

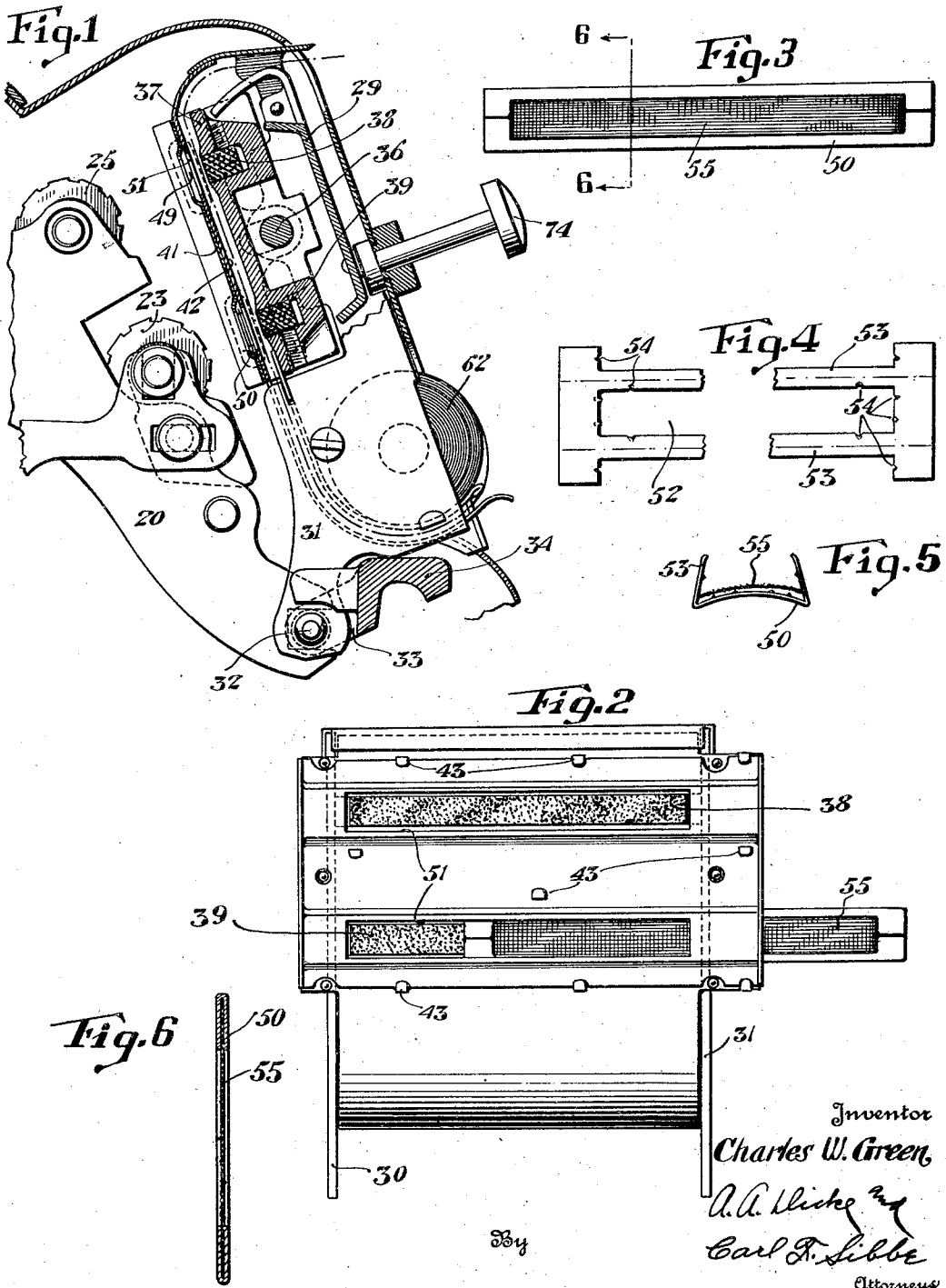
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RIBBON FRAME

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UNITED STATES PATENT OFFICE

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RIBBON FRAME

Application filed January 24, 1929. Serial No. 334,747.

This invention relates to ribbon frames, and the embodiment selected for the purpose of illustration is particularly adapted for use in printing mechanisms for cash registers, although it is susceptible of ready adaptation for use in other types of accounting or printing machines and analogous devices.

This application is a continuation in part of the application of Charles W. Green, Serial No. 13,470, filed March 6, 1925, to which application reference may be had for a complete disclosure of the cash register mechanism and other devices not herein shown.

In printing mechanisms, as for example that illustrated in the parent application, where impressions are taken from a number of sets of type wheels by actuating a printer frame, it is necessary to provide a plurality of strips of inking ribbon so that impressions may be taken simultaneously therefrom. Again, when it is desired to print from only certain of said sets of type wheels, the ribbon frame for the type wheels not to be employed must be removed from the printer and the printing of proper data would then be insured. It is believed to be quite evident that if the usual step feed ribbon mechanism were employed the task of removing the same from the machine would be laborious and cause great inconvenience to the operator of the machine. This would be especially apparent where such changes must be effected at frequent intervals. On the other hand, for example, where totals or other data are printed at infrequent intervals, the ribbon employed for such printing remains efficient for a long period, and consequently the use of a step feed ribbon mechanism in such cases is not only impracticable but would render the machine cumbersome and inefficient because of the number of parts usually contained in such devices.

It is an object of this invention to overcome such difficulties, and applicant has provided an efficient ribbon mechanism which comprises a thin flat frame for retaining a strip of inking ribbon and which may be readily placed in the printing frame or removed therefrom without necessitating the disassembling of any of the parts, or requiring

the operator to touch the ribbon itself.

Another object of my invention is to provide a ribbon frame which is simple in construction and which may be manufactured at a small cost, so that in installations where the ribbon would receive excessive use and thereby require replacement more frequently the cost of operation would still be slight.

A more specific object of my invention is to provide as an article of manufacture a ribbon frame of sheet metal or other material having similar properties so that the same may be stamped out in blank form and then bent into its proper shape for retaining the ribbon in the desired position.

Other and further objects of my invention will become apparent as the description thereof progresses. One construction by which the desired results are obtained is illustrated by the accompanying drawings in which:

Fig. 1 is a side elevation of the printing mechanism shown in the parent application with parts broken away and showing one of the ribbon frames in place between the guides in the printing mechanism.

Fig. 2 is an elevation view of a portion of the printer frame and showing one of the ribbon frames partly inserted in said printer frame.

Fig. 3 is an assembly view of my improved ribbon frame.

Fig. 4 is a plan view of the frame structure as it appears before being bent in position to retain the inking ribbon therein.

Fig. 5 is an end view of the ribbon frame showing how the frame is bent to grip the inking ribbon.

Fig. 6 is a cross-section view taken through the ribbon frame on line 6—6 of Fig. 3.

Referring to the drawings, particularly to Figs. 1 and 2, it will be noted that the machine to which my invention is applied, is provided with frame members 20 in which are mounted a plurality of sets of type carrying wheels 23 and 25. The printing frame structure forming a part thereof comprises a plate 29 integral with which are two side plates 30 and 31, the lower ends of which being apertured to receive a shaft 32 carried by ears 33 in-

tegral with the cross-bar or frame piece 34. Journalled in the side plates 30 and 31 at their upper portions is a shaft 36 forming the pivotal point of a platen 37 carrying upper and lower rubber impression blocks 38 and 39 respectively. The ribbon supporting plates are comprised of two parallel plates 41 and 42 which may be attached to each other by any suitable means, such as bent-over lugs 43, as is clearly shown in Fig. 2. By means of springs, not shown, the ribbon supporting plates 41 and 42 are forced away from the rear face of the platen to the position shown in Fig. 1, wherein it will be noted that there is normally a considerable clearance space between the plate 42 and the face of the impression blocks 38 and 39. This facilitates the insertion of the paper strip to be printed upon.

It will also be noted from an inspection of Fig. 1 that the supporting plates 41 and 42 are suitably bent so as to form channels 49 located just beneath the impression blocks 38 and 39 for the reception of a ribbon carrying frame or plate 50, and the plates 41, 42 are apertured at 51 so as not to interfere with the printing action when the printer frame is rocked.

The printing frame also carries a supply roll 62 of record paper which when unwound therefrom is suitably guided between the plate 42 and the impression members 38 and 39 aforesaid. Thus, to make an imprint on the same the operator merely depresses the button 74 which causes the printing frame to rock about its pivot 32 and the platen when striking the type carriers 23 and 25 will effect an imprint on the said record paper.

The specific construction of the printing mechanism shown herein forms no part of this invention and therefore will not be described in detail. For a complete description thereof reference may be had either to the parent application or to an application of Charles W. Green, Serial No. 151,293, filed November 29, 1926.

Referring to the structure shown in Figs. 3 to 5, the numeral 50 designates generally the ribbon frame comprising my invention. This frame is constructed from a single piece of metal having sufficient ductility to permit bending of the same without rupture. This frame, however, may also be constructed from any suitable material other than metal. The frame 50 embraces a strip of inking material 55 which may be composed of the usual ink carrying fabric such as that used in typewriters or other similar devices or may be composed of carbon paper or any other suitable ink carrying material. The frame proper being comprised of a single piece of material and is of such form that it may be stamped out from a flat piece of material. In Fig. 4 the frame is shown in blank form and is of substantially I shaped construc-

tion having a longitudinal slot 52 therein and comprising members 53 on opposite sides thereof which are of channel shape form. A number of prongs 54 are also punched from the material which are employed to grip the ink carrying ribbon when the said frame is bent into holding position, as shown in Figs. 3 and 6. Thus, it is clear that when the frame is bent in the manner shown in Fig. 5 the frame will finally assume the shape shown in Figs. 3 and 6 of two overlying rectangular portions with corresponding slots 52 therein. This construction permits the detachment of an old ribbon from the printer and the insertion of a new one without touching the moistened ribbon itself. There is a ribbon frame for each printing line so that each may be removed or replaced independently of each other. When it is desired not to print the information set up on a certain line of type this can readily be done by removing the associated ribbon.

The specific embodiment of my invention as disclosed herein constitutes but one of the many forms in which the said article may be constructed. For example, under certain conditions it may be desirable to provide a ribbon frame having a different geometric shape, and the means for retaining the same may be slightly altered to correspond with such change in shape. Therefore, it is to be understood that the applicant is not limiting himself to the specific means shown herein, but the invention is adapted to fulfil the objects primarily stated, all coming within the scope of the appended claims.

What I claim is:

1. As a new article of manufacture, a reinforcing member of substantially I-shaped form when in blank construction and having a longitudinally disposed opening therein, ink carrying material disposed along said member, said reinforcing member provided with prongs, said member being adapted to be so bent that it grips the said ink carrying material about its periphery and assumes a rectangular shape exposing said ink carrying material on both sides thereof.

2. As a new article of manufacture, a reinforcing member adapted to be stamped out in substantially I-shaped form and having a longitudinally disposed opening therein, thereby forming two integral oppositely disposed channel shaped members, a plurality of prongs provided in said members, said channel members being bent toward each other through an angle of 180° thereby assuming a rectangular shape, an ink carrying fabric, said ink carrying fabric being gripped by said channel members.

CHARLES W. GREEN.