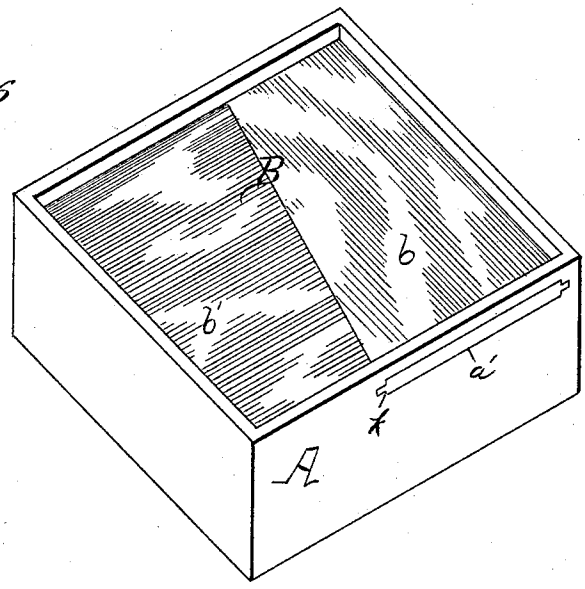
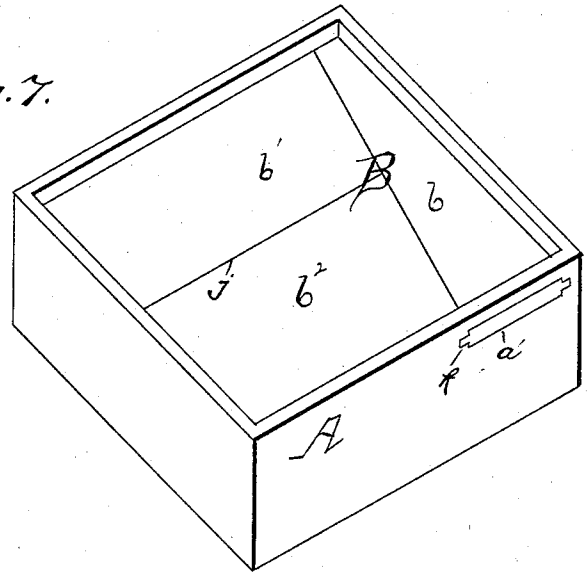


Fig. 7.



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UNITED STATES PATENT OFFICE.

WILLIAM SCHARNWEBER, OF CHICAGO, ILLINOIS, ASSIGNOR OF TWO-THIRDS TO HENRY N. MANN AND RICHARD J. KILLICK, OF SAME PLACE.

BOX-COVER.

SPECIFICATION forming part of Letters Patent No. 401,660, dated April 16, 1889.

Application filed July 2, 1888. Serial No. 278,801. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM SCHARNWEBER, a citizen of the United States of America, and a resident of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Removable Lids for Boxes, Tubs, &c., of which the following is a specification.

In the accompanying drawings, which illustrate this invention, and in which like reference-letters indicate the same or corresponding parts, Figure 1 is a view of a box, showing one of the forms in which my improved lid may be constructed. Fig. 2 is a vertical cross-section of the same box in the line $x\,x$ of Fig. 1. Fig. 3 is a vertical cross-section of said box in line 4 4 of Fig. 1. Figs. 4 and 5 show different forms of joints which may be used in place of the one shown in Figs. 1, 2, and 3. Figs. 6 and 7 illustrate modified forms of my improved cover.

This invention relates to lids or covers for boxes, tubs, &c., which are designed to hold such materials as tobacco, which must be packed under great pressure, and which therefore tend to swell and burst the boxes. To enable these boxes to withstand this bursting strain, they are necessarily made of the best material, and the parts are fitted and joined together with great care, all of which tends to make them very expensive. It is therefore desirable that they should be so constructed as to be capable of use as long and as many times as possible. The common form of box, the lid of which is nailed on, is comparatively worthless after it has been once packed and opened.

The object of my invention is to furnish a lid or cover which, while possessing the requisite strength and firmness when fastened upon the box, will also be easily removed and as easily replaced, so as to form perfectly tight joints, and which will at the same time be durable and cheap to make. To accomplish this end, I have devised a form of cover which is fastened upon the box by means of a key or wedge, and have secured important advantages by means of certain improvements, which will be hereinafter set forth.

These improvements are illustrated in the drawings, wherein—

A represents a box, which may be of any desired form and construction; B, the cover of said box, the same being constructed of the wedge-shaped portion b and the filling portions b', b^2, b^3, and b^4, and the whole being fitted into a groove, a, in the sides and ends of the box and near the top thereof. This groove is cut through a portion of the ends of the box in the shape of a mortise, as shown at a' and a^2, to allow the wedge-shaped portion b to be inserted from the side of the box after the other parts of the cover are in place.

To fasten this cover upon the box, the pieces b', b^2, b^3, and b^4 are first put in place, as it is evident can easily be done by first inserting each pair of them in turn in the end grooves of the box and then forcing them down together until they can be driven into the side grooves thereof, and then the wedge b is inserted through the mortise a' and driven in until the joints between it and the other portions of the cover as well as those between the latter and the sides of the box are made perfectly tight.

To remove the cover, the wedge b is driven back and the other pieces taken out.

Another special improvement consists in the cutting of the side portions of this cover into two pieces, as shown in Figs. 1, 2, and 3, which enables them to be inserted in the manner hereinbefore described, instead of through the mortise a', as would otherwise be necessary in a box containing the groove a. This improvement will be seen to be of great value when it is considered that these covers must be applied against the expansive force of the tobacco or other material with which the box is filled. In the box described above this improvement has been applied to a cover composed of a wedge-shaped portion, b, and two side pieces or filling portions divided into the sections b' b^2 and b^3 b^4. Fig. 7 shows the same improvement in a cover composed of a wedge or key, b, and one filling portion divided into the sections b' b^2. I prefer the arrangement shown in Fig. 1, however, as it enables the cover to be made of smaller pieces without

detracting from its strength. The central position of the wedge is also preferable.

In the use of covers of this kind—*i. e.*, those which are keyed or wedged in—great inconvenience often arises from the swelling and shrinking of the cover itself, due to changes in the amount of moisture contained therein, the cover, when the box is stored in a damp place, tending to swell, and, being wedged tightly together, to burst the box, and, on the other hand, when the box is placed in a dry atmosphere, tending to shrink and thereby loosen the joints of the cover. This disadvantage I have overcome by cutting the pieces b', b^2, b^3, and b^4, so that when in place in the box the grain of the wood will run in a direction practically at right angles to the grain in the wedge-shaped portion b. It is a well-known fact that wood swells and shrinks much more in a direction at right angles to the grain than in the direction of the same. Consequently by this construction I not only divide the expansion between the length and breadth of the cover, but I also compel the side portions of the same to expand in a direction approximately parallel to the wedge, thereby preventing the loosening of the same.

In Fig. 6 I have shown how this improvement may be applied to a cover composed of but two pieces.

This cover is made much tighter and firmer by using some form of tongue-and-groove joint between the different parts of the cover, as shown at *j k*.

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

1. A box with a groove in its walls, in combination with a cover fitted thereinto and containing a wedge-shaped piece and a filling-piece divided into sections, as and for the purpose stated.

2. A box provided with a groove in its inside walls, in combination with a cover fitted into said groove and composed of a central wedge-shaped portion and two filling portions divided into sections, as and for the purpose set forth.

3. A box with a groove in its inside walls, in combination with a cover fitted thereinto containing a wedge-shaped portion and a filling portion, so arranged that the grain of the wood in the filling portion will run crosswise of the grain in the wedge-shaped portion, as and for the purpose stated.

4. A box with a groove in its walls, in combination with a cover fitted thereinto and composed of a wedge-shaped piece and two filling-pieces divided into sections, and so arranged that the grain of the wood in the filling-pieces shall run crosswise of the grain in the wedge-shaped piece, as and for the purpose set forth.

WILLIAM SCHARNWEBER.

Witnesses:
HARRY BITNER,
CHAS. S. HILL.