

T. ALEXANDER.
NAIL PACKING MACHINERY.
APPLICATION FILED OCT. 20, 1919.

1,340,200.

Patented May 18, 1920.

Fig. 1.

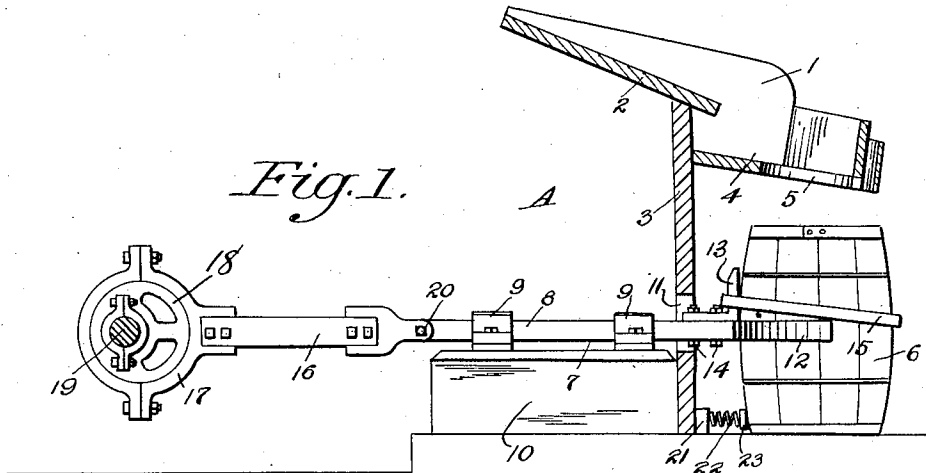


Fig. 2.

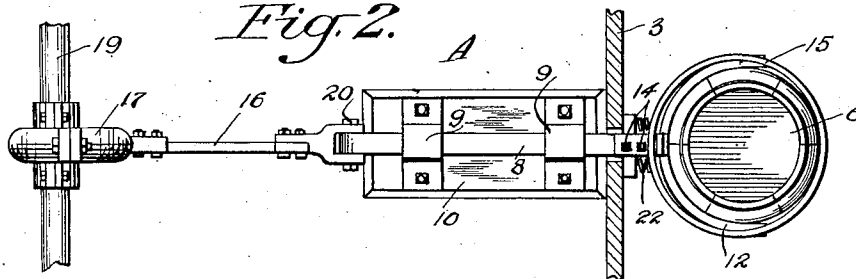
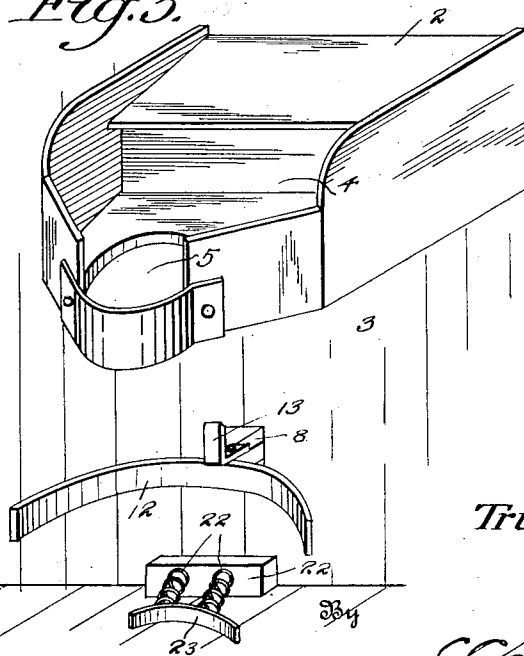


Fig. 3.



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NAIL-PACKING MACHINERY.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, TRUE ALEXANDER, a citizen of the United States, residing at Ashland, in the county of Boyd and State of Kentucky, have invented certain new and useful Improvements in Nail-Packing Machinery, of which the following is a specification.

This invention relates to improvements in nail packing machinery, and has particular reference to improved means for handling nails or other similar articles in such manner as to effect the packing thereof into suitable containers so that the latter will be enabled to receive the maximum number of nails which their capacity affords.

It is a well known fact that nails or other like articles when inserted into a container such as a barrel or cask will, under ordinary conditions, assume such positions as will tend to take up more space than their bulk or quantity should occupy. Therefore, the present invention has for its object to provide improved machinery for automatically operating said containers so as to cause a settling or condensing of the nails therein and to produce this result in such an improved manner as will enable the containers to receive a far greater number or amount of articles than has hitherto been possible by the use of methods now in common vogue.

Another object of the invention resides in mechanism of the above character and purpose which will tend to reduce the barrel costs of nail manufacturers by providing means whereby a greater number of nails may be positioned in the same sized barrels than has hitherto been possible.

Accordingly, the present invention consists in the provision of a reciprocating structure which is adapted to be connected with a barrel or other container into which nails are being placed, whereby upon the reciprocation of said structure said barrel will be shaken back and forth so that a thorough and complete settling of the nails therein will be provided. Another essential feature of the present invention resides in the provision of spring or resilient mechanism arranged in combination with the reciprocating structure, the resilient mechanism serving to impart quick outward thrusts to the lower end of said barrel so that successive

jolts or jars will be imparted to the latter and to its contents.

With these and other objects in view, as will appear as the description proceeds, the invention further consists in the novel features of construction, combination of elements and arrangement of parts, hereinafter to be fully described and to have the scope thereof pointed out in the appended claims.

In the accompanying drawing, forming a part of this specification, and in which similar characters of reference denote like and corresponding parts:

Figure 1 is a view in side elevation of the improved nail packing machine comprising the present invention,

Fig. 2 is a top plan view thereof, and

Fig. 3 is a front elevation.

The nail packing machine A comprising the present invention is preferably used in connection with a frame structure 1 which includes an inclined table 2 and a vertical front wall 3. The table 2 has its lower front edge terminated over a hopper 4 into which nails or other similar articles or devices are adapted to be passed. If desired, the table 2 may be situated immediately beneath a tumbling barrel or other similar agitating structure in which the nails are brightened or polished, whereby upon the finishing of this cleaning process, the tumbling barrel may be reversed so that its contents will be discharged upon the table 2. When this action takes place, said nails will gravitate, owing to the inclination of the table 2, toward the hopper or hoppers 4 into which the nails are deposited upon leaving said table. As usual, the forward end or bottom of the hopper is provided with an opening 5, and the bottom of said hopper may be inclined in a manner similar to the table 2 so that said nails will gravitate toward the opening 5 thereof. Ordinarily, it has hitherto been the practice to simply place a barrel, cask or other container 6 immediately beneath the opening 5 so that the nails could be collected and placed in condition for shipment. However, the present invention provides mechanism for oscillating or reciprocating the barrel 6 in a quick, sharp and positive manner in order that an effective settling of the nails contained therein may be obtained and in

this manner to obtain the maximum holding capacity of the barrel.

The present invention, therefore contemplates the provision of a barrel reciprocating structure 7 which preferably consists of a metallic bar 8, arranged for sliding movement within spaced bearings 9, the latter being mounted upon a suitable foundation block 10. The forward end of the bar 8 is arranged to project through an opening 11 formed in the front wall 3, and this outwardly projecting end of said bar is equipped with a yoke shaped barrel embracing member 12 as shown, the member 12 has a diameter which enables the same to receive the barrel 6. Also provided upon the protruding end of the bar 8 is an angle bracket 13 which is bolted or otherwise secured as at 14 to said bar. Hence, in order to connect the barrel 6 with the bar 8, a metallic ring or hoop 15 is positioned about said barrel so as to extend behind the vertical leg of the bracket 13. By virtue of this construction it will be obvious that upon inward movement of the bar 8 corresponding movement will be imparted to the barrel 6 and upon outward movement of said bar similar movement will be imparted to the barrel by virtue of the member 12.

To effect the reciprocation of the bar 8, the inner end of the latter is connected with a pivoted link 16, the latter having its other end connected with an eccentric strap 17. This strap is arranged upon an eccentric 18, which, in turn, is keyed or otherwise secured upon a transversely extending shaft 19. Obviously, upon the rotation of the shaft 19 back and forth movement will be imparted to the link 16 and hence owing to the pivotal connection 20 between said link and bar, reciprocation would be imparted to the structure 7 as a whole.

To render the operation of the above mechanism more effective and positive, the front wall 3 has its lower edge provided with a block 21 from which extends a plurality of horizontally arranged coil springs 22, the inner ends of said springs being suitably connected with the block 21, while their outer ends are connected with a curve plate 23, which is so situated as to be capable of engaging with the lower end of the barrel 6. By virtue of this spring construction, it will be manifest that when the bar 8 is drawn inwardly, said springs will be compressed and that upon outward movement of said bar, said springs will be released from their stressed condition and permitted to thrust the barrel violently in an outward direction. This results in imparting a series of abrupt jars to the contents of the barrel so that a thorough and complete setting of the contents within said barrel is accomplished.

From the foregoing description, taken in

conjunction with the accompanying drawing, it will be apparent that there is provided a simple and effective structure for carrying out the aims of the present invention, and one which will be simple to operate and control. It will be apparent that a barrel may be quickly connected or disconnected with the reciprocating structure by the mere use of the hoop or ring 15 and that such substitutions of empty for filled barrels may be accomplished in a brief and rapid manner. The discharge openings 5 may be provided with the usual controlling door if desired. It has been found in practice that the use of the present invention considerably increases the nail holding capacity of a barrel or other container and it is in this capacity of reducing barrel expense that is believed to be the outstanding feature of the invention. However, it will be appreciated that owing to the existing comparatively high costs of barrels of this nature that a reduction in their use without effecting production is essentially desirable.

In the foregoing, the invention has been described and set forth as being primarily applicable for the purpose of compactly assembling or positioning nails in barrels, and accordingly, these terms have been employed in certain of the following claims. However, it is not intended that the same shall be used in limiting sense, as it is obvious that containers other than barrels may be employed and likewise spikes, screws or other similar articles may be packed in such containers in lieu of nails.

What I claim is:

1. In a barrel shaking mechanism, the combination with a reciprocating member, a barrel embracing yoke formed upon the forward end of said member, a ring arranged to encircle a barrel embraced by said yoke, means for detachably connecting said ring with said member, and driving mechanism for reciprocating said member.

2. In mechanism of the class described, the combination with a reciprocating member, a barrel embracing yoke carried by said member, an angle bracket rigidly carried by said member to the rear of said yoke, a hoop arranged to be detachably connected with said member and to encircle a barrel embraced by said yoke, whereby upon the reciprocation of said member movement in unison will be imparted to the barrel connected therewith, and means for reciprocating said member.

3. In mechanism of the character described, the combination with a reciprocating member, means carried by the forward end of said member for detachably connecting the barrel therewith, resilient means disposed beneath said member and coöperative with the bottom of said barrel, and means for reciprocating said member.

4. In mechanism of the class described, the combination with a frame structure including a nail receiving hopper, a reciprocating member disposed beneath said hopper, 5 means for detachably connecting a barrel for reciprocation with said member and to maintain said barrel in registration with said hopper, resilient means interposed between said frame structure and said barrel, 10 and means for actuating said resilient member.

5. In mechanism of the class described, the combination with a frame structure having a protruding hopper beneath which a 15 barrel is adapted to be arranged, of a reciprocating member coöperative with said barrel, said member including a forwardly disposed, yoke shaped barrel embracing portion, a bracket carried by said member in

a position contiguous to said yoke shaped 20 portion, a hoop arranged to be connected with said bracket and to encircle a barrel embraced by said yoke shaped portion, and a spring structure coöperative with the bottom of said barrel.

6. In mechanism of the class described, the combination with a reciprocatory member, means carried by the forward end of 25 said member for detachably connecting a container therewith, resilient means disposed beneath said member and coöperative with the bottom of said container, and means for reciprocating said member. 30

In testimony whereof I affix my signature.

TRUE ALEXANDER.

Witnesses:

E. E. AYERS,
O. O. SEMLEPP.