July 31, 1951 G. E. LIMBERG 2,562,557

ROLLING CONTACT MARKING DEVICE WITH INTERCHANGEABLE MARKING ROLLERS

Filed March 20, 1946

Fig. 1.

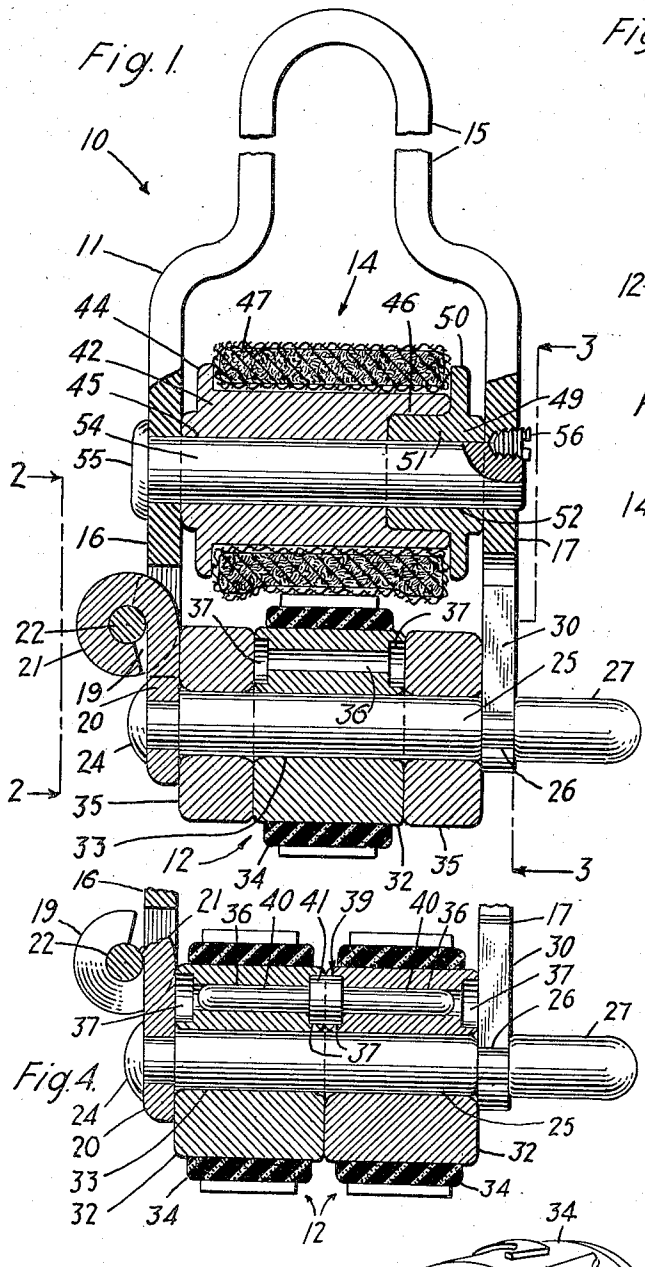


Fig. 2.

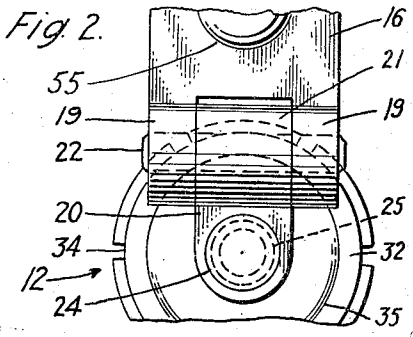


Fig. 3.

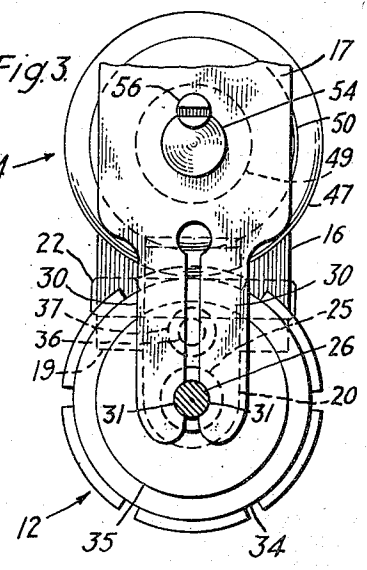


Fig. 4.

Fig. 6.

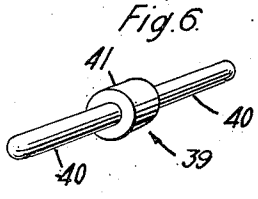
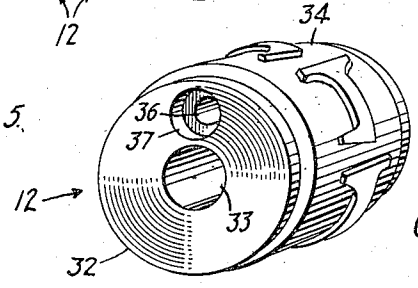


Fig. 5.



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ROLLING CONTACT MARKING DEVICE WITH INTERCHANGEABLE MARKING ROLLERS

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4 Claims. (Cl. 101—329)

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The present invention relates to rotary marking devices, and more particularly to such devices having interchangeable marking rollers.

An object of the present invention is to provide a marking device wherein rapid interchanging of the marking rollers is facilitated.

Another object is to provide a marking device which is simple and economical in construction, can be readily manufactured and assembled and can withstand rough usage to which it may be subjected.

Another object is to provide a marking device which has great utility for numerous purposes.

A further object consists in the construction and arrangement of parts and combination of elements whereby the foregoing objects and advantages are accomplished.

Other and further objects of the invention will be obvious upon an understanding of the illustrative embodiment about to be described, or will be indicated in the appended claims, and various advantages not referred to herein will occur to one skilled in the art upon employment of the invention in practice.

A preferred embodiment of the invention has been chosen for purposes of illustration and description, and is shown in the accompanying drawings, forming a part of the specification, wherein:

Figure 1 is a front elevational view, generally in longitudinal section, of a marking device in accordance with the invention.

Figure 2 is a fragmentary side elevational view of the device as viewed along the line 2—2 of Figure 1.

Figure 3 is a fragmentary side elevational view of the opposite side of the device as viewed along the line 3—3 on Figure 1.

Figure 4 is a fragmentary sectional view similar to the lower portion of Figure 1, but illustrating a pair of marking rollers substituted for the single roller shown in Figure 1.

Figure 5 is a perspective view of an element for connecting a pair of rollers to align the same for simultaneous rotation.

Figure 6 is a perspective view of an element for locking a plurality of rollers for simultaneous rotation.

Referring to the drawing, and more particularly to Figure 1, there is shown a marking device 10, generally comprising a frame 11, a marking roller 12, and a roller 14 for applying a marking medium to the marking roller 12.

The frame 11 is constructed of a strip slightly bendable or yieldable material such as metal or

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plastic molding composition. The frame is provided at its upper end with a substantially U-shaped handle 15 of suitable length to facilitate manual engagement thereof. If desired, the handle may be omitted since the device is adapted to be grasped manually as is apparent from the illustration thereof. At its lower end, the frame is provided with a pair of spaced apart, substantially parallel legs 16 and 17, respectively, between which the rollers 12 and 14 are mounted as will be described hereinafter.

As illustrated in Figures 1 and 2, the leg 16 is slightly shorter than the leg 17, and is provided at its lower end with a pair of spaced apart generally circular trunnion portions 19 integrally formed with the strip. A hinge member 20 has an upper generally circular portion 21 disposed between the trunnion portions 19 and is pivotally mounted by a pin 22 or the like extending through the trunnion portions 19 and the portion 21.

The lower end of the hinge member 20 has an aperture therein in which one end 24 of shaft means 25 is secured by riveting or the like (Figure 1). The shaft means, as shown, is circular in section to rotatably mount the marking rollers and is of a length to extend from the leg 16 to a point slightly beyond the leg 17. Adjacent the other end of the shaft means a circumferentially extending recess 26 is provided for detachably connecting the shaft means to the leg 17, as about to be described. The end of the shaft means extending beyond the leg 17 provides a manually engageable portion 27 which facilitates connection and detachment between the shaft means and the leg 17.

As illustrated in Figures 1 and 3, the leg 17 has a pair of bifurcated portions 30 at the lower end thereof, each provided with an arcuate recess 31 for receiving the circumferentially recess portion 26 of the shaft means. By reason of the resilience of the material of which the strip is formed, the portions 30 are yieldable and cooperate with the shaft means 25 to provide a locking connection.

The marking rollers 12 are illustrated more particularly in Figures 1, 4 and 5 and comprise a circular member 32 having a circular bore 33 for rotatable mounting thereof on the shaft means 25, and a printing strip 34 extending circumferentially about the periphery of the member 32. For purposes of illustration, the strip has formed thereon suitable indicia such as a numeral repeated at spaced intervals.

Two sets of rollers, each numbered from zero through nine respectively are provided with the

device so that the rollers may be used in combinations providing numbers from one to ninety-nine. Where it is desired to provide numbers from one to nine, a single roller is used (Figure 1) which is positioned between spacing rollers **35** each being half the width of a roller **12**. Where it is desired to provide numbers from ten to ninety-nine a pair of rollers is used (Figure 4), the spacing rollers being unnecessary since the width of the rollers is such to take up the space between the legs **16** and **17**. It will be understood that the width of the rollers **12** and the spacing rollers **35** may be such that three or four rollers may be mounted side by side on the shaft means to thereby provide numbers from one to nine thousand and ninety-nine.

Where two or more rollers are used together, it is desired that they are aligned and rotate as a unit. For this purpose, each of the rollers **12** is provided with an eccentric bore **36** having countered portions **37** at each end. A suitable element **39**, such as shown in Figure 6, is utilized for locking the rollers **12** for simultaneous rotation. This element has end portions **40** each adapted to extend into the bore **36** of adjacent rollers and has an enlargement **41** between its ends adapted to extend into the counterbored portion **37** of adjacent rollers.

The marking medium applying roller **14** is illustrated in Figures 1 and 3 and comprises a spool member **42** having a flange **44** at one end and a central bore **45** provided with a counterbored portion **46** at the end opposite the flanged end. A tubular inking pad **47** or the like is mounted on the spool and is removably positioned thereon by a member **49** having a flange **50**, a bearing portion **51** fitting into the counterbored portion, and a central bore **52**.

The roller **14** is rotatably supported intermediate the handle **15** and the roller **12**, with its inking pad in contact with the roller **12**, by a shaft **54** having a head **55** at one end and extending through apertures in legs **16** and **17** and through the bores **45** and **52** of the members **42** and **49**, respectively. The shaft is removably secured to the legs to facilitate replacement of the inking pad **47** by a set screw **56** threaded into an aperture partially formed by the leg **17** and partially formed by the end of the shaft opposite the head **55**.

The shaft means **25** when attached as shown and the shaft **54** serve to reinforce the frame of the device, particularly to maintain the legs **16** and **17** in their parallel position and to prevent spreading thereof during use of the device.

In operation, when it is desired to interchange the rollers **12**, the portion **27** is engaged and urged downwardly to cause the circumferentially recessed portion **26** to be disengaged by the bifurcated portions **30**. The shaft means is then adapted to be swung downwardly about its pivotal connection and away from the leg **17**, whereby rollers **12** and spacing rollers **35** can be slipped over the free end of the shaft means to remove or replace the same. When interchanging of the rollers has been effected, the shaft means is again connected to the leg **17**. These operations can be easily effected in a minimum time interval.

While the device in accordance with the invention is useful for numerous purposes, it is particularly useful in the printing art where it is desired to number galley strips so that printed articles can be readily identified after editorial changes are effected, such as cutting, inserting and arrangement.

From the foregoing description, it will be seen that the present invention provides an improved marking device wherein the marking rollers are readily interchanged and the marking medium applying means are readily replaced. The device is simple in construction, economical in manufacture and is easily manipulated. The device can readily withstand such usage to which it may be subjected for its intended purpose.

As various changes may be made in the form, construction and arrangement of the parts herein, without department from the spirit and scope of the invention and without sacrificing any of its advantages, it is to be understood that all matter herein is to be interpreted as illustrative and not in any limiting sense.

It is also to be understood that the following claims are intended to cover all the generic and specific features of the invention herein described, and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

I claim:

1. A marking device of the class described, comprising a frame having a pair of spaced apart parallel legs each provided with a free end and having a handle portion at the opposite ends of said legs, a shaft, a hinge element at one end of said shaft, means pivotally connecting said element to the free end of one of said legs, in a manner whereby said shaft is mounted for tilting movement about an axis substantially perpendicular to the longitudinal axis of said shaft marking roller means removably mounted on said shaft and providing a close fit between said legs, a second shaft removably mounted on said legs between said handle portion and said first shaft and parallel to said first shaft, inking roller means removably mounted on said second shaft in contact with said marking roller means and providing a close fit between said legs, means for detachably securing said second shaft on said legs, and positive locking means including cooperating elements at the free end of said leg other than said leg on which said hinge element is pivotally connected and at the other end of said first shaft, respectively, for detachably securing said first shaft, to said other leg and maintaining said legs in parallel relation at the free ends thereof the aforementioned arrangement of both of said shaft securing means and the close fit of said marking and said inking roller means between said legs providing a rigid structure whereby said shafts are maintained in parallel relation.

2. A marking device according to claim 1, wherein said locking element means for said first shaft include yieldable split fingers on said leg formed with opposed recesses and a reduced section on said first shaft of a width about equal to the thickness of said fingers adapted to be forced between said fingers and seat in said opposed recesses to positively lock said shaft and said leg and adapted to cooperate with the pivotal connection to rigidly connect said legs.

3. A marking device according to claim 1, wherein said inking roller means include a spool having a flange at one end thereof and a central shaft receiving bore provided with an enlarged bore portion at the end opposite said flange, a tubular inking medium applying member removably mounted on said spool and a member having a shaft receiving bore, a portion seated in said enlarged bore portion and a flange cooperating with said first flange to position said tubular

member on said spool, said last mentioned member and said spool each having an outer portion in contact with one of said legs to maintain the same in assembled relation.

4. A marking device according to claim 1, wherein said marking roller means include a plurality of independent rollers having means for removably interconnecting and aligning the same for simultaneous rotation about said first shaft.

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