Aug. 7, 1951 P. N. BRAUN 2,563,513

INK RIBBON MECHANISM FOR MARKING MACHINES

Filed Nov. 4, 1947 4 Sheets-Sheet 1

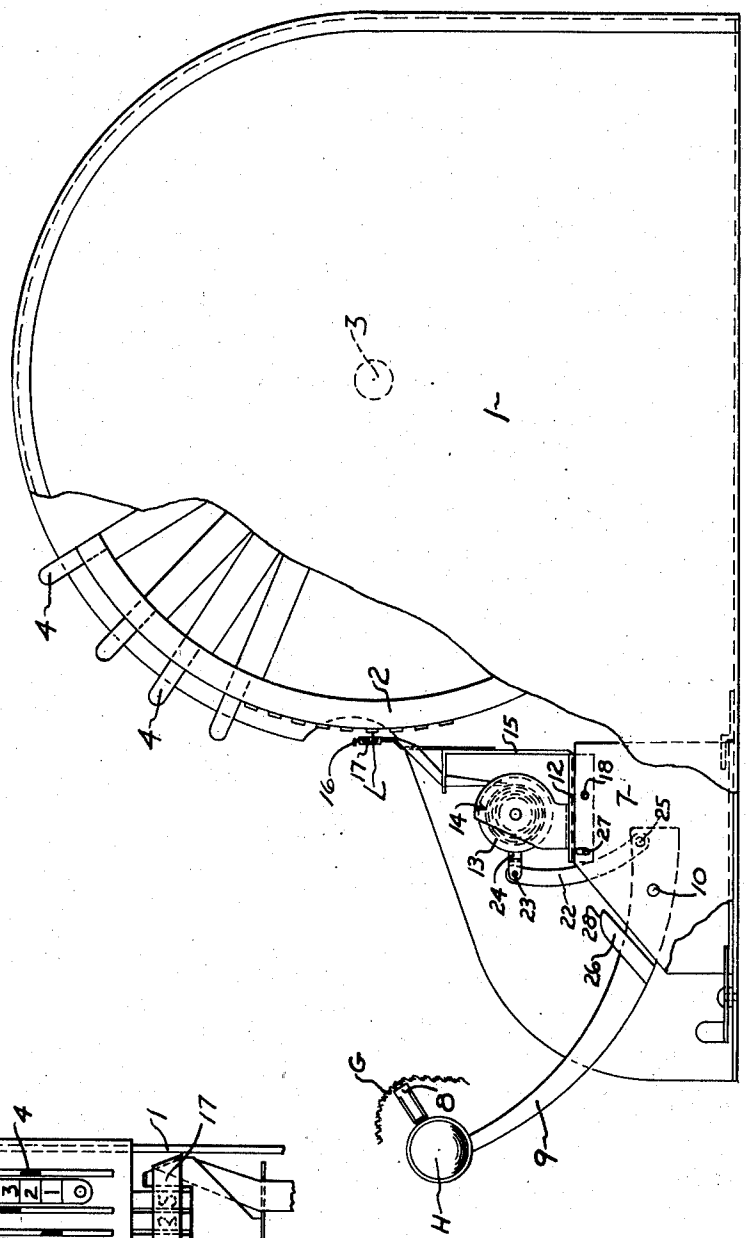

Fig 1

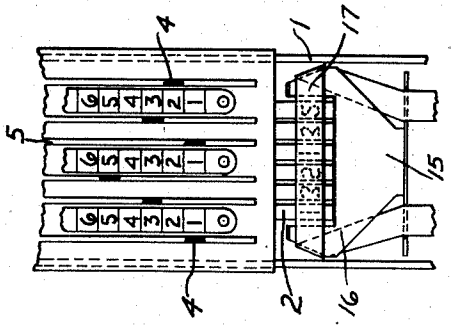

Fig 2

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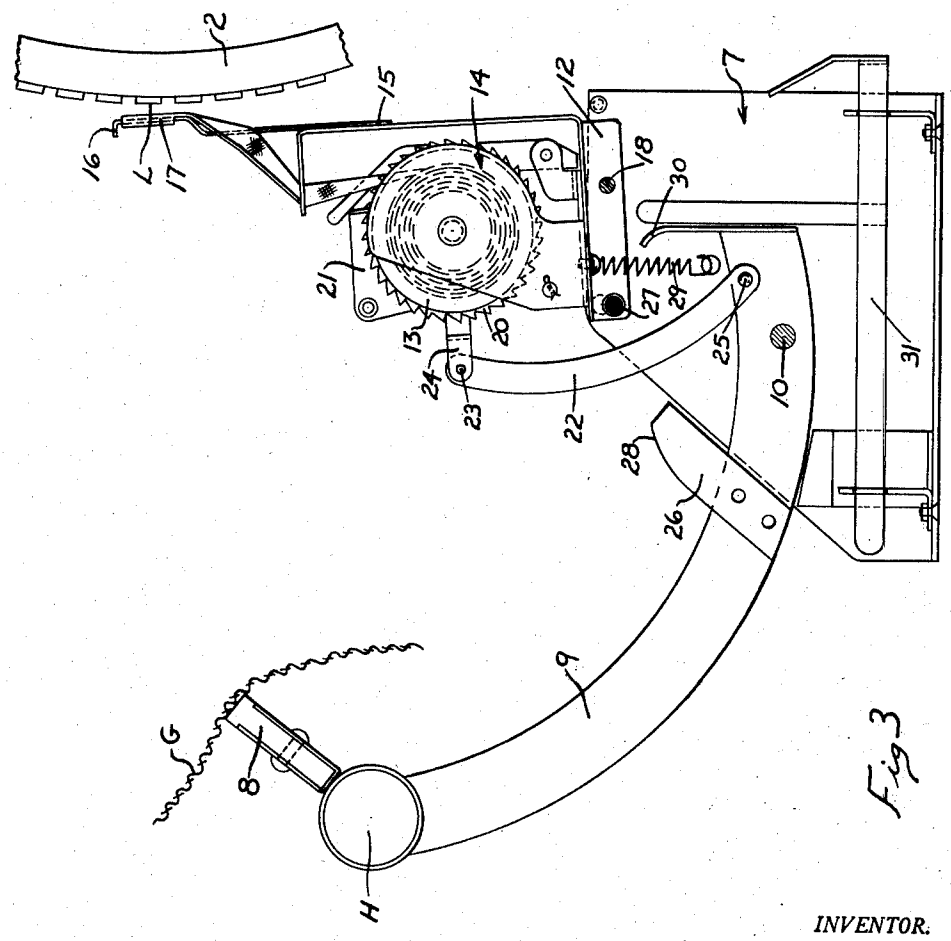

Fig. 3

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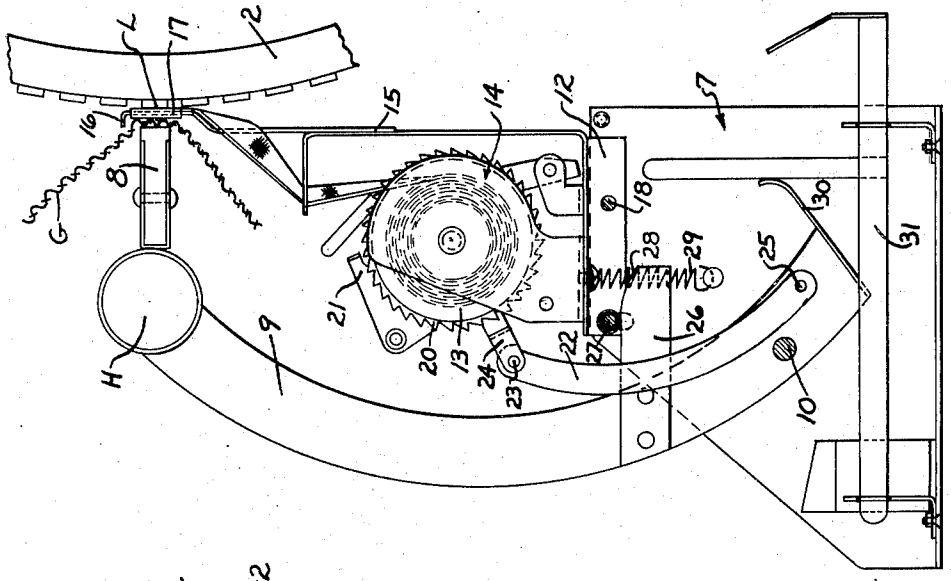

Fig 4

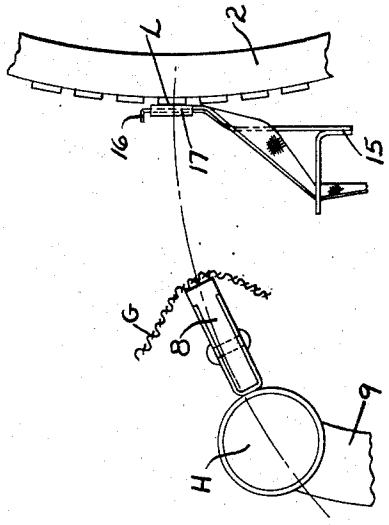

Fig 5

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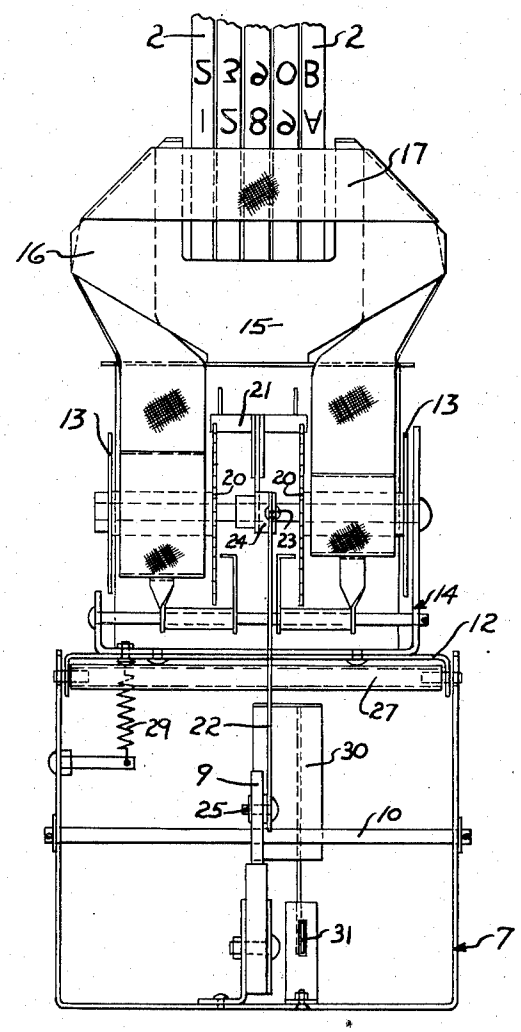

Fig 6

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UNITED STATES PATENT OFFICE

2,563,513

INK RIBBON MECHANISM FOR MARKING MACHINES

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Application November 4, 1947, Serial No. 783,973

1 Claim. (Cl. 101—96)

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This invention relates to marking machines for printing identifying characters on articles to be laundered, or dry cleaned, or to tags to be applied to such articles.

Heretofore in marking or printing machines for that and similar purposes, the indelible ink has been applied to the type of a printing machine by pads in which the ink is saturated or impregnated. The type is inked by the pads being brought, by suitable mechanism, directly against the type. The ink is absorbed in the pads from an ink supply pad saturated with the ink. The applying pad is normally in contact with the supply pad, and the applying pad transferred from its normal position to the printing line where it applies the ink to the type and then back to the supply pad, all prior to the bringing of the article to be marked directly against the type. This ink mechanism quickly fouls the type, and frequent cleaning of the type is necessary to maintain clear legible printing.

This invention has for its object an ink ribbon mechanism for this type of machine wherein the work, to which an identifying number or character is to be applied, is carried by a platen to the printing line, the platen with the work thereon being pressed against the ribbon, while the ribbon is against the type at the printing line.

More specifically, it has for its object a ribbon mechanism having a ribbon guide as a part thereof which is normally spaced apart from the type set at the printing line, and is shifted against the type by the movement of an actuator or platen carrier on which the work piece to be printed is carried, the ribbon guide being actuated to carry the ribbon against the type while the platen is on its way carrying the work piece toward the type so that the identifying character or number is impressed through the ribbon on the work piece when the platen is pressed against the ribbon, this in contradistinction to printing operations in various types of machines, as typewriters, calculating machines, etc., in which the type head strikes the ribbon and the impression is made on the work on a stationary platen.

The invention consists in the novel features and in the combinations and constructions hereinafter set forth and claimed.

In describing this invention, reference is had to the accompanying drawings in which like characters designate corresponding parts in all the views.

Figure 1 is a side elevation, partly broken away, of a printing machine for applying identifying marks to articles to be laundered, or dry cleaned.

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Figure 2 is a fragmentary elevation of parts seen in Figure 1 showing the location of the ribbon guide to the type set in the type wheels at the printing line.

Figure 3 is a fragmentary elevation of the ribbon mechanism, the platen and the carrier therefor, the contiguous portion of the type wheels being also shown, the ribbon mechanism and guide, and also the platen and platen carrier being shown in their normal or starting position wherein the ribbon guide is located with the portion of the ribbon opposed to the type spaced radially away from the type.

Figure 4 is a view, similar to Figure 3, showing the position of the parts at the end of the printing operation, or when the printing is being performed.

Figure 5 is a fragmentary view of parts seen in Figure 4, showing the position of the parts before the platen reaches printing position but after the ribbon guide has been shifted to carry the ribbon against the type.

Figure 6 is a front elevation of the ribbon mechanism and support therefor, the contiguous portions of the type wheels being also shown.

The printing machine may be of any suitable form, size and construction. It includes a casing 1 in which a main frame is mounted which supports a series of type carrying members as wheels or segments 2 mounted side by side to shift about an axis 3 to set selected type at the printing line L. The type wheels are moved about their axes by means of suitable handles 4 extending radially from the peripheries thereof through slots 5 in the top wall of the casing 1, the peripheral wall being formed with rows of numbers along the slots 5 corresponding to the numbers or characters on the type. These numbers are for the purpose of facilitating the setting of selected type at the printing line.

The machine also includes an auxiliary frame 7 for supporting the ribbon mechanism and the carrier for the platen, this being mountable and demountable from the main frame as a unit.

The numeral 8 designates the platen, and 9 the platen carrier, the carrier being an upright lever pivoted at its lower end at 10 in the auxiliary or base frame 7 and normally extending forwardly and upwardly from its pivot and carrying the platen 8 at its upper end. The platen 8 may be a block of rubber on which the article to be printed is placed, or across which the articles are drawn taut. Handles H extending in opposite directions from the outer upper end

of the lever 9. When articles of clothing are being marked, the operator holds the articles taut across the platen by the hands grasping the handles H, and moves the lever 9 about its pivot to carry the platen into and out of printing position. When tags are being printed, the tags are held on the face of the platen by a clip, not shown.

The ribbon mechanism includes a frame 12 mounted on the auxiliary frame 7 in front of and below the printing line, ribbon spools 13, feed mechanism 14 therefor mounted on the frame 12, and a ribbon guide 15 carried by the frame as a unit therewith and having bifurcated portion 16 extending beyond opposite sides of the type wheels and between which a portion 17 of the ribbon is held opposed to the type at the printing line. The guide extends upward in a direction tangential to the type wheels at the printing line. The ribbon guide, or the bifurcated portion 16 thereof, is normally arranged, as seen in Figures 1 and 3, spaced from the type at the printing line. The frame 12 for the ribbon mechanism is mounted to shift to carry the portion of the ribbon extending over the printing line radially toward the type against the same.

In the illustrated embodiment of the invention, the frame 12 is pivoted at 18 on a transverse pivot located below and in front of the printing line, or the pivot extends transversely of the plane of movement of the platen carrier 9. The frame 12 is shifted on its pivot by the operation of the platen carrier 9 to carry the ribbon against the type during the printing operation, as will be presently described.

The ribbon feed mechanism per se may be of any well known construction, and its construction forms no part of this invention. Briefly, it includes ratchet wheels 20, one for each spool and reversely operating pawls 21, one of which is in operative position to its ratchet wheel, while the other is out, the pawls being operated by connections actuated by the movement of the platen carrier 9. The pawls are alternately shifted in position to operate their ratchet wheels by the movement of the ribbon when it unwinds from either spool on the other. The ribbon feed mechanism may be of any well known construction. As here shown, the feed mechanism is connected to the platen carrier 9 by a link 22 pivoted at one end at 23 to a lever 24 forming part of the ribbon spool feed mechanism, and at its other end at 25 to the platen carrier 9 eccentric to or in front of the pivot 10 thereof. These connections merely actuate the pawls of the ribbon spool mechanism to turn one or the other of the spools to feed the ribbon.

The ribbon mechanism frame 12 is shifted on its pivot by means operated by the platen carrier lever 9 to cause the ribbon guide 15 to shift from its normal position Figures 1 and 3, wherein the portion of the ribbon opposed to the type at the printing line is spaced from the type into a position against the type before the platen 8 reaches, but while on its way to, printing position. This means is here shown as a cam 26 projecting forwardly from the platen carrier 9 and normally spaced, as seen in Figure 1, from the carriage 12, and a bar or roller 27 extending transversely of the front lower side of the frame 12, the arm having a cam surface 28 at its front end for engaging the roller and tilting the frame 12 about its pivot 18 prior to the time the platen 8 reaches printing position, as shown in Figure 4. The platen carrier lever 9 is moved by the operator

with his hands on the handles H. During the retrograde movement of the platen 9 from printing position, the ribbon mechanism frame 12 is returned to its normal position, as by a spring 29, this being shown for illustrative purposes only as the frame 12 is so mounted as to return by gravity. Also springs used in the standard ribbon feed mechanism are under a load in such direction as to return the carriage about its pivot 18 to starting position so that a special spring 29 for this purpose is not necessary. The platen carrier 9 also operates, through an arm 30 at the extreme end thereof, an actuator 31 mounted as a unit in the auxiliary frame 7, which arm, through a bar not shown, operates a lock mechanism for locking the type wheels in their set position. This locking mechanism forms no part of the invention.

In operation, the operator stretches a portion of the garment G over the platen, holding it taut across the platen by his hands on the handles H, and moves the platen carrier 9 from the position shown in Figures 1 and 3 toward that shown in Figure 4. When the platen carrier 9 is part way in its forward movement, the arm 26 engages the roller 27 on the ribbon mechanism carriage 12 and shifts the carriage 12 on its pivot carrying the ribbon guide from the positions shown in Figures 1 and 3 into the position shown in Figure 4, wherein the portion of the ribbon opposed to the type is against the type. During further movement of the platen carrier 9 by the operator, the roller 27 rides up on a dwell portion of the cam arm 26 so that the ribbon holder holds the ribbon against the type during further movement of the platen carrier 9. Upon continued movement of the platen carrier 9, the platen with the garment thereon is brought with a hammerlike blow against the ribbon which is against the type, and the number or identifying character set up in the type at the printing line is impressed on the garment. The ribbon itself is impregnated with the same indelible ink used in machines utilizing inking pads.

In operating the platen carrier 9, the operator moves it quickly into and out of printing position. Upon retrograde movement of the platen carrier from the printing position shown in Figure 4, the ribbon carrier tilts in the reverse direction, or counterclockwise, Figure 4, about its pivot 18, carrying the ribbon guide to its normal relation spaced from the type, as shown in Figures 1 and 3. During the movement of the platen carrier forwardly, the link 22 is also operated to operate the feeding mechanism for the ribbon before the arm 26 engages the roller 27 and hence, before the platen 8, with the garment thereon, comes into printing position. Owing to the use of the ribbon mechanism wherein the platen on which the garment or article to be printed is mounted, is brought up against the ribbon overlying the type at the printing line, the type is not fouled and does not need frequent cleaning except over very long intervals, as once in eight hours of use, and owing to the shiftable or tiltable ribbon mechanism carriage holding the ribbon normally spaced off the type, the type does not catch in the ribbon during the operation of the type wheels in setting type at the printing line.

What I claim is:

An ink ribbon mechanism for type carrying machines having type wheels operable to set different type in the printing line, and a platen on which the work to be printed is carried, a carrier for the platen mounted relatively to the type wheels

to shift the platen in a general radial direction toward and from the type at the printing line, the ribbon mechanism including a frame, ribbon spools and feeding mechanism therefor on the frame, and a ribbon guide on the frame located to guide the ribbon over the type at the printing line, the frame being pivotally mounted on a pivot parallel and spaced from the printing line, and the ribbon guide being normally spaced from the printing line and shiftable by the pivotal movement of the frame into a position tangential to the type wheels at the printing line, and a cam on the platen carrier and normally spaced from the frame and coacting therewith responsive to the movement of the platen carrier and platen toward the printing line to shift the frame on its pivot and shift the ribbon guide to carry the ribbon against the type before the platen with the work thereon reaches final printing position,

and self-returnable means acting on the frame to return it to its initial position during movement of the platen carrier and the platen away from the printing line.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,196,114	Hume	Aug. 29, 1916
1,352,070	Lang	Sept. 7, 1920
1,526,287	Horner	Feb. 10, 1925
1,822,339	Constable	Sept. 8, 1931
2,119,713	Lang	June 7, 1938
2,251,354	Gettman	Aug. 5, 1941
2,435,434	Kosmer	Feb. 3, 1948