June 11, 1929. P. R. GLASS 1,716,629

MARKING MACHINE

Filed Sept. 17, 1925

Fig.1.

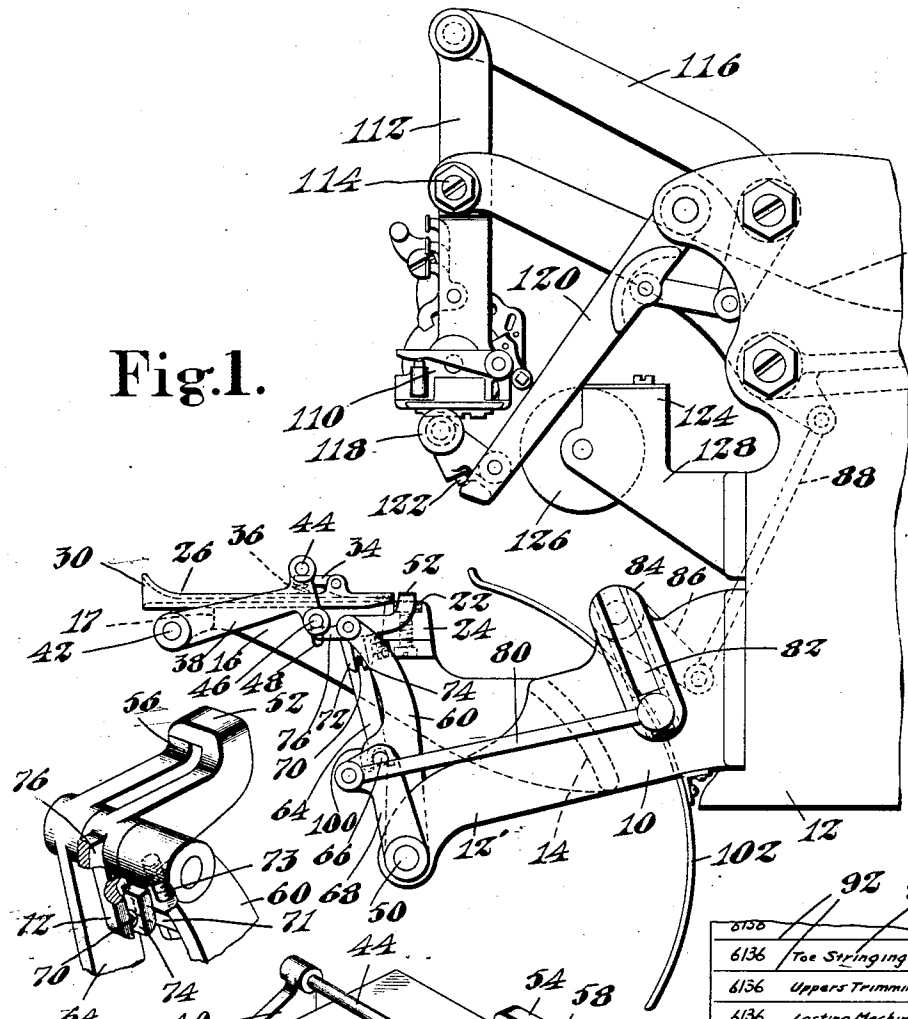


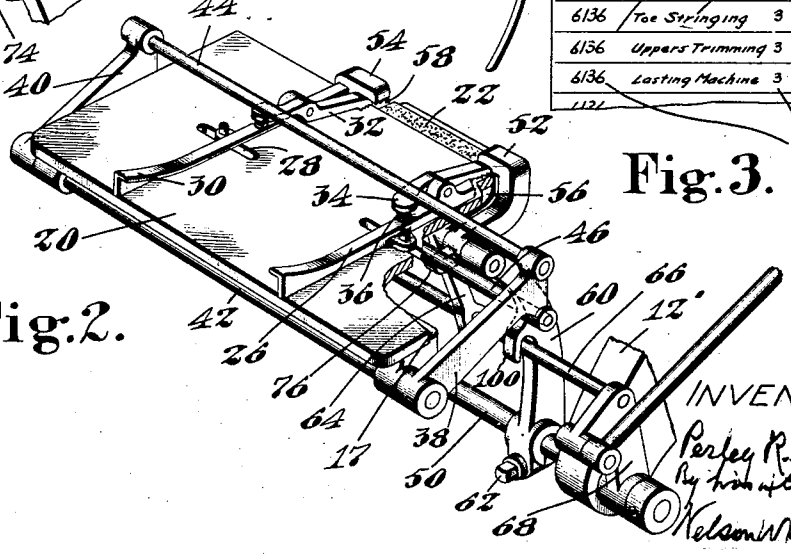
Fig.4.

6136	Toe Stringing	3	03	.60
6136	Uppers Trimming	3	03	.40
6136	Lasting Machine	3	03	7.00

92 94 96 98

Fig.3.

Fig.2.



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UNITED STATES PATENT OFFICE.

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MARKING MACHINE.

Application filed September 17, 1925. Serial No. 56,955.

This invention relates to marking machines and is illustrated as embodied in a marking machine in which a narrow strip of material is fed intermittently to the printing position so that successive impressions may be made at regular intervals thereon.

In factories, such as garment making factories, or shoe factories, where the work is divided into a large number of operations, it is common practice to provide a tag, having as many sections as there are operations to be performed, which is attached to a bundled lot of material. These tags may be printed in advance with legends in the sections to show the various operations and are marked at the time of use to indicate the particular lot or class of material to which they are attached. The custom then is for each operator to remove a section of the tag which corresponds to the particular operation which he is performing so that he may turn in to the accounting department printed slips which will show the amount of work performed and hence the wages to which he is entitled. These slips may be arranged to contain other information which may be desired as a record for the management. Commonly, these tags are made of long narrow strips of thin cardboard and the sections to be removed are small in proportion to the length of the tag because of the large number of different steps or operations to be performed. Factories of this sort commonly have marking machines in use for various other purposes the marking mechanisms of which are well suited to marking on the tags the various items of information repeated on each section, such as Lot No., Case No., Quantity, etc., but such machines have not been adapted for feeding tags of the type referred to conveniently and rapidly to the marking apparatus in such a fashion that the imprints will be made in proper positions with respect to the sections of the tag.

Accordingly, it is an object of this invention to provide a marking machine having improved work feeding mechanism arranged to move a relatively narrow strip of material along step by step and capable of use for feeding a wide variety of tags. To this end, and in accordance with features of the invention, the illustrated work feeding means is arranged to facilitate the introduction of work, so that the forward movement of the work may be adjustably predetermined with accuracy, and is provided with guiding, retaining and feeding members adjustable laterally to accommodate strips of work of varying widths and to position the strips correctly with relation to the printing apparatus in order that the imprint may occupy the desired relation laterally of the work.

These and other features of the invention which will be pointed out in the claims and described in the specification are illustrated in the accompanying drawings, in which

Fig. 1 is a side elevation of a marking machine having embodied therein novel work feeding mechanism constructed in accordance with the present invention;

Fig. 2 is a perspective view with parts of the work feeding mechanism broken away;

Fig. 3 illustrates a section of an illustrative tag such as is used in a shoe factory; and

Fig. 4 is a fragmentary perspective view of one set of feeding jaws.

The illustrated work feeding mechanism is provided with a bracket which may be removably attached to a marking machine in place of the bracket holding the work table normally used in the machine, and the arrangement is such that, after the operator has inserted a piece of work between guides upon a work supporing table, the machine may be started and continued in operation until the desired numbers have been repeated on each section of the tag with the assurance that the printed impressions will occupy the desired positions both laterally and longitudinally of the piece of work.

The illustrated marking machine which, except as herein illustrated and described in detail, is organized as disclosed in United States Letters Patent No. 960,029, granted May 31, 1910, upon the application of F. W. Merrick, comprises a type carrying head 110 secured at the lower end of an upright arm 112 which is pivotally attached at 114 to the outer end of the operating lever 90 and at its upper end to a link 116 pivoted in the machine. This arrangement provides for movement up and down of the type carrying head to bring the markers into contact with the work and during this up and down movement ink may be supplied to the marking type by means of a roller 118 pivotally secured at the outer end of a lever 120 and resiliently held against the type by a spring pressed plunger

122. An ink reservoir 124, embodying a supply roll 126, is mounted in an auxiliary bracket 128 also attached to the frame of the machine.

The work feeding mechanism comprises a supporting bracket 10 attached to the frame 12 of the machine. This bracket 10 has lateral arms 12′, between which extends a web 14 having formed centrally thereon a forwardly extending bracket arm 16. The outer end 17 of this bracket arm 16 is T-shaped and provides means for attaching a work supporting table 20 extending rearwardly from the forward end of the bracket to an intermediate point, adjacent to which there is provided a platen 22 supported upon a removable cross member 24 attached to the bracket 16 with screws. Overhanging guides 26 are adjustably attached to the upper surface of the work table 20 by bolts passing through slots 28 in said table and the outer ends of these guides are flared, as shown at 30 to facilitate the insertion of a piece of work into the guides. Spring pressed work retaining jaws 32 are pivotally mounted above the table to prevent retrograde movement of the work and in the particular construction herein illustrated these jaws are pivotally mounted directly upon the guide members 26 so that they are laterally adjustable with said guide members. It will be apparent that the arrangement illustrated and described makes it very easy for the operator to insert work into the guides 26 and under the jaws 32, and that it provides for varying widths of strips of work and allows the centering of the work with respect to the platen 22 or an exact lateral adjustment with respect to said platen to any position which may be desired. The retaining jaws 32 are provided with finger pieces 34 beneath which are springs 36 serving to hold the serrated forward ends of the jaws normally in engagement with the work, the serrations or teeth sloping in the direction of work feeding movement acting to prevent retrograde movement without hindering the forward feeding movement of a piece of work. Manually operable means are provided for intermittently releasing said retaining jaws, when it is desired to insert a tag, which means is arranged to co-operate with the finger pieces 34 upon the retaining jaws in whatever position of lateral adjustment they may be placed. To this end arms 38 and 40 are privotally mounted upon a rod 42 secured in bearings formed upon the T-shaped end 17 of the forwardly extending central bracket arm 16. These arms carry at their outer ends a pair of parallel rods 44 and 46, and the upper rod 44 overlies the finger pieces 34 in any position which the latter may occupy. The lower rod 46, as later described, is arranged to co-operate with feeding jaws 52 and 54. A slot 48 (Fig. 1) is provided in the forwardly extending bracket arm 16 for the passage of the lower rod 46.

The mechanism for intermittently feeding the work forward step by step is mounted upon a shaft 50 journaled in the lateral arms 12′ of the supporting bracket 10. This mechanism comprises the upper jaws 52 and 54 and co-acting lower jaws 56 and 58, each set of jaws being pivotally mounted at the upper end of a corresponding arm 60, two of these arms being adjustably secured in the desired positions on the shaft 50 and clamped thereon by bolts 62. The feeding jaws are thus arranged to grasp the work at points outside the work support, and, as here shown, upon opposite sides of the platen 22 adjacent to its ends. Each of the lower jaws 56, 58 is serrated to grip the work and is provided with a depending, forked lever 64, the forked lower end of which overlies a transverse rod 66 supported in similar bell cranks 68 loosely pivoted on the opposite ends of the transverse shaft 50 outside the bracket arms 12′. Springs 70 to hold the jaws in gripping contact are provided which are interposed between flanges 74 formed upon the sides of the depending forked levers 64, and arms 72 formed as an integral part of the upper jaws 52 and 54. The effect of these springs as they tend to rotate the jaws about their common pivot is limited by stops 71 (Fig. 4) formed upon the inner sides of arms 60 which contact with the flanges 74 and by stop screws 73 passing upwardly through said stops and abutting the under sides of the upper jaws 52 and 54. By adjusting the stop screws 73, the level at which the upper and lower jaws grip the tag may be determined to bring it substantially into coincidence with the plane of the upper surface of the platen 22. Extensions 76 are provided upon the upper jaws 52 and 54 which, in any position of lateral adjustment and in one operating position of the feeding jaws, underlie the rod 46, thereby to make the manually operated rod 46 effective to open the feed jaws when it is desired to insert and adjust a piece of work.

Actuation of the feeding jaws is effected by a connecting rod 80 pivotally secured at its outer end to one of the bell crank levers 68 and at its other end adjustably secured in a groove 82 in a bell crank lever 84 pivotally mounted in the bracket 10 and having another arm 86 which is connected by means of a rod 88 to the actuating lever 90 of the marking machine.

The arrangement of the parts is such that, as the type carrying head of the marking machine is lowered, the feeding jaws grip the work outside the platen and the work support and are moved away from the operator to feed the piece of work so as to bring

a fresh portion of the strip into position over the platen 22. It will be understood that the amount of feeding movement may be adjustably determined by varying the point of connection of the rod 80 in the groove 82 of the bell crank lever 84. Thus, if the piece of work at hand is a tag such as is illustrated in Fig. 3, the amount of feeding movement is adjusted to bring the impresses within the sections indicated by cross lines 92 on the tag. The particular tag illustrated has been previously printed with the name of each individual operation, as indicated at 94, in each of the sections, and preferably with the wage which will be paid to the operator for the particular operation listed on the tag, as represented at 96. The function of the machine then is to imprint duplicate numbers such as those indicated at 98, which may convey to the accounting department the desired information such as lot number, case number, etc., of the work to which the tag was attached.

It has already been pointed out that the transverse operating rod 66 is in engagement with the forked ends of the levers 64 upon the lower jaws. It should be noted, also, that this rod passes under hooked projections 100 integral with the jaw supporting levers 60, and the space provided between these hooks 100 and the levers 60 is such that it forms a lost motion connection, with the result that movement to the right (viewed as in Fig. 1) of the connecting rod 80 serves to move both sets of jaws along together to feed the work ahead toward the frame of the machine while a reverse movement acts first to depress the serrated lower jaws 56 and 58 away from the work and then to carry the feeding jaws back to starting position while the work is held by the retaining jaws 32. In order that forward movement of the tag may not be interrupted by contact of a tag with the frame of the machine when the tag is of considerable length, a curved work deflecting plate 102 is secured between the side arms 12′ of the brackets 10 which is suitably curved to deflect the forward end of the tag downwardly away from the frame of the machine so that it may be printed along its full length and then allowed to fall into a suitable receptacle beneath the machine.

The arrangement described provides for the lateral adjustment of the work guides 26 and the retaining jaws 32 simultaneously with respect to the work supporting table 20, so that various widths of tags may be handled and properly positioned with respect to the platen 22 or the type in the head 110. The arrangement also provides for the lateral adjustment of the feeding jaws by adjustment of their supporting arms 60 upon their shaft 50 in order that these jaws may be brought into proper relationship with the edges of a piece of work. After the machine has been started its operation becomes automatic and the work is fed forward step by step a distance determined by the adjustment of the end of the connecting rod 80 in the groove 82. During this feeding movement the tag is intermittently grasped by the feeding jaws while the retaining jaws are arranged so that forward movement is not hindered and retrograde movement is prevented. During the work feeding movement the rod 66 cooperates with the depending forked arm 64 to open the feeding jaws by moving the lower jaws 56 and 58 downwardly while the upper jaws are prevented from rotating by means of the adjustable stop 73. On the other hand, when the machine is at rest and the manually operated rod 46 is depressed, this is effective to open the feeding jaws by lifting the upper jaws 52 and 54 away from the lower jaws, which latter are held in position by reason of the engagement of their arms 64 with the operating rods 66.

Having thus described my invention, what I seek to protect by Letters Patent of the United States is:—

1. In a marking machine, tag feeding mechanism comprising two sets of adjustable retaining jaws, adjustable feeding jaws, and manually operated means common to both sets of jaws, normally inactive during the feeding movement, for opening both sets of jaws when it is desired to insert a tag.

2. In a marking machine, a work supporting table, an overhanging guide arranged to engage the edge of a strip of material to be fed and a work retaining jaw carried by said guide.

3. In a marking machine, an elongated platen, and a feeding device gripping a side edge of a work strip adjacent to the end of the platen, said feeding device being adjustable laterally toward and away from the platen to grip the side edges of work strips of different widths and being movable to feed the work strip across said platen at right angles to the length of the platen.

4. In a marking machine, a work-supporting table, lateral guide members adjustably mounted upon said table, spring pressed work retaining means carried by and adapted to be adjusted with said guide members to hold a strip of work against backward movement, and means for feeding a strip of work guided upon said table.

5. In a marking machine, a work-supporting table across which a strip of work may be fed, lateral guide members adjustably mounted upon said table, spring pressed work retaining jaws, having teeth sloping in the direction of work feeding movement so as not to hinder the latter, feeding jaws, means for actuating said feeding jaws intermittently to pull along a strip of work, and

manually operable means arranged to open the feeding jaws in one position of the latter.

6. In a marking machine, retaining jaws, feeding jaws, pivoted arms carrying said feeding jaws, means for actuating said arms to feed the work, and common means for releasing said retaining and feeding jaws arranged to co-operate with said feeding jaws in one position of the latter.

7. In a machine for marking elongated pieces of work, a detachable bracket provided with an intermediate forwardly extending arm, a narrow platen for supporting work pieces and extending transversely of the length of a work piece, said platen being detachably carried by said arm, lateral arms on said bracket, a transverse shaft extending between said arms, feeding jaws adjustably mounted on said shaft and arranged to grasp the lateral edges of a piece of work at points adjacent to the ends of the platen, and means for actuating said feeding jaws to feed the work forward step by step.

8. In a marking machine, a detachable work-supporting bracket, said bracket comprising lateral arms, a transverse rib connecting said arms and spaced from the point of attachment of the bracket to said machine and a forwardly extending arm supported by said transverse rib, a work support on said forwardly extending arm, work feeding mechanism carried by said bracket, and a work-deflecting plate mounted between the arms of said bracket at the rear of said transverse rib and arranged to deflect a strip of work downwardly between the transverse rib and the adjacent part of the machine as the strip is fed toward the deflecting plate.

9. In a marking machine, a work-supporting table, retaining jaws upon said table, adjustably positioned means for supporting said jaws, and manually depressible means for releasing said jaws adapted to coact with both jaws in any position of adjustment comprising a transverse rod overhanging and arranged to co-operate with said jaws.

10. In a tag printing machine, an elongated work supporting platen, means for feeding intermittently a tag in a direction transverse to the length of said platen comprising a shaft extending lengthwise of the platen, feeding jaws, feeding jaw carrying arms adjustably positioned upon said shaft, and means including a movable jaw operating rod extending transversely in a direction substantially parallel to said shaft arranged to co-operate with both of said feeding jaw carrying arms in any position of lateral adjustment to oscillate the feeding jaws to grip the work and then to feed it.

11. In a tag printing machine, an elongated work supporting platen, and means for feeding intermittently a tag in a direction transverse to the length of said platen comprising a pair of feeding jaws supported upon a pivotally mounted arm, resilient means arranged to hold said jaws in gripping relation, and means for operating said jaws pivotally connected to one of said jaws and having a lost motion connection with the supporting arm arranged upon movement of the rod in one direction to act first to open the jaws and then to move both jaws back along the tag.

12. In a tag printing machine, an elongated work supporting platen, and means for feeding intermittently a tag in a direction transverse to the length of said platen comprising a work support, tag-retaining jaws carried by said work support, controlling means for said jaws comprising arms pivotally mounted upon the work support, tag feeding jaws disposed beneath said support, a rod extending transversely between said arms above the work support arranged to co-operate with said retaining jaws to open the same, and another rod between said arms beneath said support arranged to co-operate with said feeding jaws to open them.

13. In a tag printing machine, an elongated work supporting platen, and means for feeding intermittently a tag in a direction transverse to the length of said platen comprising a work support, resiliently closed work-retaining jaws adjustably positioned upon said work support, means for releasing said jaws comprising pivoted arms, a rod connecting said arms co-operating with said jaws to open the same, another rod connecting said arms, and adjustably mounted resiliently closed feeding jaws constructed and arranged to co-operate with said latter rod in any position of lateral adjustment whereby said retaining jaws and said feeding jaws may be opened simultaneously manually to allow the operator to position a tag within the jaws.

14. In a tag printing machine, a narrow elongated platen, and means for advancing a tag across the platen constructed and arranged to co-operate with different widths of tags and to advance them along an adjustably predetermined path across the platen, said means comprising a pair of laterally adjustable guides co-operating with the edges of the tag and feeding devices laterally adjustable independently of the guides and arranged intermittently to grasp opposite edges of the tag.

15. In a tag printing machine, a work supporting platen, means for feeding a tag step-by-step across said platen comprising a pair of coacting feeding jaws supported upon a pivoted arm, means for adjusting the level of the work contacting face of one of said jaws with respect to said platen, and means for operating said jaws, said last-named means being constructed and arranged alternately to open and close the jaws as the supporting arm is oscillated.

16. In a tag printing machine, a work sup-

porting platen, means for feeding a tag step-by-step across said platen, said feeding means comprising a pair of coacting work gripping jaws each pivotally mounted upon a supporting arm, resilient means urging said jaws into contact with one another, means for operating said feeding mechanism arranged to move one of said jaws against the tension of said resilient means to open the jaws, and means cooperating with the other jaw for preventing rotation thereof under the impulse of said resilient means.

17. In a tag feeding device, a work support, means for feeding a tag step-by-step across said work support comprising a pivotally mounted arm, a pair of coacting feeding jaws pivotally mounted on said arm, resilient means urging said jaws into gripping relation, and means for moving either of said jaws away from the other jaw, thereby to release their grip upon a piece of work.

In testimony whereof I have signed my name to this specification.

PERLEY R. GLASS.