

(No Model.)

W. O. WHEELER.
TACK DISTRIBUTER.

No. 518,933.

Patented Apr. 24, 1894.

Fig. 1.

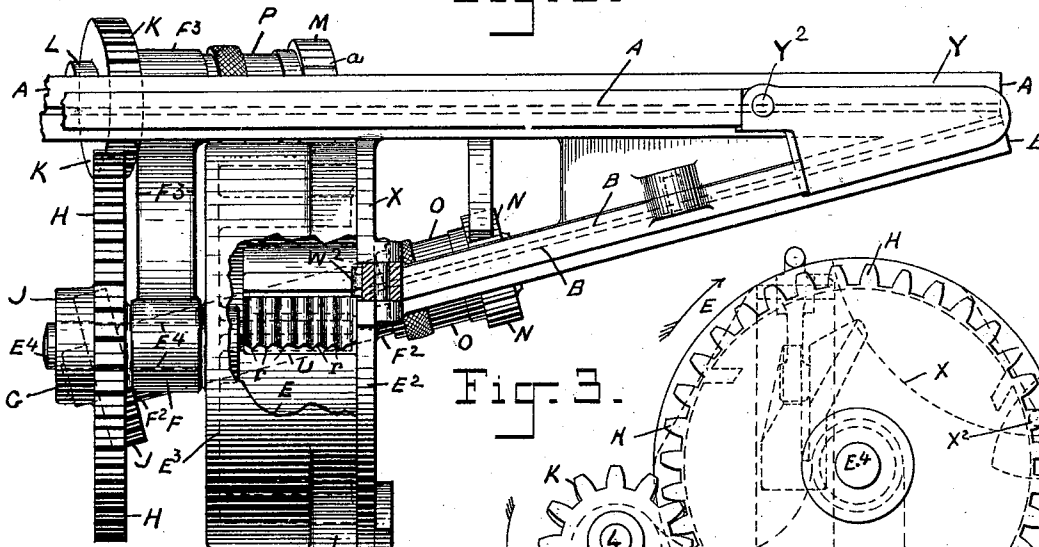


Fig. 3.

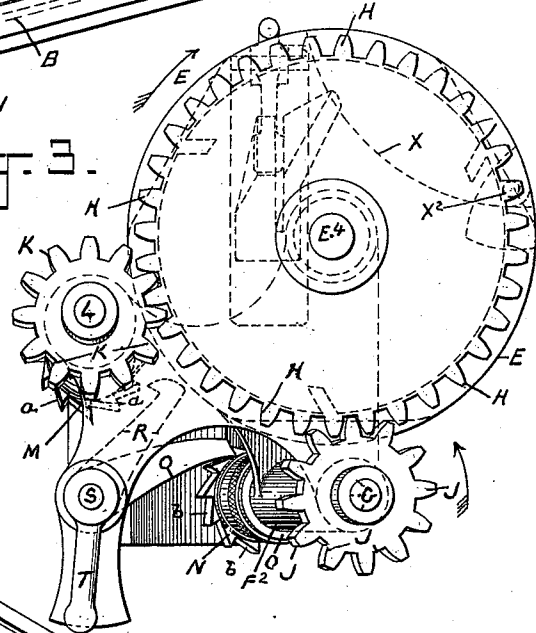


Fig. 2.

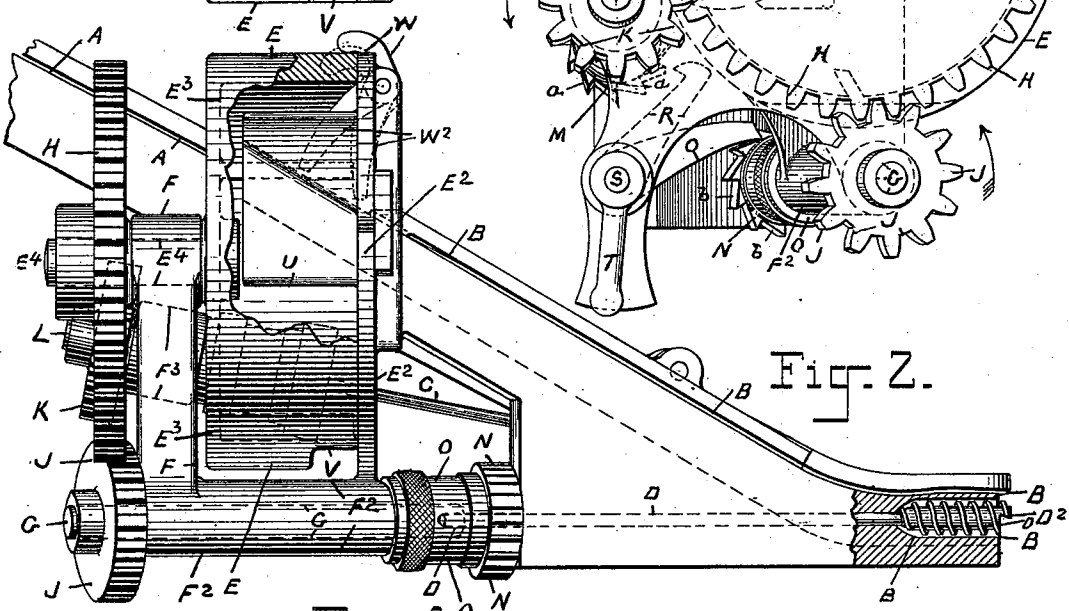


Fig. 4.

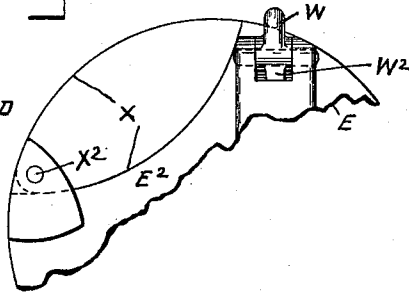


Fig. 5.

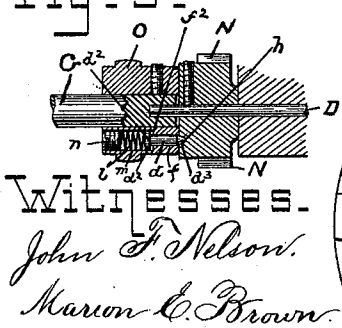
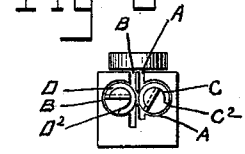


Fig. 6.



Inventor.
Walter Otis Wheeler
by his Attorneys
Brown Bros.

Witnesses.
John F. Nelson.
Marion C. Brown.

UNITED STATES PATENT OFFICE.

WALTER O. WHEELER, OF WEBSTER, MASSACHUSETTS.

TACK-DISTRIBUTER.

SPECIFICATION forming part of Letters Patent No. 518,933, dated April 24, 1894.

Application filed August 29, 1893. Serial No. 484,315. (No model.)

To all whom it may concern:

Be it known that I, WALTER OTIS WHEELER, a citizen of the United States of America, and a resident of the town of Webster, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Tack-Distributers, of which the following is a full, clear, and exact description.

This invention, although applicable to other purposes, as will hereinafter appear, is designed, more especially, for that class of machines to last boots and shoes, which use tacks, or other such like fastenings, to secure the lasted upper to the sole, and in which the lasting-tacks are automatically conducted from a hopper, and delivered, one at a time, to the lasted upper and sole, to be there driven, to fasten them together.

As well known, in the lasting of boots and shoes, by a machine, or even by hand, the toe-portion of the upper necessarily is folded, or doubled upon itself to a much greater extent and thickness than that at any other portion or portions, and consequently tacks, or other fastenings, which are all sufficient to secure the lesser folded or doubled-over portions of the upper to the sole, are found inefficient as means to secure the lasted toe-portion, or in other words, it is preferable to use two kinds of tacks, or other fastenings, as for illustration, short or lighter ones for the lesser folded or doubled-over portions of the upper, and longer or stronger ones for the greater folded or doubled-portion, to wit; the toe of the upper.

The object of this invention is to secure the conducting and delivering of tacks, differing in length, or in strength, or otherwise suitably for the purpose stated.

This invention consists in the combination with two conducting or race-ways for tacks, or such like, and means adapted to deliver the tacks therefrom, one at a time, to be driven as desired, of means adapted to place said tack delivering means of said race-ways into and out of operation, all substantially as hereinafter described.

Further than the above, the invention consists of the special means for the purpose stated.

In the drawings, forming part of this speci-

fication, this invention is shown as adapted for, and in connection with some parts of lasting machines before specially mentioned.

Figure 1 is a plan view, with the hopper for one of the race-ways, partially broken out. Fig. 2 is a side view, Fig. 1, with the hopper partially broken out. Fig. 3 is an end elevation, Figs. 1 and 2. Figs. 4, 5, and 6 are de-

tail views, as will hereinafter appear. In the drawings, A and B represent two race-ways for conducting and delivering tacks, one at a time, for being driven. A is the ordinary race-way of the lasting machines specially referred to, and it and all appurtenances and appliances including among them, a threaded-shaft C having its terminal C² abruptly changed, Fig. 6, for delivery of the tacks thereat, one at a time, are all as well known, in said machines, and therefore it is not deemed necessary to describe them herein, except so far as is required to understand this invention. The other, or supplemental race-way B, has (Figs. 2 and 6) a threaded-shaft D, which has a terminal D² similar to the threaded-shaft C of the race-way A and a thread that runs in a direction opposite to that of the shaft C of the race-way A and all so that the tacks traveling along the race-way B, will be delivered by the threaded shaft D of the way, one at a time, and at the same point and otherwise as the tacks, traveling along the race-way A, are delivered by the threaded-shaft C of said way. In other words, the threads of said threaded-shafts C and D are respectively left and right.

E is a rotatory chambered-cylindrical and tack receiving hopper, vertically located and from which the tacks pass to be conducted and delivered, as explained, by the supplemental race-way B and its threaded-shaft D. This hopper, except as hereinafter stated, is the same substantially as the hopper (not shown) in the machines referred to, for the regular tack race-way A thereof. The opposite ends, or heads E², E³, of the hopper are closed, but the head E², which is toward the supplemental race-way B, and through which, as will farther on appear, tacks from the hopper pass into said race-way, is not attached to the hopper, and is stationary as to it, in its rotation. The opposite head E³ of the hopper has an axial journal-pin or stud E⁴, which is sup-

ported, and turns in a bearing of a stationary and vertical arm F, part of a fixed frame F, F² and F³. The portion F² of said frame is a horizontal tube or sleeve, located below the hopper E, and axially coincident with the axis of the threaded shaft D of the supplemental tack race-way B. The stationary sleeve F² is the bearing for a shaft, G in axial extension of, but separate from said threaded shaft D which, at its end D³ opposite to that at which it delivers tacks as stated, is entered into the adjacent end of said shaft G for either to turn independently of the other. The vertical plane of the axis of the threaded-shaft D and its shaft G in extension thereof as above stated is oblique to the vertical plane of the axis of the rotatory hopper.

H is a gear held on the journal E⁴ of the rotatory hopper E, and J, K are two gears of same size, but smaller than the hopper-gear H, and arranged to mesh said hopper-gear H, the one J, at the under side, and the other K at one side thereof. The smaller gear J, meshing the under side of the hopper-gear H, is held on the shaft G, and the smaller gear K, meshing the larger gear H at one side thereof, is held on a shaft L, which corresponds to said shaft G, and turns in bearings of a tube, or sleeve F³ of the stationary frame F, F², F³, and is in axial extension of, but separate from the threaded-shaft C, for the race-way A, and is engaged with said threaded-shaft C the same as the shaft G, is engaged with the threaded-shaft D for the race-way B. The vertical plane of the axis of the threaded-shaft C and its shaft L in extension thereof, as above stated, is oblique to the vertical plane of the axis of the rotatory hopper E.

The rotation of the smaller gear K, held on the shaft L in extension, as stated, of the threaded-shaft C for the regular race-way A, rotates the larger gear H, and thus the hopper E, and also the smaller gear J, held on the shaft G in extension, as stated, of threaded-shaft D of the supplemental race-way B, but, so far as now appears, and for the reason, that the two shafts G, L, and threaded-shafts C D respectively in extension thereof, and joined to turn upon each other all as stated, neither of said threaded-shafts C, D are rotated. The threaded-shafts C, D, are however to be rotated from the rotation of the shafts G, L, respectively, and to that end as also to the end of having only one threaded-shaft rotate at one time, means are provided, which are now to be described.

M is a ratchet-wheel, fixed on the threaded-shaft C, and N is a similar ratchet-wheel fixed on the threaded-shaft D. The teeth *a*, and *b*, respectively, of the ratchet-wheels M, N are presented in opposite directions, Fig. 3.

O is a collar fixed on, and at one end adjacent to the end of the ratchet-wheel N of the shaft G. P is a similar collar fixed on and at one end adjacent to the end of the ratchet-wheel of the shaft L.

d, Fig. 5, is a headed sliding-pin, located

in a bearing *f* of the collar O, and the pin *d* and its bearing *f* are at one side of and parallel to the shaft G, carrying said collar. The pin, in its normal position, either rests on, or is in close proximity, by its head *d*², to the shoulder *f*² at the inner end of its said bearing *f*, and its end *d*³, preferably rounded, then projects from the end of said collar and enters into a socket *h* of the ratchet-wheel N, adjacent to said collar.

l is a coil-spring, located in an enlarged bore *m* of the collar O, and confined end to end, but affording resilient pressure to said headed pin *d* in its engagement as aforesaid, between the head *d*² of said pin and the inner end of an adjustable screw-plug *n*, entered into the open end of said bore *m*, and all such, that said collar O, on the shaft G, and the ratchet-wheel N, on the threaded-shaft D, are clutched together, and so, because of the then rotation of the smaller gear J, the threaded-shaft D, belonging to the shaft G of said gear J, and to the supplemental race-way B, is rotated.

Q, and R are two pawls joined together at their heels and held on a fixed stud, or pin S.

T is a handle for convenience in swinging the pawls, the two moving together as one. These pawls are located, for the pawl Q to be engaged with the teeth of the ratchet-wheel N of the shaft G, and for the pawl R to be then out of engagement with the teeth *a* of the ratchet-wheel M of the shaft L, and vice-versa, and said relative engagements of the pawls, is secured, Fig. 3, in one case, by swinging their handle T in a direction to the left, and in the other case, by swinging said handle in an opposite direction, that is, to the right.

Either pawl Q, or R engaged with its ratchet-wheel N, or M, necessarily fastens the threaded-shaft D, or C, which carries it, against rotation while, at the time the shaft G, or L, as the case may be, in continuation of the threaded-shaft fastened as stated, continues its rotation, which is permissible because of the slip of the collar O, or P,—(it being understood that the collar P is constructed and adapted the same as the collar O)—as the case may be, over the end of the ratchet-wheel N, or M, according to which of the ratchet-wheels is fastened as stated. This slip of the collars O, or P, is allowed by the inward movement of the clutching-pin *d* against the tension of the spring *l*, and when the fastened ratchet-wheel is released, the pin *d* then, by the resiliency of its said spring, automatically engages the ratchet-wheel and so clutches it to the continuous rotating shaft G, or L, as the case may be.

From the description given, plainly either of the threaded-shafts C, D, may be put into, and out of operation, according as the pawls Q, R are placed, and that when one threaded-shaft is in, the other is out of operation, and consequently with the hoppers, for each of said threaded-shafts C, D,—(the hopper E for the supplemental threaded-shaft D', being

the only one shown, as the hopper, for the regular threaded-shaft C, as before stated, is the same as well known)—charged with tacks, differing substantially as before stated, either the one or the other kind of tacks as desired, can be delivered at the common point of delivery for both tack race-ways, A, B, and thus is attained the main object of this invention.

The special mechanism, herein described constitutes a feature of the invention, but the invention, broadly considered, is neither to be limited thereto, nor to any other special form, nor is it to be limited to its use with lasting machines, as plainly it might be used with other machines which in their running, or in the results thereof, it might be desirable to distribute tacks, or other like fastenings, differing in their qualities or characteristics, substantially as hereinbefore stated.

It will be observed that in the operation of the special mechanism explained, the tack-hopper E is in constant rotation and while this is not objectionable, but obviously preferable, it plainly is not essential, for reasons not necessary to state. The tack-hopper E, is of the well known type, that is, it has buckets, (not shown) located at different points for lifting up the tacks and dropping them onto a stationary inclined shelf U, held on the stationary head E² of the hopper, as well known. This shelf has a series of parallel transverse grooves *r*, Fig. 1, as guides for the better disposition of the tacks, by causing them to lie lengthwise on the shelf, and thus the better to present them for passing out into the tack race-way B belonging to the hopper, and in the manner, as well known. At times, the tacks, tend to clog the inclined shelf U of the hopper, and to the end of breaking up this clogging, the hopper is provided with a series of similar cam-faces V, V, around, and located at regular, or irregular distances apart of its outer perimeter, and in position, as the hopper rotates, each to act on the outer end-portion of one arm W of an angular lever W, W², that is fulcrumed on the stationary head E² of the hopper, and has its other arm, W² arranged, as the lever is swung on its fulcrum, by the action of said cams, to be thereby moved along the length of said stationary-shelf U and in so moving to upset, or throw off the tacks, and otherwise to break up their clogging. This angular lever W, W², at all other times than when it is acted on by said cam-faces of the hopper is held out of the tack-chamber of the hopper, by the regular perimeter of the hopper and so the tacks are free to pass through the fixed head of the hopper into the race-way B, and thence along it to travel for delivery, all as aforesaid and as well known. The stationary head E² of the hopper at its upper portion is cut out and the cut-away portion closed by a

door X, swinging on a pin X² of the head F² as a center.

The tack race-ways A, B at their joined portions, where the threaded-shaft of each is located as explained, have a plate Y, which covers them, and is hung on a fixed pin Y² of the race-ways to be swung onto and off the race-ways and thus, in the one case, to cover them and in the other case to open them and so should there be any obstruction of the tacks on either one of the threaded-shafts to present it for proper attention.

The threaded-shafts C, D may be either both right, or both left, changing of course the driving mechanism to suit the change of direction as stated if the tacks are to be allowed at one and the same point. Again the race-ways may be arranged to deliver the tacks at different points, instead of at one point, as has been explained.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a machine for distributing or delivering tacks, the combination with two tack conducting chutes both located for distribution or delivery of the tacks one by one from each chute and at a common point, an appliance for and to operate in conjunction with each chute to distribute its tacks as aforesaid and separate operating means for each tack distributing appliance, of separate clutching mechanisms to clutch and unclutch each tack distributing appliance and its operating mechanism, and means in connection with and adapted to actuate said clutching mechanisms so as to simultaneously clutch one and unclutch the other tack distributing appliance and its operating mechanism, substantially as described and for the purpose specified.

2. In a machine for distributing or delivering tacks, the combination with two tack conducting chutes both located for distribution or delivery of the tacks one by one from each chute and at a common point and a rotatory appliance located in and to operate in conjunction with each chute to distribute its tacks as aforesaid, of a rotating gear wheel H, pinions J, K meshing said gear-wheel, a separate clutching mechanism for each of said pinions and one of said rotatory tack distributing appliances, ratchet-wheels M, N of said pinions, and pawls Q, R to engage said ratchet-wheels, substantially as described, for the purpose specified.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WALTER O. WHEELER.

Witnesses:

J. W. PICKERING,
ALBERT W. BROWN.