

June 14, 1938.

F. KOHNLE

2,120,936

INKING MECHANISM FOR MARKING MACHINES

Filed Aug. 26, 1937

2 Sheets-Sheet 1

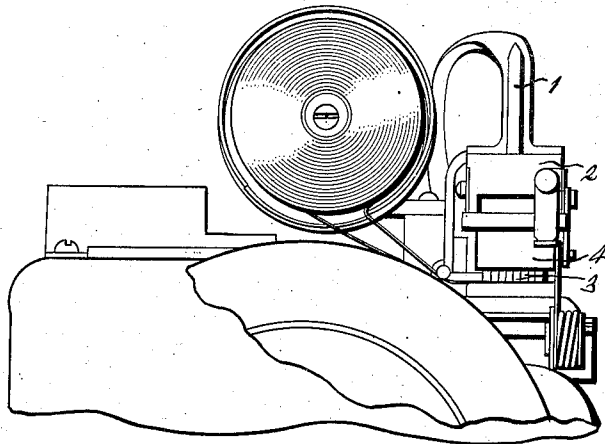


Fig. 1

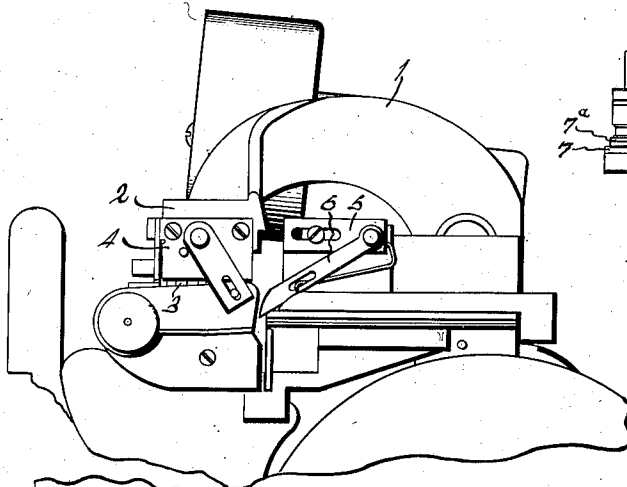


Fig. 2

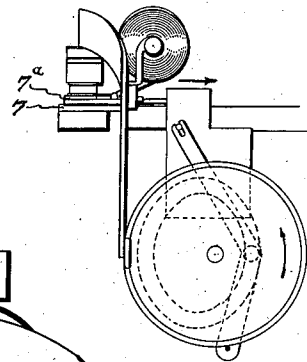


Fig. 7

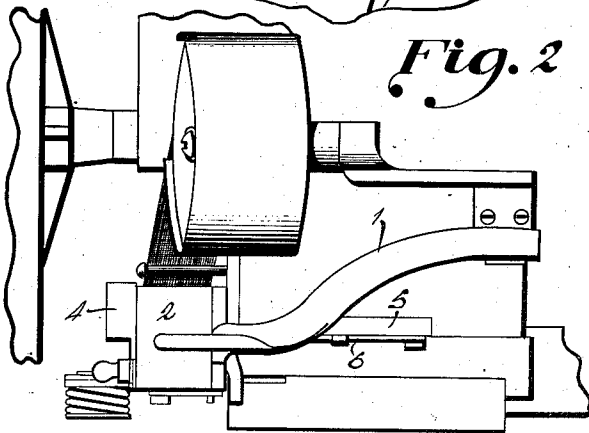


Fig. 3

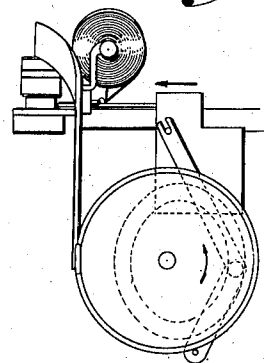


Fig. 8

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2 Sheets-Sheet 2

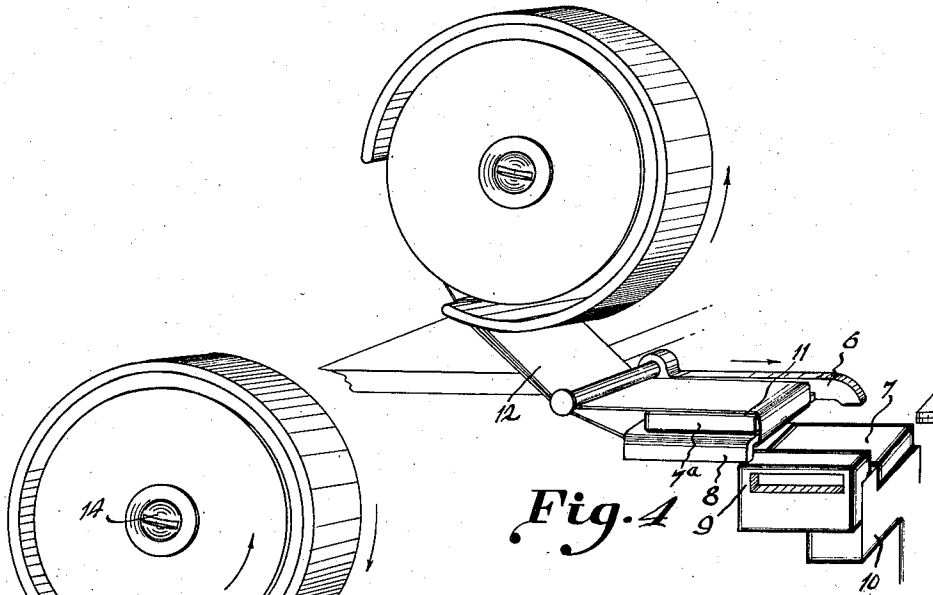


Fig. 4

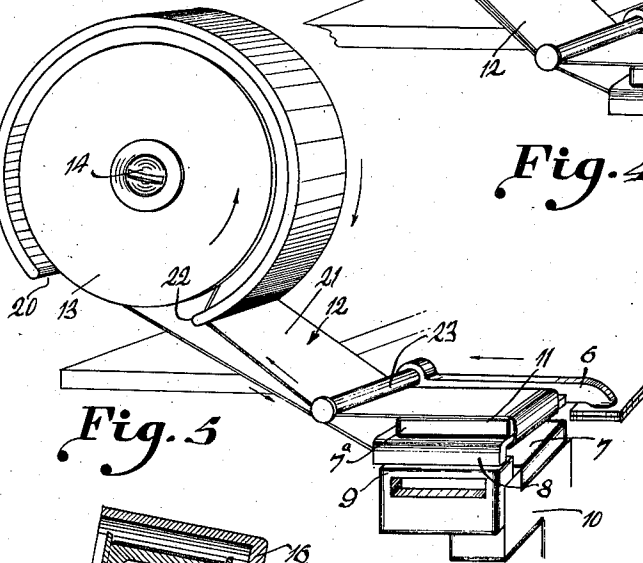


Fig. 5

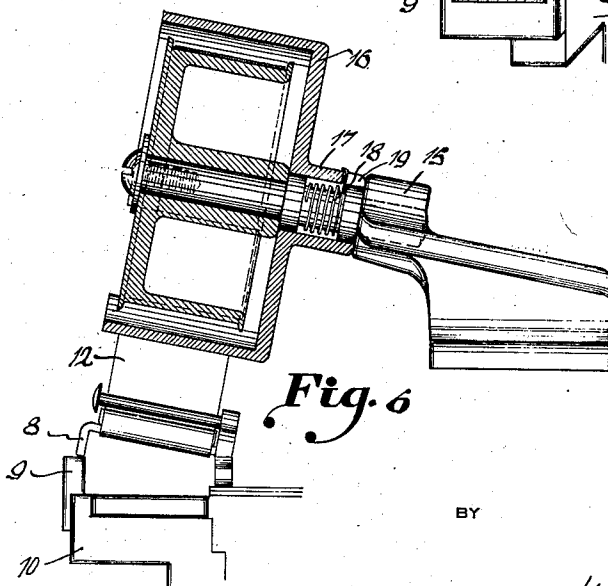


Fig. 6

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2,120,936

INKING MECHANISM FOR MARKING
MACHINESFrederick Kohnle, Dayton, Ohio, assignor to The
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Ohio, a corporation of Ohio

Application August 26, 1937, Serial No. 161,013

6 Claims. (Cl. 101—336)

This invention relates to improvements in inking mechanism for printing machines of the character such as price-marking or ticket issuing machines, and employs an endless inking ribbon having a portion looped over or engaged about a platen or carrier to sustain a section thereof for impressing type thereon for inking.

The platen is reciprocated for bringing the same beneath the type and intermittently advance or feed the ribbon over the platen.

An object of the invention is to provide a ribbon mechanism employing an endless ribbon for inking type, having a portion thereof engaged over a platen, upon which the type is impressed for inking, and feeding or advancing the ribbon for repeatedly changing its spread over the platen, thereby subjecting a different section thereof to the action of the type for each inking operation and rendering available the full length of the ribbon.

Another object of the invention is to provide a ribbon mechanism for inking type, in the form of an endless belt engaged over a platen, and an idler sheave or wheel, together with a slack take-up, operative for controlling the tautness of the ribbon and for translating the same.

Other objects and further advantages of the invention will be more fully set forth in a description of the accompanying drawings, in which:

Figure 1 is a front elevation of the upper portion of a price marking machine embodying the improved ribbon mechanism, employing an endless ribbon for inking the type used in printing the price marking data upon tags which are applied to merchandise.

Figure 2 is an end elevation of the portion of the machine shown in Figure 1.

Figure 3 is a top plan view thereof.

Figure 4 is a perspective view of the ribbon mechanism in a retracted or retreat position, away from the type.

Figure 5 is a perspective view similar to Figure 4, with the ribbon mechanism in a position for inking the type.

Figure 6 is a side elevation with part of the ribbon mechanism in section.

Figure 7 is a side elevation of the improvement and the driving means of a marking machine for reciprocating the inking platen, at a starting portion for return stroke.

Figure 8 is a view similar to Figure 7 for a forward stroke.

For the purpose of exemplification, the ribbon mechanism is shown as incorporated in a mark-

ing machine of the type illustrated and described in Letters Patent No. 1,484,136, issued February 19, 1924, to which reference may be had for an understanding of the structure of the complete machine and such details thereof which are not herein included and do not form a part of the present improvement.

In such type or class of machines, the type or type block of the printing mechanism is moved for impressing the face of the type, after it has been inked, upon the tag or work, resting upon a platen or suitable support, to receive the impression. Heretofore, and as illustrated in the machine of the said patent, it has been customary to ink the type by means of an ink carrying pad, moved beneath the type, the type being compressed upon the pad for an application of ink to the face thereof. An inking pad is objectionable owing to the care and frequent attention required to maintain a proper ink supply, and the dependence of the operator to consistently obtain good impressions, a good print being quite essential to the price marking of merchandise to avoid error in reading.

In the present instance an endless ink carrying ribbon is employed, having a portion thereof looped about a carrier. The carrier is movable to present a section of the ribbon beneath the type in substantially the same manner as instituted in the employment of a pad adapting the ribbon mechanism to be applied to existing machines in substitution for the inking pad. The ribbon, with each reciprocation of the carrier, is translated in stepped degrees for progressively presenting a different section thereof to the type in each inking operation. This subjects the full length of the ribbon to use under uniform wear, allowing for an extended use before renewal of the ribbon is necessary.

It has been experienced that very sharp and clean impressions can be more consistently made by impressing the type against the cushion supported ribbon, each time taking a sufficient quantity of ink, than by any method of transferring the ink directly from the ribbon to the work, by impacting the type upon the ribbon interposed between the type and the work. The latter method is severe on the type surfaces and therefore requires the use of a hard metal type, adding materially to the cost, particularly when, as in marking machines, an abundant supply of type is furnished with each machine, necessary for making the different set-ups for marking a variety of merchandise, and especially for four or more lines of printing.

Referring to the drawings, 1 indicates a lever suitably actuated at timed intervals and oscillated in differential stroke degrees for moving its type carrying head 2 in a short stroke to impress the type upon a section of the inking ribbon stationed therebeneath, and subsequently, after a type inking operation and the ribbon mechanism has been moved to a retreat position from beneath the type carrying head, under an increased length of stroke, to impress the inked type upon a tag or work stationed upon a stationary platen 7.

The type 3, of movable bar form is compiled within a chase 4 removably mounted within the head 2, with the face ends of the type bars projected slightly beyond the lower face of the chase.

The tags upon which the price marking data is printed are arranged in the form of a strip, the strips being notched or perforated at spaced intervals, the degree of spacing being appropriate to the dimension of the tag. These spacings are utilized for advancing the strip by a reciprocating feed finger 6. The feed finger 6 engages into an aperture or notch of the tag strip in a forward stroke of a carriage carrying the finger, for advancing the strip end for stationing the foremost tag of the strip beneath the printing mechanism, and for severing the printed tag from the strip and dispensing the same.

The tag strip is suitably guided and tracked within the machine so that each tag, as it assumes the foremost position of the strip, is appropriately stationed upon the platen 7, preferably of a cushion material such as rubber. For advancing the strip the feed finger is mounted upon a reciprocable carriage 5 and hingedly depends therefrom so that it will connect with an aperture or notch in the strip in a forward stroke of the carriage and will release therefrom during the return stroke.

As disclosed in the aforesaid patent, the carriage moves in timed relation to the printing or type carrying head to feed or advance the tag strip when the printing head is at rest in a retracted position, and to dwell at the end of its forward stroke for a type inking interval.

In the present instance, the ribbon mechanism is shown as applied to a type of marking machine as disclosed in the aforesaid patent, which serves for several different types of tag strips and which may be classified as a duplex machine employing a pair of carriages translating in directions at right angles to one another. Both are similar in principle of construction and operation, each carrying strip feed fingers 6, as illustrated in Figure 2, although only one of the carriages is employed for the ribbon mechanism as the position of the printing head serves for all of the tags operated upon within the machine, irrespective of which carriage is employed for feeding the tickets.

The carriage 5, at its forward end, is provided with a lateral extension or inking platen 7a, bridging one of the track-ways for the tag strips and platen 7, which is common to both track-ways when the carriage is at the limit of its forward stroke. The outer edge of the extension is flanged downwardly, as at 8, for sliding and resting upon a stationary ledge 9, as a part of the table or bracket 10 of the machine frame, which supports the platen 7. The lateral extension or platen 7a, upon its upper side, has a cushion or pad 11 fixed thereon to provide a yielding platform, over which a section of the

endless ribbon 12 spreads and upon which the type is depressed for an application of ink.

In Figure 4 the carriage is illustrated in a retracted position so that its ribbon carrying extension, with its spread of ribbon, is clear of the platen to allow the type head to be moved downwardly and upon the tag or work upon the platen. In Figure 5 the carriage is in its foremost position, with the ribbon carrying extension rigidly supported for a type inking operation.

The endless ribbon 12 extends at an angle slightly upwardly from the plane of the reciprocable inking platen 7a about which it is looped, and is engaged over a sheave 13, loosely journaled upon a stud 14. The stud 14 has one end fixed within a hub of a bracket 15 mounted upon a rigid support or the frame of the machine.

The sheave is encased by a drum 16, which may be termed a take-up, open at one side or face, and has its opposite side provided with a hub 17 for journaled the drum upon the stud 14. The portion of the stud within the hub of the drum is annularly channeled or recessed to provide a circumferential space for a spring 18, coiled about the stud with one end thereof fixed to the stud. The opposite end of the spring is bent to extend into a slit 19 in the end of the hub 17 for connecting the spring to the drum and automatically rotating the same in a forward or clockwise direction when released by a slackening of the endless ribbon between the sheave and inking platen 7.

The runs of the ribbon, as they leave the sheave, pass through an opening 20 in the periphery of the drum or take-up with the upper run 21 of the ribbon traversing an edge 22 formed by the opening 20.

The carriage is provided with a laterally extended guide rod 23 extending over the ribbon for guiding and maintaining a section thereof in a horizontal plane over the inking platen to spread or cover the same. In the forward stroke of the inking platen 7a the ribbon is drawn forwardly, rotating the sheave 13 and the take-up 16 in a reverse or counter-clockwise direction. The sheave is rotated through the surface contact of the ribbon upon the rim thereof while the take-up 16 is rotated in a corresponding direction with the sheave by the pull of the upper run of the endless ribbon through its loop-like connection about the transverse edge thereof. A reverse stroke of the inking platen slackens the ribbon, and the slack as developed is taken up by the take-up 16 rotating in a forward or clockwise direction under the tension of the spring. This action causes a reverse pull on the upper run of the endless ribbon, feeding or translating the entire length of ribbon, presenting a new section of the ribbon over the inking platen.

During the period of the forward movement or stroke of the platen and until it commences to recede, the ribbon is held tautly over the platen under the tension applied thereon by the oscillatable take-up 16. During the return stroke of the platen the ribbon is slackened and drapes over the platen, thereby permitting it to be easily pulled over the forward edge thereof by the take-up 16, which imposes a rearward pull upon the upper stretch or run of the ribbon.

The sheave, as an idler being loosely journaled is free to rotate in either direction, its direction of rotation is governed by the direction of ribbon pull so that the action of the device is very smooth and requires very little power to produce a belt-

like creep or ribbon feed, for successively bringing different sections thereof over the platen upon each return stroke of the platen. By this method the ribbon is intermittently advanced from one direction so that its wear is uniform for its full length.

The ribbon can be easily replaced by slipping it sidewise from the sheave and inking platen, and an interchange can be made in considerably less time than it would require to ink-replenish a pad.

The inking platen is slightly inclined so that the ribbon section spread thereover is in parallelism with the face of the type when the head moves downwardly for impressing the type upon the ribbon. The type engages the ribbon under pressure to transfer a desired amount of ink onto its face, for making a clean, sharp print when the type is subsequently impressed upon the work.

Having described my invention, I claim:

1. A device for inking type, comprising, an endless ink impregnated ribbon, a reciprocable platen and a sheave relatively arranged to sustain the ribbon and be girdled thereby for spreading a section thereof over the platen, and a take-up contacting the ribbon to tension the same and effect a translation thereof during a reciprocating stroke of the platen.

2. A device for inking type, comprising, an endless ink impregnated ribbon, a reciprocable platen and an idler sheave relatively arranged to sustain the ribbon and be girdled thereby for spreading a section thereof over the platen, and a take-up oscillatable in an arc concentric with the sheave and contacting the ribbon to tension the same and effect translation thereof during a reciprocating stroke of the platen.

3. A device for inking type, comprising, an endless ink impregnated ribbon, a reciprocable

platen and a loosely journalled sheave relatively arranged to sustain the ribbon and be girdled thereby for spreading a section thereof over the platen, and a rotatable take-up coaxial with and telescoping the sheave, having an edge contacting the ribbon to tension the same and effect translation thereof during a reciprocating stroke of the platen.

4. A device for inking type, comprising, an endless ink impregnated ribbon, a reciprocable platen and a sheave relatively arranged to sustain the ribbon and be girdled thereby for spreading a section thereof over the platen, and a take-up journalled coaxially with the sheave contacting the ribbon to tension the same and effect translation thereof during a reciprocating stroke of the platen.

5. A device for inking type, comprising, an endless ink impregnated ribbon, a reciprocable platen and an idler sheave relatively arranged to sustain the ribbon and be girdled thereby for spreading a section thereof over the writing platen, and a take-up movable in an arc about the sheave for contacting the ribbon to tension the same and effect translation thereof during a reciprocating stroke of the platen.

6. A device for inking type, comprising, an endless ink impregnated ribbon, a reciprocable platen and a loosely journalled sheave relatively arranged to sustain the ribbon and be girdled thereby for spreading a section thereof over the writing platen, and a rotatable take-up encasing the sheave, apertured for passing the stitches of the ribbon leading to the platen and providing an edge contacting the ribbon to tension the same and effect translation thereof during a reciprocating stroke of the platen.

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