Oct. 10, 1961 S. N. ROSENTHAL 3,003,468

LINE MARKERS

Filed July 29, 1959

FIG. 1

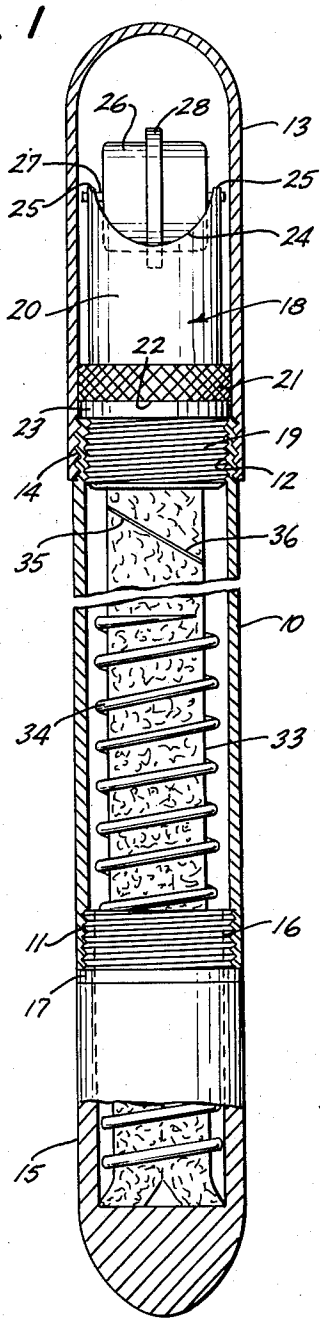


FIG. 2

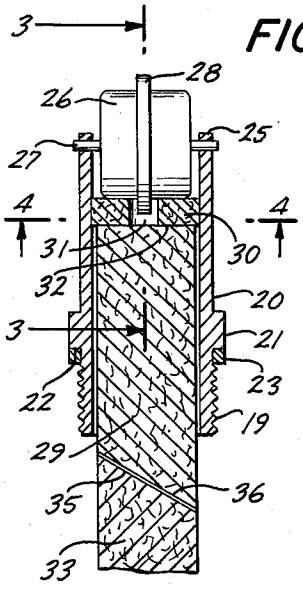


FIG. 3

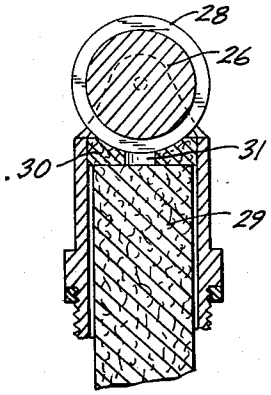
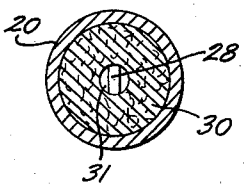


FIG. 4



INVENTOR.
SIDNEY N. ROSENTHAL

BY

Curtis, Morris & Safford

ATTORNEYS

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LINE MARKERS

Sidney N. Rosenthal, Belle Harbor, N.Y., assignor to Speedry Chemical Products, Inc., Richmond Hill, N.Y.

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1 Claim. (Cl. 120—42.2)

This invention relates to a capillary line marker.

The principal object of the invention is to provide a marker having an ink applicator which is so formed that continuous single or multiple broad or narrow lines may be marked upon the surface of an object and wherein the ink is fed to an applicator by capillarity and under controlled conditions.

A further object of the invention resides in so constructing the marker that the ink supply may be replenished by the user, and so that there will be substantially no free ink present in any part of the marker.

A still further object of the invention resides in providing the marker with a removable head assembly so that the configuration and width of the line may be changed at will.

It is a still further object of the invention to so mount an ink supply carrier that it conveniently may be removed from the casing or barrel of the marker for resaturation with ink without exposing the fingers of the user to contact with the ink.

Another object of the invention is to provide ink feeding means in separate independently movable sections, part thereof being included in the head assembly and movable therewith, as desired, from one end of the casing; and part thereof being removable, as desired, through the opposite end of the casing.

With these and other objects in view, the invention comprises the combination of parts illustrated in the drawing, described in the specification, and recited in the claims, it being understood, however, that modifications in the embodiment disclosed may be made without departing from the spirit of the invention or exceeding the scope of the claims.

In the drawing which illustrates the preferred embodiment of the invention,

FIGURE 1 is an elevational view, partly in section and partly in elevation;

FIGURE 2 is a fragmentary vertical sectional view;

FIGURE 3 is a section taken on the plane of line 3—3 of FIGURE 2; and

FIGURE 4 is a section taken on the plane of line 4—4 of FIGURE 2.

Preferably the marker comprises a hollow cylindrical mid-section or body portion, as casing 10 having internal screw threads 11 and 12 at its open ends and which may be cylindrical or of cross-section other than circular throughout or throughout a major portion. A cap 13 is removably mounted on the casing 10 by suitable means such as interengaging screw threads 14 on the inner surface of the cap and the outer surface of the casing. At the opposite end of the casing a cover 15 is mounted by suitable means such as interengaging screw threads 16 and screw threads 11 on the casing 10.

Interposed between the cover 15 and the casing 10 is a resilient washer 17 which is formed preferably of plastic, and which insures air tightness at the adjacent joint between the casing 10 and the cover 15.

A removable head assembly indicated generally by the reference numeral 18 includes a sleeve 20 provided with securing means such as screw threads 19 which interengage with the screw threads 12 on the casing 10. Said sleeve 20 has a peripheral flange which provides a knurled finger grip 21 adjacent the screw-threaded portion 19, and a shoulder 22. A compressible washer 23 is mounted to

seal the joint between said shoulder 22 and the outer end edge of casing 10.

The upper end of this sleeve 20 is cut away as at 24 to form oppositely arranged stanchions which provide bearings 25.

An applicator 26 is mounted for rotation in these bearings 25 by means of a spindle 27. This applicator is preferably of cylindrical cross-section, but may be of other desired forms. The applicator includes a marking rim 28 which is preferably midway between the bearings 25, and the marking surface of which may be plain or of such design in bas relief as may be desired. The marking rim is circular in form, but may, of course, be of a desired width, depending upon the width of the line that is to be produced.

The head assembly is removable as a unit and may be replaced by others having different widths of marking rims or different surface configurations.

This marking head assembly includes, also, an ink transmitter portion 29 of the ink feeding means which transmits the ink from the main supply, or carrier member 33 preferably to a washer 30 having a central opening 31 therein into which the rim 28 extends, said transmitter and said washer being coaxially and removably mounted in said sleeve 20. These ink transmitter and washer portions are both made of such material as is capable of conveying ink by capillarity, felt being one of such materials. Relatively hard felt is preferable. These ink transmitter and washer portions have surface-to-surface contact at 32 so that the ink from the transmitter will be conveyed to the washer portion and from the washer portion to the applicator; and the inner end of transmitter 29 extends inwardly beyond the inner end of sleeve 20 into position to receive ink from the supply in a carrier 33 which is preferably of relatively soft absorbent felt and which serves in effect as an ink reservoir.

Said ink carrier 33 is retained in extended condition by suitable stiffening means, as a coil 34 of resilient wire or other material which encircles a major portion of the length of said carrier leaving its surface free for ink absorption.

Said carrier 33 and retainer coil 34 are carried by the cover 15, the lower (as seen in FIGURE 1) end portions thereof extending into said cover 15 with lower end turns of coil 34 held therein by a friction fit.

The upper end of the carrier portion 33 is preferably skived or slanted at 35 and is retained by coil 34 and cover 15 in ink feeding contact with a complemental inner end face of the ink transmitter 29.

To replenish the ink supply, cover 15 is removed along with ink carrier 33 and coil 34 which thus extend outwardly in exposed condition beyond the open end of cover 15 so that the carrier 33 may now be conveniently saturated with a new supply of ink and returned to operative position in casing 10. Thereupon, ink will pass by capillary action to and through said transmitter 29, to and through washer 30 and will then be picked up by the applicator for use in marking.

With the above described construction, and particularly with reference to the washer 30 and the roller rim 28, the rim is positioned within the aperture so that by wiping the washer at two opposite edges of the aperture, the flow of ink to the roller is controlled and is limited and hence prevents over-inking of the rim. Also, the rim being narrower than the aperture, as seen in FIG. 4, a vent or air passageway is available to permit air to reach the felt pack 29 to thus provide proper capillary action. With the space between the sides of the rim and the edge defining the aperture being large, it cannot be easily blocked off by the ink and thus provides a satisfactory vent at all times. In addition, the washer is small, inexpensive, and easily replaceable simply by pulling out the

felt pack **29** and pulling out the washer and replacing it with a new washer. Hence, the washer which is the one part which wears out quickly in use, can be easily replaced by an inexpensive substitute and the device thus may be used over and over again with an almost indefinite life simply by replacement of the washers as they wear out.

What I claim is:

A marking device comprising a casing open at one end, a head assembly including a sleeve releasably attached to said casing at such end, an inking roller mounted in said sleeve and extending outwardly through its outer end, a felt pack in said sleeve with its inner end extending inwardly through the inner end of said sleeve into said casing; a centrally apertured flat felt washer removably positioned between the felt pack and the roller

and engaged by both the roller and the felt pack; the roller having a peripheral annular central rim narrower than the aperture of said washer whereby air may vent through the aperture to the felt pack and said rim rotatably wiping the edge of the aperture of the washer at two points in a path transversely across said aperture, whereby the flow of ink from the washer to the rim is controlled.

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