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MARKING DEVICES

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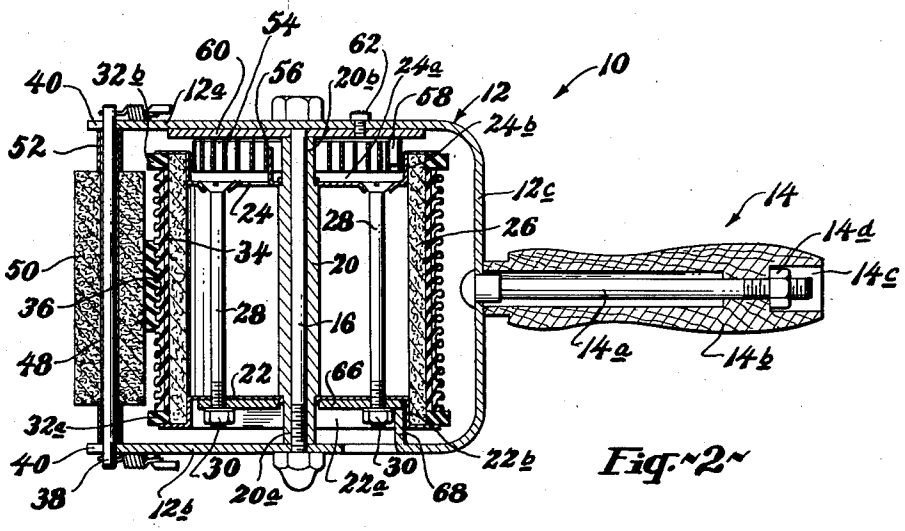


Fig. 2

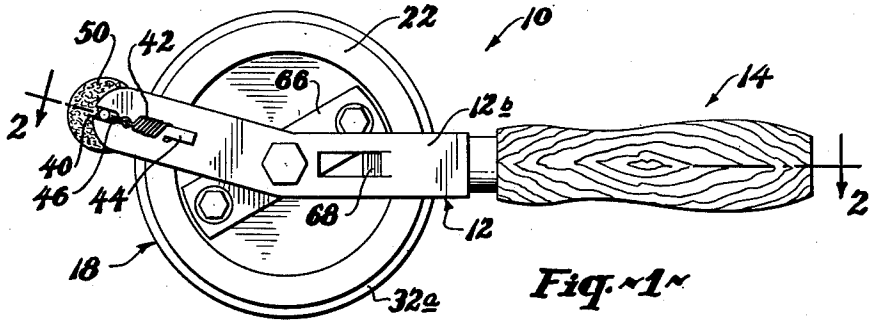


Fig. 1

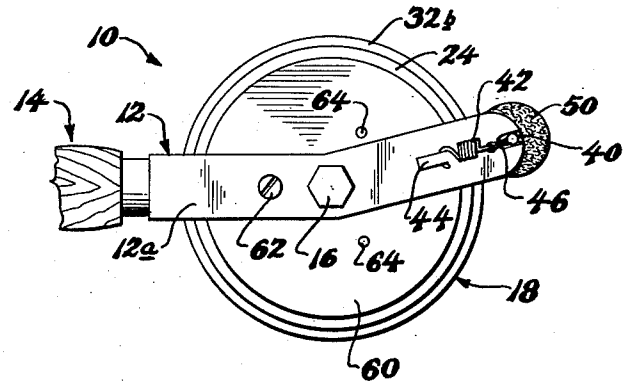


Fig. 3

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MARKING DEVICES

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The present invention relates generally to marking devices, and is particularly directed to improvements in marking devices wherein a marking wheel, having marking elements supported on the periphery thereof, is rolled on the surface to be marked so that the marking elements apply inked or other impressions to that surface.

An object of the present invention is to provide a marking device of the described character which is simple and economical to produce so that it may be sold at a low price to find wide-spread use.

Another object is to provide a marking device of the described character which is formed, for the most part, from stamped metal parts, and wherein at least some of these stamped metal parts are similar in configuration to permit use of a single set of dies in stamping such similar parts.

A further object is to provide a marking device of the described character which is arranged and constructed to hold together in its original assembled condition even after repeated and extensive operation.

In accordance with the present invention, the above, and other objects, features and advantages, are achieved by providing a marking device which includes a stamped U-shaped frame formed by two parallel legs and a cross-piece connecting the legs at one end and having a handle extending therefrom. An axle extends parallel to the frame cross-piece and is mounted at its opposite ends in the parallel frame legs at locations intermediate the ends of the latter. A marking wheel is rotatably mounted on the axle and includes a bushing rotatable on the axle, two stamped circular end plates carried by the bushing and formed with oppositely facing circular recesses which define annular, radially outwardly directed shoulders, and a cylinder or core of cardboard or the like disposed between the circular end plates and seating at its opposite ends on the annular shoulders of the end plates. A pair of bolts extend axially between the end plates to draw the latter together against the opposite end edges of the cylindrical core. Annular rubber bearer rims are mounted on the cylindrical core. Annular rubber bearer rims are mounted on the cylindrical core adjacent the end plates and extend radially beyond the latter to frictionally engage the surface to be marked and cause rotation of the marking wheel as the frame is moved bodily over that surface. Suitable type supporting means is provided on the cylindrical core to carry type elements for marking the surface over which the marking wheel is rolled, and an inking roll is removably and rotatably supported between the free ends of the parallel frame legs for rolling and ink supplying contact with the type elements on the marking wheel. In order to return the marking wheel to its original position after each marking operation, a torsion spring is disposed within the circular recess of one of the end plates and has one of its ends secured to a tab struck-out of that end plate. The other end of the torsion spring is secured to a tab struck-out of a circular adjustment plate which is rotatable on the axle between

the spring and the adjacent leg of the frame, and a lock-screw is extended through that adjacent leg and into a selected one of a series of circumferentially spaced tapped openings in the adjustment plate. In order to limit the return rotation of the marking wheel under the influence of the torsion spring, a stop member is disposed within the recess of the other of the end plates and is mounted at its opposite ends on the axial bolts which draw the end plates together. An abutment is struck-out of the frame leg adjacent that other end plate and extends into the recess of the latter into the path of travel of the stop member for engagement with the latter when the marking wheel has been returned to its original or starting position.

In order that the present invention may be fully understood, a specific embodiment thereof is hereinafter described in detail, merely by way of example, and shown in the accompanying drawing forming a part hereof and wherein:

Fig. 1 is a side elevational view of a marking device embodying the present invention;

Fig. 2 is a sectional view taken along the line 2—2 of Fig. 1; and

Fig. 3 is a fragmentary side elevational view, similar to Fig. 1, but showing the opposite side of the marking device.

Referring to the drawing in detail, the marking device therein illustrated and embodying the present invention is generally identified by the reference numeral **10**. The marking device **10** includes a U-shaped frame **12** which is made up of two parallel spaced apart legs **12***a* and **12***b* and a cross-piece **12***c* connecting the legs **12***a* and **12***b* at one end. The frame **12** is preferably formed from a metal strap which is bent or stamped into the desired configuration. A handle **14** extends from the center of the frame cross-piece **12***c* in the direction opposed to the legs **12***a* and **12***b*. The handle **14** may include a bolt **14***a* extending through the cross-piece **12***c*, and a suitably shaped outer body **14***b* which has an axial bore therein, accommodating the bolt **14***a*, and formed with a counterbore **14***c* to receive a nut **14***d* which secures the body **14***b* on the bolt **14***a*.

An axle forming bolt **16** extends through the frame legs **12***a* and **12***b*, parallel to the cross-piece **12***c*, and at locations intermediate the opposite ends of the frame legs. A marking wheel, generally identified by the reference numeral **18**, is rotatably mounted upon the axle forming bolt **16** and includes a bushing **20** which is rotatable on the bolt **16** between the frame legs **12***a* and **12***b*. The opposite end portions of the bushing **20** are of slightly reduced diameter to define radially extending shoulders facing away from each other at the opposite ends of the bushing. The marking wheel **18** further includes two circular end plates **22** and **24** which are stamped out of flat sheet metal. The circular end plates **22** and **24** are of the same general configuration so that they can be stamped out and formed with the same set of dies. Each of the end plates **22** and **24** is formed with a central opening having a narrow flange therearound to receive one of the reduced diameter end portions of the bushing **20**. Thus, the circular end plate **22** is disposed upon the reduced diameter portion **20***a* of the bushing, while the end plate **24** is disposed upon the reduced diameter end portion **20***b* at the opposite end of the bushing **20**. Further, the end plates **22** and **24** are formed with circular recesses **22***a* and **24***a*, respectively, opening axially away from each other. The circular recesses **22***a* and **24***a* are peripherally defined by axially extending portions **22***b* and **24***b* which provide radially outwardly directed annular shoulders adjacent the peripheral margins of the respective end plates. A cylindrical core **26**, formed of

cardboard or the like, is disposed between the end plates 22 and 24 and seats at its opposite ends upon the axially extending portions 22*b* and 24*b* of the circular end plates. The several parts of the marking wheel 18 described above are held together by two axially extending bolts 28 having counter-sunk heads received in countersunk openings in the end plate 24 and threaded end portions which extend through suitable openings in the end plate 22 and receive securing nuts 30. Thus, the bolts 28 are effective to draw together the end plates 22 and 24 against the opposite end edges of the cylindrical core 26 and against the radial shoulders of the bushing 20 defined at the inner ends of the reduced diameter portions 20*a* and 20*b* of the bushing 20.

Cast rubber bearing rims 32*a* and 32*b*, of circular configuration, are disposed upon the cylindrical core 26 adjacent the end plates 22 and 24, respectively, and extend radially beyond the peripheries of the adjacent end plates. Thus, when the marking device 10 is grasped by the handle 14 and moved bodily over a surface to be marked, the bearing rims 32*a* and 32*b* frictionally engage that surface and cause rolling of the marking wheel 18 along the surface to be marked. The marking wheel 18 also has means on the cylindrical core 26, between the bearing rims 32*a* and 32*b*, for supporting conventional marking elements. For example, as shown in Fig. 2, such supporting means may be in the form of a rubber sheet 34 adhesively secured to the outer surface of the core 26 between the bearing rims and having circumferentially extending, resilient gripping elements thereon to cooperate with correspondingly shaped gripping elements on the back surface of rubber type elements 36. Since the specific type elements and the means for supporting such type elements upon the marking wheel are not a part of the present invention, no attempt has been made to either describe or illustrate such means in detail herein. In any event, as the marking wheel 18 is rotated in rolling contact with a surface, the marking or type elements 36 will be brought into marking contact with the surface.

When the marking applied to the surface is to be in the form of an inked impression, the marking device 10 embodying the present invention includes an arrangement for supplying ink to the surfaces of the type elements 36. This ink supplying arrangement preferably includes an axle 38 received at its opposite ends in open slots or notches 40 formed in the free ends of the frame legs 12*a* and 12*b*. The axle 38 is retained in the slots 40 by tension springs 42 which at one end are secured to tabs 44 struck out of the related frame legs and at the other end are attached to cotter pins 46 secured to the related ends of the axle 38. A sleeve or bushing 48 is rotatable on the axle 38 between the frame legs 12*a* and 12*b* and carries a felt, or other porous, roller 50 which is impregnated with ink. Suitable tubular spacers 52 are provided on the bushing 48 between the ends of the inking roll 50 and the adjacent frame legs 12*a* and 12*b* to maintain the inking roll 50 in an axial position effecting contact with the type elements 36, while avoiding contact with the outer surfaces of the bearing rims 32*a* and 32*b*. It is apparent that the springs 42, not only act to retain the axle 38 within the notches or slots 40, but also resiliently urge the inking roll 50 against the printing surfaces of the type elements. In order that the handle 14 may be held in a position raised from the surface to be marked without causing contact of the inking roll with that surface, the frame legs 12*a* and 12*b* are preferably bent longitudinally, as shown in Figs. 1 and 3, in parallel planes normal to the axis of rotation of the marking wheel 18.

Since it is intended that the marking device 10 will apply only a single marking to the surface over which the marking wheel 18 is rolled, the device 10 includes a return mechanism for repositioning the marking wheel at its original or starting location after the wheel is lifted off a marked surface. This repositioning or return mechanism includes a torsional spring 54, for example, a coiled clock spring, which is disposed within the recess 24*a* defined by the end plate 24 of the marking wheel. One end of the torsional spring 54 is secured to an axially struck-out tab 56 extending from the end plate 24, while the other end of the torsional spring 54 is suitably secured to an axially struck-out tab 58 formed on a circular plate 60 which is rotatable on axle 16 between the torsion spring 54 and the frame leg 12*a*. The circular plate 60 is adjustably held against rotation by a locking screw 62 which extends through a suitable opening in the frame leg 12*a* and is received in a selected one of a series of circumferentially spaced apart tapped holes 64 formed in the plate 60. Thus, the plate 60 can be rotatably adjusted for increasing and decreasing the torsional force exerted by the spring 54 for the purpose of returning the marking wheel 18 to its original position following the marking of a surface.

In order to limit the return movement of the marking wheel 18 under the influence of the torsional spring 54, and thereby to establish the initial or starting position of the marking wheel, a diametrically extending stop member 66 is disposed within the recess 22*a* defined by the end plate 22 and is formed with a central opening through which the adjacent and portion 20*a* of the bushing 20 loosely extends. Adjacent its opposite ends, the stop member 66 is formed with suitable openings through which the bolts 28 extend, and the bolts 28 thereby secure the stop member 66 to the marking wheel. An abutment 68 is struck out of the frame leg 12*b* and extends axially into the recess 22*a* and the path of travel of an end portion of the stop member 66. Thus, when the marking wheel is lifted from a marked surface, the torsional spring 54 causes the marking wheel to rotate in the direction opposite to the rotation during marking until the stop member 66 engages the abutment 68 and thereby establishes the initial or starting position of the marking wheel. Since the stop member 66 is supported at its opposite ends by the bolts 28, the engagement of the stop member with the abutment 68 will not produce any turning action of the stop member about either one of the supporting bolts 28, and therefore there will be no tendency to loosen the nuts 30.

From the foregoing, it is apparent that the present invention provides a marking device of simple and inexpensive construction, embodying a minimum number of parts for the functions to be performed, and making full use of stamped elements, as distinguished from machined or cast parts. Further, it is apparent that the stamped end plates 22 and 24 of the marking wheel 18 are substantially similar and can be formed with the same set of dies, with the counter-sunk openings and struck out tab 56 of the end plate 24 being formed in a second or further stamping operation.

While a particular embodiment of the invention has been described in detail and illustrated in the drawing, it is to be understood that the invention is not limited to this precise embodiment, and that various changes and modifications may be effected therein without departing from the scope or spirit of the invention, as defined in the appended claims.

What is claimed is:

1. A marking device comprising a portable frame movable bodily over a surface to be marked end including a bent metal strap of U-shaped configuration having two parallel, spaced apart legs and a cross-piece connecting said legs at one end of the latter, an axle extending parallel to said cross-piece and supported in said legs intermediate the ends of the latter, a marking wheel including a bushing rotatable on said axle, two identical, circular stamped metal end plates having central openings receiving said bushing and circular recesses concentric with the axis of the bushing and opening axially in directions facing away from each other, said circular recesses being peripherally defined by axially extending portions of the end plates

spaced radially inward from the perimeters of the latter and forming annular, radially outward facing shoulders which are each bounded, at one side, by a radially outwardly directed annular flange, a cylindrical core of relatively rigid fibrous material between said end plates and seating, at its opposite ends, upon said annular shoulders and against said flanges, said core having a thickness less than the radial extent of said flanges so that the latter extend radially beyond the outer surface of said core, and axial bolts extending through said core and end plates and drawing the latter together against the end edges of said core, circumferential bearer rims on said core adjacent said flanges of the end plates and extending radially beyond the latter to frictionally engage the surface to be marked and cause rolling of said wheel in one direction in response to movement of said frame over the surface, marking means on said core between said bearer rims, an inking roll, means supporting said inking roll in said frame in rolling contact with marking means on said core between said rims, means connected between said frame and wheel and nested within the recess of one of said end plates to yieldably urge said wheel to rotate in the direction opposed to said one direction, and means extending into the recess of the other of said end plates to limit the rotation of the marking wheel in said opposed direction and thereby to establish the starting position of said marking wheel.

2. A marking device according to claim 1; wherein said means limiting the rotation of the marking wheel includes a stop member extending diametrically in the circular recess of said other end plate, the opposite end portions of said stop member having openings therein to receive said axial bolts drawing the end plates together so that said axial bolts secure the stop member to said marking wheel, and an abutment struck from the frame leg adjacent said other end plate and extending axially into said circular recess of the latter and into the path of travel of an end of said stop member, and wherein said means

yieldably urging said marking wheel to rotate includes a coiled torsional spring in the circular recess of said one end plate, a first tab struck-out of said one end plate and extending axially into the related recess, one end of said spring being attached to said first tab, and rotatably adjustable means securing the other end of said torsional spring relative to said frame.

3. A marking device according to claim 2; wherein said adjustable means securing the other end of the torsional spring relative to the frame includes a circular plate rotatable on said axle supporting the marking wheel between said one end plate and the adjacent one of said frame legs, said circular plate having a struck-out tab extending axially into said recess of said one end plate and secured to said other end of the torsional spring, said circular plate further having a series of circumferentially spaced apart tapped holes therein, and a locking screw extending through said adjacent frame leg and into a selected one of said tapped holes to secure said circular plate in an angularly adjusted position relative to said frame so that said spring exerts a predetermined torsional force on said marking wheel.

References Cited in the file of this patent

UNITED STATES PATENTS

52,169	Holt	Jan. 23, 1866
314,470	Pierce	Mar. 24, 1885
321,223	Keeler	June 30, 1885
342,228	Rodgers	May 18, 1886
391,228	Burbank	Oct. 16, 1888
1,364,301	Paxton	Jan. 4, 1921
1,404,417	Wolfe	Jan. 24, 1922
1,646,576	Castan	Oct. 25, 1927
1,782,792	Pajeau	Nov. 25, 1930
2,607,293	McKay	Aug. 19, 1952
2,634,676	McKay	Apr. 14, 1953