

E. J. BROOKS.
 DEVICE FOR SEALING BOXES.
 APPLICATION FILED MAR. 3, 1909.

925,990.

Patented June 22, 1909.

2 SHEETS—SHEET 1.

Fig. 1.

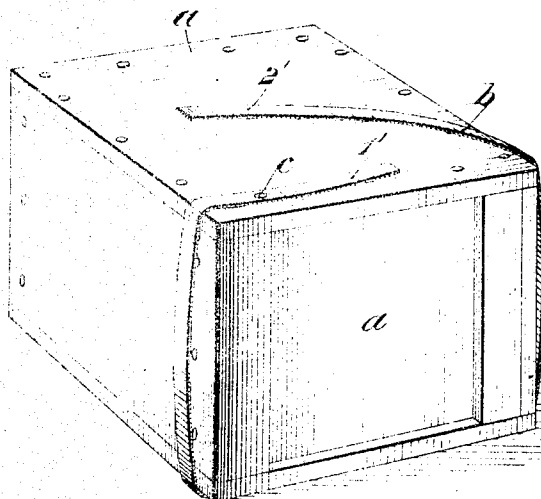


Fig. 2.

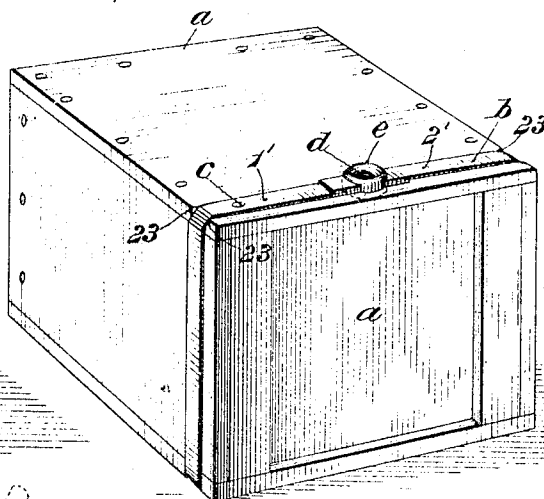
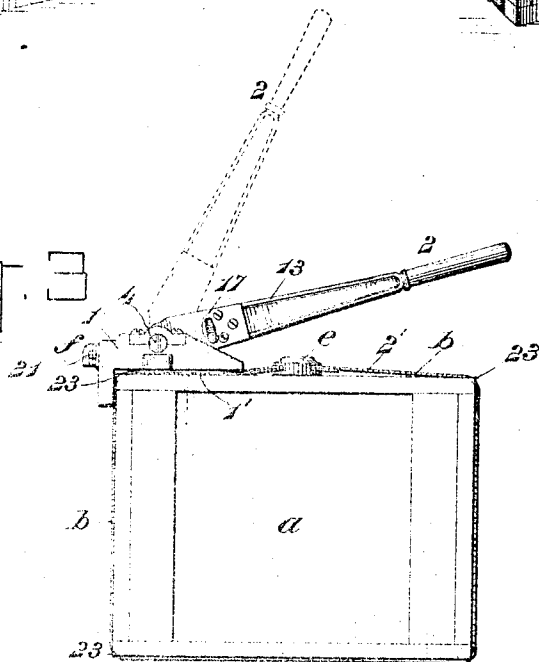


Fig. 3.



WITNESSES

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2 SHEETS—SHEET 2.

Fig. 4.

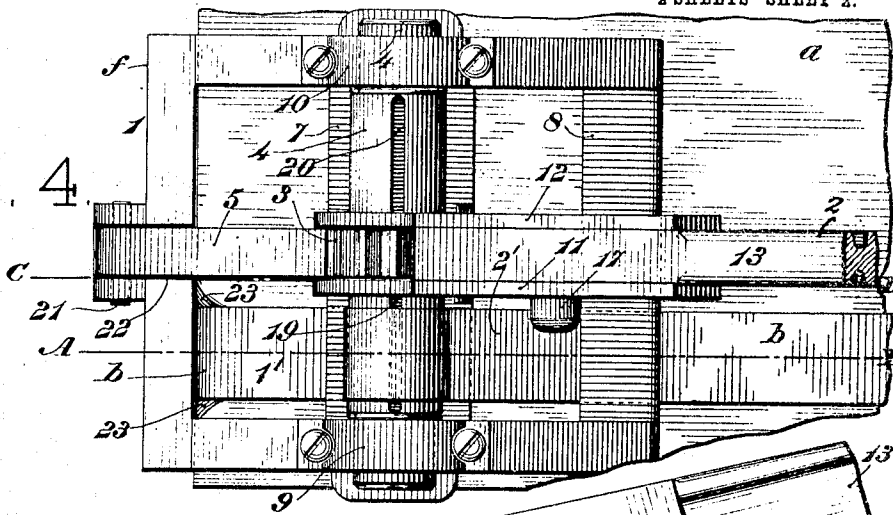


Fig. 5.

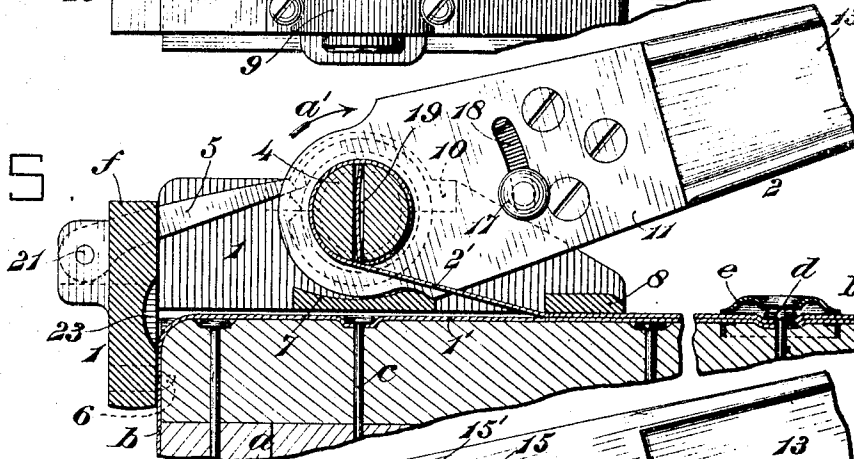


Fig. 6.

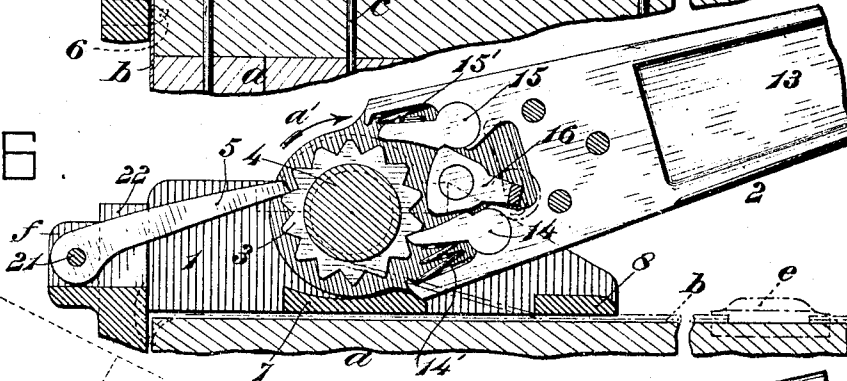
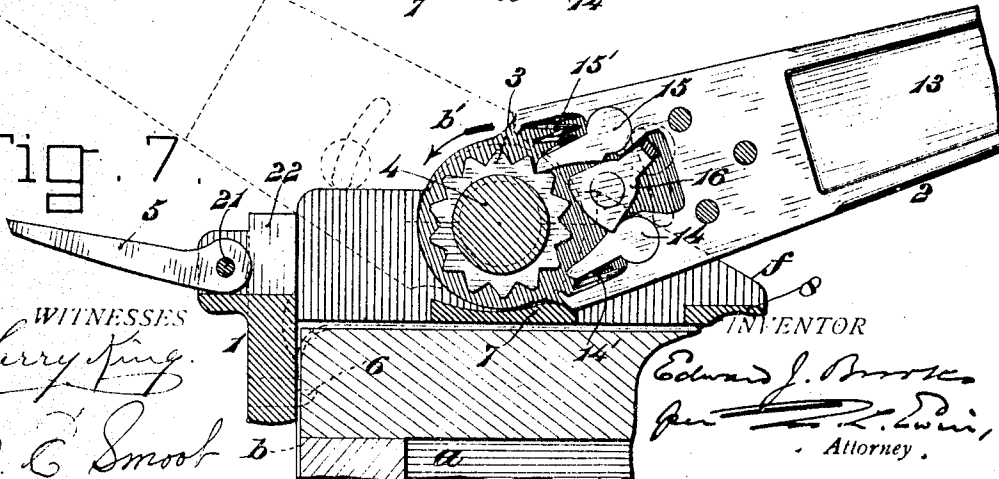


Fig. 7.



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UNITED STATES PATENT OFFICE.

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DEVICE FOR SEALING BOXES.

No. 925,990.

Specification of Letters Patent.

Patented June 22, 1909.

Application filed March 3, 1909. Serial No. 481,201.

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 Devices for Sealing Boxes, of which the following is a specification.

This invention relates primarily to devices for securing boxes with the aid of strap iron and seals; but it is applicable to "box-strap tools," or tools for tightening box straps, for general use.

The present invention consists in certain novel combinations of parts, and in a box-strap tool embodying such combinations or any of them, as hereinafter more particularly described and claimed.

The leading objects of the invention are to render the tool as simple and powerful as possible, with reference to insuring the requisite strength and durability in a tool required and adapted to embed the box strap in the corners at least of the wooden box, by tensile strain, so as to prevent the displacement of the strap on the box, and thus to render a single sealed nail all that is required to permanently and securely fasten a box-strap after preliminarily fastening one of its ends by one other nail, permanently driven therethrough into the box cover, and stretching the band by means of the improved tool.

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

Two sheets of drawings accompany this specification as parts thereof.

Figures 1 and 2 are perspective views of a box and box strap illustrating the means for preliminarily attaching the box strap and permanently fastening and sealing the same; Fig. 3 is a side view of the sealing device or box-strap tool, showing the same in position on the same box, and illustrating its operation by full and dotted lines; Fig. 4 is a top view of the sealing device or box-strap tool on a larger scale, showing it in position upon a box, and illustrating its interaction with a box strap; Fig. 5 represents a section through the tool and strap on the line A—B, Fig. 4; Fig. 6 represents a section on the line C—D; Fig. 4, illustrating the strap tightening operation; and Fig. 7 represents a section on the same line, illustrating the operation of unwinding the pulling end of the box strap after the strap is fastened and sealed.

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

For sealing a wooden box, which is represented at *a* in the drawings, I employ in connection with one or each box strap, *b*, of ordinary strap iron, a nail, *c*, Figs. 1, etc., to preliminarily fasten one end of the strap, and a second nail, *d*, and a suitable seal, *e*, to protect this nail, which is driven through both strap ends, against withdrawal. Such seal may be of the construction set forth and claimed in my specification forming part of United States Letters-Patent No. 847,276, dated March 12, 1907, but for the purposes of the present invention is preferably driven into the top of the box cover, instead of into the bottom of a recess in the box cover as shown in the drawings accompanying that specification.

The improved sealing device or box-strap tool, shown at *f*, is composed of a frame, 1, a pawl-carrying hand-lever, 2, a toothed wheel, 3, interacting with said hand-lever, a strap-winding spindle or shaft, 4, rotatable with said wheel, and a dog, 5, interacting with said wheel in the strap-tightening operation, as illustrated by Figs. 3 to 5, inclusive, accompanying this specification, which see.

The frame 1 is constructed with vertical and horizontal portions at right angles to each other, forming a reentrant angle at its bottom, and is thus adapted to be applied to and to temporarily embrace, as in Figs. 3, etc., one of the upper corners of a box, *a*, to which a box-strap, *b*, has been preliminarily attached as in Fig. 1; and said vertical portion is preferably and conveniently provided with a spur, 6, shown in Figs. 5 and 7, which is driven into the wood to assist in temporarily holding the tool in place on the box. The horizontal portion of the frame 1 is constructed with cross bars, 7 and 8, to rest upon the box cover, and upon the ends, 1' and 2', of the box strap, and with a pair of bearings, 9 and 10, at its top, in which the shaft 4 is mounted so as to rotate freely. The hand-lever 2 is fulcrumed on the shaft 4, and is constructed with a pair of flat fulcrum-embracing heel pieces, 11 and 12, in the shape of cap plates, arranged at the sides of the wheel 3, and rigidly connected with each other and with the body, 13, of the hand-lever by through screws. Said body 13 of the hand-lever is recessed, as shown in Figs. 6 and 7, and within its recesses a pair of pawls, 14 and 15, and a reversing cam, 16, are pivoted, and a pair of springs, 14' and

15', interacting with the respective pawls, are inclosed; one or the other of said pawls interacting with the wheel 3, as in Fig. 6 or Fig. 7. Said reversing cam 16 is constructed with a thumb-piece, 17, which protrudes through a slot, 18, concentric with the shaft 4 in the front heel piece 11. The wheel 3 is fast on the shaft 4 at mid-length; and the shaft 4 is provided with longitudinal slots, 19 and 20, on both sides of the wheel, and is mounted as aforesaid in said bearings 9 and 10 at the top of the horizontal portion of the frame 1. The dog 5 is attached to said vertical portion of the frame 1 by a horizontal pivot, 21, and is movable within an open-topped notch, 22, in the frame, into and out of engagement with the wheel.

With the tool *f* in position on the box *a*, as above described and as illustrated by Fig. 3, the box-strap ends 1' and 2' are loosely threaded through a seal, *e*, and the second box-strap end 2' is drawn beneath the outer cross bar 8 of the frame 1, and temporarily attached to the shaft 4 by threading it through one of said slots, 19 or 20, and bending the extremity of the strap. The shaft 4 is then turned in the direction indicated by the arrow *a'* in Figs. 5 and 6 by oscillating the hand-lever 2 and thereby turning the wheel 3 and therewith the shaft 4 as in said Figs. 5 and 6, which operation is continued until the box strap *b* is tightened to a sufficient extent to embed it in the corners at least of the box *a*, as represented at 23. During this operation, the lower pawl 14 of the hand-lever 2 interacts with the toothed wheel 3, and retrogression is prevented by the interaction with the wheel 3 of the dog 5 in customary manner. At the conclusion of the tightening operation, the seal *e* is adjusted, if necessary, as to position, and the seal nail *d* is driven therethrough and through both shackle ends 1' and 2' into the box cover, as represented in Fig. 5. The tool is then adjusted for unwinding the pulling end 2' of the strap, as represented by Fig. 7, which includes reversing the cam 16 so as to disengage the lower pawl 14 and to engage the upper pawl 15 with the wheel 3. One or two oscillations of the hand-lever 2, turning the wheel 3 and therewith the shaft 4 in the direction represented by the arrow *b'* in Fig. 7, will then suffice to unwind and disengage the strap end 2' from the shaft. The tool *f* is then removed from the box, and the loose portion of the strap end 2' is or may be removed by cutting it off as close to the seal *e* as may be desired.

The slots 19 and 20 on the respective sides of the wheel 3, as shown in Fig. 4, adapt the tool to be used at both ends of a box with its hand-lever projecting in one and the same direction, convenient to the right hand (or left hand) of the operative.

The frame 1 of the improved tool and others of its parts may obviously be changed considerably in construction without affecting the operation of the tool; 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, in a box-strap tool, of a frame having vertical and horizontal portions forming a reëntrant angle at its bottom adapted to temporarily embrace one of the top corners of a box, a pawl-carrying hand-lever, a toothed wheel interacting therewith, a longitudinally slotted shaft mounted in said frame forming the fulcrum of said hand-lever and rotatable with said wheel, and a dog pivoted to said frame and interacting with said wheel.

2. The combination, in a box-strap tool, of a frame having vertical and horizontal portions, adapted to temporarily embrace one of the top corners of a box and constructed with cross bars at the bottom of said horizontal portion to rest upon the box cover and box strap, a pawl-carrying hand-lever, a toothed wheel interacting therewith, a longitudinally slotted shaft mounted in said horizontal portion of the frame, forming the fulcrum of said hand lever and rotatable with said wheel, and a dog pivoted to said vertical portion and interacting with said wheel.

3. The combination, in a box-strap tool, of a frame adapted to be temporarily held in working position on a box, a longitudinally slotted and rotatable shaft mounted in said frame, a toothed wheel fast on said shaft, a hand-lever carrying a pair of spring-pressed pawls and a reversing device which lifts one or the other of said pawls to determine the direction of rotation, and a dog pivoted to said frame and interacting with said wheel when the wheel and shaft are rotated to tighten the box strap.

4. The combination, in a box-strap tool, of a frame having vertical and horizontal portions and adapted to embrace one of the top corners of a box, a pawl-carrying hand-lever, a toothed wheel interacting therewith, a rotatable horizontal shaft mounted in said horizontal portion of the frame, having said wheel fast thereon at mid-length, constructed with longitudinal slots on both sides of said wheel and forming the fulcrum of said hand-lever, and a dog pivoted to said vertical portion of the frame and interacting with said wheel, substantially as hereinbefore specified.

EDWARD J. BROOKS.

Witnesses:

W. M. BROOKS,
ELLEN J. BROOKS.