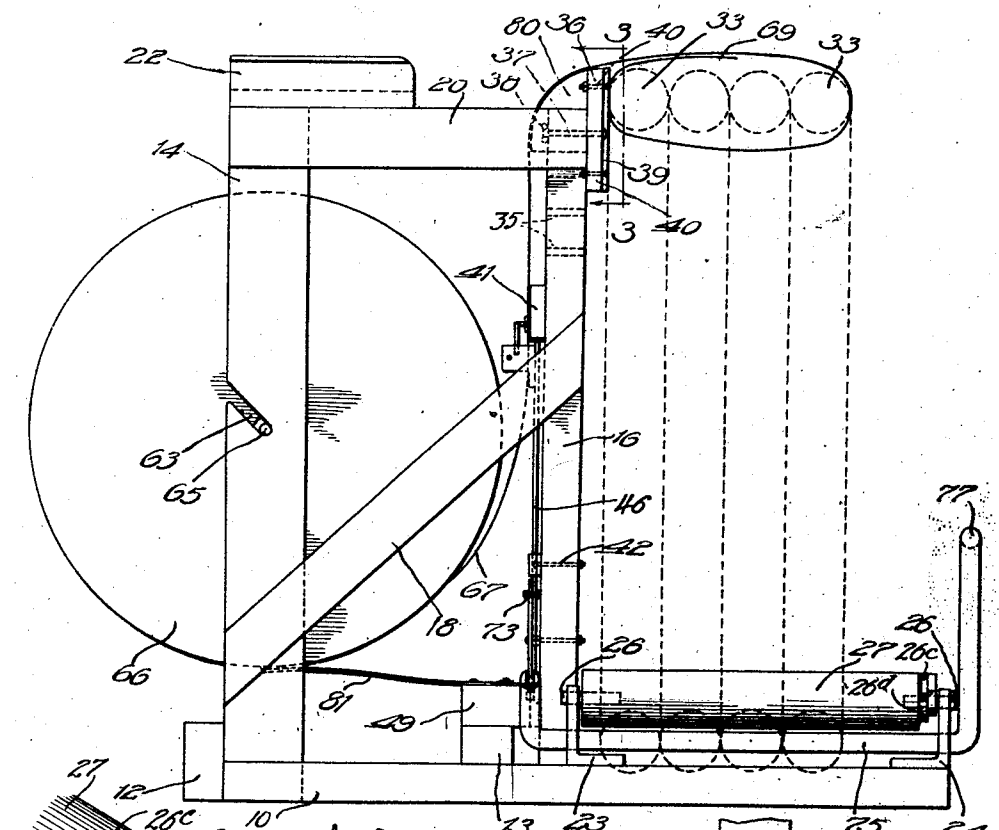
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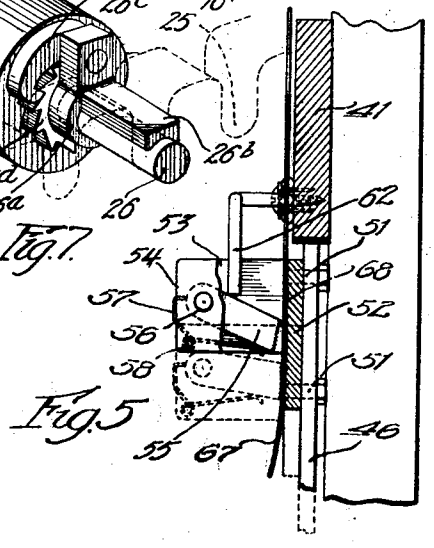
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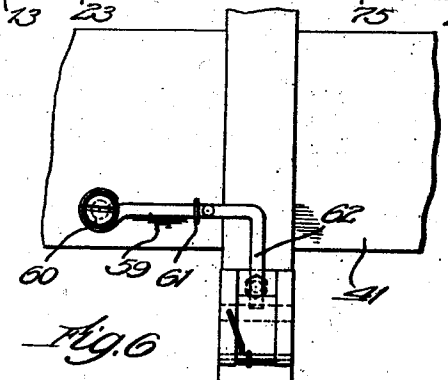
PACKAGE STRAPPING BENCH

Filed May 3, 1922 2 Sheets-Sheet 1

Fig. 1







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PACKAGE STRAPPING BENCH

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Fig. 2

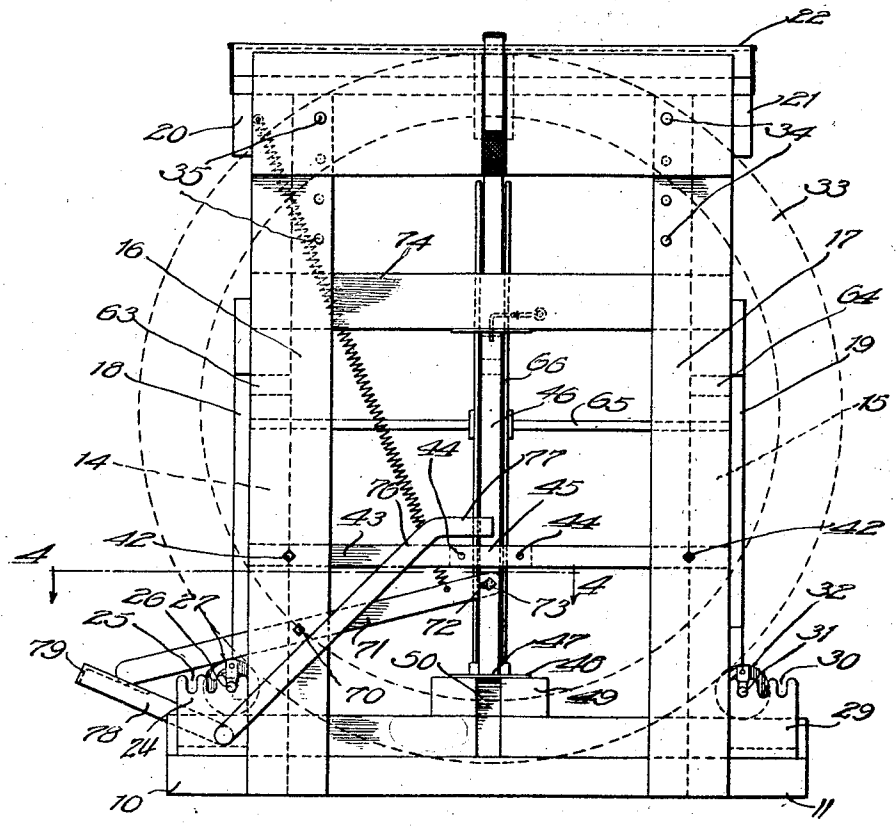


Fig. 3

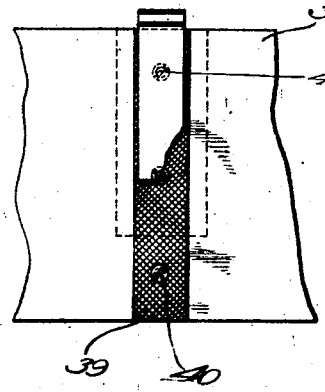
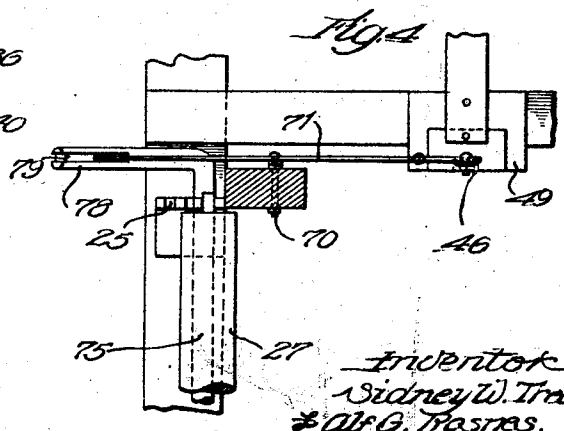


Fig. 4



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UNITED STATES PATENT OFFICE.

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PACKAGE-STRAPPING BENCH.

Application filed May 3, 1922. Serial No. 558,058.

To all whom it may concern:

Be it known that we, SIDNEY W. TREAT and ALF G. ROSNES, citizens of the United States, and residents of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Package-Strapping Benches, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

This invention relates to a package strapping bench for use in placing tensional binders about packages of various types, and in the accompanying drawings is specifically disclosed for use in placing tensional binders about a plurality of automobile tires.

The object of the present invention is to provide a bench of this character which is cheap to manufacture, which may be operated with the minimum amount of tension, and exertion, and which will rapidly and efficiently place tensional binders about packages of the desired kind.

One of the features of the invention is the manner of retaining the free end of the binder strap by engaging it between the side of the package to be strapped and a plate, which, if desired, may be knurled or roughened.

Another feature of the invention resides in the method of compressing the package to be strapped by merely drawing on the strap through the medium of a power device, such as a manually operated lever.

Other features and advantages will appear from time to time as the description of the invention progresses.

In the drawings which represent one embodiment of applicants' invention,

Figure 1 is a side elevation of the device;

Figure 2 is a view of the device from the right of Figure 1;

Figure 3 is a section on the line 3—3 of Fig. 1;

Figure 4 is a section on the line 4—4 of Fig. 2;

Figure 5 is a view, with parts broken away, of the strap clamping dog of the invention, showing the dog in its normal position in solid lines, and in operative position in dotted lines;

Figure 6 is a rear view of the clamping dog and the dog disengaging finger adjacent to the normal position of the dog; and

Figure 7 is a perspective view of the end of one of the rollers showing a ratchet mechanism associated therewith.

Reference will now be made to the drawings in which like characters of reference indicate similar parts in the several figures.

The base of the bench consists of a pair of parallel timbers 10 and 11, to the rear ends of which is secured the cross strip 12. To the timbers 10 and 11, intermediate their ends, is secured the cross member 13. It is to be understood that the timbers 12 and 13 are parallel to each other and extend at right angles to the timbers 10 and 11. The timbers 10 to 13, forming the base of the bench, may be 2 x 4's, or material of other suitable size. Extending vertically from the base members 10, 11 and 12, at the points of intersection, are the upright timbers 14 and 15. Extending vertically from the base members 10, 11 and 13, at the points of intersection, are the upright timbers 16 and 17. The upright members 14 and 16 are joined by the diagonal brace 18, and the upright members 15 and 17 are joined by the diagonal brace 19.

Secured to the upper ends of the members 14 and 16 are the ends of the member 20, and the upper ends of the members 15 and 17 are joined by the cross member 21. The cross strips 20 and 21 are tied together at the rear of the bench by the shelf plate 22.

Secured to the member 10, in any desired manner, are the angle brackets 23 and 24, each of which is provided in its upper edge with a series of notches 25 adapted to receive the oppositely extending pintles 26 for the supporting roller 27. Secured to the strip 11 is a pair of bracket members, in every way similar to the brackets 23 and 24, only one bracket member 29 being shown in the drawings. It is to be understood, however, that another bracket member is carried by the strip 11, which is in every way similar to the bracket member 23 of Fig. 1 carried by strip 10. The bracket member 29 and its mate are provided in their upper edges with the notches 30 adapted to receive the pintles 31 of the supporting roller 32.

It has been found that placing the bundles on the supporting rollers is often facilitated by arranging the rollers to rotate in one

direction only. Thus a bundle, as a bundle of tires, may be rolled over one of the rollers onto the supporting platform, then rotated in the opposite direction on the rollers to adjust different portions of the tire bundle to the strapping portion, and then, by rotating the bundle of tires in the reverse direction, it may be readily rolled off from the platform. The rolls engaged by the bundle upon rolling the bundle on and upon rolling it off, will remain stationary,—that is, will not roll under the bundle.

In Figure 7 is shown a pawl and ratchet mechanism associated with the pintle 26 of the roller 27, which may be utilized to limit the rotation of the rollers to one direction. Loosely mounted on the pintle 26 is a collar 26^a having a laterally extending portion 26^b arranged to snugly engage the upper side of the pintle 26. Pivotally joined to the upwardly extending portion of the collar 26^a is a pawl 26^c arranged to engage the ratchet wheel 26^d fixed to the roller 27. The laterally extending portion 26^b is arranged so that the pintle 26 and the overlying portion 26^b may be placed in one of the notches 25, and, when placed therein, the part 26^b will snugly engage the sides of the notches, thus preventing the rotation of the pawl carrying member. As thus arranged, the roller may be moved from notch to notch with a pawl mounted on the pintle. It is to be understood, of course, that the pintle 31 may be provided with a similar ratchet mechanism. It has been found that a ratchet is required at only one end of each of the rollers. However, one may readily be provided at each end of each of the rollers, if desired.

As shown in the drawings, the rollers 27 and 32 are adapted to support the tires 33 to be strapped, and, by placing the pintles 26 and 31 in the different notches, the rollers may be adjusted toward or from each other so as to provide for tires of different sizes.

The upright 15 is provided with a plurality of spaced openings 34, and the upright 16 is provided with a similar plurality of spaced openings 35. The transversely extending abutment member 36 is adapted to be secured in position by having the bolts 37 at the opposite ends thereof engaged respectively with the corresponding holes 34 and 35. Each of the bolts 37 is provided with a wing nut 38 by means of which the transverse member 36 may be firmly secured in position. The bolts 37 may be placed in any desired pair of the openings 34 and 35 so that the height of the cross member 36 may be adjusted. To the abutment member 36 intermediate its ends is secured a knurled plate 39 by means of the bolts or screws 40.

Extending transversely of the bench and secured to the upright members 15 and 16 is the transverse member 41. It is to be understood that the frame members 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22 and 41 are all secured together so as to form a rigid supporting frame. The transverse member 36 also forms part of the framework, but, as previously explained, it may be adjusted vertically.

Extending transversely of the bench with its opposite ends secured respectively to the upright members 16 and 17 by the bolts 42 is a bar 43, preferably of metal. Secured to the bar 43, intermediate its ends, by means of the bolts 44, is a U-shaped strap 45 which forms a guide through which the vertically extending bar 46 is slidable. The lower end of the bar 46 extends through a slot 47 in a plate 48 mounted on a block 49, which in turn is secured to the transverse member 13 intermediate its ends. The block 49 is provided with a cut-out notch 50 through which the lower end of the bar 46 may extend. Secured to the bar 46, adjacent to the upper end thereof, by means of the bolts 51, is a plate 52, having at the upper end thereof the outwardly extending parallel flanges 53 and 54, between which is pivoted the dog 55, by means of the rivet 56 passing through the plates 53 and 54 and the end of the dog 55.

A spring member 57 is coiled about the pin 58, the opposite ends of which are received in openings in the flanges 53 and 54. One end of spring 57 bears on the end of the dog 55 adjacent to the pivot pin 56. The other end engages the lower side of the dog 55 adjacent to its free end, and thus tends to maintain the dog in its upper or operative position.

Secured to the transverse member 41 is a wire or rod 59. One end of the rod 59 is bent to encircle the screw 60 while the staple 61 is driven into the member 41 straddle of the member 59 at a point remote from the screw 60. Adjacent to the staple 61, the rod 59 is bent outwardly and then to the right and then downwardly, as viewed in Fig. 6, terminating in the downwardly extending finger 62 which, when the bar 52 is in its uppermost position, is adapted to engage the upper surface of the dog 55 and move it in a clockwise direction about the pivot pin 56 to inoperative position, as indicated in solid lines in Fig. 5.

The uprights 14 and 15 are provided with the downwardly inclined notches 63 and 64, respectively, which are arranged to receive the opposite ends of the bar 65 which supports the reel 66. About the reel 66 is wound the strap 67. The strap 67 is adapted to extend upwardly between the surface 68 on the plate 52 and the free end of the dog 55, thence up and over the upper end of the transverse member 36, out and around the tires 33 and upward between the innermost

tire 33 and the knurled plate 39, terminating in a free projecting end 69.

Pivotally supported on the upright member 16 by means of the bolt 70 is a lever 71 provided at one end with a slot 72, through which projects a bolt 73 carried by the slidably supported member 46. A spring 74 has one end secured to the lever 71 adjacent to the bar 46, and its other end to the cross strip 20, thus tending to maintain the slidable bar 46 in its uppermost position.

Pivotally supported in openings in the bracket members 23 and 24 is a shaft or bar 75 provided at one end with the right angularly and diagonally upwardly extending portion 76 which terminates in a substantially horizontally extending portion 77. The shaft 75 at its end remote from the portion 76 is provided with the right angularly extending portion 78 which is provided in its upper side and end with the groove 79 adapted to receive that end of the lever 71 which is remote from the slidable member 46.

Secured opposite the knurled plate 39 is a block 80 having a substantially arcuate outer surface terminating flush with the upper edge of the adjustable member 36. The block 80 provides a curved surface over which the strap 67 may be drawn without producing a sharp bend in the strap.

Extending outwardly from the block 49 is a spring arm 81, the free end of which engages the edge of the reel 66, and thus acts as a brake to prevent the strap 67 unwinding to too great an extent.

The operation of the device is as follows:

We will assume that the bench and parts associated therewith are in their normal position. The tires 33 to be strapped are placed on the rollers 27 and 32, as shown in Fig. 1, and the strap 67 is placed around the tires, as above explained. The end 77 of the lever 76 is then engaged by the foot of the user and pushed downwardly. The downward movement of the lever 76 causes the extension 78 at the opposite end of the shaft 75 to move upwardly, thus forcing the left end of the lever 71 upwardly, as viewed in Fig. 2, and the right end of the lever 71 downwardly. As the right end of the lever 71 is connected to the reciprocating bar 46, bar 46 is moved downwardly. At the beginning of the downward movement of the bar 46, the dog 55 is disengaged from the downwardly projecting finger 62 and comes into engagement with the strap 67 (see Fig. 5), firmly clamping the strap between the knurled end of the dog 55 and the surface 68. Upon further downward movement of the reciprocating bar 46, the strap 67 is drawn with it and is caused to tightly engage and compress the tires 33. As the end of the strap 67 is clamped between the innermost tire 33 and the knurled plate 39, it is prevented from slipping, and it is unnecessary to provide any special holding means whatever for the free end 69 of the strap 67.

When the tires, or other material being strapped, are sufficiently compressed, the overlapping portions of the strap 67 are secured together in the usual or any desired manner, and the strap 67 is cut off. Upon release of the lever 76, the bar 46 is returned to normal position by the spring 74. When bar 46 reaches its uppermost or normal position, the finger 62 will engage the upper side of the dog 55 and move it to inoperative position so that the strap 67 may be freely drawn therethrough ready for the next operation. The tires may now be rotated on the rollers 27 and 32 so as to present the opposite or any desired other section of the tires for strapping, when the process is repeated. Of course, the strap will need to be threaded between the dog 55 and the surface 68 only when a new spool of the strap is placed on the bench. At all other times the free end of the strap will project well above the dog.

While in the accompanying drawings and in the description, applicants' device is disclosed as a tire strapping bench, and a single set of details have been disclosed, it is to be understood that the principles of applicants' invention are applicable to benches for strapping bundles other than tires, and that modifications in the details of construction are contemplated. Therefore, the invention is to be limited merely by the scope of the appended claims.

Having now described the invention, what we claim is new and desire to secure by Letters Patent of the United States is:

1. In a package strapping device, a support for a bundle of tires, and a knurled strap engaging plate against which the strap is pressed by the inner side of the bundle.

2. In a package strapping device, a support for a bundle of tires, a plate against one side of which the strap is pressed by the inner side of the bundle, and a strap tensioning device located on the opposite side of said plate.

3. In a package strapping device, a support including a pair of substantially horizontal and parallel rollers, an abutment positioned above said support at one end thereof, and a plate on said abutment against which the strap is pressed by the inner side of the package to be strapped.

4. In a package strapping device, a support for a bundle of tires, an abutment positioned above and at one side of said support, a plate on one side of said abutment against which the strap is pressed by the package to be strapped, and a strap tensioning device on the opposite side of said abutment.

5. In a package strapping device, a support for a bundle of tires including a pair

of substantially horizontal and parallel rollers, an abutment positioned above and at one side of said support, a plate mounted on one side of said abutment against which the strap is pressed by the package to be strapped, and a strap tensioning device on the opposite side of said abutment.

6. In a package strapping device, a support for a bundle of tires, an abutment at one side of said support, a plate on one side of said abutment against which the strap is pressed by the package to be strapped, a reciprocating bar mounted on the opposite side of said abutment, and a strap engaging dog on said bar.

7. In a package strapping device, a support for a bundle of tires, an abutment at one side of said support, a plate on one side of said abutment against which the strap is pressed by the package to be strapped, a reciprocating bar mounted on the opposite side of said abutment, a strap engaging dog on said bar, and a lever connected to said bar for forcibly moving said dog from said abutment.

8. In a package strapping device, a support for a bundle of tires, an abutment at one side of said support, a plate on one side of said abutment against which the strap is pressed by the package to be strapped, a strap engaging dog on the opposite side of said abutment, a shaft extending under said support, a manually operable lever at one end of said shaft, and means joining the opposite end of said shaft to said dog for forcibly moving said dog away from said abutment.

9. In a package strapping device, a support for a bundle of tires, an abutment, a plate on one side of said abutment, against which the strap is pressed by the inner side of the bundle to be strapped, a reciprocating bar on the other side of said abutment, a strap engaging dog on said bar, and a manually operable lever engaging said bar and arranged to forcibly move said dog from said abutment.

10. In a package strapping device, a support for a bundle of tires, an abutment at one side of said support, a strap engaging plate mounted on one side of said abutment, a strap engaging dog on the opposite side of said abutment, a shaft, a manually operable lever at one end of said shaft, and means actuated by said shaft arranged to forcibly move said dog from said abutment.

11. In a package strapping device, a substantially horizontal support for a bundle of tires or the like, an abutment positioned above and at one side of said support, a strap engaging plate on one side of said abutment, a vertically reciprocable bar on the opposite side of said abutment, a strap engaging dog on said bar, and a manually operable lever for moving said bar from said abutment.

12. In a package strapping device, a substantially horizontally extending support for a bundle of tires or the like, an abutment positioned above and at one side of said support, a strap engaging plate on one side of said abutment, a longitudinally vertically reciprocating bar on the other side of said abutment, a strap engaging dog on said bar, a manually operable lever for moving said bar downwardly away from said abutment, tension means for returning said bar to its normal position, and means for rendering said dog inoperative when in normal position.

13. In a package strapping device, a support for a bundle of tires, including a roller and means for preventing the rotation of said roller in one direction.

14. In a package strapping device, a support including a laterally adjustable roller, and means for preventing the rotation of said roller in one direction.

15. In a package strapping device, a support including a roller having a pintle projecting from one end thereof, a bracket having a series of notches, in any one of which said pintle may be placed, and means mounted on said pintle for preventing the rotation of said roller in one direction.

16. In a package strapping device, a support including a roller having a pintle projecting from one end thereof, a bracket having a series of notches, in any one of which said pintle may be placed, and a pawl and ratchet mounted on said pintle for preventing the rotation of said roller in one direction.

In witness whereof, we hereunto subscribe our names this 25 day of April, 1922.

SIDNEY W. TREAT.
ALF G. ROSNES.