

Nov. 23, 1943.

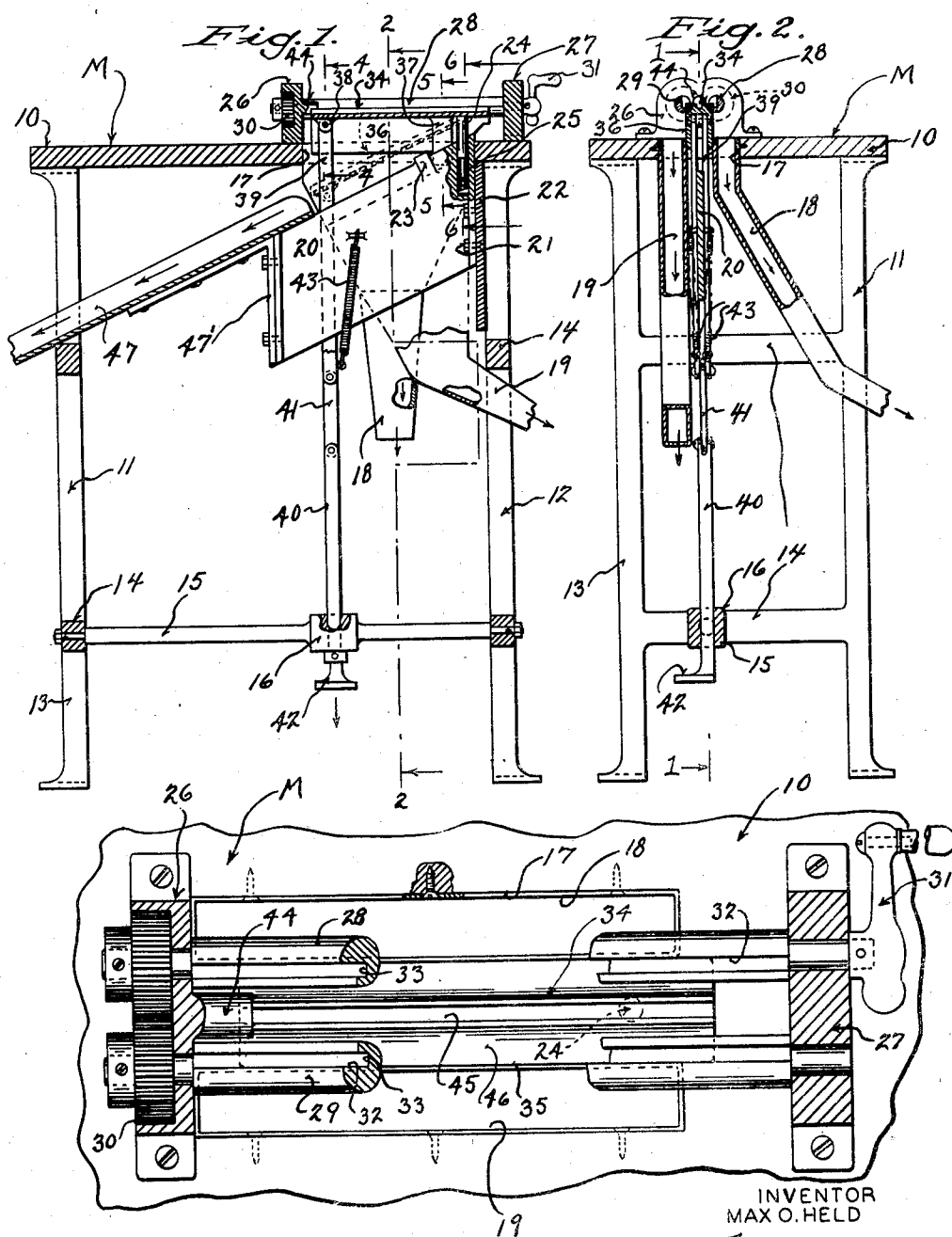
M. O. HELD

2,334,873

TACK STRIPPING MACHINE

Filed April 25, 1942

2 Sheets-Sheet 1



INVENTOR
MAX O. HELD

BY

Young & Wright

ATTORNEYS

Nov. 23, 1943.

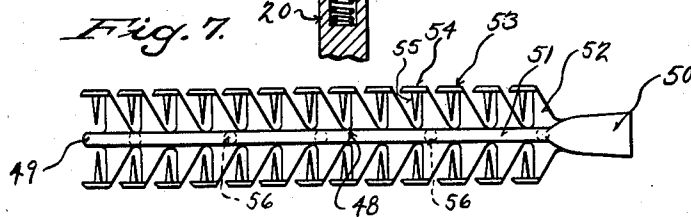
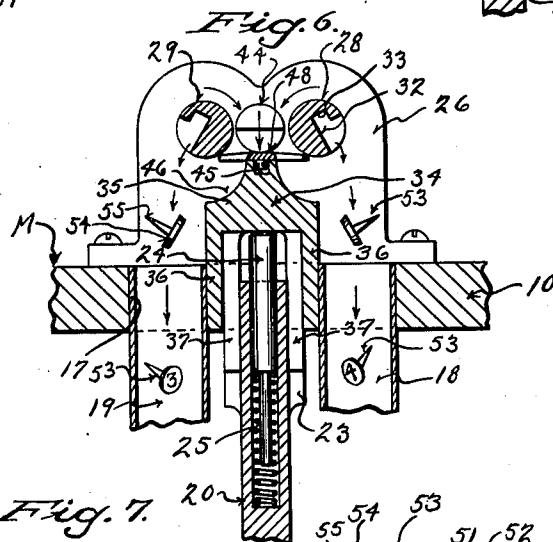
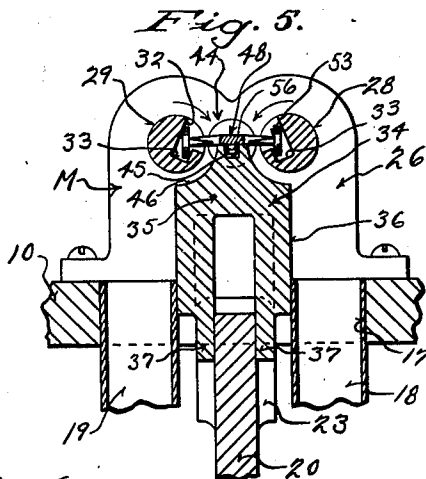
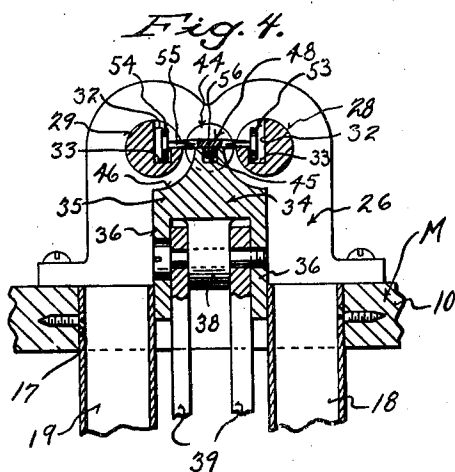
M. O. HELD

2,334,873

TACK STRIPPING MACHINE

Filed April 25, 1942

2 Sheets-Sheet 2



INVENTOR
MAX O. HELD

BY

Young & Wright

ATTORNEYS

UNITED STATES PATENT OFFICE

2,334,873

TACK STRIPPING MACHINE

Max O. Held, Milwaukee, Wis.

Application April 25, 1942, Serial No. 440,564

8 Claims. (Cl. 29—66)

This invention appertains to machines for breaking away cast elements (such as numbered tacks) from the sides of a cast body.

To facilitate the manufacture of numbered tacks, which are used for identifying storm sashes, window screens, and the like, it is proposed to die-cast a plurality of tacks at a time on the longitudinal sides of a connecting body, and thereafter break away the tacks from the body. The body is returned to the melting pot of the die-casting machine, so that the metal therein can be used again. Difficulty has been encountered in separating the tacks from the body in a rapid and efficient manner.

It is further proposed to cast the tacks on one side with one number, and the tacks on the other side with a different number. This cuts down on the number of dies needed and the necessity for frequently changing the dies to produce the different numbered tacks. The tacks on one side of the body (of one number) must be segregated from the tacks (of a different number) on the other side of the body.

It is, therefore, one of the primary objects of my invention to provide a machine for receiving the cast body with the desired elements thereon, having novel means for simultaneously engaging all of the elements for breaking or snapping off said elements from the body and delivering said elements to suitable receiving containers.

Another salient object of my invention is the provision of means for delivering the cast elements on one side of the body to a receptacle, and the cast elements on the other side of the body to a separate receptacle.

A further salient object of my invention is the provision of novel means for quickly releasing the cast body from the machine after the breaking away of the elements, and the delivery of the cast bodies to a suitable receptacle for return to the die-casting machine.

A further object of my invention is the provision of a support for the cast body and grooved rollers on the opposite sides of the support for receiving the outer ends of the heads of the cast elements, so that upon rotation of the rollers, the cast elements will be quickly broken off the body and carried away from the body to separate delivery chutes.

A further important object of my invention is the provision of means for resiliently mounting the support for the cast body on the machine between the rollers, so that said support can give relative to the rollers upon rotation thereof, with means under the control of operator for depress-

ing the support to quickly release the cast body to a delivery chute after the breaking away of the cast elements.

A still further object of my invention is to provide a machine of the above character, which will be durable and efficient in use, one that will be simple and easy to manufacture, and one which can be placed upon the market at a reasonable price.

With these and other objects in view, the invention consists in the novel construction, arrangement, and formation of parts, as will be hereinafter more specifically described, claimed, and illustrated in the accompanying drawings, in which drawings:

Figure 1 is a longitudinal sectional view through my machine, taken on the line 1—1 of Figure 2, looking in the direction of the arrows.

Figure 2 is a transverse sectional view through the machine, taken on the line 2—2 of Figure 1, looking in the direction of the arrows.

Figure 3 is an enlarged, fragmentary, top plan view of the machine, with parts thereof broken away and in section to illustrate structural detail.

Figure 4 is an enlarged, detail, sectional view taken on the line 4—4 of Figure 1, looking in the direction of the arrows, showing the initial position of the rollers upon the receiving of the cast body.

Figure 5 is a view similar to Figure 4, but taken on the line 5—5 of Figure 1, looking in the direction of the arrows, and showing the position of the rollers at the start of the turning thereof.

Figure 6 is a view similar to Figure 5, but taken on the line 6—6 of Figure 1, looking in the direction of the arrows, and showing the position of the rollers after the cast elements have been broken off the cast connecting body.

Figure 7 is a plan view of the casting, showing the connecting body and the cast elements attached thereto.

Referring to the drawings in detail, wherein similar reference characters designate corresponding parts throughout the several views, the letter M generally indicates my novel machinery, and the same includes a work or table top 10, which can be supported at the desired height in any preferred manner, such as by the use of end pedestals 11 and 12. Obviously, the table top can be supported in various ways, and the pedestals 11 and 12 shown can each include supporting legs or standards 13 connected by transverse braces 14. The pedestals themselves can be connected together by a longitudinally extending

brace bar 15. This brace bar 15 can also have formed thereon a guide or bearing 16, for a purpose which will be later described.

The top, adjacent one end, can be provided with a longitudinally extending slot 17 in which are fitted delivery chutes 18 and 19. Between the delivery chutes is disposed a downwardly inclined, longitudinally extending guide plate 20. This plate 20 is arranged below the table top 10 and can be secured in place in any preferred way. As illustrated, the guide plate is secured by means of bolts 21 to a supporting plate or bracket 22, which is, in turn, firmly fastened to the table top 10 or to the pedestal 12. Stop lugs 23 are formed on the guide plate 20, and these stop lugs extend slightly above the upper edge of said guide plate and are disposed adjacent one end of said guide plate. The guide plate also supports adjacent its upper end and slightly in rear of the stop lugs 23, a supporting plunger 24. This plunger is held in a desired raised elevated position by a coil spring 25.

Securely fastened to the table top 10 at the opposite ends of the slot 17 are bearing brackets 26 and 27. Journaled in the bearing brackets 26 and 27 are spaced rollers 28 and 29. The rollers at one end are connected together for synchronous movement by meshing spur gears 30, and these spur gears are keyed or otherwise secured to the rollers. One roller is provided with an operating crank and handle 31, and, obviously, by turning the crank the rollers will be rotated together. If preferred, the rollers can be power-driven by an electric motor. Each of the rollers is provided with a longitudinally extending groove 32, and the bottom walls of the grooves 32 are, in turn, undercut or grooved to provide a seat 33, for a purpose which will be later set forth.

Arranged between the rollers 28 and 29 is a supporting shoe 34. The supporting shoe 34 includes a top wall 35 and a pair of depending spaced flanges 36, which are adapted to straddle the guide plate 20, as will also be hereinafter more fully set forth. The inner faces of the guide flanges 36 have formed thereon adjacent their rear ends guide ribs 37, which slidably engage the opposite sides of the guide plate 20 directly in rear of the stop lugs 23. The end of the shoe remote from the guide ribs 37 is provided with a pivot ear 38 between the guide flanges 36, and the pivot ear 38 has pivotally connected thereto depending pull levers 39. The pull levers slidably engage the opposite sides of the guide plate 20, and the lower ends of the levers 39 are, in turn, pivotally connected to a pedal 40 by means of a connecting link 41. The pedal 40 slidably extends through the guide 16, and the lower end thereof is provided with a treadle plate 42. Contractile coil springs 43 connect the lower ends of the levers 39 with the guide plate 20, and these coil springs normally tend to hold the supporting shoe in a raised elevated position between the rollers 28 and 29 and against a stop boss 44 formed on the bearing 26.

The operator, by pressing down on the treadle plate 42, can depress the shoe against the tension of the coil spring 43, and upon the depressing of the supporting shoe, the guide ribs 37 will rock on the guide plate 20 against the stop lugs 23, and the stop lugs and the spring-pressed plunger 24 form means for holding the shoe in place in conjunction with the levers 39.

Referring more particularly to the supporting shoe 34, it will be noted that the top wall 35 thereof includes a centrally disposed rib 44, which is, in

turn, provided in its upper face with a guide groove 45. The wall 35 on opposite sides of the rib 44 is rounded, as at 46, to make room for the rollers 28 and 29, as will also be more clearly understood as the description proceeds.

The guide plate 20 can also support, by means of a bracket 47', a downwardly inclined chute or trough 47. This chute 47 is arranged below the supporting shoe 34.

In Figure 7, I have shown a casting 48 as received from a die-casting machine. This casting includes a longitudinally extending body 49 having a hand grip 50 on one end thereof, by means of which the casting can be conveniently handled.

The body 49 of the casting includes a central, relatively heavy backbone member 51, and this backbone member has formed on its opposite sides laterally extending fingers 52. These fingers 52, in turn, carry the cast elements 53, which, in the present instance, are shown to be numbered tacks. Each tack 53 includes a head 54 and a pointed shank 55. The heads 54 have cast thereon the desired numbers, and the inner faces of the heads, at one side of the prongs or shanks 55, are integrally connected to the outer ends of the fingers. Hence, the pointed prongs or shanks 55 lie between the fingers 52. The lower face of the backbone member 51 has cast thereon depending lugs 56.

In use of my machine, the castings are brought in quantities from the casting machine to the operator, and the operator picks up one casting at a time by the hand grip 50 and lays the same on the supporting shoe 34, with the lugs 56 in the groove 45 of the shoe. The fitting of the lugs 56 in the groove 45 prevents the twisting of the casting on the shoe. As the casting is placed on the shoe, the heads of the tacks are received within the groove 32, and parts of the heads of the tacks will rest in the seats 33.

The operator now turns the crank 31, and the heads of the tacks will be caught by the groove rollers (see Figure 5) and will be quickly broken off the fingers 52. As the rollers snap off the tacks from the opposite sides of the casting, the rollers engage the fingers 52 and press down on the casting. The shoe 34 is allowed to move down, due to the fact that the same is resiliently supported by the plunger 24. Downward movement of the shoe insures the carrying away of the tacks by the grooved rollers from the opposite sides of the casting, and when the rollers are rotated substantially half a revolution, the tacks will be dropped from the rollers into the delivery chutes 18 and 19 disposed on opposite sides of the rollers and the guide plate 20 (see Figure 6). Upon the turning of the rollers substantially another half a revolution, the rollers will be in position for receiving another casting.

Upon the breaking away of the tacks, the operator presses down upon the pedal 40, and the shoe 34 will be swung downward, which will allow the casting to slide off the shoe into the chute 47. The springs 43 will return the shoe 34 to its normal position for the reception of said new casting.

Hence, it can be seen that the tacks on one side are delivered to one chute, the tacks on the other side to another chute, and the cast bodies to a separate trough. A receptacle can be positioned below the various chutes or troughs for receiving the tacks and cast bodies. The cast bodies can be returned to the melting pot of the machine for re-use.

As explained in the objects of the specification, the tacks on one side of the casting can be provided with one number, and the tacks on the other side of the casting can be provided with another number. This is clearly indicated in Figure 6. By providing tacks with different numbers on opposite sides of the casting, the number of required dies is reduced, and the frequency of changing the dies is eliminated.

From the foregoing description it can be seen that I have provided an efficient machine of an exceptionally simple and durable character for quickly snapping off cast elements from the opposite sides of a connecting body.

Changes in details may be made, which do not depart from the spirit and scope of my claims, and what I claim as new is:

1. A machine for breaking cast elements off a connecting body, a support for the connecting body, and a roller extending longitudinally of the support having means thereon for receiving the outer ends of the elements for snapping off said elements from the connecting body upon rotation of the roller past the support.

2. In a machine for breaking cast elements off a connecting cast body, a support for the cast body, and a rotatable grooved roller extending longitudinally of the support having a seat for simultaneously engaging the outer ends of all of the cast elements, means for rotating the roller for moving the seat past the support at right angles thereto, and means for releasing the cast body after the breaking off of the elements therefrom.

3. In a machine for breaking off a plurality of cast elements from a connecting body, a depressible support for said body, a rotatable roller arranged longitudinally of the support having a seat for simultaneously receiving and catching the outer ends of the elements, means for rotating the roller for snapping off said elements from the body, means for receiving the cast elements from the roller, means for depressing the support to release the body, and means for receiving the body from the support.

4. In a machine for breaking off a plurality of cast elements from the side of a connecting body, a support for receiving the body, a roller extending longitudinally of the body, means for rotatably supporting the roller, means for rotating the roller, said roller having a longitudinally extending seat for receiving the outer ends of the elements for catching said elements and breaking said elements off the connecting body upon rotation of the roller, means resiliently supporting one end of the support, and means for depressing the other end of said support.

5. A machine for breaking off cast elements from the opposite sides of a connecting body comprising, a work table, a pair of spaced rollers on said table, means rotatably supporting the rollers, means connecting the rollers together for simultaneous movement, means for rotating the rollers, a supporting shoe arranged between and below said rollers for receiving a connecting body

with the cast elements thereon, each of said rollers having grooves and seats for receiving the outer ends of said elements, receiving chutes for the cast elements disposed on opposite sides of the shoe, means for depressing the shoe to release the connecting body after the breaking away of the cast elements therefrom, and means for receiving the body from the shoe.

6. A machine for simultaneously breaking off a plurality of cast elements from the opposite sides of a connecting body comprising, a supporting shoe for the connecting body, rollers on opposite sides of the shoe, means for rotatably supporting the rollers, means operatively connecting the rollers together for synchronous movement, means for rotating the rollers, the rollers having longitudinally extending grooves and seats for receiving the outer ends of the cast elements for gripping and breaking off the cast elements upon rotation of said rollers, means resiliently supporting one end of the shoe, and means for depressing the other end of the shoe, and means for limiting upward movement of the shoe between said rollers.

7. A machine for breaking off cast elements from the opposite sides of a connecting body comprising, a work table, a vertically disposed downwardly inclined guide plate carried by the table, a supporting shoe having depending flanges straddling the guide plate, stop lugs formed on the guide plate adjacent one end thereof, guide ribs on the inner ends of the flanges engaging the guide plate and the stop lugs, means resiliently supporting the shoe adjacent the stop lugs and guide ribs, means for depressing the opposite end of the shoe, a roller mounted on each side of the shoe, means connecting the rollers together for synchronous movement, means for rotating the rollers, the rollers having longitudinal grooves and seats for receiving the outer ends of the cast elements, and chutes for receiving the cast elements.

8. A machine for breaking off cast elements from the opposite sides of a connecting body comprising, a work table, a vertically disposed downwardly inclined guide plate carried by the table, a supporting shoe having depending flanges straddling the guide plate, stop lugs formed on the guide plate adjacent one end thereof, guide ribs on the inner ends of the flanges engaging the guide plate and the stop lugs, means resiliently supporting the shoe adjacent the stop lugs and guide ribs, means for depressing the opposite end of the shoe, a roller mounted on each side of the shoe, means connecting the rollers together for synchronous movement, means for rotating the rollers, the rollers having longitudinal grooves and seats for receiving the outer ends of the cast elements, and chutes for receiving the cast elements, the upper face of the supporting shoe being provided with a locating groove, and said connecting body having locating studs for fitting in said groove.

MAX O. HELD.