Sept. 27, 1932. F. KOHNLE 1,879,875

MARKING MACHINE

Filed July 14, 1930 6 Sheets-Sheet 1

Fig. 1.

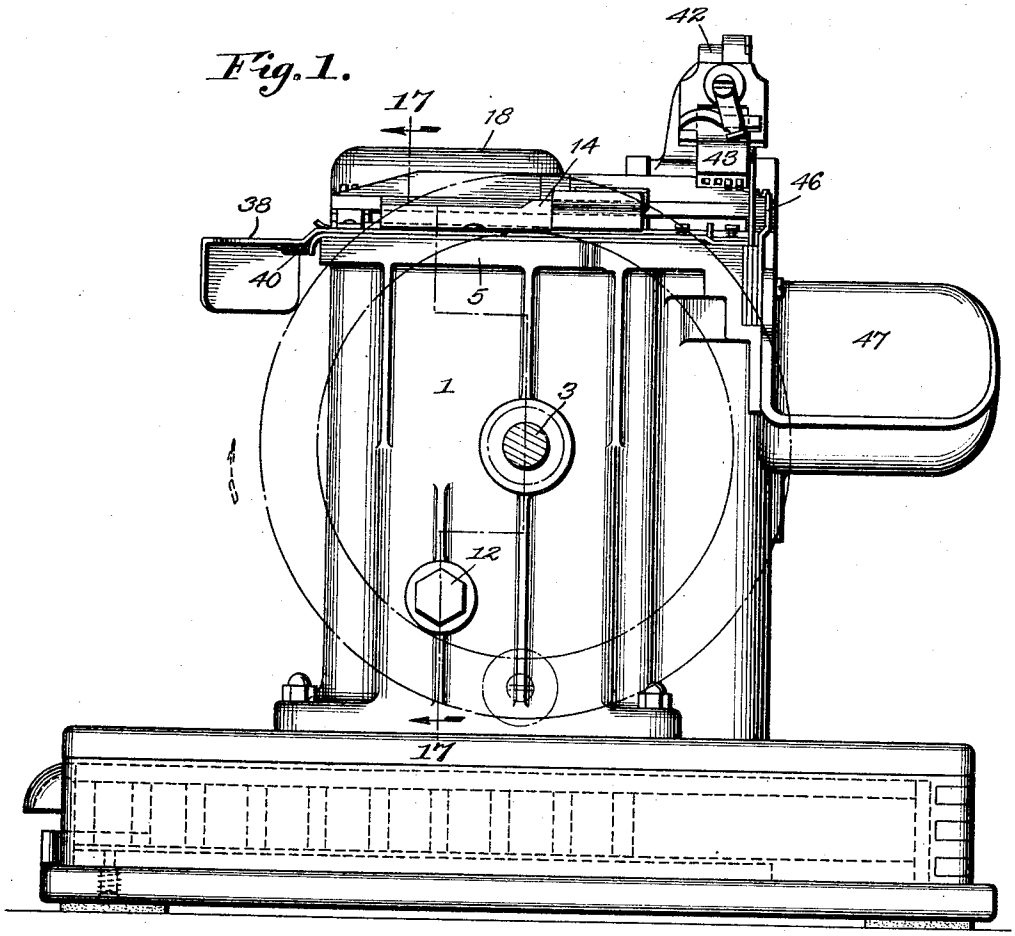


Fig. 2.

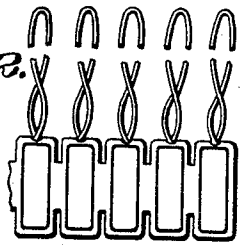


Fig. 3.

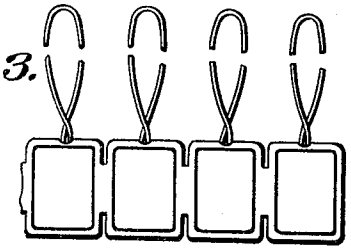


Fig. 4.

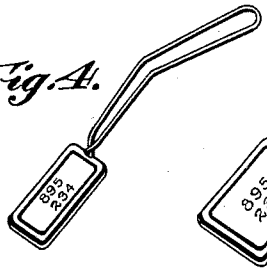
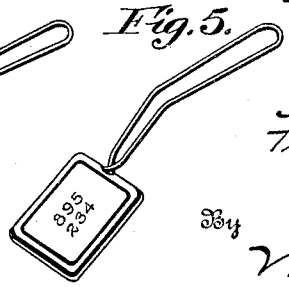


Fig. 5.



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Fig. 6.

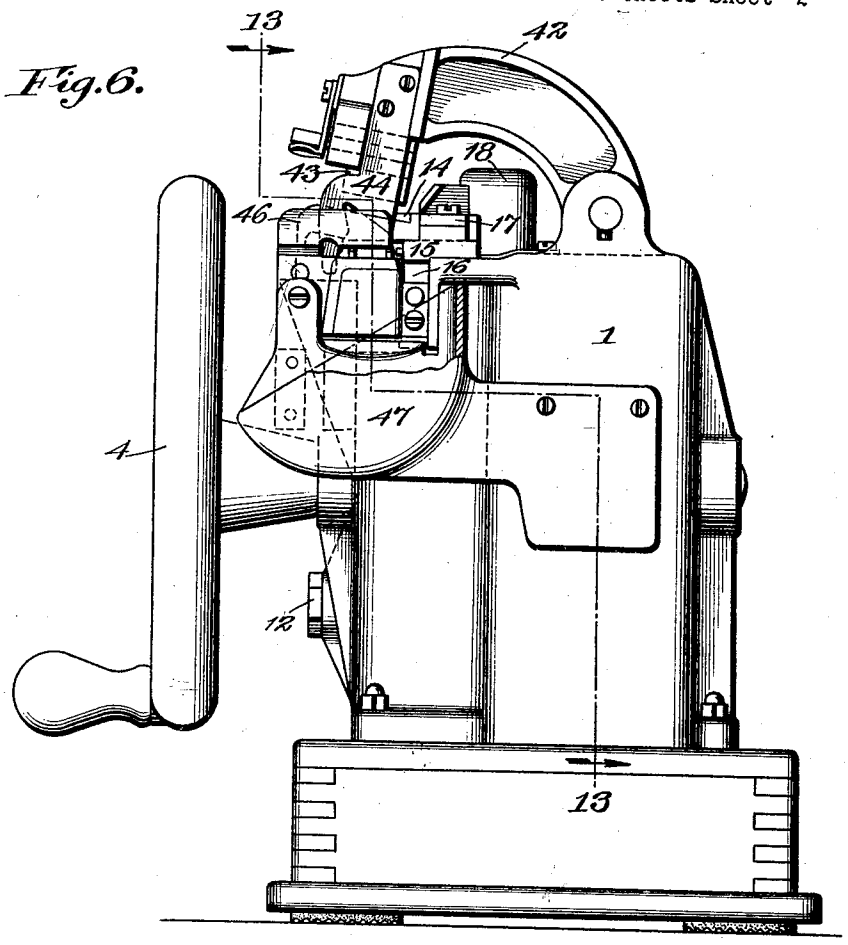
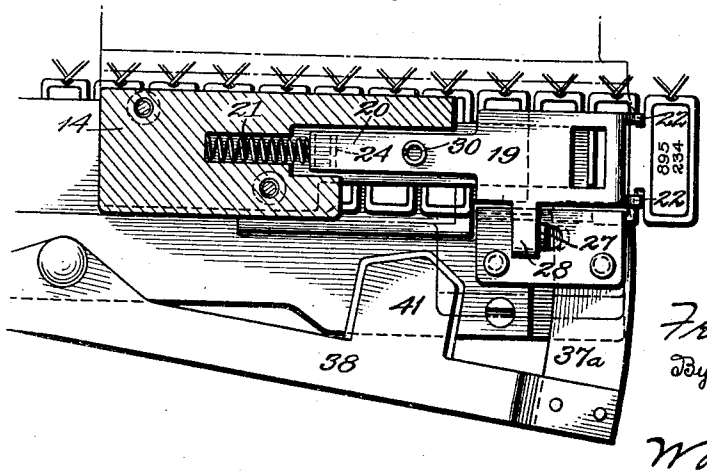


Fig. 7.



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Fig. 8.

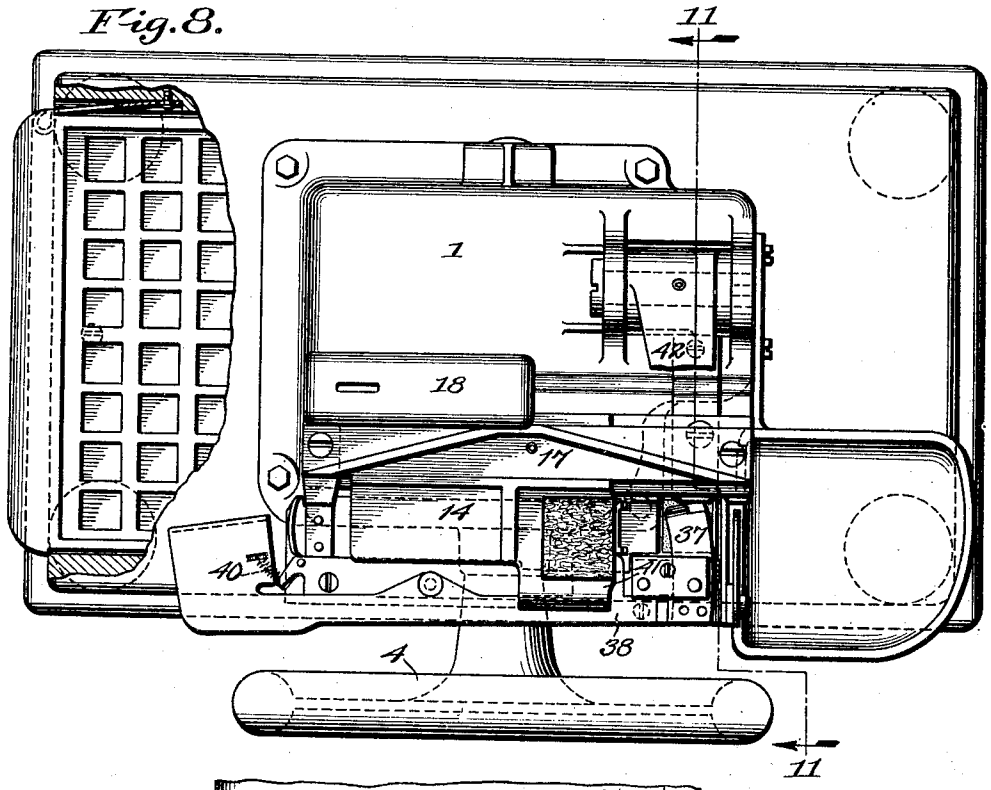


Fig. 9.

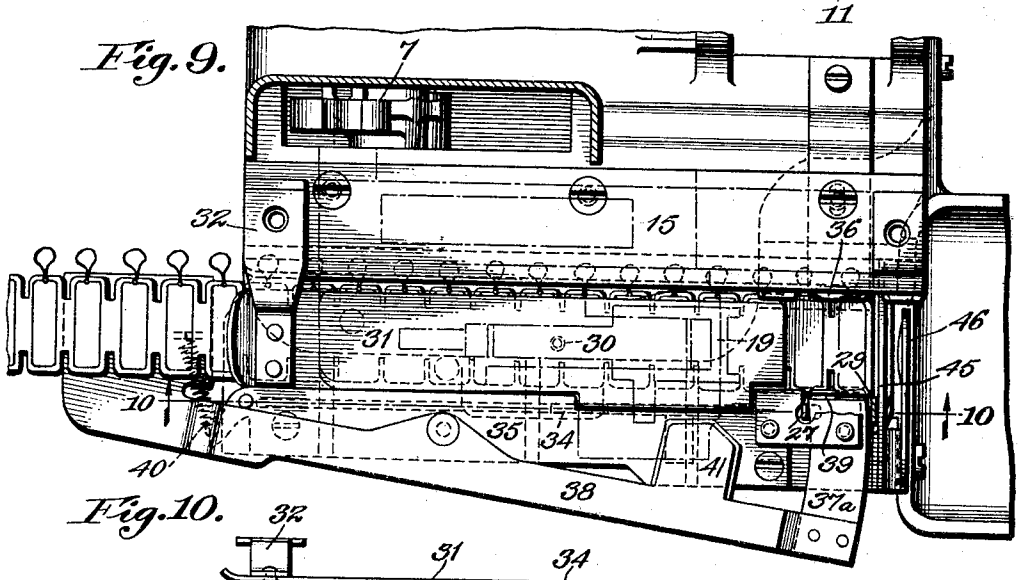
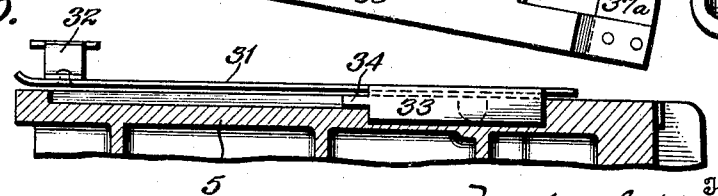


Fig. 10.



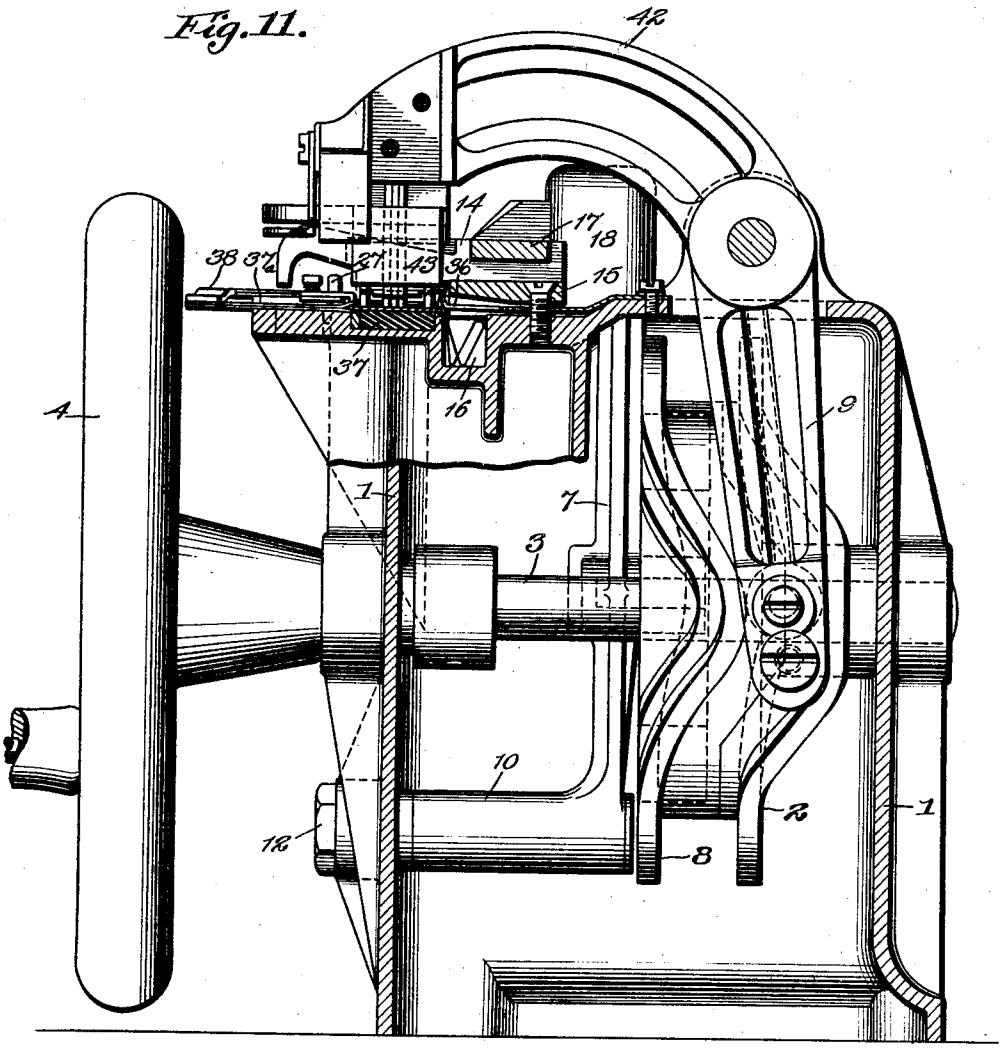
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Fig. 11.



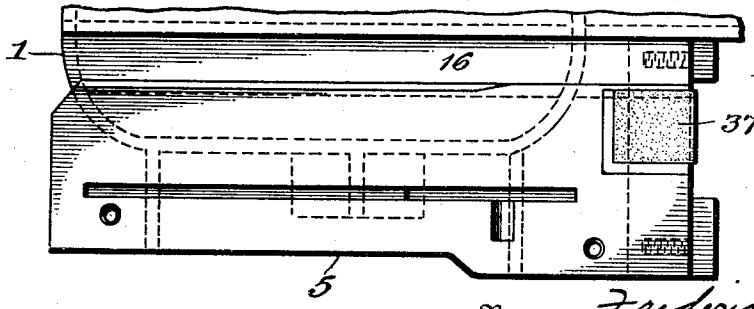


Fig. 12.

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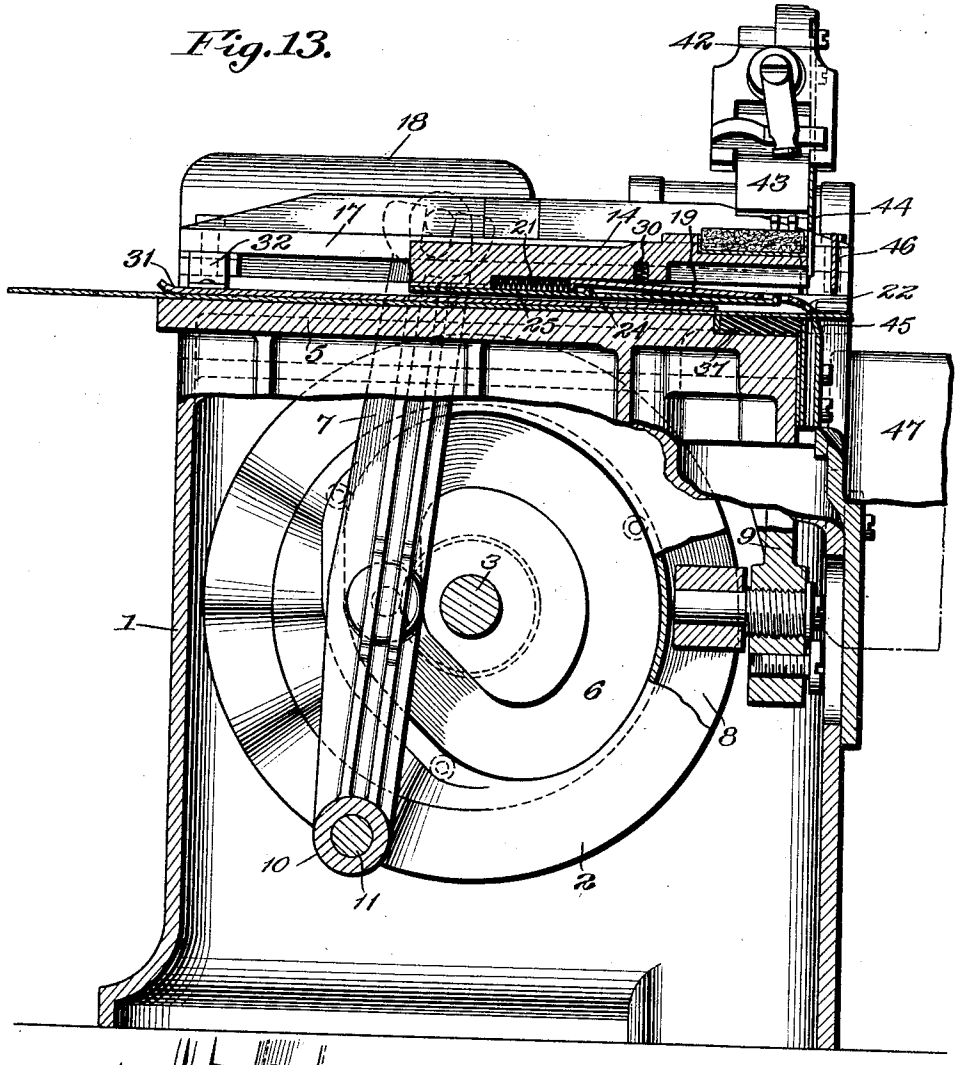
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MARKING MACHINE

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Fig. 13.



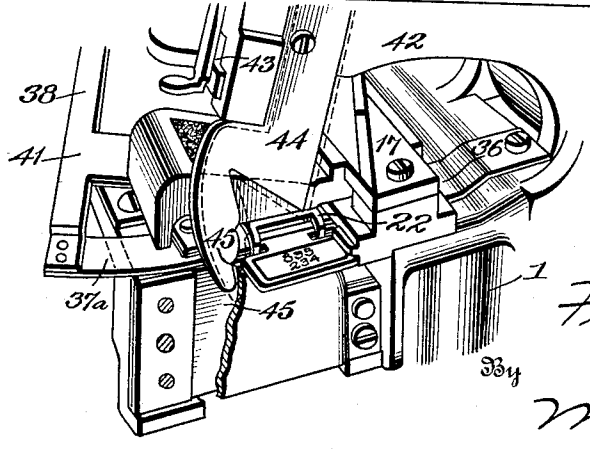


Fig. 14.

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Fig. 15.

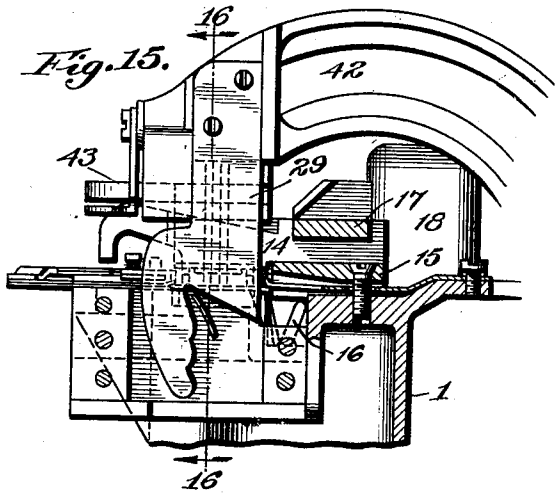


Fig. 16.

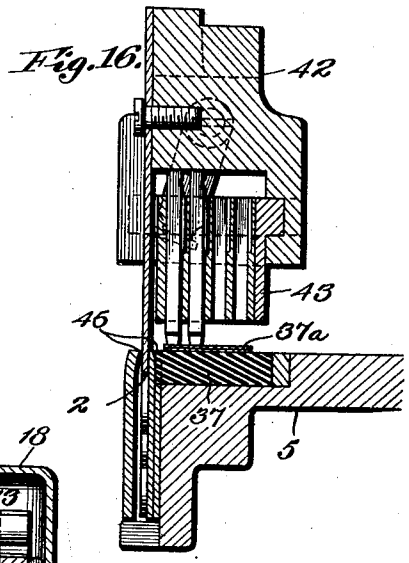
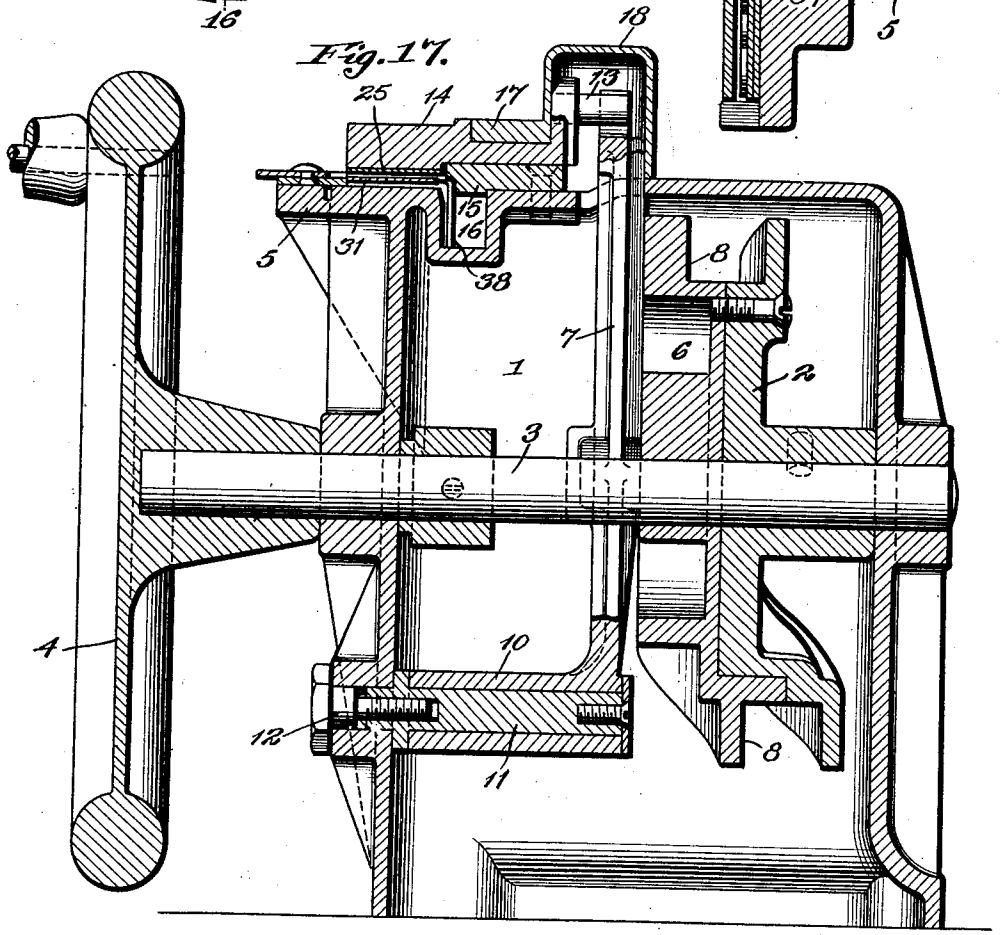


Fig. 17.



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Patented Sept. 27, 1932 1,879,875

UNITED STATES PATENT OFFICE

FREDERICK KOHNLE, OF DAYTON, OHIO, ASSIGNOR TO THE MONARCH MARKING SYSTEM COMPANY, OF DAYTON, OHIO, A CORPORATION OF OHIO

MARKING MACHINE

Application filed July 14, 1930. Serial No. 467,839.

This invention relates to improvements in tag or ticket price marking machines and particularly to machines wherein the tags in gang form are utilized and constituting a strip of paper having definitely spaced notches cut from one or opposite longitudinal edges thereof, the notches defining the width of the tags and providing shoulders for engagement by feeding mechanism of the machine for intermittently advancing the strip, successively bringing the tags beneath a printing device for printing upon the foremost tag of the strip and severing a printed tag from the strip along the notch or notches to dispense the same. In severing the tags it is desirable to make a die cut corresponding to the width of the notch or aligned notches at opposite longitudinal edges of the strip to cut continuous therewith for producing a flush cut edge for the tag or ticket. This necessitates accurate feeding of the strip to bring each notch in absolute registry with the cutting dies.

It is, therefore, an object of the invention to improve the structure of the feeding mechanism to make the same more simple and durable and to increase its efficiency.

The printing mechanism for printing the marking data upon a tag makes an impression in each operating cycle of the machine as no provision is made for cutting it out nor to alter its degree or stroke as this would complicate the structure, therefore, if the machine is operated empty or no tag be present to be printed upon, an impression would be made upon an impression platen, recessed in the table of the machine which is usually of rubber to provide a cushion, which will transfer the ink to and smudge the under side of a tag stationed on the platen. This is very objectionable and is avoided by providing a movable guard for covering the impression platen which is held out by the tags or tag strip when the machine is loaded and snaps into place as soon as the last ticket of the strip is dispensed from the machine. In starting it is desirable to run the machine idly for one or more cycles preliminarily for inking the type. This is done, as the impression stroke is first in order in an operating cycle which is preferred, to print upon and dispense the tag in one operating cycle of the machine and the inking of the type follows after the feeding mechanism, which carries the inking pad, comes to rest at the limit of its feeding stroke positioning the inking pad over the impression platen and beneath the printing mechanism.

Another object of the invention is to protect the impression platen against the deposition of ink thereon by a guard movable to cover the platen when the machine is unloaded and retracted by the work or tag strip as the strip moves over the printing platen.

Figure 1 is a front elevation of the machine with the operating hand wheel shown in dot and dash lines.

Figs. 2 and 3 illustrate sections of gang tag strip of two different sizes of tags known as jewelery tags, and represents one style of tags which are operated upon by the machine for printing the price marking data upon the tags and severing the individual tags from the strip. Strips of several sizes of tags can be fed into the machine without making any adjustments for feeding.

Figs. 4 and 5 represent perspective views of individual tags comprised in the respective strips illustrated in Figs. 2 and 3.

Fig. 6 is an end elevation of the machine and Fig. 7 is a plan view with parts in section of the tag strip feeding magazine in the position it occupies at the end of its forward stroke advancing the foremost tag of the strip to a position to be severed from the strip by a cutting die or knife cutting the tag strip continuous with an aligned set of notches cut into the opposite edge of the strip, the notches being employed to provide shoulders for cooperation with a reciprocating plunger or feeder, its forward end engaged into a pair of notches during the latter part of its forward or feeding stroke.

Fig. 8 is a top plan view of the machine with portions of the base of the cabinet cut away to illustrate the type holding drawer.

Fig. 9 is a fragmentary top plan view, enlarged, of the table portion of the machine charged with a strip of tags with the parts of the machine above the table removed or omitted.

Fig. 10 is a vertical, longitudinal, sectional view on line 10—10, Fig. 9 showing the upper magazine plate and its alignment in the longitudinal groove of the machine block.

Fig. 11 is a vertical cross section through the machine taken on line 11—11, Fig. 8, showing the position of the swinging printing head depressed for printing the price marking data upon a tag.

Fig. 12 is a fragmentary top plan view of the table portion of the machine with the parts mounted thereon, removed.

Fig. 13 is a section on line 13—13, Fig. 6 showing the moving parts in a position for ejecting a tag with the printing head in a position for inking the type bearing against an ink pad mounted within a reciprocating slide.

Fig. 14 is a perspective view with parts in section looking down upon the forward end upon an ejected end of the machine showing a foremost tag of the strip in an advanced or extended position ready to be severed from the strip.

Fig. 15 is a vertical section through the table taken on a line with the cutter used for severing the tags from the strip. The view illustrates the cutter in its depressed position when the tag is completely severed from the strip.

Fig. 16 is a section on line 16—16, Fig. 15, and Fig. 17 is a section on line 17—17, Fig. 1.

Referring to the drawings, 1 indicates the main housing or casing frame of the machine, preferably molded of a composition material "bakelite." Many other parts of the machine are molded of the same material making a structure very light in weight and possessing the necessary durability. It has been experienced that parts made of such material very aptly serve for bearings, cams, slides or moving parts subjected to friction, and to which lubricants must be sparsely used to avoid smudging the product operated upon in the machine. Also it permits the operation on the machine for extended periods without injury under infrequent lubrication, as operators of the machine usually are very negligent in giving attention to lubrication.

The frame provides a closure and journal for a cam wheel 2 fixed upon a shaft 3 journalled in bearings formed in the front or rear walls of the frame and the forward end of the shaft 3 extends beyond the front wall of the casing or frame, and is provided with a hand wheel 4.

The top of the casing frame is provided with a forwardly projecting ledge 5 serving as a table and track upon which the tag strips are supported and conveyed to successively bring the tags of the strip beneath a swinging printing head for printing the desired data upon the tags, after which the printed tag with the strip is advanced to eject or dispense the foremost printed tag of the strip from the machine after it has been severed from the strip.

The cam wheel 2 is composed of sections secured together, the sectional form making the same to be more convenient in mold. The forward face of the cam wheel is provided with a camway 6 for oscillating a lever or pitman 7 actuating the tag feed mechanism for feeding or advancing the tag strip intermittently or in step degrees over the table to eject or dispense the foremost tag of the strip from the machine and after the marking data has been printed thereon.

The periphery of the cam wheel 2 is provided with a camway or groove 8 for actuating a lever 9 of the printing mechanism. The cam 2 operates the levers 7 and 9 at relative time intervals, and in an operating cycle first swings the lever 9 to depress its printing head for printing the desired data upon the foremost tag of the strip, retreating the printing head, then moving the reciprocating tag strip feeding mechanism allowing the same to dwell at the forward limit of its stroke for a second depressing movement of the type head to bring the type carried thereby in contact with an inking pad 8 recessed within the forward end of a reciprocating slide of the tag feeding mechanism for inking the type, whereupon the printing head is again retreated and the tag feeding mechanism in order follows in its retreated motion.

The lower end of the lever of the pitman 7 is provided with a laterally extended hub or sleeve 10 concentrically about a stud 11 fixed to and extending from the forward wall of the casing. The stud is provided with an annular flange at its forward end which bears against the inner surface of the front wall of the casing and is clamped thereto by a screw 12 engaged through a bore in the boss in the casing and screw threaded in the end of the stud with the end of the stud socketed in said casing boss.

The pitman is provided with a laterally extended pin carrying a roller engaged into the camway 6 of the cam wheel. The upper end of the lever or pitman 7 is forked and engages with a pin 13 laterally extending from a slide member or carriage 14 which reciprocates over a table 5. The carriage engages upon a rail plate 15 fixed to the top of the casing 1 and partly overlies the longitudinal groove or channel 16 as a longitudinal recess within the table into which the fastener elements of the tags are conveyed out of way from interference with any of the moving parts of the machine or in any wise impeding the advance or traverse of the tag strip.

In the drawings tag strips employing string fasteners are illustrated. The slide or carriage 14 at its upper side, is longitudinally grooved to provide a slide way for

the stationary guide bar 17 engaged into said longitudinal groove or channel of the carriage and has its opposite ends fixed rigidly to the top of the casing by means of screws, the plate providing a housing extension 18 which caps over the upper end of the pitman and its connection with the carriage so as to completely enclose the same. The guide bar 17 confines the carriage against lateral and vertical displacement.

The under side of the carriage which overhangs the table beyond the channel 17 is longitudinally grooved for recessing a feed finger or plunger 19 having a rearwardly extending tongue portion 20 abuttingly bearing against a spring 21 recessed within a groove on the under side of the carriage (see Fig. 7). The forward end of the finger or plunger 18 is provided with a pair of depending or downwardly projecting tangs 22—22 having butt ends for engaging the shouldered edges of the tags formed by notching the opposite longitudinal edges of the tag strip for connecting the feed finger with the tag strip in each forward stroke of the carriage. Engaging the tag strip at two opposite points provides for more accurately feeding the strip over the table well in longitudinal alignment with guide shoulders along the table, one of the gearing shoulders being provided by the longitudinal edge of the stationary slide plate 15 upon which the carriage slides, a second shoulder being provided by a longitudinal guide plate 23 fixed upon the top of the table.

The feed finger at its rear end or extremity of the tongue 20 is flanged or bent at an angle to engage with an upwardly extending lip 24 punched from a flexible plate 25 having its rear end fixed to the under side of the carriage housing the spring and tongue of the finger with the forward end of the plate 25 flanged or angled to engage into a rectangular slot 26 punched through the forward end of the feed finger or plunger 18.

The feed finger is held against displacement by the plate 25 but free to move longitudinally under and against attention of the spring 21 to compensate for continued or overrun motion of the carriage at the end of a forward or feeding stroke after the feeding motion of the plunger or finger has been arrested by engaging against a stationary pin 27 fixed to and projected upwardly from the upward side of the table.

The feed finger or plunger is provided with a laterally extended arm 28 which is adapted to engage with the stop pin for definitely limiting the feed or feeding motion of the plunger to bring the tag strip or pair of notches into registry with the cutter or knife 29 dependingly extended from the printing head. The plunger or finger 19 is also yieldingly depressed by a spring 30 recessed within the under side of the carriage bearing against the top surface of the tongue 20 of the plunger yieldingly forcing the forward end of the plunger downwardly to bring the tangs into contact with the tag strip and into a pair of aligned notches when reached and brought into registry therewith in a forward stroke of the carriage for feedingly connecting the strip with the carriage. In the preferred arrangement, the tangs of the feed plunger are arranged to engage with the aligned notches between the two foremost tags of the strip so as to directly engage with the tag to be next in order to be operated upon.

A flexible guard plate 31 is mounted above the table to overlie the tag strip with one end of the plate at the receiving end of the table rigidly secured to a bracket 32 fixed to and extending laterally from the rail plate 15 (see Fig. 9), toward the opposite end of the guard plate 31 along one edge and longitudinally thereof.

A downwardly depending flange 33 is formed integral with the plate and engaged into a longitudinal groove in the table (see Fig. 10). This limits the down flexing of the guard plate so that it will not unduly bear upon the tag strip so as to limit the down movement of the guard plate and prevent the same from imposing any friction upon the tag strip.

One end of the flange has a projecting tongue 34 longitudinally extending therefrom adapted to underlie a stationary guide plate 35 fixed to the top of the table.

The inner longitudinal edge of the guide plate 35 and the opposite edge of the rail plate 15 form a channel or way or provide opposite guiding edges between which the tag strip is confined in its traverse over the table. The tags as they are advanced beneath the printing mechanism slightly beyond the end of the guard rim 31 have their margin adjacent the rail plate engaged by a spring blade 36 functioning to hold the tag upon an impression plate or cushion 37 recessed within the table. This is of advantage particularly when feeding book labels into the machine which comprises double loose leaves folded to lie one upon the other presenting a fold edge and a pair of loose edges with the strip in the machine to bring the loose edges adjacent the guard rail 15 and thus are engaged beneath the spring blade 36 holding the uppermost leaf down upon the other and preventing the material from being buckled or otherwise disturbed in a manner which would interfere with the feed of the strip.

To prevent making an impression upon the impression pad or platen, if the machine is operated without tags or if the strip has been completely fed through, which if permitted acts as a printing blanket smudging the lower side of the tags as the strip is advanced over the impression pad, the ma-

chine is provided with a movable guard which swings into place above the impression pad as soon as the last tag of the strip is ejected, thus covering the impression pad.

The guard comprises a thin plate 37ª extending laterally from a lever 38 pivotally mounted upon the guide plate 35. The opposite end of the lever 38 is formed to provide a finger hold at the receiving end of the machine so that it can be conveniently manipulated when inserting a tag strip to move the guard plate 37ª outwardly to uncover the impression pad.

The forward end of the guard 37ª has an upwardly projected flange 39 adapted to contact with an edge of the tag strip, whereby the tag strip holds the guard outwardly against the tension of a spring 40 connecting with the lever 38, one end of the spring being fixed to the lever and the opposite end to the stationary guide plate 35. Thus, as soon as the strip is advanced through the machine to move the last tag of the strip beyond engagement with the flange, the lever will be automatically swung to bring the guard plate 37 over the impression pad to cover the same. The guard being of very thin sheet material not exceeding the thickness or gauge of the paper strip will not injure the face of the type when impressed thereon.

The lever 38 is provided with a tongue 41 extending in a direction corresponding with the guard 37 serving when the lever is in its normal position with the guard covering the impression pad as a fender for the feed plunger 19. The arm 28 of the feed plunger is adapted to slide upon the tongue 41, raising or elevating the forward end of the plunger and sustaining the same in such position during the reciprocating motions of the carriage to prevent the tangs from engaging with the edge of the guard plate which would cause injury to the parts. The fender, when the lever 38 is retracted, is clear of the arm allowing the arm to descend its full limit so that the tangs of the feed plunger are engaged or bear upon the tag and drop into an aligning pair of notches in the strip when registering therewith for advancing or feeding the strip with the forward stroke of the carriage.

The printing mechanism in detail of construction as heretofore employed in machines of this class with the lever 9 actuated by the cam 2 has an arm 42 overhanging the casing and table portion thereof at the dispensing end of the machine with its free end removably supporting a type chase 43 and a cutter or die plate 44 rigidly fixed to the lever arm 42 adjacent one side of the chase.

The cutter moves between a pair of stationary blades 45—45 fixed to the end of the table adjacent the impression pad and provided with a depending tongue which is constantly engaged between the stationary blades for maintaining the alignment and registration of the movable blade with the stationary blades. The knife is protected by a guard 46 fixed to the forward end of the table and extends above the plane of the table and the forward end of the table is also provided with a tray 47 for collecting the tickets or tags as severed from the strip.

Having described my invention, I claim:

1. In a machine of the class described, means for supporting and guiding a tag strip, the strip notched at definitely spaced intervals at opposite longitudinal edges thereof, a carriage reciprocating over said strip supporting means, a plunger carried by said carriage, spring tensioned for moving independently longitudinally of the carriage traverse, the forward end of said plunger provided with a pair of spaced tangs for engagement with a pair of aligned notches for advancing the strip, said plunger yieldingly depressed for bearing upon the strip and snap the tangs into the notches when brought into registry therewith and a rigid stop for limiting the strip in advance of said plunger.

2. In a machine of the class described, means for supporting and guiding a tag strip, a carriage reciprocating over said strip supporting means, a plunger carried by said carriage, spring tensioned for moving independently longitudinally of the carriage traverse, the forward end of said plunger engageable with the strip to advance the same, said plunger yieldingly depressible for bringing the same into engagement with the strip and a rigid stop for limiting the strip in advance of said plunger.

3. In a machine of the class described, means for supporting and guiding a tag strip, the strip notched at definitely spaced intervals at opposite longitudinal edges thereof, a carriage reciprocating over said strip supporting means, a plunger carried by said carriage longitudinally movable upon the carriage against the tension of a spring to compensate for excess of carriage motion over the plunger, the forward end of said plunger depressible and provided with a pair of spaced tangs for engagement with a pair of aligned notches to advance the strip, and a rigid stop for limiting the strip in advance of said plunger.

4. In a machine of the class described, means for supporting and guiding a tag strip, a carriage reciprocating over said strip supporting means, a plunger carried by said carriage longitudinally movable upon the carriage against the tension of a spring to compensate for excess carriage motion over that of the plunger, the forward end of said plunger depressible for engagement with the tag strip to advance the same, and a rigid

stop for limiting the strip in advance of said plunger.

5. In a machine of the class described, a casing, a table extending horizontally from one side of the upper end of the casing, the table providing a guide way for the tag strip, a carriage reciprocable over the table having means for engaging with the tag strip in a forward stroke thereof to intermittently advance the strip, said carriage longitudinally having a lateral extension slidably supported upon the casing, the extension longitudinally channeled, and a stationary guide bar fixed to the casing and engaged into said channel for slidably mounting the carriage to the casing.

6. In a machine of the class described, a casing, a table extending horizontally from one side of the upper end of the casing, the table providing a guide way for the tag strip, a carriage reciprocable over the table having means for engaging with the tag strip in a forward stroke thereof to intermittently advance the strip and provided with a longitudinal channel and a stationary guide bar fixed to the casing and engaged to said channel for slidably mounting the carriage to the casing and over the table.

7. In a machine of the class described, a casing, a table extending from said casing providing a guide way for the tag strip, a carriage reciprocable over the table having means for engaging with the tag strip in a forward stroke thereof to intermittently advance the strip, a printing device movable to impress its type upon the foremost portion of the tag strip, and a thin blade guard held in retracted position by the tag strip, and automatically moved to cover the portion of the table beneath the printing device when released by the tag strip.

8. In a machine of the class described, a casing, table providing a guide way for the tag strip, a carriage reciprocable longitudinally of the table having means for engaging with the tag strip in a forward stroke thereof to intermittently advance the strip, a printing platen at the tag dispensing end of the table, and a guard covering the printing platen adapted to be retracted by the tag strip to uncover the platen.

9. In a machine of the class described, a casing, a table for supporting a tag strip, means for feeding the strip in step degrees to bring a tag thereof upon a printing platen of the table, and a guard held in a retreat position by the tag strip for automatically covering the printing platen when the tag supply on said table has been exhausted.

In witness whereof, I hereunto subscribe my name.

FREDERICK KOHNLE.