March 2, 1937. E. W. DAVIS ET AL 2,072,098

IDENTIFICATION AND RECORDING DEVICE

Filed Oct. 10, 1931

Fig. 1.

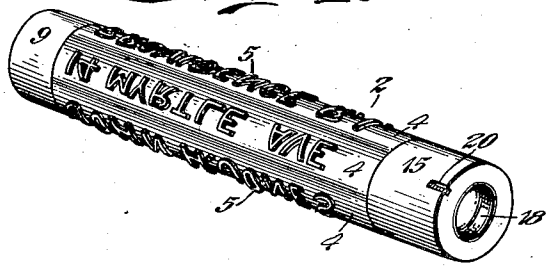


Fig. 2.

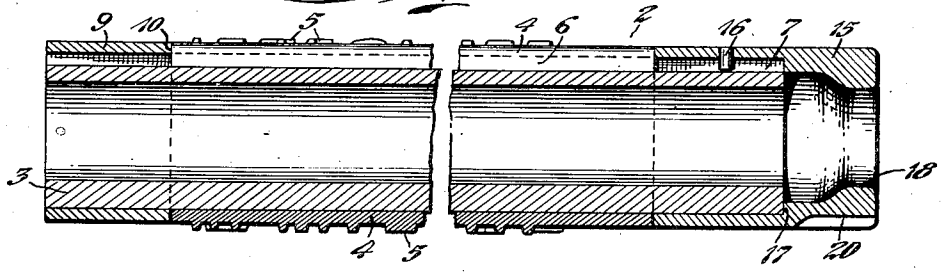


Fig. 3.

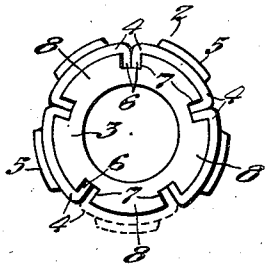


Fig. 4.

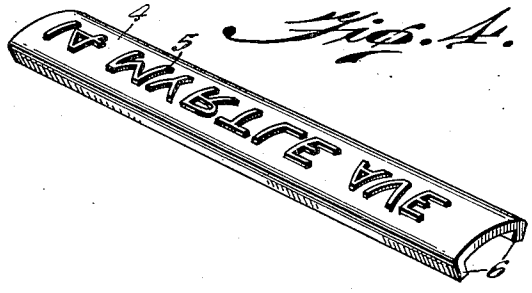


Fig. 5.

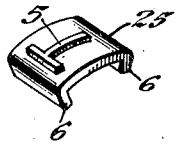


Fig. 6.

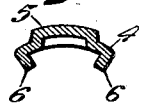


Fig. 7.



Inventor
Elmer W. Davis and
By Arthur H. Mayhew
Pennington and White
Attorneys

Patented Mar. 2, 1937

2,072,098

UNITED STATES PATENT OFFICE

2,072,098

IDENTIFICATION AND RECORDING DEVICE

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

Application October 10, 1931, Serial No. 568,048

15 Claims. (Cl. 101—375)

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

In its preferred form the invention is embodied in a printing roller of relatively small dimensions, approximately the shape and size of a pencil or fountain pen to adapt it to be carried in the pocket or in a purse or hand-bag.

A particular object of the invention is to provide a printing device in the form of a small cylinder or roller having type-characters on its periphery which are shaped to the general contour of the cylinder, that is, concentric to the axis thereof, whereby to insure a clear and legible imprint on the surface to which they are applied.

Another object of the invention is to provide a device of the type specified having printing elements or type-units detachably mounted on a holder whereby they may be removed for substitution of other elements of a like nature to change the character of the indicia as a whole or in part.

Another object of the invention is to provide a device of the type specified wherein the detachable printing elements or type-units are securely locked in place so that the token may be carried about and handled frequently without disarrangement of the indicia thereon.

Another object of the invention is to provide a device of the type specified having the indicia characters formed on detachable slides which may be readily inserted in and removed from their holder.

Another object of the invention is to provide a printing element and identification token of relatively small compass, convenient for carrying and readily distinguishable by sense of touch from other objects contained in a purse or pocketbook.

Another object of the invention is to provide a printing device and identification token which is free from sharp edges and projecting portions liable to injure the hands of the user or to abrade and wear the lining of a pocketbook or other receptacle.

Another object of the invention is to provide a device of the type specified which may be inserted in a press or printing apparatus to be traversed across the surface to be printed.

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 drawing.

In the drawing:

Fig. 1 is a perspective view of a printing roller and identification token constructed in accordanace 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; and

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

Our invention in its broadest sense consists in a printing cylinder or roller of constricted diameter having raised type or indicia characters on its periphery with the printing faces thereof curved to the cylindrical contour of the roller, that is, extending concentrically of its axis.

Heretofore in the printing art, it has been considered essential that printing rollers be of relatively large diameter in order that the type projecting from the periphery thereof may be caused to make a complete imprint. That is to say, it has never been found practical to use a printing roller of relatively small diameter because heretofore the impression faces of the type have invariably been made flat or without curvature conforming to the periphery of the roller on which they are superimposed.

By constructing the printing roller of small dimensions we adapt such a device to be used as an identification token for carrying on the person, while the novel construction of the type or characters as curved in conformity with the cylindrical surface of the roller renders it possible to obtain a clear legible imprint therefrom. The present form of construction of the printing element adapts it for use as an identification token which possesses manifest advantages over similar devices in the shape of flat printing plates.

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 drawing, 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 drawing.

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 drawing. 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. The printing roller is particularly adapted for use in presses of the type illustrated in divisional application, Serial No. 9,628 filed March 6, 1935, and an application constituting a continuation in part thereof, Serial No. 9,627, filed March 6, 1935.

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 ac-

count the customer presents the token or roller 2 for the purpose of identification and the clerk or salesperson applies it to a press to record the sale.

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. For example, the present form of roller may be employed as a printing unit in addressing, recording or reproducing machines having means for feeding a plurality of the rollers across envelopes, sheets or other objects to be printed by connecting them in a chain or delivering them from a magazine and rolling them on a platen.

The peculiar and novel form of the type on the present printing device renders it practical to construct the roller of relatively small diameter yet capable of making a clear, legible impression of the letters or characters throughout the full extent of the latter. That is to say, due to the curved printing faces of the type-characters they will make complete contact with the surface on which the printing is done during the rotative traverse of the roller thereover.

The printing strips or type-slides 4 being conformed to the cylindrical surface of the core or holder 3 on which they are mounted furnishes a firm backing for the type-characters which of themselves are formed to the same curvature, that is, concentric to the axis of rotation. The grooved construction of the roller provides for a dovetailed engagement therewith of the flanges on the slides to securely lock the individual type-elements in place while providing for their convenient application to or detachment from the roller. In brief, this ingenious form of construction of the roller and printing elements renders it convenient for altering the indicia on the face of the roller either by the substitution of other printing strips or by composing lines of type from separate character-elements such as shown in Fig. 5 of the present drawing. The printing strips or type-elements may be economically produced from suitable dies in presses or automatic machines and being constituted as small, light components of the whole roller they may be discarded for substitution of other elements without appreciable loss.

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 without departing from the spirit and scope of the invention. Therefore, without limiting ourselves in this respect, we claim:

1. A printing roller comprising a cylindrical core having longitudinal slots on its periphery, printing elements mounted on the core and having flanges engaging the slots, a bearing collar at one end of the core, a driving collar at the opposite end of the core having means engaging one of the slots, and connecting means on the driving collar for engagement with a driving element, said bearing and driving collars being adapted to rotatably support the roller.

2. A printing roller comprising a cylindrical core, a collar at one end of the core having a peripheral bearing surface, a hollow driving collar at the opposite end of the core having an internal bearing surface, printing elements on the periphery of the core held axially positioned between the collars, means for connecting the driving collar to the core for rotation therewith, and means on the driving collar for connection with a driving element.

3. A printing roller comprising a cylindrical core, a collar at one end of the core having a peripheral bearing surface, a hollow driving collar at the opposite end of the core having an internal annular shoulder for engagement with the end of the core, the bore of said driving collar being shaped to form a semispherical bearing surface, printing elements on the periphery of the core held in axial position between the collars, means for connecting the driving collar to the core for rotation therewith, and connecting means on the periphery of the driving collar for engagement with a driving element.

4. A printing roller comprising a cylindrical core having longitudinal slots on its periphery, indicia elements held in said slots and provided with raised type having arcuate printing faces concentric with the axis of the core, a bearing collar at one end of the core, a hollow driving collar at the other end of the core having a projection engaging one of the slots, said driving collar having an internal bearing surface, and means on its periphery for engagement with a driving element.

5. A printing roller comprising a cylindrical core having longitudinal grooves on its periphery, type elements overlying the peripheral surface of the core and having flanges in dovetail engagement with the grooves, hollow cylindrical bearing collars mounted on the cylindrical periphery of the core adjacent the opposite ends thereof for rotatably supporting the roller, and connecting means on one of the collars adapted for engagement with a driving element.

6. A printing roller comprising a core, a collar at one end having a peripheral bearing surface, a hollow driving collar at the opposite end having an internal bearing surface and a recess on its periphery for engagement with a driving element, and means for connecting the driving collar to the core for rotation therewith.

7. An identification token adapted to be carried by the person to be identified and in the form of a printing roller comprising a cylindrical core having type-characters on its periphery, means on the periphery of the core forming a journal for rotatably supporting the roller at one end, and connecting means at the opposite end adapted for a quick-detachable connection with a rotatable spindle.

8. An identification token adapted to be carried by the person to be identified and in the form of a printing roller, said roller comprising a cylindrical core and printing elements on the periphery of the core having type-characters formed thereon, the core at one end being so shaped as to form a centrally-positioned recess having a reduced neck portion, said recess and neck portion forming a connecting means to adapt the roller for a quick-detachable snap connection with a correspondingly shaped split clutch on a driving spindle.

9. A quickly detachable printing roller adapted to be carried by a person as a token comprising a cylindrical core, hollow cylindrical collars mounted on the periphery of the core adjacent

the opposite ends thereof, and printing elements on the periphery of the core directly engaged by the collars to hold them axially positioned therebetween, said collars being so constructed and arranged as to form bearings for rotatably supporting the roller.

10. A quickly detachable printing roller adapted to be carried by a person as a token comprising a cylindrical core, hollow cylindrical bearing collars mounted on the periphery of the core adjacent the opposite ends thereof, and printing elements on the periphery of the core directly engaged by the collars to hold them axially positioned therebetween, one of said collars having a peripheral bearing surface forming a journal for rotatably supporting one end of the roller.

11. A quickly detachable printing roller adapted to be carried by a person as a token comprising a core, hollow cylindrical collars mounted on the cylindrical periphery of the core adjacent the opposite ends thereof, and printing elements on the periphery of the core directly engaged by the collars to hold them axially positioned therebetween, one of said collars having means for connection with the end of a driving element to rotatably support one end of the roller, the other of said collars having a peripheral bearing surface forming a journal for rotatably supporting the opposite end of the roller.

12. A quickly detachable printing roller adapted to be carried by a person as a token comprising a generally cylindrical core, segmental strips mounted on the periphery of the core and having arcuate printing faces concentric with the axis of the core, and collars on the core adjacent the opposite ends thereof directly engaging the segmental strips to hold them axially positioned on the core, said collars being so constructed and arranged as to form bearings for rotatably supporting the roller.

13. A quickly detachable printing roller adapted to be carried by a person as a token comprising a cylindrical core having longitudinal slots on its periphery, segmental strips having side flanges held in the slots in the core and provided with raised type having arcuate printing faces concentric with the axis of the core, and collars on the periphery of the core adjacent the opposite ends thereof directly engaging the strips to hold them axially positioned therebetween, one of said collars having a peripheral bearing surface forming a journal for rotatably supporting one end of the roller.

14. A printing roller comprising a cylindrical core having longitudinal slots on its periphery, segmental strips having side flanges held in the slots and provided with raised type having arcuate printing faces concentric with the axis of the core, and collars mounted on the core adjacent the opposite ends thereof and directly engaging the ends of the strips to hold them axially positioned therebetween, one of said collars having means for connection with a driving element and said collars being so constructed and arranged as to form bearings for rotatably supporting the roller.

15. A quickly detachable printing roller adapted to be carried by a person as a token comprising a cylindrical core, printing elements on the periphery of the core, and means on the core directly engaging the printing elements to hold them axially positioned thereon, said printing roller having a diameter less than one-half of an inch and a length greater than six times its diameter.

ELMER W. DAVIS.
ARTHUR H. MAYNARD.