Nov. 22, 1927. 1,650,076

F. W. LAENCHER

MACHINE FOR OPERATING UPON TICKET STRIPS

Filed Dec. 12, 1923 4 Sheets-Sheet 1

Fig. 1.

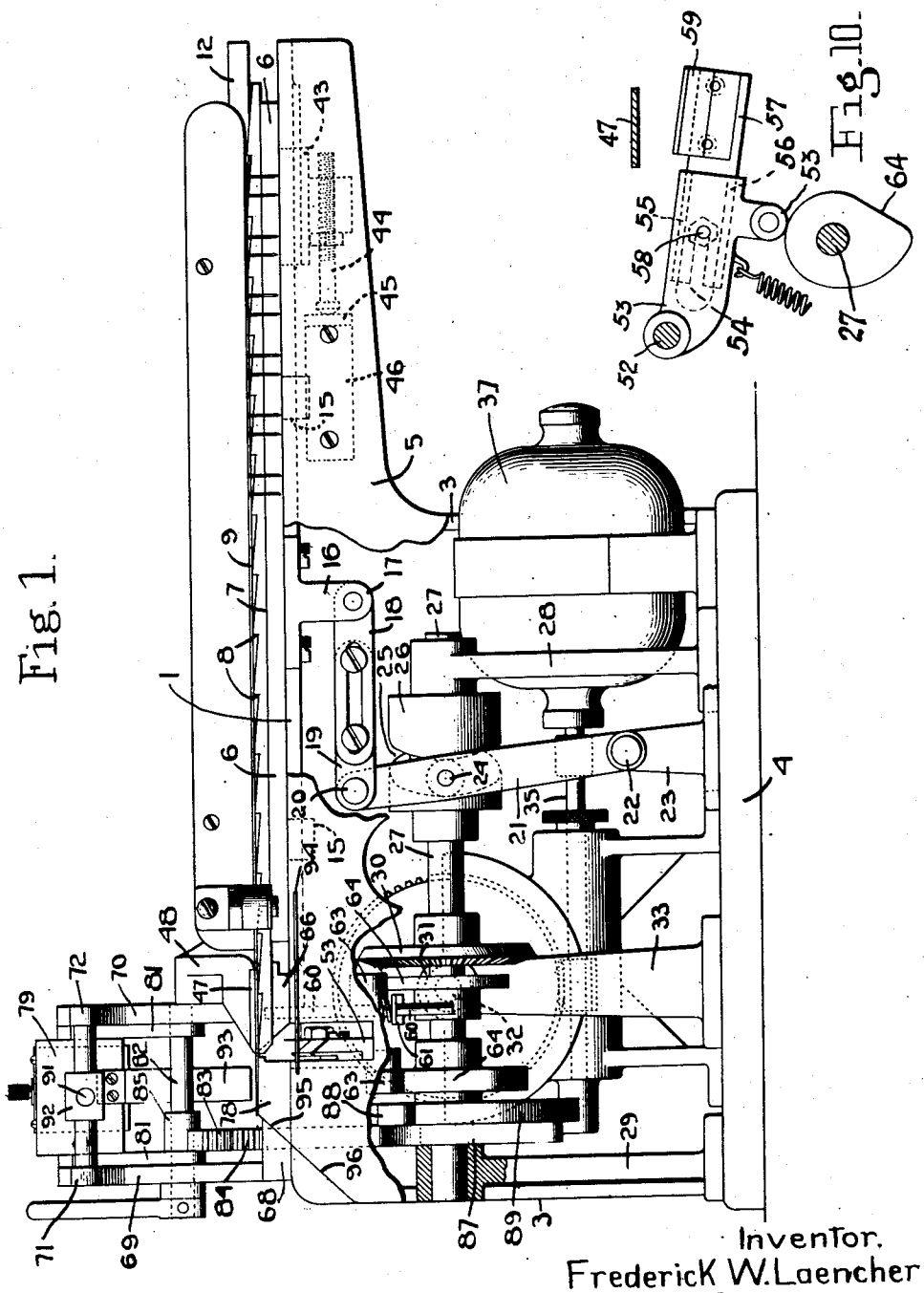

Fig. 10.

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Filed Dec. 12, 1923 4 Sheets-Sheet 2

Fig. 2.

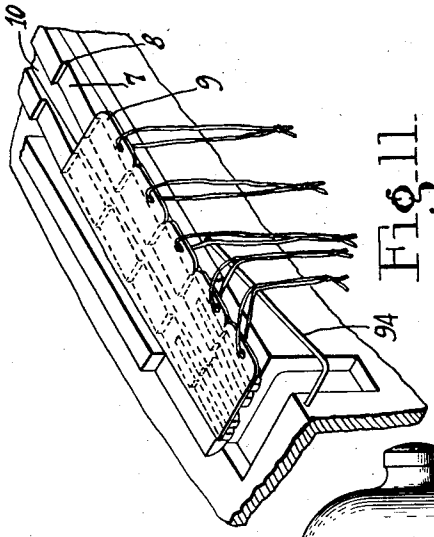
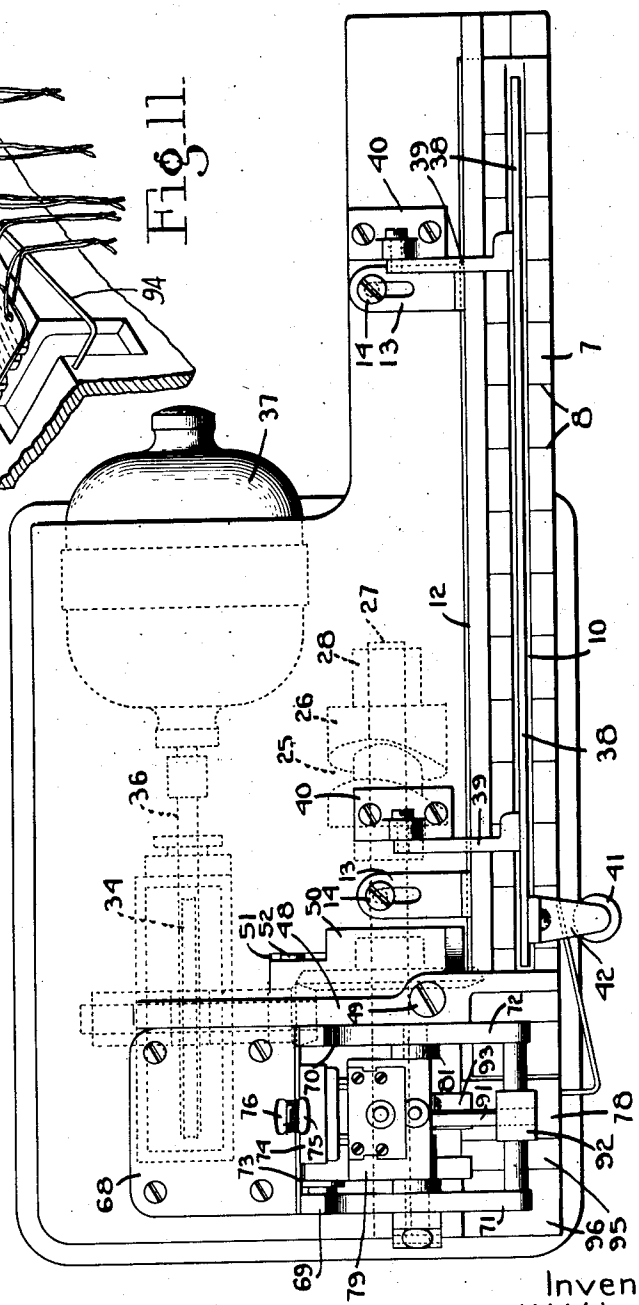


Fig. 11.



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Filed Dec. 12, 1923 4 Sheets-Sheet 3

Fig. 3.

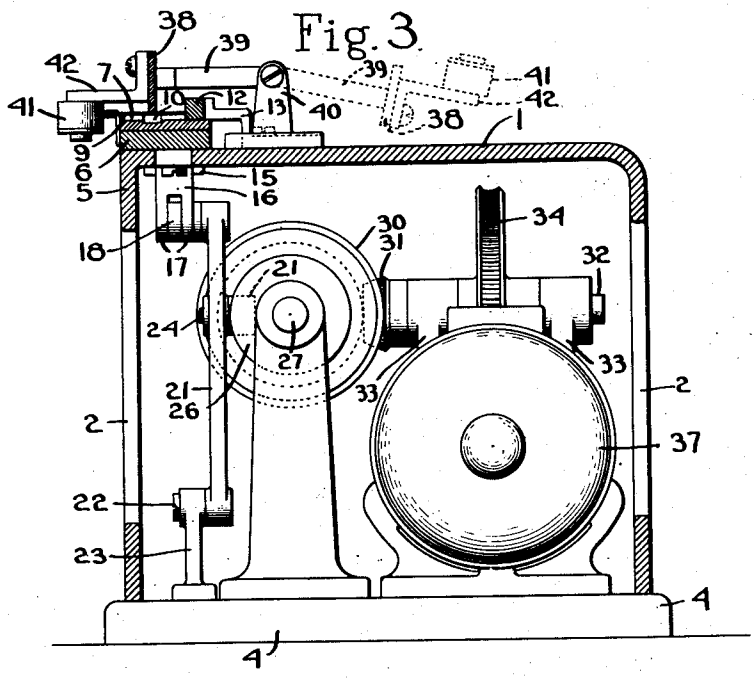


Fig. 5.

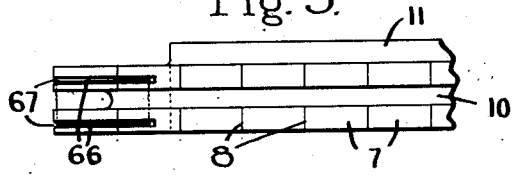


Fig. 7.

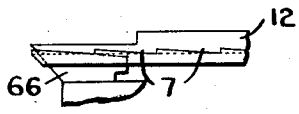


Fig. 4.

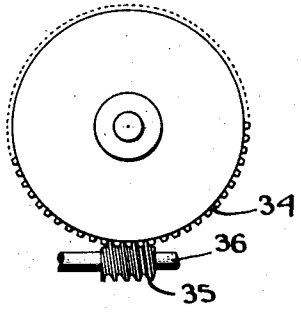
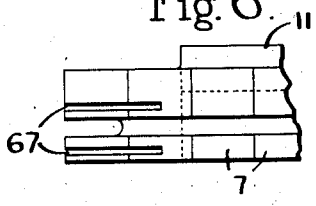


Fig. 6.



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Filed Dec. 12, 1923 4 Sheets-Sheet 4

Fig. 8.

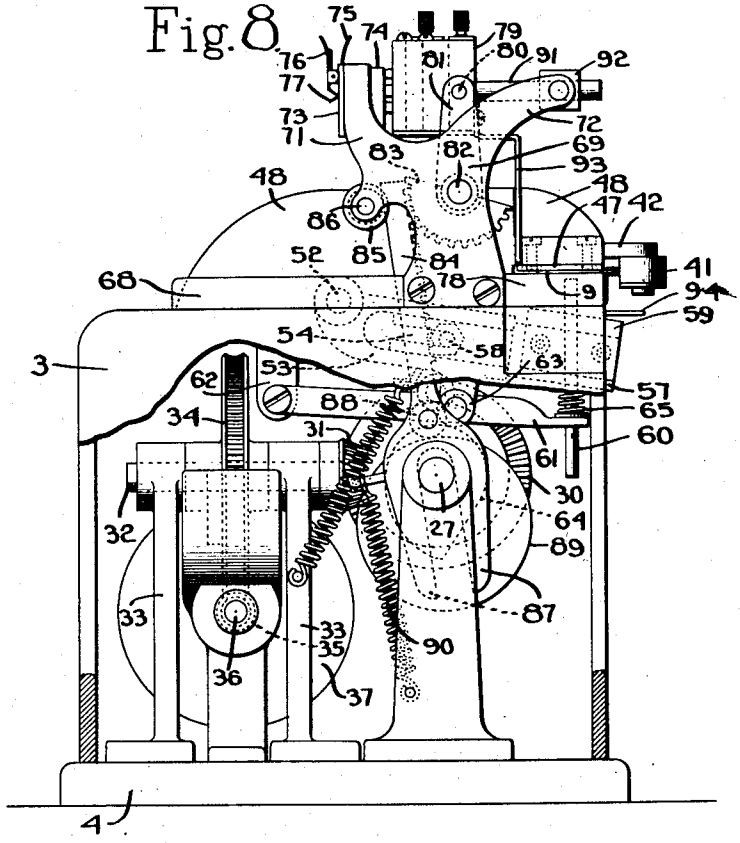
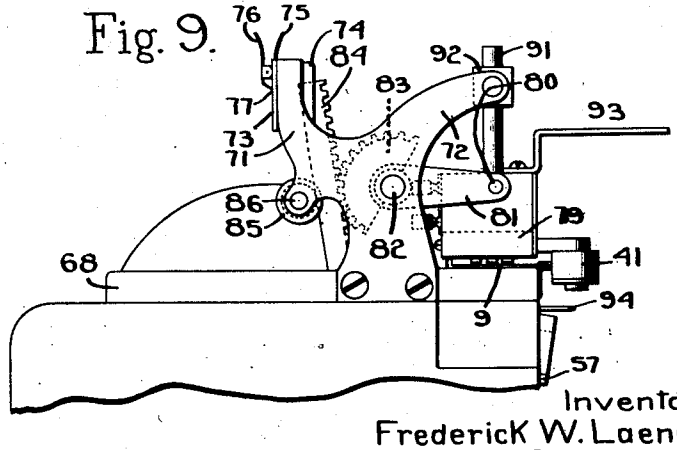


Fig. 9.



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Patented Nov. 22, 1927. 1,650,076

UNITED STATES PATENT OFFICE.

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MACHINE FOR OPERATING UPON TICKET STRIPS.

Application filed December 12, 1923. Serial No. 680,284.

This invention relates to improvements in machines for operating upon a strip of material, such as, a ticket strip and one of the objects of the invention is to provide a novel feeding mechanism operable to present sections of the strip, such as tickets, more accurately to the mechanism or mechanisms which operate upon the strip than has heretofore been provided in machines of like character.

A further object of the invention is to provide a ticket-strip feeding mechanism which will, without adjustment other than the substitution of differently spaced ticket engaging members, properly present to the mechanism for operating upon the strip the tickets of different strips in which the tickets of one strip differ in width from the tickets of other strips.

A further object of the invention is to provide a ticket-strip feeding mechanism which may be readily arranged to present tickets of any desirable length and width to the mechanism which operates upon the ticket.

More specifically the invention has for its object to provide a simple, efficient and practical machine for printing and severing individual marking tickets from a marking ticket strip. Such a strip may be partially printed beforehand with any desired data such as the name and address of an establishment using the marking tickets and this machine employed to print upon each ticket suitable indicia such as of grade, style, price, and so forth.

The ticket-strips employed to produce marking tickets may desirably be notched along one or both edges to provide bevelled corners for the tickets and the present invention contemplates the provision of ticket-strip feeding mechanism which will advance the tickets to the cutting and printing mechanism with such accuracy that the data will be properly and neatly marked upon the ticket and the tickets severed from the strip along lines which intersect the apex or apexes of the notches in the edge of the ticket, thus insuring the production of a neat and symmetrical ticket.

A further object of the invention is to provide a machine in which the feeding, marking and cutting mechanisms are so correlated in their action as accurately to feed, mark and cut the tickets.

A further object of the invention resides in providing means for actuating the feeding, marking and cutting devices from a single cam shaft.

A further object of the invention is to provide a ticket marking machine of relatively simple and of strong construction and in which the parts are readily accessible for repair and replacement.

A further object of the invention is to provide a ticket marking machine operable by an electric motor and suitable to be placed in the hands of unskilled and careless operators.

Other objects and features of the invention will more fully appear from the following description and the accompanying drawings and will be particularly pointed out in the claims.

A preferred embodiment of the invention is disclosed in the accompanying drawings as applied to a ticket-strip marking and cutting machine, in which,

Fig. 1 is a front elevation of the machine;

Fig. 2 is a plan view of the same;

Fig. 3 is a transverse sectional view through the frame and the ticket-strip feeding mechanism showing the actuating mechanism in elevation;

Fig. 4 is a detail view of the worm driving mechanism for actuating the cam shaft;

Fig. 5 is a detail plan view of the forward end portion of the strip feeding bar; and ticket support;

Fig. 6 is a plan view of a wider strip feeding bar adapted to be substituted for that shown in Fig. 5;

Fig. 7 is a side elevation of the forward end of the strip feeding bar; and ticket support;

Fig. 8 is an end elevation of the machine showing the printing head of the printing mechanism in the position in which the type faces engage the inking pad;

Fig. 9 is a detail end elevation showing the printing head of the printing mechanism in the position in which the type faces engage the ticket-strip;

Fig. 10 is a detail view of the cutter and means for actuating the same to sever the ticket-strip; and,

Fig. 11 is a detail perspective view showing a portion of the bed of the machine with the feeding mechanism mounted thereupon engaging the ticket-strip in which the tick-

ets are in the form of string tags and also illustrating means for preventing the severing of the strings as the tickets pass the cutting mechanism.

The machine illustrated in the accompanying drawings comprises a frame having a table or bed 1 with downwardly extending sides 2 and ends 3 which rest upon a base 4 and forms a box-like construction which encloses the power transmitting mechanism through which the mechanisms, which operate upon the tickets, are actuated.

The frame is also provided with a rearward extension 5 to support a ticket feeding mechanism of a desirable length.

By reason of this construction a simple, but rigid frame is provided which is capable of carrying the motor and power transmitting mechanism, but which, however, are shown in the present drawings as mounted upon the base 4.

One of the principal objects of the invention is to provide a novel feeding mechanism for feeding the ticket strips which will accurately position the tickets so that the tickets will be severed along predetermined lines, such as are found in printed ticket strips, or in such a manner that the line of severance will accurately intersect the angle or angles of the notches which define the tickets of the strip.

The feeding mechanism comprises a slide which is reciprocably mounted upon the bed or table 1, preferably adjacent one of the longitudinal edges thereof, and is provided with strip engaging members adapted successively to engage and advance the strip a predetermined distance.

In the particular embodiment of the invention illustrated herein the slide comprises a flat plate 6 which is reciprocably mounted upon the bed or table and a feed bar 7 which is detachably secured to the plate 6 and provided with a series of teeth presenting shoulders 8 which are spaced apart equal distances, not less than the width of the ticket to be operated upon, and adapted successively to engage the end of the ticket-strip 9. The feed bar 7 desirably is provided with a longitudinal way or slot 10 which intersects the teeth and over which a hold-down is located to press the ticket-strip 9 into engagement with the teeth. The feed bar 7 is also provided with a lateral extension 11 which underlies a guide 12 for the inner edge of the ticket-strip. The guide 12 desirably is supported upon brackets 13 which are adjustably secured to the table 1 by screw and slot connections 14 in order that the guide may be properly positioned for ticket-strips of different widths, i. e., for tickets of different lengths.

The slide 6 may be guided in any suitable manner as by blocks 15 secured to the under face of the slide and having extensions or flanges which underlie and slidably engage the under surface of the table. A preferred means for reciprocating the slide comprises a bracket 16 which is secured to the lower face of the plate 6 and which slidably fits within the slot in the table 1, and is provided with a bifurcated end 17 in which the rear end of a link 18 is pivotally mounted upon a stud extending across the bifurcated end of the bracket. The link 18 is connected preferably by a screw and slot connection to another link 19 which is pivotally mounted at its forward end upon a stud 20 upon the upper end of a lever 21 the lower end of which is pivotally mounted upon a stud 22 of a bracket 23 which is secured to the base 4 of the machine.

The lever 21 has intermediate of its ends a laterally extending shaft 24 which preferably is provided with a roller which engages a cam slot 25 in a cam 26 which is fixedly secured to a cam shaft 27 journalled in suitable bearings in standards 28 and 29 mounted upon the base 4. The cam shaft 27 has affixed to it a bevelled gear 30 which is driven by a pinion 31 upon a countershaft 32 which is journalled in the upper ends of suitable standards 33 which are mounted upon the base 4. The countershaft 32 has intermediate of the standards 33 a worm gear 34 which is driven by a worm 35 upon the shaft 36 driven by an electric motor 37.

By reason of this construction a train of gearing is provided which will impart a desired speed of reciprocation to the feeding mechanism. The mechanisms for operating upon the ticket-strip desirably are also actuated from the cam shaft 27, thus insuring proper synchronism of movement between the feeding mechanism and the mechanisms which act upon the ticket-strip.

In order to insure the proper feeding of the strip and its accurate presentation to the mechanism which operates upon it a hold-down is provided to press the ticket-strip down upon the toothed feed bar and means are also provided to engage the outer edge of the ticket-strip and force the inner edge thereof against the guide 12.

The preferred form of hold-down is in the form of a bar 38 which overlies the slot 10 in the feed bar and is carried by arms 39 which are pivotally mounted upon brackets 40 adjustably secured to the bed 1. The guide for the edge of the strip as illustrated comprises a roller 41 which is mounted upon a stud extending downwardly from a bracket 42 which is secured to the hold-down bar 38. By reason of this construction the hold-down and guide may be swung from the operative position illustrated in full lines in Fig. 3 to the inoperative position illustrated in dotted lines to permit the feed strip to be placed upon the feed bar 6. When the hold-down is swung again to operative position it

is pressed down upon the teeth of the feed strip so that upon the forward reciprocating movement of the feed bar the shoulders of one of the teeth will engage the end of the strip and advance the strip, while the engagement of the guide 41 with the outer edge of the strip and the engagement of the guide 12 with the inner edge of the strip will prevent lateral displacement of the strip during the feeding movement. Inasmuch as the slide is always reciprocated through a field of predetermined length the ticket-strip engaging members or teeth will always advance to a predetermined point. By substituting different feed bars 7, (see Figs. 5 and 6), in which the distance between the shoulders of the teeth are properly correlated to the width of the ticket to be fed, ticket-strips having tickets of any desired width may be properly advanced to position the tickets accurately to the mechanism which operates upon the ticket.

In order to provide for the accurate assembling of the machine and also for adjustment if necessary because of wear, the field of reciprocation of the slide may be adjusted by loosening the screws which connect the link 18 to the link 19 and adjusting the slide until the shoulders 8 of the teeth are in proper position to advance the strip exactly the right distance, whereupon the screws may be set up and the adjustment made permanent.

As a further precaution to prevent any overfeeding a stop mechanism is provided to limit the forward movement of the feeding slide. In the particular construction illustrated this is accomplished by a bracket 43 which is secured to the under face of the slide plate 6 and reciprocates in the bed thereby forming an additional guide for the slide and which is provided with a screw 44 the end of which may be positioned to engage an abutment 45 upon a bracket 46 which desirably is secured to the apron of the frame.

Any suitable means may be provided to prevent retrograde movement of the ticket-strip during the rearward movement of the feeding slide within the broad scope of the claims which are addressed to the feeding mechanism. In the preferred embodiment of the invention, however, a special mechanism is provided for clamping the ticket-strip, printing the ticket and severing the printed ticket from the strip. The strip clamping and cutting mechanism illustrated comprises a plate 47 which overlies the end of the feeding slide when in its forward position and presents a hardened ledger plate to co-operate with the movable cutter. The plate 47 is carried by a strong and rigid bracket or casting 48 which extends nearly across the bed and is secured to it by a machine screw 49 or bolt. The bracket 48 desirably is provided with a flange 50 which rests upon the table 1 and also with an extension which projects through a slot 51 in the table and provides a journal for the pivotal shaft 52 of the cutter arm 53. The cutter arm 53 is provided with a longitudinal slot 54 having under-cut walls 55 and 56 in which a cutter bar 57 is slidably mounted. The cutter bar is slotted at one end and is removably secured to the cutter arm by a machine screw 58 so that the cutter bar may be readily removed through a slot in the wall of a frame for the purpose of sharpening the tempered steel cutter 59 which is secured to the free end of the cutter bar 57.

The strip-clamping mechanism illustrated herein comprises a vertical clamping bar 60 which co-operates with the ledger plate 47 and which is slidably mounted in a suitable journal in the frame and passes through the slotted end of an actuating lever 61 which is pivotally mounted upon a bracket 62 extending downwardly from the under face of the bed or table. The lever 61 is provided intermediate of its ends with a cam follower roll 63 which engages the periphery of a cam 64 which is mounted upon the cam shaft 27. A helical tension spring connected to the cutter bar and to the stationary member of the machine, such as the standard 33, holds the follower 63 in contact with the face of the cam 64. A spring 65, surrounding the clamping bar 60 and seated at its lower end upon a washer resting upon the reduced end portion of the lever 61 and at its upper end connected to the clamping bar 60, provides a yielding support for the clamping bar 60 which will enable it properly to clamp the ticket-strip against the plate 47 and hold the strip during the backward movement of the feeding slide.

In order to prevent the last ticket of the ticket-strip from dropping when the clamping slide is moved backward a block 66 is mounted upon the table 1 beneath the plate 47 and is provided with upwardly extending ribs which project into slots 67 in the forward end of the feed bar, so that when the feed bar is withdrawn the last ticket of the strip will rest upon the ribs and will be engaged by the forward end of the feed slide upon its next forward movement and advanced to the printing mechanism.

The eccentric 64 is so formed and positioned upon the cam shaft 27 that the clamping bar 60 will be raised to engage and clamp the ticket-strip at the end of the feeding movement and will retain the strip during the backward movement of the feeding slide, thus enabling the successive shoulders 8 of the teeth upon the feed bar to engage the widest ticket for which the machine is adapted and, of course, to engage the end of the

strip upon its forward movement when tickets of less width are used.

In the preferred embodiment of the invention illustrated the frame of the printing mechanism comprises a plate 68 which is screwed to the bed or table of the machine and has secured to its edges vertical standards 69 and 70 provided at their upper portions with laterally extending arms 71 and 72. The pair of arms 70 is connected by a relatively thin plate 73 against which an inking pad 74 is secured by a suitable clamp which, as illustrated herein, comprises a bracket having an arm 75 connected to the pad and a lever 76 pivotally mounted upon the bracket having its end 77 adapted to engage the rear face of the plate 73. Thus the inking pad can be readily applied to or removed from the machine.

The inking pad is thus supported in angular relation to the plane of the platen 78, which desirably is in the form of fibrous material, and is secured to the table of the machine so that its upper plane surface is positioned to receive the forward end of the ticket-strip as it is advanced by the feeding mechanism.

In the present machine the printing head is pivotally mounted upon a swinging arm and is provided with guiding means which will cause initial and forward substantially rectilinear movements of the head with an intermediate swinging movement which will cause the type face of the printing head to be alternately presented to the inking pad and the platen in directions normal to their respective surfaces.

The printing head 79 is of substantially rectangular form and is provided with trunnions 80 which are pivotally mounted in the upper ends of arms 81 which are rigidly connected to a rock shaft 82 journalled in the standards 69 and 70 of the printing frame. The printing head constitutes a chase holder which preferably carries a chase of the character disclosed in the prior application of Alonzo Kimball Marsh, Serial Number 614,687, filed January 24, 1923.

The rock shaft 82 has secured to it a gear or segment of a gear 83, the teeth of which engage complementary teeth of a rack 84, the upper end of which rests upon a guide roller 85 upon a shaft 86 which is mounted in lugs extending downwardly from the arms 71. The rack 84 is provided with a forked lower end 87 which embraces the cam shaft 27 and is provided with a roller 88 which rests upon an eccentric 89 which is secured to the cam shaft 27. A tension spring 90, secured at its upper end to a lug upon the fork of the rack and at its lower end to a stud upon the supporting standard for the cam shaft, serves to press the cam roller 88 against the cam 89. Thus the rotation of the cam 89 will reciprocate the rack 84 and, acting through the gear 83 will oscillate the rock shaft 82 and its arms 81 which carry the printing head.

A handle upon the rock shaft 82 enables the printing mechanism to be operated to print proofs and single tickets independently of the action of the feeding mechanism as the bifurcated end of the rack 84 permits independent movement of the printing mechanism.

The guiding means for the printing head comprises a shaft 91 which is secured to the side of the printing head opposite to the type faces and extends therefrom in a direction normal to the plane of the type face. The shaft 91 is slidably mounted in a suitable bearing in a preferably rectangular bar 92 having cylindrical ends or trunnions which are rotatably mounted in suitable bearings in the end portion of the arms 71 72 of the standard 69. The axis about which the bar 92 oscillates is located at the intersection of planes normal to the face of the pad and the plane of the platen an equidistance from the pad face and the platen.

In Fig. 8 of the drawings the printing head is illustrated in its initial position with the type faces engaging the inking pad and in Fig. 9 the printing head is shown in its final position with the type faces engaging the platen.

In the operation of the machine starting with the position of the printing head shown in Fig. 8, the upward movement of the rack bar when actuated by the cam 89 causes the arm 69 to swing, toward the right, and its initial movement is in a direction substantially normal to the surface of the inking pad. Upon further movement of the arm the printing head is gradually swung down and is guided by the shaft 91, which is slidably mounted in its bearing in the bar 92, until it approaches the platen. However, the final movement of the printing head toward the platen is substantially rectilinear in a direction normal to the face of the platen. Thus the printing head is properly presented both to the printing pad and to the platen. In the present construction the plane of the inking pad is normal to that of the platen, but it will be understood that other relatively angular positions of the printing pad may be employed within the meaning and scope of the claims.

In order to prevent injury to the hands of the operator a guard 93 is secured to the face of the printing head from which the shaft 91 projects. During the downward swinging movement of the printing head this guard sweeps above the platen in such a manner as to brush the hand of the operator away before the printing head reaches printing position.

One of the features of the invention consists in so correlating the operations of the feeding mechanism, the cutting mechanism and the printing mechanism as to insure maximum accuracy and efficiency of the cutting and printing devices. This is accomplished by the actuation of the feeding mechanism, the cutting mechanism and the printing mechanism from a single cam shaft, the eccentrics and cams being so disposed as first to actuate the feeding mechanism to advance the ticket, then to actuate the clamping device to clamp the ticket firmly against the ledger plate, then to actuate the printing head to print the ticket and also to clamp the ticket beyond the cutter and substantially simultaneously with the clamping movement of the printing head to actuate the cutter to sever the strip intermediate of the printing mechanism and the forward end of the feeding mechanism.

It will be observed that the cutter is wider than the widest strip to be operated upon thereby insuring a clean cut entirely across the ticket-strip.

The machine is illustrated in Figs. 3, 8 and 9 of the accompanying drawings as operating upon pin tickets in which the shanks of the attaching members are shown as extending downwardly along the edge of the feeding slide. In the perspective view, Fig. 11, a strip of string tags is shown in operative position upon the feed bar. In order to prevent the strings of the marking tags from being engaged by the cutter means are provided for deflecting the strings of the tag out of the path of the cutter. The guide shown in Fig. 11 comprises a bar or rod 94 having its ends bent at right angles to the body of the bar and anchored to the bed or apron and outwardly and forwardly inclined with respect to the vertical face of the apron 5, the forward end of the bar being a sufficient distance away from the frame of the machine to deflect the strings out of the path of the cutter.

In the operation of the machine the hold-down may be raised to permit the first ticket strip to be placed upon the feed bar with its end closely adjacent to the path of the cutter. During the first feeding movement the shoulder 8 of one of the teeth on the feed bar will engage the rear end of the strip and advance the strip to the end of its feeding movement at which time the strip will be properly positioned upon the printing mechanism and also in proper relation to the cutter. The clamp is then actuated to clamp the strip and promptly thereafter the printing head is swung down and vertically reciprocated to print the strip. Substantially simultaneously with the engagement of the printing head with the strip the upwardly moving cutter severs the strip. The feeding mechanism is then moved backward, the clamping member being held in clamping position during the entire rearward movement of the cutter after which it is released by its cam and drawn downward by the spring. In the meantime the cutter has been depressed out of the path of the fastening devices of the pin ticket so that the strip may be fed forward by the next movement of the cutter without interference.

During the next forward feeding movement of the feed bar the strip is again advanced and forces the severed ticket across the platen so that it is delivered from the machine and slides down the inclined walls 95 and 96 of the platen and bed to serve as a chute to deliver the severed ticket from the machine to a suitable receptacle (not shown). By providing feed bars, the equally spaced strip-engaging members or teeth of which are properly correlated to the width of the tickets to be operated upon, ticket-strips of any desirable width may be properly fed and by merely adjusting the guide and hold-down mechanism provision may be made for advancing ticket-strips in which the tickets of one strip differ in length from those of the other.

The operation is then continued until the entire strip is printed and the tickets severed therefrom. When the last ticket of the strip is engaged by the foremost shoulder of the feed bar it is held by the clamping mechanism during the rearward movement of the feed bar and upon the release of the clamp is supported upon the ribs of the block upon the presser plate which underlies the ledger plate so that upon the next forward feeding movement of the feed bar it is engaged by the forward end of the feed bar and presented to the printing mechanism. After the first ticket-strip has been introduced into the machine as above described successive ticket-strips may be fed into the machine by inserting their forward ends beneath the rear end of the hold-down and pushing them forward until their forward ends approximately reach the rear end of the preceding ticket-strip. Thus the operation of the machine may be made continuous.

The ticket-strip can be removed from the machine at any time by swinging the hold-down out of engagement with the ticket-strip and withdrawing the ticket-strip from the machine when it is released by the clamping mechanism.

It will be noted that the machine above described is of an exceedingly strong construction although relatively light and that the mechanism comprises a minimum number of parts which are so constructed as to avoid vibration which would tend to displace the tickets during the operation of the machine and that the co-operating mechanisms are so designed and associated as to produce the highest degree of accuracy in

their operations upon the pin ticket-strip.

It will be understood that the embodiment of the invention disclosed herein is illustrative and not restrictive and that the feeding mechanism herein described may be employed to present tickets to other mechanisms for operating upon the ticket and that various changes in construction, form and arrangement of parts may be made within the meaning and scope of the following claims.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is:

1. In a machine for operating upon a ticket-strip, strip-feeding mechanism comprising a movable device having a series of strip-engaging members and means for actuating said device to cause the members of said series successively to engage the end of the strip and advance the strip a predetermined distance.

2. In a machine for operating upon a ticket-strip, ticket-strip feeding mechanism comprising a movable device having a series of strip-engaging members spaced apart a distance not less than the width of the ticket to be operated upon and means for actuating said movable device to cause the members of said series successively to engage an end of the ticket-strip and advance the strip a predetermined distance.

3. In a machine for operating upon a ticket-strip, ticket-strip feeding mechanism comprising a slide having a series of strip-engaging members spaced apart a distance not less than the width of the ticket to be operated upon, means for reciprocating the said slide to cause the members of said series successively to engage the end of the ticket-strip upon the successive forward movements of said slide and advance the strip a predetermined distance and means for preventing retrograde movement of the strip.

4. In a machine for operating upon a ticket-strip, ticket-strip feeding mechanism comprising a slide having a series of strip-engaging members spaced apart a distance not less than the width of the ticket to be operated upon, means for reciprocating said slide to cause the members of said series successively to engage the end of the ticket-strip upon the successive forward movements of said slide and advance the strip a predetermined distance, means for preventing retrograde movement of the strip and means on said bed extending into slots in the forward end of said slide to prevent the last ticket of the strip from dropping and to present the rear end thereof in the path of the forward end of the slide whereby said last ticket will be properly advanced upon the next forward movement of the slide.

5. In a machine for operating upon a ticket-strip, ticket-strip feeding mechanism comprising a slide having a series of teeth presenting shoulders spaced apart at equal distances not less than the width of the ticket to be operated upon, a hold-down acting to press the ticket-strip against the said teeth, means for reciprocating the said slide to cause successive teeth of said series to engage the end of the strip upon successive forward movements of said slide and advance the strip a predetermined distance and means for preventing retrograde movement of the strip.

6. In a machine for operating upon a ticket-strip, ticket-strip feeding mechanism comprising a slide having a series of teeth presenting shoulders spaced apart at equal distances not less than the width of the ticket to be operated upon and provided with a longitudinal way intersecting said teeth, a yieldable hold-down located over said way acting to press the strip against the teeth of said slide, means for reciprocating said slide to cause successive teeth of said series to engage the end of the strip upon successive forward movements of said slide and advance the strip a predetermined distance and means for preventing retrograde movement of the strip.

7. In a machine for operating upon a ticket-strip, ticket-strip feeding mechanism comprising a slide having a series of teeth presenting shoulders spaced apart at equal distances not less than the width of the ticket to be operated upon, means for reciprocating said slide to cause successive teeth of said series to engage the end of the strip upon the successive forward movements of said slide and advance the strip a predetermined distance and means for adjusting the position of the field of reciprocation of said slide, whereby successive portions of the strip may be properly positioned relatively to the mechanism which acts upon the strip.

8. In a machine for operating upon a ticket-strip, comprising a guide positioned to engage one edge of a ticket-strip, a strip-feeding slide having a series of teeth presenting shoulders spaced apart at equal distances not less than the width of the ticket to be operated upon, a hold-down acting to press the ticket-strip against said teeth and provided with means to engage the other edge of the strip and hold the strip against said guide, means for reciprocating said slide to cause successive teeth of said series to engage the end of the strip upon successive forward movements of said slide and to advance the strip a predetermined distance and means for preventing retrograde movement of the strip.

9. In a machine for operating upon a ticket-strip, comprising a guide positioned to engage one edge of a ticket-strip, a strip-

feeding slide having a series of teeth presenting shoulders spaced apart at equal distances not less than the width of the ticket to be operated upon, a hold-down acting to press the ticket-strip against said teeth and provided with means to engage the other edge of the strip and hold the same against said guide, means for adjusting said guide, means for reciprocating said slide to cause successive teeth of said series to engage the end of the strip on successive forward movements of said slide and to advance said strip a predetermined distance and means for preventing retrograde movement of said strip.

10. In a machine for operating upon a ticket-strip comprising a guide in position to engage one edge of a ticket-strip, a strip-feeding slide having a series of teeth presenting shoulders spaced at equal distances not less than the width of the ticket to be operated upon, a hold-down comprising a bar extending longitudinally above the medial portion of said slide and provided with laterally extending arms pivotally mounted to swing about an axis at one side of said slide, means carried by said hold-down to engage the other edge of the strip and hold the same against said guide, means for reciprocating said slide to cause successive teeth of said series to engage the end of the strip upon successive forward movements of said slide and to advance said strip a predetermined distance and means for preventing retrograde movement of said strip.

11. In a machine for operating upon a ticket-strip, a ticket-strip feeding slide having a series of strip-engaging members spaced apart at equal distances not less than the width of the ticket to be operated upon, means for reciprocating said slide, a plate overlying the forward end portion of said slide, means for reciprocating said slide to cause successive members of said series to engage the rear end of the strip upon successive forward movements of said slide and advance the strip a predetermined distance, a clamping member and means for actuating the same to clamp and hold the strip against said plate during the rearward movement of said slide.

12. In a machine for operating upon a ticket-strip, a ticket-strip feeding slide having a series of strip-engaging members spaced apart at equal distances not less than the width of the ticket to be operated upon, means for reciprocating said slide, a plate presenting a ledger blade and overlying the forward end portion of said slide, means for reciprocating said slide to cause successive members of said series to engage the rear end of the strip upon successive forward movements of said slide and advance the strip a predetermined distance, a clamping member and means for actuating the same to clamp and hold the strip against said plate during the rearward movement of said slide, a cutting blade and means for moving the same upwardly into co-operative relation to said ledger blade to sever the strip.

13. In a machine for operating upon a ticket-strip, a ticket-strip feeding slide having a series of strip-engaging members spaced apart at equal distances not less than the width of the ticket to be operated upon, means for reciprocating said slide to cause successive members of said series to engage the rear end of the strip on forward movements of said slide and advance the strip a predetermined distance, a clamping member and means for actuating the same to clamp and hold the strip against said plate and during the rearward movement of the slide, said slide having a slot at its forward end portion to receive said clamping member and permit rearward movement on the slide during the clamping action of said clamping member.

14. In a machine for operating upon a ticket-strip, a ticket-strip feeding slide having a series of strip-engaging members spaced apart at equal distances not less than the width of the ticket to be operated upon, a plate presenting a ledger blade overlying the forward end portion of said slide, means for reciprocating said slide to cause successive members of said series to engage the rear end of the strip upon successive forward movements of said slide and advance the strip a predetermined distance, a clamping member, means for actuating the same to clamp and hold the strip against said plate during rearward movements of said slide, a cutting blade of greater length than the width of said strip and means for moving said blade upwardly into co-operative relation to said ledger blade to sever the strip.

15. In a machine for operating upon a ticket-strip, a ticket-strip feeding slide having a series of strip-engaging members spaced apart at equal distances not less than the width of the ticket to be operated upon, a plate presenting a ledger blade overlying the forward end portion of said slide, means for reciprocating said slide to cause successive members of said series to engage the rear end of the strip upon successive forward movements of said slide and advance the strip a predetermined distance, a clamping member, means for actuating the same to clamp and hold the strip against said plate during rearward movements of said slide, a cutting blade of greater length than the width of said strip and means for moving said blade upwardly into co-operative relation to said ledger blade to sever the strip and guiding means positioned to

engage flexible attaching devices, when carried by the tickets, and to divert said attaching devices from the cutting field.

16. In a ticket marking machine comprising a single strip feeding mechanism and printing mechanism and means for actuating the feeding mechanism in synchronism with the printing mechanism to present tickets successively to the printing mechanism, and manually operable means for actuating the printing mechanism independently of the feeding mechanism and while the strip feeding mechanism is at rest whereby proofs and single tickets may be readily printed.

17. In a ticket marking machine, a bed, a cam shaft and means for rotating the same, a ticket-strip supporting slide reciprocably mounted on said bed having a series of members operable successively to engage the rear end of the ticket-strip upon successive forward movements of said slide, a plate overlying the forward end of said slide and presenting a ledger blade, a clamping member located below said plate, a movable cutter normally located below said ledger blade in co-operative relation thereto and means operable from said cam shaft to actuate respectively said slide, clamping member and cutter in co-ordinated relations, to advance the ticket-strip then to cut and clamp the same and to hold the ticket-strip during the rearward movement of the slide.

18. In a ticket marking machine, a bed, a cam shaft and means for rotating the same, a ticket-strip supporting slide reciprocably mounted on said bed having a series of members operable successively to engage the rear end of the ticket-strip upon the successive forward movements of said slide, a plate overlying the forward end of said slide and presenting a ledger blade, a clamping member located below said plate, a movable cutter normally located below said ledger blade in co-operative relation thereto, a printing head located above and a co-operating platen located below the path of the ticket-strip and means independently operable from said cam shaft to actuate respectively said slide, clamping member, printing head and cutter in co-ordinated relations successively to advance the ticket-strip then clamp and print the same and to sever the strip during the engagement of the printing head therewith and to retain the strip during the rearward movement of said slide.

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

FREDERICK W. LAENCHER.