W. M. BROOKS.

BOX STRAP PULLER, CUTTER, AND NAIL GUIDE.

APPLICATION FILED JAN. 5, 1910.

960,494. Patented June 7, 1910.

Fig. 1.

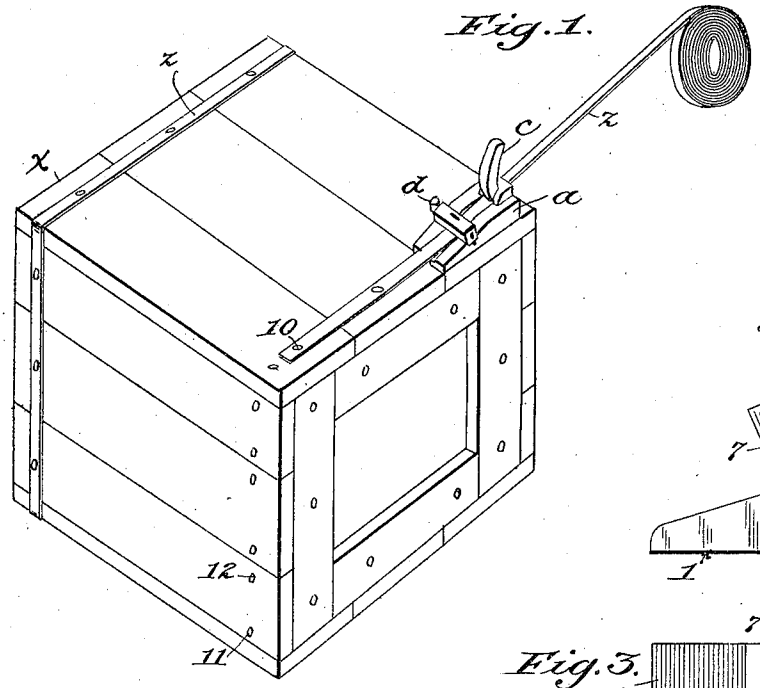


Fig. 2.

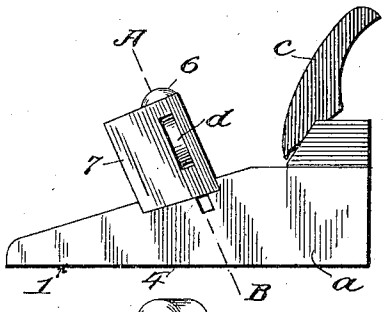


Fig. 3.

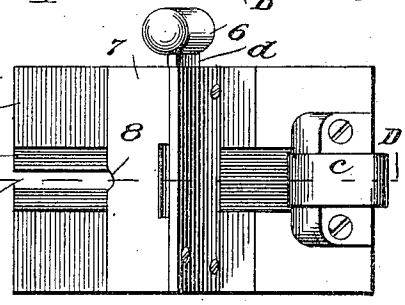


Fig. 4.

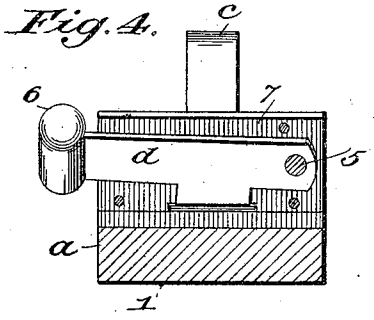
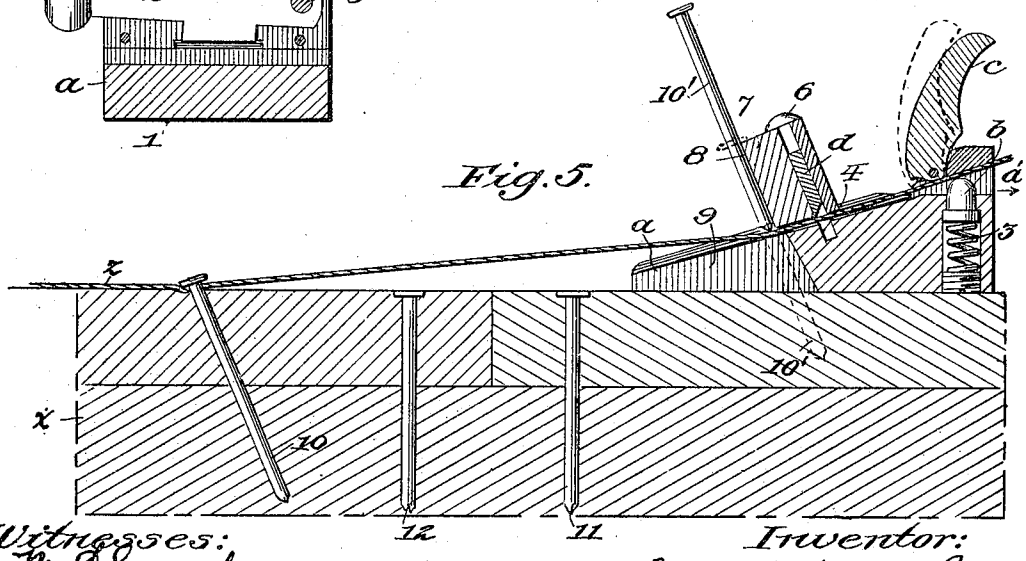


Fig. 5.



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UNITED STATES PATENT OFFICE.

WINFRED MUDGE BROOKS, OF EAST ORANGE, NEW JERSEY, ASSIGNOR TO E. J. BROOKS & CO., OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

BOX-STRAP PULLER, CUTTER, AND NAIL-GUIDE.

960,494. Specification of Letters Patent. **Patented June 7, 1910.**

Application filed January 5, 1910. Serial No. 536,443.

To all whom it may concern:

Be it known that I, WINFRED MUDGE 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-Strap Pullers and Cutters and Nail-Guides, of which the following is a specification.

This invention relates to devices or tools for securing wooden packing cases or boxes by means of box straps of strap iron or the like, with or without seals.

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 particularly described and claimed.

The leading object of this invention is to adapt a box-strap tool, especially a box-strap puller, to be threaded with a continuous length of strap iron or the like, hereinafter referred to as strap iron, and to remain attached thereto and ready for use until the reel of strap iron is used up.

Other objects of the invention are to adapt the tool in a simple manner for use as a box-strap puller; to adapt the same for use as a box-strap cutter, and also to adapt it for use as a nail guide; and to provide for increasing the resistance of the strap attaching nails to withdrawal and at the same time for giving the strap an extra tightening pull in the act of driving home each of these nails.

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

A sheet of drawings accompanies this specification as part thereof.

Figure 1 is a perspective view of a box in process of being strapped with strap iron by means of the improved tool; Fig. 2 is a side view of the improved tool detached; Fig. 3 is a top view projected from Fig. 2; Fig. 4 represents a cross section on the line A—B, Fig. 2, and Fig. 5 represents a longitudinal section through the tool on the line C—D, Fig. 3, and through a subjacent portion of a box in process of being strapped.

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

The improved box-strap puller and cutter and nail guide has a portable frame *a* of iron or steel constructed with a flat bottom, 1, adapted to rest solidly upon a box, *x*, as in Fig. 1 and Fig. 5, and having a longitudinal passageway, 2, loosely fitted to suitable strap iron, *z*, and constructed and arranged at the upper surface of the main portion or base of the frame *a*, which is recessed to contain a subjacent frictional brake or detent, *b*, Fig. 5. This detent is preferably and conveniently in the form of a contact piece supported upon a compressed spring, 3, of coiled wire within the detent recess; such detent *b* being constructed and arranged to interact with the strap iron *z* threaded through the tool, as means for preventing its accidental escape therefrom, or in other words to prevent the tool *a b* etc. from becoming accidentally detached from the strap iron *z* until the reel is used up as aforesaid.

To adapt the tool for use as a box-strap puller, a pulling dog, *c*, is hinged to said frame *a* above the passageway 2 near the delivery or anterior end of the tool, and constructed and arranged to bite the top of the strap iron *z* when pressed toward the posterior end of the tool, which is readily done by the thumb of the left hand of the operative in the act of manipulating the tool. See dotted lines at *c* in Fig. 5. At the same time the tool, and therewith the strap iron, is pulled as represented by the arrow *a'*, Fig. 5.

To adapt the tool for use as a box-strap cutter, a cutting edge, 4, is formed in the frame *a* beneath the passageway 2 and crossing the same, and a suitable knife or movable cutter, *d*, is pivoted to the frame *a* directly above said cutting edge by a horizontal pivot, 5, located at one end of the cutter. The other end, 6, of the cutter protrudes, and is suitably constructed for operation by a hammer or the like.

To adapt the tool for use as a nail guide, the posterior surface of an upper portion, 7, of the frame *a*, which serves primarily to inclose the main portion of the cutter *d*, and to support the same, is provided with a nail groove, 8, perpendicular to that portion of the passageway 2 beneath it, and central with reference to its lateral edges, and the base of the frame *a* is provided with a nail slot, 9, extending from a point in line with and beneath said groove 8 through the posterior end of the frame piece.

To provide for increasing the resistance of the strap attaching nails, 10, 10', to withdrawal, and at the same time for giving the

box strap *z* an extra tightening pull in the act of driving home each of these nails, the passageway 2 is inclined upward as shown in Figs. 2 and 5, and said nail groove 8 being perpendicular thereto, as aforesaid, the nails are guided obliquely as shown in Fig. 5. The nails 10, 10′ are successively held in the open nail groove 8 by the fore finger of the operative's hand by which the tool is manipulated, and, after pulling the strap iron taut as indicated by the arrow *a*′, Fig. 5, each nail is driven through the strap iron *z* into the wood of the box *x*, as represented in dotted lines at 10′ in Fig. 5. Pressure on the dog *c* having been meanwhile released, the tool is moved away from the partly driven nail (10′) to a sufficient distance to permit the strap iron *z* to be drawn flat upon the box *x* by completing the driving of the nail, and at the same time additionally tightened, as aforesaid, owing to the oblique direction in which the nail enters the wood.

If preferred, the first nail (10) need not be so guided. After driving that nail through the end of the strap iron *z* into the box *x*, the operation proceeds by drawing the tool *a b c d* along the edge of the box *x*, the strap iron *z* sliding therethrough until the tool reaches the proper point for another nail, when the nail driving operation as above is proceeded with, after which the tool is moved to the position for the next nail, and so on until the strap iron *z* extends wholly around the box *x* with or without overlapped ends, and with or without securing its ends by means of a seal. Suitable seals for such use are set forth in my specification forming part of United States Letters Patent No. 938206 dated October 26, 1909, and previous specifications therein referred to. A completed box strap is represented at *z*′ in Fig. 1.

Each box board crossed by the box straps may be nailed in place by two nails, 11 and 12, Fig. 5, near its respective edges at each end, and the strap attaching nails 10 may be driven centrally through or into each board to protect the same against withdrawal from beneath the box straps.

After each box strap is completed, the cutter *c* is operated by a blow of the hammer or its equivalent, and the strap iron *z* thus severed; the tool *a b* etc. remaining attached to the strap iron *z* on the reel side of the cut, ready for the next operation, which proceeds in like manner.

Other known or improved forms of detent device, pulling dog and cutter may obviously be combined with the frame *a* in substantially the manner above described, so as to accomplish the same results in substantially the same way; 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. A box-strap tool adapted to be threaded upon a continuous length of strap iron and to remain attached thereto and ready for use until the length of strap iron is used up; such tool including a frame constructed to rest solidly upon a box, and having a longitudinal passageway for strap iron and a detent within said frame constructed and arranged to interact with the strap iron as means for preventing the accidental escape of the end of the strap iron through the tool.

2. The combination, in a box-strap tool, of a frame constructed to rest solidly upon a box and having a longitudinal passageway for strap iron, and a spring-pressed detent within said frame constructed and arranged to interact with the strap iron as means for preventing the accidental escape of the end of the strap iron through the tool.

3. The combination, in a box-strap tool, of a frame constructed to rest solidly upon a box and having a longitudinal passageway for strap iron, and a superjacent dog movable by the hand which manipulates the tool to clamp the frame to the strap iron in pulling the strap iron to render it taut on the box.

4. The combination, in a box-strap tool, of a frame constructed to rest solidly upon a box and having a longitudinal passageway for strap iron, a cutting edge transverse to said passageway at midlength and a superjacent portion crossing such passageway, and a movable cutter pivotally supported by said superjacent portion in juxtaposition to said cutting edge and having a protruding end constructed for operation by a hammer or the like.

5. A box-strap tool having a frame constructed to rest solidly upon a box and having a longitudinal passageway for strap iron, a superjacent portion crossing such passageway and provided with a nail groove in its posterior surface, and a nail slot extending from a point in line with and beneath said groove through the posterior end of said frame.

6. The combination, in a box-strap tool, of a frame constructed to rest solidly upon a box, and having an upwardly inclined longitudinal passageway for strap iron, a superjacent nail-guide portion crossing said passageway and constructed with a posterior surface substantially perpendicular to the inclined bottom of said passageway, a nail groove in said posterior surface and a nail slot extending from a position beneath and in line with said groove through the posterior end of the frame, whereby provision is made for driving the nail through the

strap iron into the wood at an oblique angle to the box surface and for moving the tool away from the driven nail so as to permit the strap iron to be drawn flat on the box and at the same time pulled lengthwise to further tighten it by the interaction of the oblique nail therewith in the act of completing the driving of the nail, substantially as hereinbefore specified.

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