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SHOE PART TREATING MACHINE

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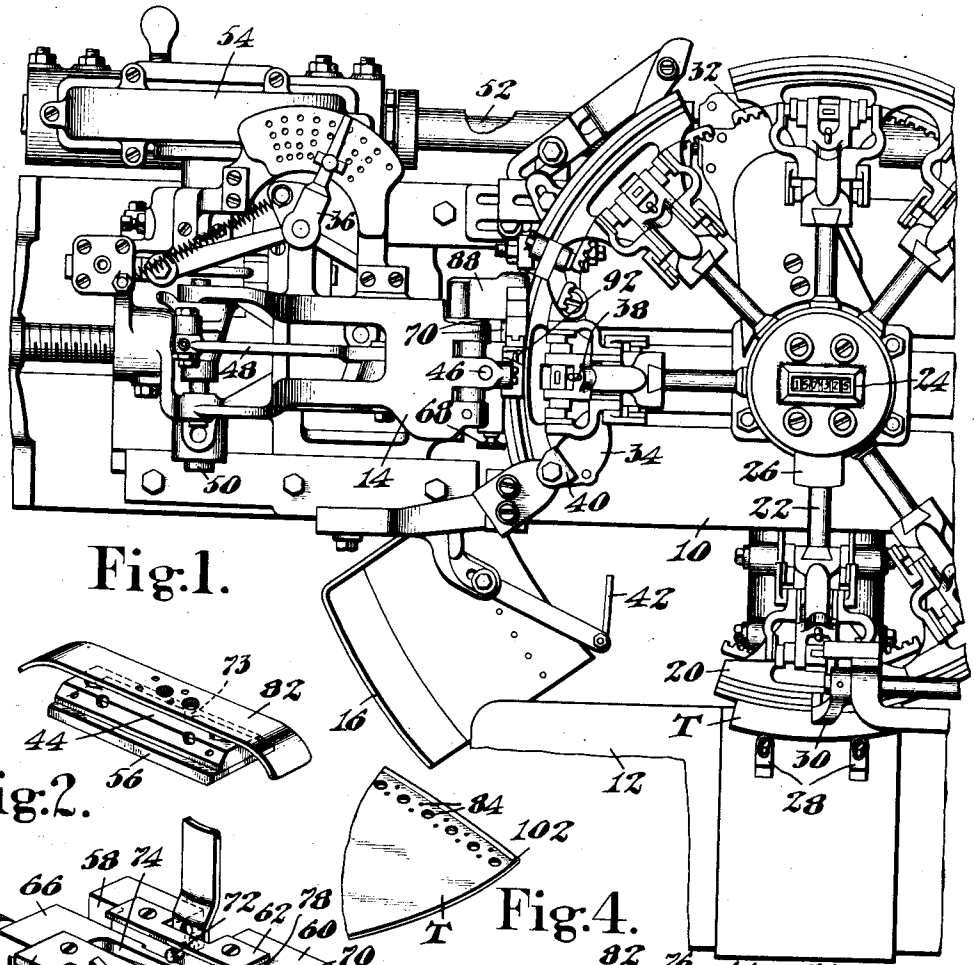
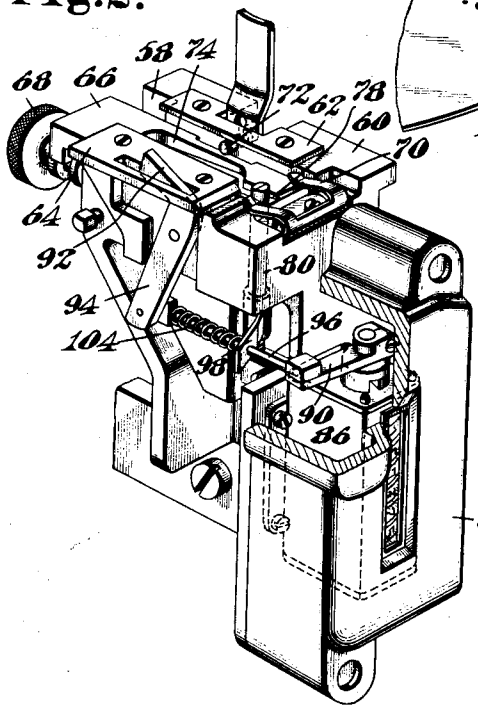


Fig.1.

Fig.2.

Fig.4.



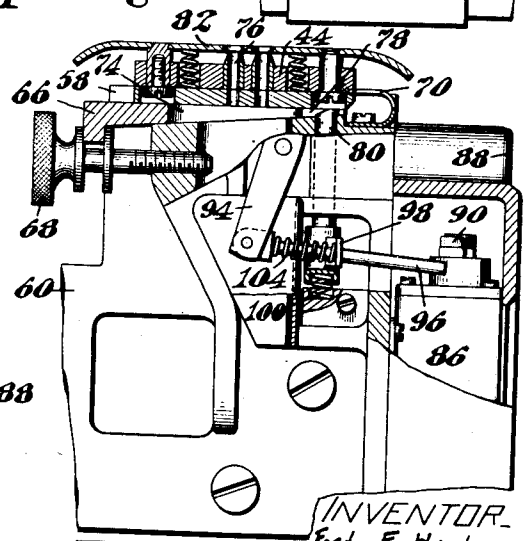


Fig.3.

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SHOE PART TREATING MACHINE

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3 Claims. (Cl. 235—91)

This invention relates to shoe part treating machines and is herein illustrated as embodied in a machine for presenting pieces of work successively to a plurality of operating machines of the type shown in Letters Patent of the United States No. 1,754,464, granted April 15, 1930 upon the application of Joseph Fossa.

In preparing toe tips for embodiment in shoe uppers, it is customary to finish the rear edge of the toe tip before it is stitched to the upper. This rear edge is usually skived and then treated to produce a finished edge as by the application of a shrinking heat to one surface of the work thereby to cause the unshrunken surface to curl toward the shrunken side. After this, it is usual to produce an ornamental row of perforations adjacent to this finished edge. In machines of the type shown in the above mentioned patent, work carriers are mounted for traversing movement in a closed path and arranged to present the toe tips successively to machines for skiving, shrinking, and perforating, for example. Such an arrangement enables the production of more uniform work and also increases the output of finished work pieces while reducing labor cost. The rental charge for the use of such machines is frequently determined by the number of pieces of work which have been presented to the component operating machines by the carriers. It is sometimes found convenient to utilize such organizations even though it is not desired to employ all the operating machines. For example, it is sometimes found desirable, either for reasons of style or cost, to finish the edges without perforating them. Under these circumstances, it is more equitable to assess a different charge for those pieces which are treated by only a portion of the operating machines.

It is an important object of this invention to provide a machine enabling the user to determine separately the quantity of work which has been treated by all of the operating machines and the quantity which has been treated by only a part of these machines.

To this end and in accordance with important features of the invention, one of the machines, here shown as the perforating machine, is provided with a counter or indicator and an actuating mechanism therefor which is controlled in response to the operating condition of the machine. For example, if the perforating machine has no die, then the counter associated with this machine is operated, thus counting the pieces only edge finished and charged at rate A. It is possible to determine the number of pieces which have been both finished and perforated by subtracting the reading of this auxiliary counter from the total number of pieces presented to the machine. These will be charged at rate B, higher than rate A. These and other features of the invention will now be described, reference being had to the accompanying drawing, in which,

Fig. 1 is a plan view of a portion of a machine of the type referred to in the above mentioned Fossa Patent No. 1,754,464;

Fig. 2 is a perspective view of a die supporting mechanism for a perforating machine with a die separated therefrom, and showing an auxiliary counter associated therewith;

Fig. 3 is a front elevation of these parts, partly in section, and showing the die in operating position, and

Fig. 4 is a fragment of a piece of work which has been treated on the machine.

While the machine illustrated is of the type shown in the Fossa patent, it differs therefrom in details which are not essential to an understanding of this invention. For a more complete understanding of such parts as are not fully described herein, reference may be had to Letters Patent of the United States No. 1,989,682, granted February 5, 1935, upon an application filed in the name of John B. Coffey, for Improvements in apparatus for operating upon shoe parts. In general, the machine comprises a base or frame **10** upon which are supported a loading platform **12**, an edge finishing machine (not shown), a perforating machine **14** and a delivery receptacle **16**. Pieces of work T are presented successively to the various operating mechanisms to finish the edge as shown at **102** in Fig. 4 and to perforate the tip as at **84**. This is done by carriers **20** mounted upon radial arms **22** pivoted for movement about a central support (not shown). These carriers are mounted for independent movement but are so arranged that they must remain in the same sequence. A counter **24** mounted at the center of the carriers is provided with an operating mechanism including a forked arm **26** engaging the radial arm **22** of one of the carriers. This operating mechanism is so arranged that the reading of the counter corresponds to the total number of carriers and hence work pieces which have passed a fixed point, as more completely shown and described in the above mentioned Coffey patent.

It will be understood that each of the carriers **20** embodies toggle operated jaws and in the use of the machine an operator will place a tip T against gages **28** upon the loading platform **12** and then by the actuation of a treadle operated lever **30** will actuate the toggle to close the jaws and to free the carrier for movement about its support. Provision is made, as in said Coffey patent, for frictionally advancing the carrier arms and separate driving mechanisms associated with the individual machines are arranged to engage curved racks **32** associated with the individual carriers, thereby positively to control the ad-

vance of the work past the operating machines. In the case of the perforating machine 14, the feeding mechanism comprises gears (not shown) partially concealed by a casing 34 and arranged for intermittent movement, the extent of which may be determined by adjustment of an arm 36 upon the perforating machine. The driving mechanism associated with the skiving and edge finishing machine is arranged for continuous movement, but at a different speed. After any particular work carrier has passed the perforating machine, its toggle is broken by the engagement of a pin 38 upon the carrier with a fixed stop 40, thereby opening the jaws and allowing the work pieces to be dragged out into the delivery receptacle 16 by a projecting finger 42 which enters the space between the open jaws.

While the exact construction of the perforating machine is not material to this invention, it will be seen that the machine illustrated comprises a removable die 44 with which, when in use, is associated a platen (not shown) mounted upon the lower end of a plunger 46. This plunger is moved up and down by means of a toggle mechanism (not shown) actuated through a link 48 connected to a cam lever associated with a cam shaft 50. This cam shaft is driven from the main drive shaft 52 by a worm and gear enclosed within a housing 54.

The die 44 is removably mounted in the perforating machine by an arrangement illustrated in Figs. 2 and 3 from which it will be seen that the die comprises a base plate having projecting flanges 56 adapted to be received in a groove 58 formed in a supporting frame 60, the flanges underlying retaining plates 62, 64. The bottom of this groove is formed by an adjustable wedge 66, the position of which may be determined by a hand screw 68 thereby enabling the operator to regulate the height of the die. The die is held down against this wedge 66 by a forked spring 70 and is retained in the groove by means of a spring-supported locking pin 72 which cooperates with a notch 73 in the edge of the die 44. The spring on which the pin 72 is mounted is supported below the die and has a projecting upper end (Fig. 2) by which the pin can be withdrawn. It will be noted that the wedge 66 is provided with a central opening 74 to permit the passage of chips from the tubular punches 76 and that it is slotted at its outer end at 78 to admit the upper end of a plunger 80. The entering end of the die 44 and the upper end of the plunger 80 are beveled to facilitate insertion of the die in the groove. A spring-supported stripper plate 82 is positioned over the punches 76 of the die and the die has a plurality of punches to form perforations of any particular design, such as the one shown at 84 in Fig. 4.

Associated with this perforating machine is a counter 86 within a protective casing 88 and having the usual oscillatory operating arm 90. In order that the counter may count the number of pieces of work passing the machine when there is no die present in the machine, an operating mechanism for the counter is provided which is controlled by the plunger 80. This mechanism comprises a bell crank tripper pivoted to the side of the frame 60 in a recess therein. The upper end 92 of this bell crank projects through a slot in the plate 64 in position for engagement by some portion of each carrier 20 as it presents a piece of work to the perforating machine. The lower end 94 of the bell crank is pivoted to a horizontal rod 96 which passes through a guide plate 98 secured to the plunger 80. Surrounding the rod 96 between the plate 98 and the bell crank is a spring 104 to hold the end 92 normally above the plate 64. A spring 100 beneath the plunger tends always to hold the plunger in an uppermost position, such as that shown in Fig. 2, so that when there is no die present in the machine the rod 96 will be in line with the operating arm 90 and cause the counter 86 to register the number of pieces of work passing by the machine. When, however, a die is in position in the machine, as is shown in Fig. 3, then the plunger 80 is depressed thereby depressing the guide 98 and breaking the chain of the operating mechanism so that the rod 96 is not aligned with the arm 90 of the counter 86. Under these circumstances, the passage of carriers will actuate the bell crank 92, 94 but will be ineffective to move the operating arm 90.

It will be seen, therefore, that the whole number of pieces of work presented to the operating machines is indicated by the counter 24 and, if there is a die 56 in the machine, this is the only record which is kept. On the other hand, if a die is not present in the perforating machine, then the operating chain between the actuating bell crank 92, 94 and the operating arm 90 is complete, and the number of pieces of work passing through this machine which have been edge finished only but not punched will be noted by the counter 86. These will be charged at rate A. By subtracting the reading of the counter 86 from the reading of the counter 24, it will be possible to ascertain the number of pieces which have been both edge finished and punched and which will be charged at the higher rate B.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. In a machine for treating pieces of work successively an operating machine having a removable tool, a carrier mounted for traversing movement to present a piece of work to said machine, a counter associated with said operating machine, operating mechanism for the counter actuated by the passage of said carrier, and means actuated by the tool when in said machine for rendering said counter operating mechanism inoperative.

2. In a punching machine, a removable work engaging member, means for presenting pieces of work successively to said machine, a counter associated with the machine, operating means for said counter including a trigger actuated by said work presenting means and a train of mechanism connecting said trigger to said counter, and means actuated by said work engaging member when in said machine for breaking said operating train.

3. In a punching machine, a removable die, a counter associated with the machine, a trigger for operating said counter, a connection between said trigger and said counter, and means for rendering said connection inoperative upon the insertion of a die in the machine.

FRED E. HOOPER.