

E. J. BROOKS.

BOX SEAL.

APPLICATION FILED DEC. 15, 1909,

Patented Apr. 5, 1910.

954,250.

Fig. 1.

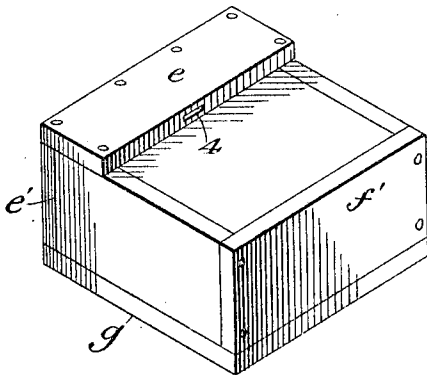


Fig. 2.

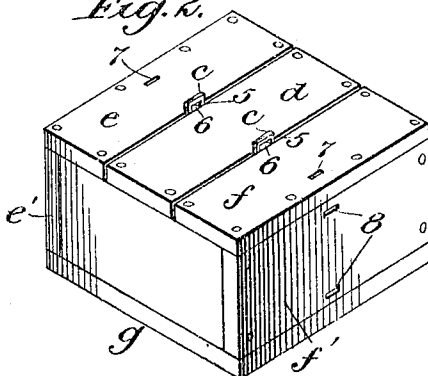


Fig. 3.

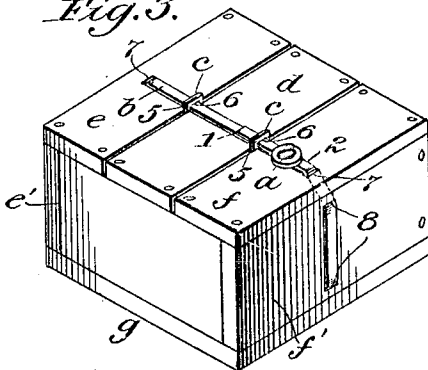


Fig. 4.

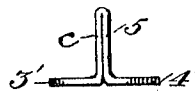


Fig. 5.

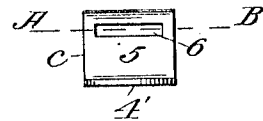


Fig. 6.

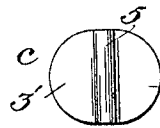


Fig. 7.

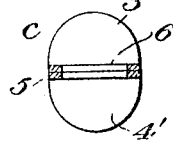


Fig. 8.

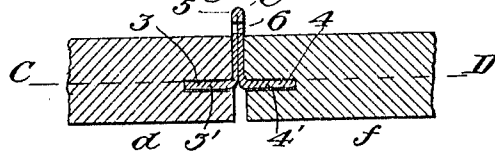


Fig. 9.

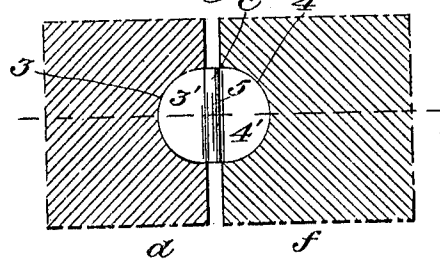


Fig. 10.



Fig. 11.

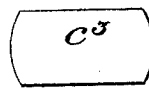


Fig. 12.

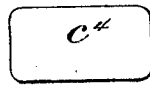


Fig. 13.



Fig. 14.

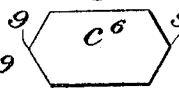
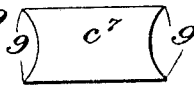


Fig. 15.



Witnesses:

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UNITED STATES PATENT OFFICE.

EDWARD J. BROOKS, OF EAST ORANGE, NEW JERSEY.

BOX-SEAL.

954,250.

Specification of Letters Patent.

Patented Apr. 5, 1910.

Application filed December 15, 1909. Serial No. 533,197.

To all whom it may concern:

Be it known that I, EDWARD J. BROOKS, a citizen of the United States of America, and a resident of East Orange, in the State of New Jersey, have invented a new and useful Improvement in Box-Seals, of which the following is a specification.

This invention relates to means for sealing wooden packing cases or boxes so as to insure the detection of any opening thereof for the abstraction of the contents or of any tampering therewith during railway or steamship transit, or in warehouses.

It relates especially to the employment of nailless box seals composed of metallic seal parts and box straps, examples of which are set forth in my previous specifications forming part of United States Letters Patent Nos. 925,450 and 925,451 dated June 22, 1909, No. 927,217, dated July 6, 1909, and No. 940,505, dated Nov. 16, 1909.

A preferred "box strap tool" for tightening the box straps preliminary to sealing them under tension, is set forth in my previous specification forming part of United States Letters Patent No. 925,990, dated June 22, 1909, and a preferred seal press for press fastening such box straps and seals is set forth in my previous specification forming part of Letters Patent No. 932,438, dated August 31, 1909.

The present invention consists in certain novel combinations of parts, and in a novel seal accessory the same being one of such parts and constituting a new article of manufacture, all as hereinafter particularly described and claimed.

One method of violating box seals without immediate detection has been to draw the nails of a board forming part of the top, bottom or one of the sides of the box, especially a middle board of the top or cover, and to displace the same endwise beneath the box strap sufficiently to admit the hand and to permit a portion of the contents of the box to be abstracted through the opening so formed.

The leading object of this invention is to prevent so displacing any board of the box otherwise liable to such displacement, by interlocking the same with boards that are otherwise protected against displacement; such interlocking being accomplished by the aforesaid seal accessories.

Other objects will be set forth in the general description which follows.

A sheet of drawings accompanies this specification as part thereof.

Figures 1, 2 and 3 are perspective views of one and the same wooden box, illustrating the sealing operation; Figs. 4 and 5 are edge and side views of one of the seal accessories on a larger scale; Fig. 6 is a top view projected from Fig. 5; Fig. 7 represents a section on the line A—B, Fig. 5; Fig. 8 represents a section through the same seal accessory and through adjoining edges of two box boards locked together thereby; Fig. 9 represents a section on the line C—D, Fig. 8; and Figs. 10 to 15 inclusive are face views of alternative seal accessories of different shapes, hereinafter more particularly described.

Like reference characters refer to like parts in all the figures.

In carrying this invention into effect, a metallic seal part, *a*, is employed, together with a metallic box-strap, *b*, in connection with which said seal part forms a nailless seal by which the box-strap ends, 1 and 2, Fig. 3, are inseparably connected with each other under the required tension by means of the aforesaid box-strap tool and seal press or equivalent means. Such seal part, *a*, may be of the make set forth in said Letters Patent No. 940,505 or of any known or improved make; and the box strap *b* may be cut from a continuous length of any suitable thin strap iron or like flexible flat metal or metallic ribbon, and requires no preliminary treatment. In connection with such seal part and box strap, a "seal accessory" *c* or *c*² or *c*³ or *c*⁴ or *c*⁵ or *c*⁶ or *c*⁷ is employed in sufficient numbers to extend the protection of the seal to all the boards of the sealed box, Fig. 3.

In the species represented by Figs. 1 to 9, inclusive, the lateral edges of a middle cover board, *d*, and the opposing edges of the two adjoining cover boards, *e* and *f*, are provided by means of a suitable router or saw with pairs of sockets, 3 and 4, Figs. 1, 8 and 9, into which opposite edges of the disk portions, 3'—4' of said seal accessory, *c*, are inserted in the process of assembling and nailing on the cover boards. Compare Figs. 1 and 2. The remainder of said seal accessory *c* consists of a flat doubled portion, 5, adapted to project slightly above the top of the box and provided with a slot, 6, through which the box strap *b* is threaded at the next stage of the sealing operation;

the seal accessory being made of a single piece of strap iron, sheet tin or the like, bent upon itself to form said doubled portion 5, and rebent to form said disk portions 3'—4' at right angles to said doubled portion. Said cover boards *e* and *f* of the box, and adjoining side boards, *e'* and *f'*, together with the bottom *g*, of the box, are further provided at each of the corners formed thereby with diagonal slots, 7—8, which may be cut in the several boards by any known or improved means. A novel tool for cutting such slots in the closed box, Fig. 2, will be set forth in a companion specification to form part of separate Letters Patent.

After providing the box with the seal accessories *c* and corner slots 7—8 as in Fig. 2, the box strap *b* is threaded therethrough and stretched, and its ends 1 and 2 are then inseparably sealed together by means of the seal part *a*, as aforesaid. Fig. 3 shows the sealed box, in which all the boards except the ends are thus securely tied together, so that it will be necessary to pull all their nails in order to release any board. The ends are not liable to be tampered with, owing to the fact that each of them is commonly made in one piece or of boards inseparably framed together; and all the boards of the top, bottom and sides of the box are nailed to both ends. Ordinarily the top or cover boards are the only ones requiring special protection such as is provided by the present invention.

The seal accessories *c*², *c*³ and *c*⁴ represented by Figs. 10, 11 and 12, are simple planchets of suitable thin metal either of which may obviously take the place of the seal accessory *c* of said first species as regards the interlocking of the socketed edges of box boards with each other.

To obviate providing the edges of the box boards with the sockets 3 and 4 (Figs. 1, 8 and 9) which would have to be done at the box factory, seal accessories, *c*⁵, *c*⁶ or *c*⁷ may be constructed as illustrated by Figs. 13, 14 and 15, with sharp end points 9, by which they are adapted to be driven into the adjoining edges of the boards without first socketing such edges.

Any of such simpler forms of the seal ac-

cessory (*c*², *c*³, *c*⁴, *c*⁵, *c*⁶, or *c*⁷) may obviously be used in the bottom and sides, either or both, in connection with the seal accessory *c* in the top of the same box; and other like modifications will suggest themselves to those skilled in the art.

Having thus described said improvement, I claim as my invention and desire to patent under this specification:

1. The combination with a metallic seal part and a metallic box strap under tension, the ends of which are inseparably united by said seal part, of metallic seal accessories constructed and arranged to interlock with each other the adjoining edges of box boards crossed by said box strap, whereby opening the box by the endwise displacement of a board after withdrawing its nails is prevented.

2. The combination with adjoining boards at parallel corners of a box, provided with diagonal slots, of a metallic seal part, a metallic box strap under tension interacting with said seal part and extending through said slots, and metallic seal accessories constructed and arranged to interlock the edges of an intermediate board with adjoining edges of such slotted boards.

3. The combination with a metallic seal part and a metallic box strap under tension, the ends of which are inseparably united by said seal part, of metallic seal accessories having disk portions constructed and arranged to interlock the adjoining edges of boards crossed by said seal part and protruding slotted portions through which said box strap is threaded.

4. A metallic seal accessory of strap iron or the like constructed with a disk portion formed by outward bends and adapted to interlock the adjoining edges of box boards, and with a flat doubled portion perpendicular to said disk portion adapted to protrude between such adjoining edges and slotted to interact with a box strap, substantially as hereinbefore specified.

EDWARD J. BROOKS.

Witnesses:

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