Nov. 23, 1937. E. W. DAVIS ET AL 2,099,679

IDENTIFICATION AND RECORDING DEVICE

Original Filed Oct. 10, 1931 2 Sheets-Sheet 1

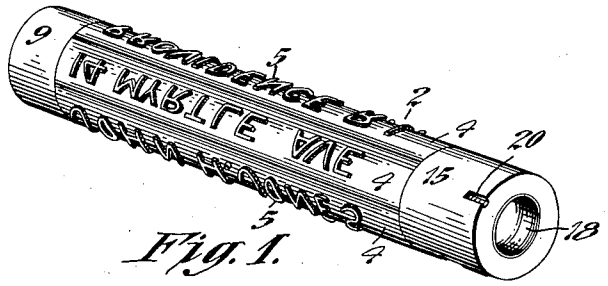


Fig. 1.

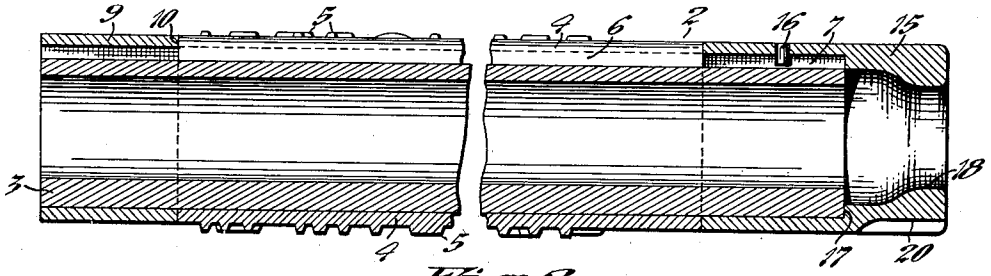


Fig. 2.

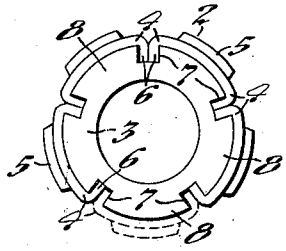


Fig. 3.

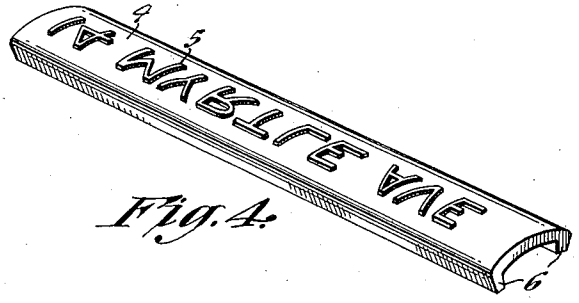


Fig. 4.

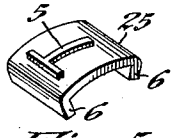


Fig. 5.

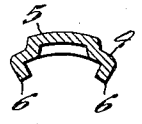


Fig. 6.

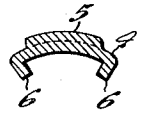


Fig. 7.

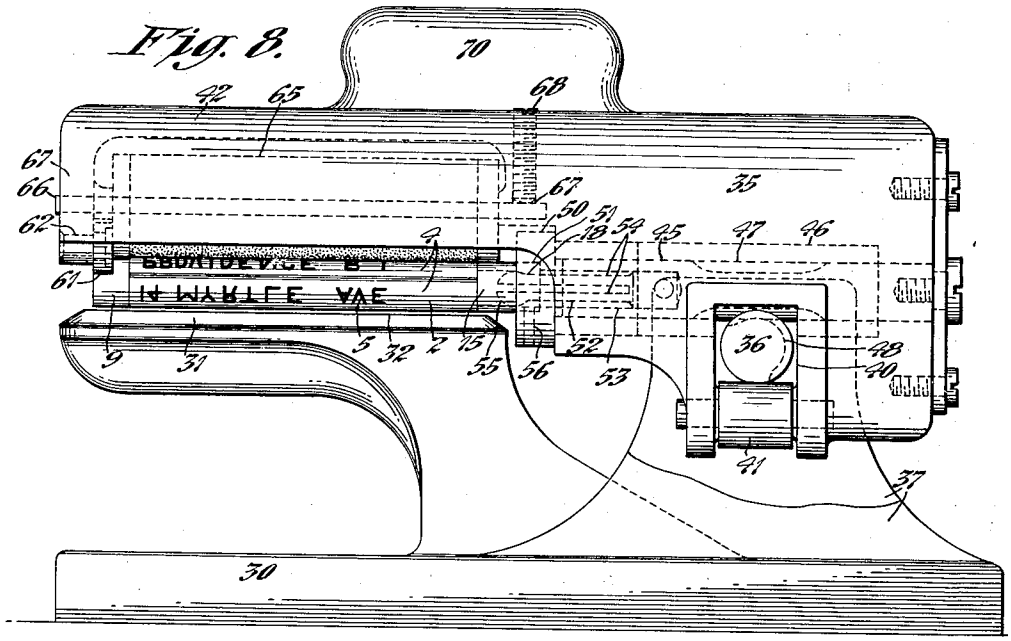
Inventors:
Elmer W. Davis and
Arthur H. Maynard
By Pennington and Hale
Attorneys.

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IDENTIFICATION AND RECORDING DEVICE

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Fig. 8.



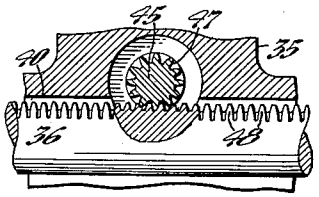


Fig. 10.

Fig. 9.

Inventors:
Elmer W. Davis and
Arthur H. Maynard
By
Attorneys.

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UNITED STATES PATENT OFFICE

2,099,679

IDENTIFICATION AND RECORDING DEVICES

Elmer W. Davis, Newton Center, Mass., and Arthur H. Maynard, Warwick, R. I., assignors to Boston Wire Stitcher Company, Portland, Maine, a corporation of Maine

Original application October 10, 1931, Serial No. 568,048. Divided and this application March 6, 1935, Serial No. 9,628

26 Claims. (Cl. 101—212)

This application is a division of our prior copending application, Serial No. 568,048, filed October 10, 1931.

This invention relates to improvements in devices for printing or recording information, and particularly to a device of the type specified having a printing element which may be used as an identification token to be carried on the person.

One of the objects of the present invention is to provide a recording or printing apparatus for transferring identifying indicia from a quickly attachable and detachable printing roller or token to a blank or other legend-receiving medium.

Another object of the invention is to provide a recording or printing apparatus of the type indicated having a carriage movable away from a platen on which the blank is held to facilitate attachment and detachment of the printing roller or token, and movable across the platen to record identifying indicia on a blank.

Another object of the invention is to provide a recording or printing apparatus of the type indicated having a carriage adapted to rotatably support the printing roller with means for quickly attaching the roller in locking engagement with a rotating element.

Another object of the invention is to provide a recording or printing apparatus of the type indicated comprising a carriage and printing roller adapted for travel across a platen and having means for rotating the roller during the movement of the carriage to obtain clear, legible impressions on a sheet, card or other object.

Still another object of the invention is to provide a machine of the type indicated which is compact in structure, efficient and positive in operation and adapted to be easily and quickly manipulated by unskilled persons.

Further objects of the improvement are set forth in the following specification which describes a preferred form of construction of the invention, by way of example, as illustrated by the accompanying drawings.

In the drawings:

Fig. 1 is a perspective view of a printing roller and identification token constructed in accordance with the present invention;

Fig. 2 is an enlarged, longitudinal sectional view of the printing roller taken in the plane of its axis;

Fig. 3 is an enlarged end view of the printing roller showing the method of mounting the type-elements or indicia slides thereon;

Fig. 4 is a perspective view showing one of the type-elements or slides;

Fig. 5 is a similar view showing an individual character type-unit;

Fig. 6 is a cross-sectional view of the type-element or slide, illustrating the same as being stamped from sheet-metal;

Fig. 7 is a similar sectional view showing the construction of a cast or embossed type-element;

Fig. 8 is a front elevation of the apparatus or press in which the printing element is used;

Fig. 9 is an end view of the same; and

Fig. 10 is a detailed view of the operating mechanism of the press.

Our invention in its broadest sense consists in a printing cylinder or roller of constricted diameter adapted to be carried on the person as an identification token; and an apparatus to and from which the token may be quickly attached and detached. The apparatus includes a carriage in which a rotatable element is journaled and the rotatable element and printing roller or token have interengaging means which provide a quick detachable connection. The carriage is mounted for movement away from a platen to facilitate attachment and detachment of the printing roller or token, and for movement across the platen to record identifying indicia on a suitable blank. Means are also provided for rotating the printing roller during its traversing movement across the platen to obtain clear, legible impressions on the blank.

Department stores and other merchandizing establishments having large clienteles generally furnish each charge customer with some sort of token or coin bearing indicia by means of which the customer may be identified to clerks or employees. With such a system the token is shown to the salesperson at the time of a purchase and the clerk fills out the charge or sales slip with data furnished by the customer.

Another more advanced method of handling charge accounts in large mercantile establishments is to furnish the customer with a flat metal printing plate having raised characters thereon embodying indicia for identifying the holder and also adapted to print and record the required information on sales or charge slips. Usually, the name and address of the customer against whose account the goods are to be charged, and in some instances the number or distinguishing symbol of the account, are embossed in type or characters on the face of the plate. With this form of token the required information may be recorded by

placing the plate in a suitable press or apparatus which imprints its indicia on the charge slip by means of carbon paper or an inked ribbon.

The previously used methods above described have certain disadvantages in that the small coin-like token is easily mislaid or lost and may sometimes fall into the hands of an unauthorized and unscrupulous person. Such coin-shaped tokens are also likely to be confused with currency carried in the purse or pocketbook and therefore are not adapted for convenient and ready use. In the case of printing plates, these must necessarily be of relatively thin metal in order to economize in weight and thus they are apt to be bent or broken. Moreover, such plates have sharp edges and corners which are liable to inflict injury to the hand or to tear the lining of the purse or pocketbook in which they are carried.

To avoid the above-stated disadvantages of prior articles of this nature it is a general object of the present invention to provide a small, compact printing and identification device readily distinguishable from other objects carried in the purse; easy to grasp and adapted for frequent handling without injury to the hands or annoyance to the user; and also capable of withstanding hard usage and abuse without appreciable deterioration.

Referring to the accompanying drawings, the present improved printing roller and identification device 2 is herein shown in its preferred embodiment as comprising a central core or holder 3 in the form of a hollow cylinder carrying a plurality of detachable printing elements in the shape of segmental strips or slides 4. The printing elements or slides 4 are preferably constructed of sheet-metal formed into arcuate shape in cross-section and provided on their convex faces with raised type or printing characters 5. The longitudinal edges of the slides 4 are bent or folded inwardly to provide marginal flanges or keys 6 for attaching the elements to the core or holder 3. For this purpose the surface of the cylindrical core 3 is scored or splined with a series of longitudinally-extending slots or grooves 7 adapted to receive the keys 6 on the slides 4 in the manner illustrated in Fig. 3 of the drawings.

As herein shown the circumference of the holder 3 is divided into five equal parts or segments 8 and each type-element or slide 4 is shaped with its main portion adapted to overlie the circumferential face of a segment with its flanges or keys 6 overlapping the sides thereof to provide a dovetailed engagement therewith. The slots 7 are of sufficient width to accommodate the abutting flanges 6 of two contiguous type-elements with the proper clearance to insure that the latter may be readily slid into position longitudinally of the holder.

One end of the holder 3 carries a fixed locating collar 9 with its end providing a shoulder or abutment 10 against which the ends of the printing strips 4 seat to aline them in position on the holder. At the other end of the holder 3 is a retaining collar 15 adapted to be forced onto the periphery of the holder to abut the opposite ends of the printing elements 4. The retaining collar 15 is provided with a pin 16 projecting radially into its bore to adapt it to engage one of the slots or grooves 7 on the holder 3 to key the collar rotatively therewith. The outer end of the collar 15 has its bore reduced in diameter to provide a shoulder 17 which abuts the end of the holder 3 when the collar is placed thereon. The shoulder 17 limits the inward movement of the collar 15 on the holder whereby to prevent it from crowding or jamming against the printing elements 4. At its outermost end the bore of the collar 15 is reduced still further to provide a contracted neck 18 which serves a purpose as later explained. The outer periphery of the collar 15 is provided at its end with a kerf or keyway 20 for keying it to a rotating element in the press or other apparatus in which the printing element is used.

In place of the relatively long printing elements or type-slides 4 containing the indicia or legends to be printed, a plurality of individual type-units or character-elements 25 such as shown in Fig. 5 may be employed. That is to say, each individual letter or character may be embodied in a separate element or slide 25 for use in composing a line of type with blanks or slugs as required to separate the words; thus rendering it possible to print any desired legend from the roller 2. Usually, however, in employing the printing roller as an identification device the longer strips or slides 4 are used incorporating the customer's name and address. This arrangement generally requires only three slides, but in other instances the fourth and fifth slides, as herein illustrated, are convenient for use in designating the account number and other particulars.

As previously noted, the printing elements or type-slides 4 are preferably constructed of sheet-metal to adapt them to be stamped out with hollow type-characters embossed on their convex faces, see Fig. 6. This may be accomplished in a suitable press having dies for the type-characters adapted to be set in different combinations. In other cases the printing slides may be die cast from suitable metal with the raised letters embossed and made solid with the main portion of the element as illustrated in Fig. 4 of the drawings. As a further modification in the method of constructing the printing slides, the latter may have the type-characters separately formed and soldered thereto.

The improved printing element or roller 2 is adapted for use in any suitable press either hand or power operated. In other cases it may be applied to use in an addressing or like machine by feeding the rolls from a hopper or connecting them in a chain. In the present drawings there is illustrated a small, compact hand-operated press or printing apparatus suitable for use in mercantile establishments for recording charge sales and as a means for addressing tags or envelopes.

As shown in Figs. 8 and 9, the printing device to which the present invention particularly relates comprises a base 30 supporting an anvil-like platen or rest 31 for the sales slip, card, envelope or other article to be printed. The anvil 31 overhangs the base 30 and is formed with beveled edges on its upper side and a tapered or rounded underpart to adapt the paper slip or card to be readily placed on its upper surface or an envelope to be slid over its end. The flat upper surface 32 of the platen 31 forms a fixed support for the sheet, card or other article to be printed and the printing element or roller 2 is held in a sliding carriage 35 to be rolled across the platen.

The carriage 35 is mounted for pivotal and

sliding movement on a horizontal rod 36 extending between arms or standards 37 rising from the base 30. As shown in Fig. 9 the rod 36 is seated in sockets in the top of the standards 37 and held in place by caps 38 clamped down thereagainst by means of screws 39. In the bottom of the carriage 35 is a lateral passageway 40 through which extends the rod 36, and a pair of rollers 41 journaled between the sides of the passageway bear against the underside of the rod to provide an easy sliding action of the carriage therealong. The carriage 35 extends laterally from the rod 36 in a hooded portion 42 overhanging the platen 31 and carrying inking and pressure rollers to be later described.

The printing roller 2 is adapted to be attached to the end of a rotatable shaft or spindle 45 journaled in a bearing 46 in the main portion of the carriage 35. The spindle 45 extends laterally across the top of the fixed rod 36 and has its peripheral portion slotted to provide gear-teeth 47 meshing with rack-teeth 48 on the rod 36, see Fig. 10. As shown in Fig. 9 the rack-teeth 48 of the rod 36 extend throughout the greater part of its circumference so that when the carriage 35 is rocked upwardly on the axis of the rod a clearance is provided to permit the teeth 47 on the spindle 45 to slide therearound. Through the gear and rack connection between the spindle 45 and rod 36 the forward and backward traverse motion of the carriage 35 on the rod imparts rotating movement to the spindle in alternately opposite directions whereby to roll the printing roller 2 across the top of the platen 31.

The printing roller 2 is connected to be rotated from the spindle 45 in the manner as next described. At the outer end of the spindle 45 is an enlarged head or collar 50 having a counterbored socket 51 for receiving the end of the retaining collar 15 on the printing roller 2. Projecting axially into the socket 51 of the collar 50 is a ball-ended bifurcated clutch-element 52 adapted to be inserted through the constricted neck 18 of the roller 2 to detachably connect the latter to the spindle. The clutch-element 52 may be constructed in the form of a split pin held in an axial bore 53 of the spindle 45 with its opposite legs 54 formed with enlargements or ball-ends 55. The legs or prongs 54 of the clutch-element 52 are adapted to spring together to permit their enlarged ball-ends 55 to slide through the neck 18 of the collar 15 on the printing roller 2 in the manner of a snap-fastener.

Projecting radially into the socket or counterbore 51 of the head 50 is a pin 56 adapted to engage in the kerf or keyway 20 on the end of the printing roller 2 to lock the latter rotatively with the spindle 45. The pin 56 is so indexed with respect to the gear-teeth 47 on the spindle 45 that when it registers with the keyway 20 in the end of the roller 2 the latter will be correctly positioned to cause it to traverse across the platen 31 to print its indicia in the proper sequence. It will be understood that the printing roller 2 may be snapped into and out of connection with the clutch-element 52 by manual manipulation whereby to provide convenient application of the roller to the press and its removal therefrom.

A pair of pressure rollers 60 and 61 are journaled on studs 62 at the outer end of the hooded portion 42 of the carriage 35 to adapt them to bear against the circumference of the printing roller 2 or, more properly, on the collar 9 thereof to press the type-characters down into contact with the card or slip placed on the platen 31. A larger inking roller 65 is journaled on a shaft 66 held in suitable bearings 67 at the ends of the hooded portion of the carriage 35. The inking roller 65 may have its surface covered with felt or other resilient material to adapt it to carry a supply of ink to be applied to the faces of the type-characters on the printing roller 2. A screw 68 extending down through the top of the carriage 35 bears against the inking roller shaft 66 to secure the latter in place.

A handle 70 on the top of the carriage 35 provides convenient means for sliding the latter on the rod 36 whereby to roll the printing roller 2 back and forth across the top of the platen 31. The handle 70 is gripped to raise the carriage 35 by rocking it back on the axis of the rod 36 in applying the object to be printed to the platen 31 and also for convenience in connecting the printing roller 2 with and removing it from the spindle 45 on the carriage. The method of operation of the complete apparatus is as next explained.

When the roller 2 is to be used as an identification token and recording device, the department store or other commercial establishment furnishes each charge customer with one bearing suitable indicia, such as the customer's name and address, and other particulars if desired. Upon making a purchase to be charged to his account the customer presents the token or roller 2 for the purpose of identification and the clerk or salesperson applies it to the press to record the sale in the manner as next explained.

With the form of press or printing apparatus herein illustrated the printing roller 2 is applied thereto by swinging the carriage 35 upwardly on the axis of the rod 36 and connecting the roller with the rotatable spindle 45. This connection is easily and quickly made by simply inserting the end of the roller carrying the collar 15 into the socket 51 in the head 50 of the spindle 45 with the clutch-element 52 engaged within the bore of the collar. The end of the roller 2 is merely pressed into the socket 51 to cause the ball-ends 55 of the spring-legs 54 to snap into place within the constricted neck 18 of the collar 15; the roller being first turned into position to register the keyway 20 at its end with the key or pin 56 which projects into the socket 51. The expanding action of the clutch-element 52 draws the end of the roller 2 snugly into the socket 51 and thus positions it with its axis in line with the axis of the spindle 45. By this connection the outer end of the roller 2 is seated against the pressure rolls 60 and 61 which are thus adapted to take the upward thrust of the roller during the printing operation. In this position of the roller 2 its peripheral characters contact with the surface of the inking roller 65 which carries a supply of ink applied thereto by hand or supplied from a suitable reservoir, not shown.

The operator next places the sales slip, card or other object to be printed on the platen 31 and if duplicate copies are desired several sheets or slips are laid one over the other with carbon paper therebetween. Usually, the carriage 35 is pushed back into the position illustrated in Fig. 9 before being swung down to carry the printing roller 2 into contact with the object to be printed. The operator grasps the handle 70 and draws the carriage forward, or from left to right as viewed in Fig. 9, to cause the printing roller 2 to be traversed across the top of the sheet or card. As the carriage is thus operated the engagement

of the gear-teeth 47 of the spindle 45 with the rack-teeth 48 on the fixed rod 36 causes the spindle to be rotated to roll the roller 2 over the surface of the sheet or other object to be printed.

It has been stated that the engagement of the pin or key 56 with the keyway 20 in the end of the roller 2 locates the type matter or character legends thereon in such relation that when the carriage 35 is drawn forward from the position shown in Fig. 9 the several lines of type will be printed in proper sequence. That is to say, the roller 2 is so applied to the press that the line of type for the customer's name will print first with the address and other particulars following. The carriage 35 may be slid back and forth to traverse the roller several times across the object to be printed whereby to insure a strong impression of the type-characters and also clear and legible carbon copies on the under sheets. The positive engagement of the teeth 47 on the spindle 45 with the rack-teeth 48 on the rod 36 insures that the repeated impressions will register accurately without blurring or smudging.

After the record has been made on the sales slip, card or other object the carriage 35 is lifted away from the platen 31 and the printing roller 2 removed therefrom and returned to the customer. The printing roller 2 is detached from the press by simply withdrawing it from the socket 51 in the head of the spindle 45, a slight pull serving to release the clutch-element 52 from the constricted neck of the collar 15 on the roller.

In order that ink remaining on the type faces of the printing roller may not cause inconvenience by soiling the hands or staining the lining of the pocketbook the roller is usually provided with a sheath or case. For example, a light metal cylinder may be used as a casing for the token or printing roller 2 with a suitable cover closing its end. Preferably, the receptacle or protecting case for the printing roller should have means for locking it thereon in such manner that it can only be released by the person authorized whereby to eliminate the danger of the token being used to defraud. Such a form of holder for the printing roller or token is embodied in an invention forming the subject matter of a separate application.

It will be observed from the foregoing that our invention provides a particularly simple and efficient device for the various purposes specified or for any use where information or identifying indicia is to be registered or recorded on a sheet, card, envelope or other object.

While the improved printing roller is herein shown and described as adapted for use as an identification token and for recording information relative to sales or the like, it is also applicable to other varied uses.

It will also be observed that the apparatus of the present invention provides for a quick attachment of the printing roller or token to a rotating element on the carriage and a quick detachment of the roller from the element. Further, the token may be attached to and detached from the apparatus and the apparatus operated by an unskilled salesperson to record identifying indicia in clear and legible impressions on a sheet or other blank.

While the present device has been herein described and illustrated as embodied in a preferred form of construction, it is to be understood that various modifications may be made in the form and arrangement of its parts, both as to the printing element itself and the press for operating it, without departing from the spirit and scope of the invention. Therefore, without limiting ourselves in this respect, we claim:

1. A recording apparatus comprising a relatively small printing roller having indicia characters on its periphery, means for rotating the roller across the article to be printed, and interengaging means on the roller and rotating means self-acting to lock the parts together as one is moved axially into engagement with the other.

2. A recording apparatus comprising a platen, a printing roller having indicia characters on its periphery, a carriage movable with respect to the platen, interengaging means on the roller and carriage self-acting to detachably connect the roller to the carriage as one is moved axially into engagement with the other, and means for rotating the roller as the carriage is moved across the platen.

3. In a recording apparatus, the combination of a platen for supporting an object to be printed, a printing roller having indicia characters on its periphery, a carriage slidable with respect to the platen, means on the carriage for rotating the roller as the carriage is moved with respect to the platen, and interengaging snap-fastener means on the roller and rotating means movable axially into engagement one with the other, one of said means having a resilient element adapted to yield as the roller is snapped into engagement with the rotating means.

4. In a recording apparatus, the combination of a slidable carriage, a rotatable spindle on the carriage, means operated by the sliding motion of the carriage for rotating the spindle, a roller having printing characters on its periphery, and an automatically operative clutch for releasably connecting the roller to be rotated from the spindle.

5. In a recording apparatus, the combination of a slidable carriage, a rotatable spindle on the carriage, means operated by the sliding movement of the carriage for rotating the spindle, a printing roller having type-characters on its periphery and a socket at its end, and a resilient clutch-element on the spindle for releasably engaging the socket to connect the roller with the rotatable spindle on the carriage.

6. In a recording apparatus, the combination of a platen, a carriage movable to traverse it with respect to the platen, a rotatable spindle on the carriage, gearing for rotating the spindle during the traverse of the carriage, a printing roller having indicia characters on its periphery, and interengaging means on the printing roller and spindle movable axially into engagement one with the other and self-acting to releasably clutch the roller and spindle together.

7. In a recording apparatus, the combination of a platen, a gear-rack extending parallel with the platen, a carriage slidable longitudinally of the gear-rack, a rotatable spindle on the carriage geared to the rack, a printing roller, and ball-and-socket means on the printing roller and spindle for releasably connecting said elements whereby to rotate the printing roller during its traverse with the carriage.

8. In a printing apparatus, the combination of a platen, a carriage reciprocable with respect to the platen, a spindle rotatable on the carriage means for rotating the spindle during the reciprocation of the carriage, a printing roller having indicia characters on its periphery, a clutch for detachably connecting one end of the printing roller to the spindle for rotation thereby during

the traverse of the carriage, and bearing means on the carriage engaging the opposite end of the roller for maintaining the printing roller in contact with an object held on the platen.

9. In a recording apparatus, the combination of a reciprocable carriage, a rotatable spindle on the carriage, means for rotating the spindle during the reciprocation of the carriage, a printing roller having indicia characters on its periphery and an opening in its end formed with a constricted neck, and a clutch-element on the spindle having resilient ball-ended members for insertion through the neck of the opening in the roller to attach the latter to the spindle.

10. In a recording apparatus, the combination of a fixed platen, a carriage, means for mounting the carriage for movement across the platen and for rocking movement toward and away from the platen, means on the carriage engaging the mounting and adapted to be rotated thereby during the movement of the carriage across the platen, a printing roller having indicia characters on its periphery, and means for releasably connecting the printing roller with the rotatable means on the carriage.

11. In a recording apparatus, the combination of a platen, a track extending longitudinally of the platen, a carriage, means on the carriage for mounting it on the track for sliding movement across the platen and for rocking movement toward and away from the platen, a printing roller having indicia characters on its periphery, means on the carriage rotatable during its sliding movement, and means for connecting the printing roller with said rotatable means.

12. In a recording apparatus, the combination of a standard, a platen fixed on the standard, a cylindrical rack-bar extending longitudinally of the platen, a carriage having bearings embracing the rack-bar to mount the carriage for sliding and pivotal movement with respect to the platen, a gear on the carriage engaging the teeth of the rack-bar to adapt it to be rotated therefrom during the sliding movement of the carriage, and a printing roller attachable to the carriage for connection with the gear to adapt it to be rotated thereby across the face of the platen.

13. In an apparatus of the type indicated, the combination of a platen, a supporting rod extending longitudinally of the platen and having rack-teeth formed thereon, a carriage pivotally mounted on the rod and slidable therealong, a spindle journaled in the carriage and provided with gear-teeth engaging the rack-teeth on the rod, a printing roller having indicia characters on its periphery, and means for detachably connecting the printing roller with the end of the spindle in position above the platen to adapt it to be rolled across the face thereof when the carriage is traveled on its supporting rod.

14. In an apparatus of the type indicated, the combination of a platen, a fixed rod extending along the side of the platen and formed with rack-teeth, a carriage mounted on said rod for sliding movement across the platen and for rocking movement toward and away from the platen, a spindle journaled in said carriage, a gear on the spindle engaging the rack-teeth on the rod, a printing roller having indicia characters on its periphery, and means for clutching the printing roller to the spindle to adapt it to be rolled across the platen during the travel of the carriage on the rod.

15. In an apparatus of the type indicated, the combination of a base, a platen on said base, a rod supported from the base in parallel relation to the platen and formed with rack-teeth on its side, a carriage having bearings embracing the rod to mount it for sliding and rocking movement thereon, a spindle journaled in the carriage, a gear on the spindle engaging the rack-teeth on the rod, a printing roller having indicia characters on its periphery, and means for detachably connecting the printing roller with the spindle to adapt it to be rotated therefrom to roll it across the platen as the carriage is traversed on the rod.

16. In an apparatus of the type indicated, the combination of a support, a platen on said support, a carriage travelable on the support, a rack on the support, a spindle journaled in the carriage, a gear on the spindle arranged with its teeth engaging the rack, a pair of rollers on the carriage, a printing roller having indicia on its periphery, means for rotatably mounting the printing roller on the carriage in peripheral contact with the rollers thereof, and means for rotatably connecting the printing roller with the spindle.

17. In an apparatus of the type indicated, the combination of a support, a platen on said support, a carriage, a pivot on the support for mounting the carriage for swinging movement from a horizontal printing position to a vertical inoperative position, said carriage being slidable on its pivotal mounting, a printing roller on said carriage, and means for rotating the printing roller during the sliding movement of the carriage.

18. In an apparatus of the type indicated, the combination of a support, a platen on said support, a rack-bar on said support, a carriage pivotally mounted on said bar for rocking movement from a horizontal printing position to a vertical inoperative position, said carriage being slidable along the rack bar, a printing roller on said carriage, and a pinion engaging the rack for rotating the printing roller during the sliding movement of the carriage across the platen.

19. In an apparatus of the type indicated, the combination of a support, a carriage mounted for movement on said support, a driving spindle on said carriage, means for rotating the driving spindle during the movement of the carriage on the support, and a printing roller drivably connected with the spindle and having bearing collars, said collars rotatably supporting the roller in the carriage.

20. In an apparatus of the type indicated, the combination of a support, a platen on said support, a carriage mounted for movement on said support, bearing rollers on said carriage, a driving spindle on said carriage, means for rotating the driving spindle during the movement of the carriage on the support, a printing roller having a bearing collar at one end engaging the bearing roller on the carriage and a driving collar at the opposite end having a bearing surface for engaging the driving spindle, and means for drivingly connecting the collar to the spindle.

21. In an apparatus of the type indicated, the combination of a platen, a carriage movable across the platen, a printing roller having a collar at each end, and spaced independent supports on the carriage for detachably engaging the collars on the roller to rotatably support the roller on the carriage.

22. In an apparatus of the type indicated, the combination of a platen, a carriage movable across the platen, a printing roller having a bearing collar at one end with an internal recess, a

spindle on the carriage having means for engaging the internal recess in said collar to rotatably support one end of the roller, interengaging means on the collar and spindle for drivingly connecting the roller and spindle, a collar at the opposite end of the roller having a peripheral bearing surface, and means on the carriage engaging the peripheral bearing surface on the collar to rotatably support the opposite end of the roller.

23. In a recording apparatus, the combination of a platen, a carriage, means for mounting the carriage for traversing movement across the platen and for rocking movement toward and away from the platen, a printing roller, and interengaging means on the roller and carriage self-acting to lock the parts together as one is moved axially into engagement with the other, said carriage being rockable away from the platen to facilitate the mounting of the printing roller on the carriage.

24. In a recording apparatus, the combination of a platen, a supporting rod positioned in a plane parallel to the platen, a carriage having bearings embracing the rod to mount the carriage for sliding and rocking movement thereon, said carriage being adapted to traverse the platen when slid on the rod and to move toward and away from the platen when rocked on the rod, a printing roller, and means for detachably mounting the printing roller on the carriage when the latter is rocked away from the platen.

25. In a recording apparatus, the combination of a fixed support, a carriage, a printing roller, interengaging means on the carriage and printing roller for detachably mounting the roller to rotate on the carriage, and means for mounting the carriage on the support to adapt it to travel in a predetermined path and to rock about an axis at right-angles to the axis of the printing roller whereby the carriage may be moved away from the support to facilitate attachment and detachment of the roller.

26. In a recording apparatus, the combination of a fixed platen, a carriage, a printing roller, interengaging means on the carriage and printing roller for detachably mounting the roller to rotate on the carriage, and means for mounting the carriage to adapt it to traverse the platen and to rock about an axis at right-angles to the axis of the printing roller whereby the carriage may be moved through a substantial angle from an operative to an inoperative position with respect to the platen to facilitate attachment and detachment of the roller.

ELMER W. DAVIS.
ARTHUR H. MAYNARD.