

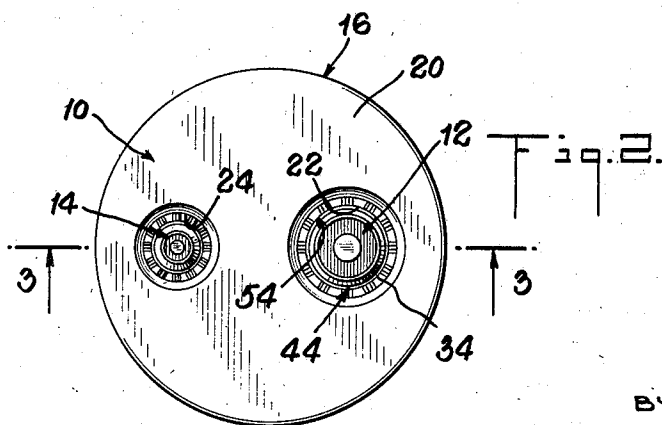
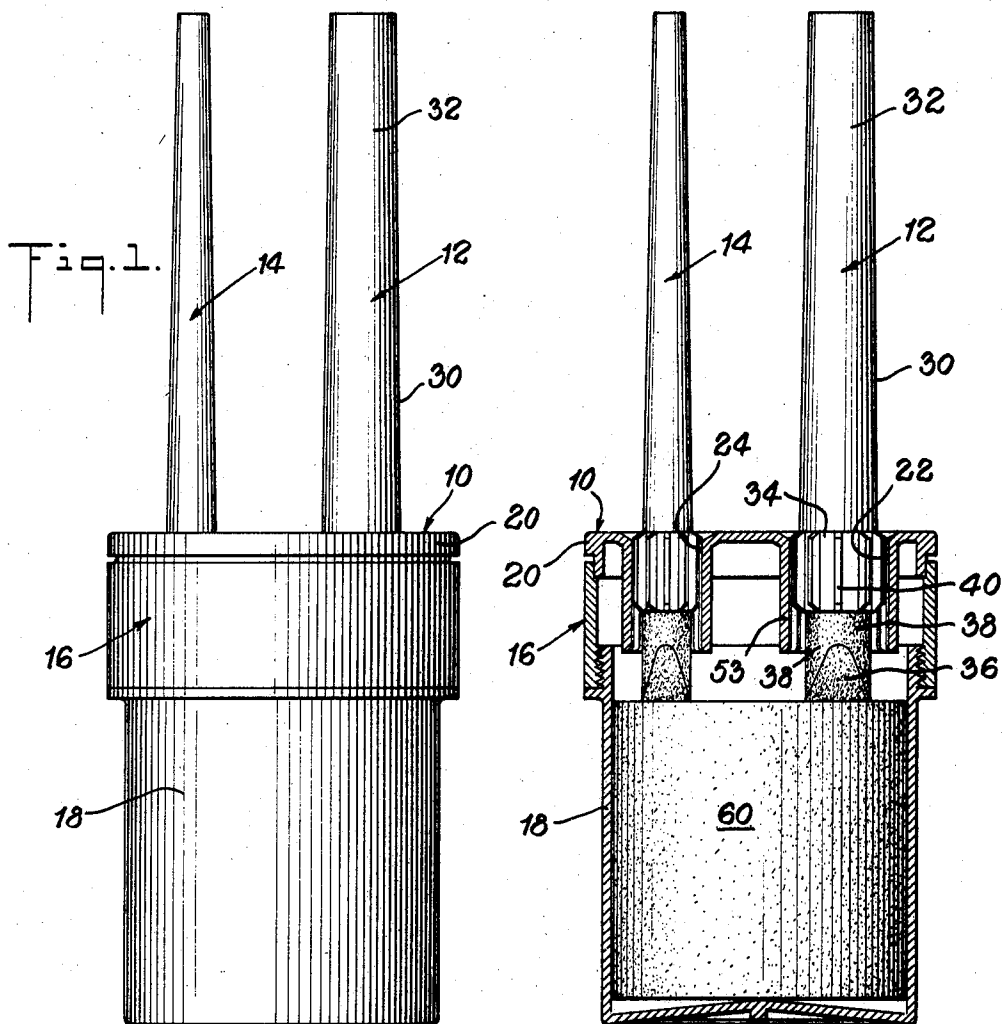
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MARKING APPARATUS INCLUDING MARKING PEN AND
INK-DISPENSING RECEPTACLE

3,480,371

Filed May 7, 1968

2 Sheets-Sheet 1



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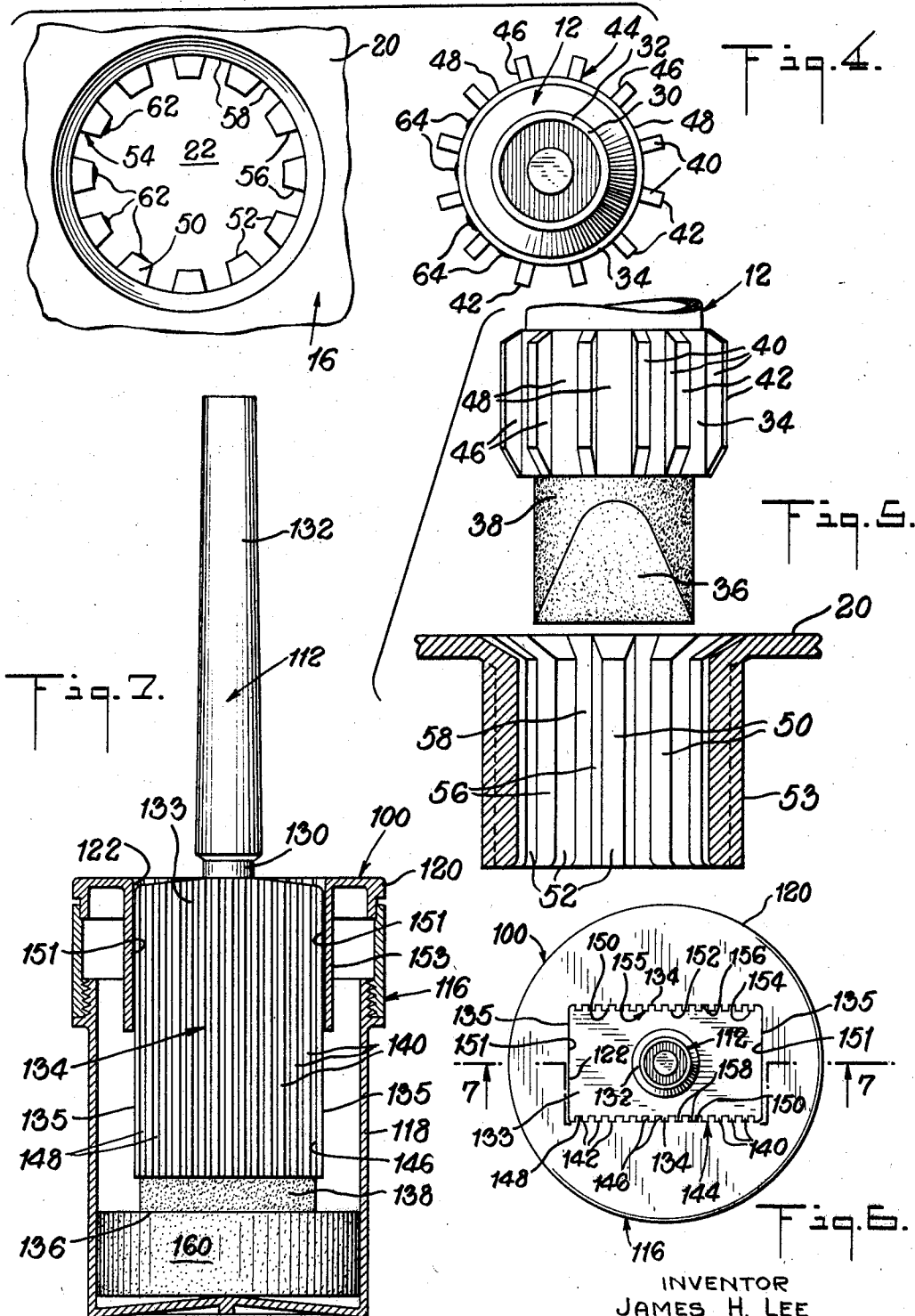
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10 Claims

ABSTRACT OF THE DISCLOSURE

Marking apparatus including a marking pen and an ink-dispensing receptacle having an opening for receiving the body of the pen and wherein both the body of the pen and the opening in the receptacle are provided with at least partially complementary ribbed configurations so that any ink which may be wiped from the writing tip of the pen onto the periphery of the opening in the receptacle by insertion or withdrawal of the pen into or out of the receptacle will lie on the crests of the ribs of the opening and will be excluded from the crests of the ribs of the pen body thereby providing an ink-free, finger-grip portion on the body of the pen.

The present invention pertains generally to marking systems employing marking pens and ink-dispensing receptacles and pertains, more specifically, to apparatus including particular pen and receptacle constructions which will provide an ink-free gripping area on the body of the pen.

Marking pens are commonly employed for making bold lines on a variety of materials such as, for example, in the marking of prices upon items of merchandise, and in the fabrication of signs and labels. Ordinarily, these pens employ writing tips constructed of a soft, porous material such as felt and do not carry a self-contained ink supply. Hence, such pens must be externally linked and are usually utilized in connection with an ink-dispensing receptacle. Very often, when a marking pen is inserted into its corresponding receptacle or withdrawn from the receptacle, the writing tip will brush against the rim of the opening in the receptacle, thereby wiping ink onto the rim. This ink is then usually transferred to the body of the pen where the pen is gripped, by virtue of contact between the pen and the inked rim of the receptacle, so that the user of the pen is plagued by ink on the tips of his fingers.

It is therefore an important object of the invention to provide ink marking apparatus employing a marking pen and an ink-dispensing receptacle, each having a construction which will exclude ink from the finger-grip portion of the pen body.

Another object of the invention is to provide a marking pen and an ink-dispensing receptacle which cooperate in such a manner as to exclude ink from those portions of the body of the pen which will be gripped during use.

Still another object of the invention is to provide a marking pen having a construction which cooperatively engages a corresponding construction in an ink-dispensing receptacle to effectively seal the receptacle.

A further object of the invention is to provide an ink marking system wherein the marking pen and the ink-dispensing receptacle each have a simplified, economically fabricated construction.

The above objects, as well as further objects and advantages, are attained by the invention which may be described briefly as marking apparatus including the combination of a marking pen having a body with a finger-grip portion and a writing tip, and an ink-dispensing re-

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ceptacle having an ink supply and an opening for receiving at least a portion of the body of the pen including the writing tip thereof. A plurality of first ribs are spaced peripherally along the finger-grip of the body of the pen, each first rib having a crest and extending longitudinally along the body, projecting outwardly and being peripherally spaced from an adjacent first rib such that the first ribs define a first configuration including a plurality of inwardly directed first grooves between the first ribs so that the pen body may be gripped at the finger-grip portion along the crests of the first ribs. A plurality of second ribs are spaced peripherally along the perimeter of the opening in the receptacle, the second ribs each having a crest and extending longitudinally, projecting inwardly and being peripherally spaced from an adjacent second rib such that the second ribs define a second configuration which is at least partially complementary with the first configuration and includes a plurality of outwardly directed second grooves between the second ribs. The finger-grip portion of the pen body may be received within the opening of the receptacle to bring the writing tip into contact with the ink supply, with the first and second configurations engaged such that the first ribs project into the second grooves and the second ribs project into the first grooves and any ink wiped from the writing tip onto the periphery of the opening by insertion or withdrawal of the pen into or out of the receptacle will lie on the crests of the second ribs and will be excluded from the crests of the first ribs.

The invention will be more fully understood and further objects and advantages will become apparent in the following detailed description of preferred embodiments of the invention illustrated in the accompanying drawing, in which:

FIGURE 1 is a front elevational view of marking apparatus constructed in accordance with the invention;

FIGURE 2 is a top plan view of the marking apparatus of FIGURE 1;

FIGURE 3 is a cross-sectional view taken along line 3—3 of FIGURE 2 with the marking pens thereof shown in elevation;

FIGURE 4 is an enlarged fragmentary plan view illustrating the configuration of interengagable portions of a pen and a receptacle of FIGURE 3;

FIGURE 5 is an enlarged fragmentary view, partially sectioned, of portions of the apparatus of FIGURE 3 with the component parts in another position;

FIGURE 6 is a plan view of another marking apparatus illustrating another embodiment of the invention; and

FIGURE 7 is a cross-sectional view taken along line 7—7 of FIGURE 6.

Referring now to the drawing, and especially to FIGURES 1 and 2, a marking apparatus 10 is shown to include two marking pens 12 and 14 received within an ink-dispensing receptacle 16 having an ink-retaining vessel 18 including a cap 20. The pens 12 and 14 are of two different sizes and, as best seen in FIGURE 2, the cap 20 is provided with two openings 22 and 24, one for each pen, each opening having a size corresponding to the size of the pen received therein.

Since the pens 12 and 14 are of identical construction and differ only in size, only pen 12 will be described in detail in connection with FIGURES 3, 4 and 5. Pen 12 is seen to have a body 30 which includes an elongate stem 32 and a finger-grip portion illustrated in the form of a collar 34. Projecting longitudinally below the collar 34 is a writing tip 36 which is actually a wedge-shaped extension of an elongate body 38 of a resilient, porous material such as felt which is encased within the stem of the pen.

As best seen in FIGURE 2, as well as in FIGURES 3

through 5, the collar 34 is provided with a plurality of ribs 40 extending longitudinally along the collar and circumferentially spaced from one another around the periphery of the collar. Each rib 40 projects radially outwardly to a crest 42 at the outer extremity thereof and adjacent ribs 40 are circumferentially spaced from one another such that the ribs define a configuration 44 including a plurality of inwardly directed grooves 46 between the ribs 40, the grooves 46 each having a bottom 48. The configuration 44 may be characterized as a "splined configuration," each of the ribs 40 corresponding to a spline. The circumferential spacing of the ribs 40, the circumferential width of each of the ribs 40 which establishes a land at each crest 42, and the depth of the grooves 46 are such that the pen 12 may be gripped along the lands at the crests of the ribs in such a manner that the fingers which grip the collar 34 will not contact the bottoms 48 of the grooves 46.

The opening 22 in the cap 20 of the receptacle 16 is also provided with a plurality of ribs 50 spaced circumferentially along the perimeter of the opening, the ribs 50 each having a crest 52 and extending longitudinally along an integral sleeve-like portion 53 of the cap 20. The ribs 50 are spaced circumferentially from one another and project radially inwardly to establish a configuration 54 which is at least partially complementary to the splined configuration 44 of the collar 34 of the pen 12 and includes a plurality of radially outwardly directed grooves 56 lying between the ribs 50 and each having a bottom 58.

When the apparatus is at rest, as shown in FIGURES 1 through 3, the collar 34 of the pen 12 is received within the opening 22 in the receptacle 16 and the writing tip 36 lies against an ink supply shown in the form of an ink-impregnated felt pad 60 located within the vessel 18 of the receptacle. In this position, the receptacle is closed by the engagement of the configurations 44 and 54 of the collar 34 and the opening 22, respectively, and ink is supplied to the writing tip 36 from the ink supply.

When it is desired to use the pen, the body 30 of the pen is withdrawn from the opening 22 in the receptacle 16, as seen in FIGURE 5, and the collar 34 is gripped by the writer's fingers along the lands provided by crests 42 of ribs 40. Should either the insertion of the pen into the opening or the withdrawal of the pen from the opening result in the brushing of the writing tip 36 against the periphery of the opening 22, such brushing of the writing tip against the opening would wipe ink onto the crests 52 of the ribs 50 of the opening 22, as seen at 62 in FIGURE 4, and would leave the grooves 56 free of ink. Thus, upon insertion of the pen into the opening, any ink wiped onto the periphery of the opening would not come into contact with the crests 42 of the ribs 40 on the collar 34 of the pen, even though some ink might be transferred to the bottoms 48 of the grooves 46 as seen at 64 in FIGURE 4, and ink is effectively excluded from that portion of the pen which is gripped by the writer's fingers.

Turning now to FIGURES 6 and 7, another embodiment of the invention is shown in the form of a marking apparatus 100 which includes a marking pen 112 and an ink-dispensing receptacle 116 including a vessel 118 which has a cap 120 provided with an opening 122 therein for receiving the pen. The marking pen 112 is designed for drawing wide lines and is provided with a body 130 including an elongate stem 132 and a finger-grip portion shown in the form of a generally parallelepipedal sleeve 133 having a first pair of opposed faces 134 which are to be gripped by the fingers of a writer using the pen and a second pair of opposed faces 135, and below which projects a rectangular writing tip 136 which is the extremity of a rectangular block 138 of resilient, porous material such as felt received within the sleeve 133. The opposed faces 134 are parallel and are each provided with a plurality of longitudinally extending ribs 140 spaced laterally from one another. Each rib 140 projects outwardly to a crest 142 and is spaced from an adjacent rib 140 such

that the ribs define a configuration 144 including a plurality of inwardly directed grooves 146 between the ribs 140, the grooves 146 each having a bottom 148. The ribs 140 have sufficient width to provide lands at the crests 142 thereof, which lands will provide the area necessary for gripping.

The opening 122 in the cap 120 is also generally parallelepipedal and includes first opposed faces 150 and second opposed faces 151. The opposed faces 150 are each provided with a plurality of ribs 152 extending longitudinally along the sleeve-like portion 153 which defines the perimeter of the opening 122 in the receptacle. Each rib 152 projects inwardly to a crest 154 and is laterally spaced from an adjacent rib 152 such that the ribs define a configuration 155 which is fully complementary with the ribbed configuration 144 of the body of the pen and which includes a plurality of outwardly directed grooves 156 lying between the ribs 152 and each having a bottom 158.

Because the configurations 144 and 155 are fully complementary, the pen 112 may be inserted within the receptacle 120 to a position where the opening is not only closed, but is effectively sealed by the engagement of the fully complementary configurations of the body of the pen and the opening in the receptacle. In this position, the writing tip 136 will receive ink from an ink supply shown in the form of an ink-impregnated pad 160 lying within the vessel 118 of the receptacle 116.

Upon removal of the pen 112 from the opening 122, or insertion of the pen into the opening, any ink wiped from the writing tip 136 onto the portion of the periphery of the opening which corresponds to the finger-grip portion of the body of the pen will lie on the crests 154 of the ribs 152 of the opening 122 and will be excluded from the crests 142 of the ribs 140 of the body 130 of the pen 112. Since the opposed faces 135 of the sleeve 133 are not intended to be gripped, these faces and corresponding opposed faces 151 of the opening need not be provided with a ribbed configuration.

Thus, it will be seen that the above described construction provides a simplified means for attaining cleanliness in a marking apparatus. Additionally, the construction provides an effective means for closing and sealing the ink-dispensing receptacle and which permits rapid removal of the pen from the receptacle and easy reinsertion of the pen into the receptacle.

It is to be understood that the above detailed description of the preferred embodiments of the invention is provided by way of example only. Various details of design and construction may be modified without departing from the true spirit and scope of the invention as set forth in the appended claims.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. In a marking apparatus including the combination of a marking pen having a body with a finger-grip portion and a writing tip, and an ink-dispensing receptacle having an ink supply and an opening for receiving at least a portion of the body of the pen including the writing tip thereof:

a plurality of first ribs spaced peripherally along the finger-grip portion of the body of the pen, each first rib having a crest and extending longitudinally along the body, projecting outwardly and being peripherally spaced from an adjacent first rib such that the first ribs define a first configuration including a plurality of inwardly directed first grooves between the first ribs so that the body may be gripped at the finger-grip portion along the crests of the first ribs; and

a plurality of second ribs spaced peripherally along the perimeter of the opening in the receptacle, each second rib having a crest and extending longitudinally, projecting inwardly and being peripherally spaced

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from an adjacent second rib such that the second ribs define a second configuration at least partially complementary with the first configuration and including a plurality of outwardly directed second grooves between the second ribs so that the finger-grip portion of the pen body may be received within the opening of the receptacle to bring the writing tip into contact with the ink supply with the first and second configurations engaged such that the first ribs project into the second grooves and the second ribs project into the first grooves and any ink wiped from the writing tip onto the periphery of the opening by insertion or withdrawal of the pen into or out of the receptacle will lie on the crests of the second ribs and will be excluded from the crests of the first ribs.

2. The invention of claim 1 wherein the first and second configuration are fully complementary such that all of the first grooves are fully engaged by second ribs and all of the second grooves are fully engaged by first ribs and the opening is sealed by the pen body when the pen is inserted into the opening.

3. The invention of claim 1 wherein:

the finger-grip portion and the opening are generally cylindrical;

the first ribs and the first grooves are spaced circumferentially around the perimeter of the finger-grip portion of the pen body; and
the second ribs and the second grooves are spaced circumferentially around the perimeter of the opening.

4. The invention of claim 1 wherein:

the finger-grip portion and the opening are generally parallelepipedal and include pairs of opposed faces; the first ribs and the first grooves are spaced laterally along at least one pair of opposed faces of the finger-grip portion of the pen body; and
the second ribs and the second grooves are spaced laterally along a corresponding pair of opposed faces of the opening.

5. A marking pen for use in a marking apparatus which includes an ink-dispensing receptacle having an ink supply and an opening for receiving at least a portion of the pen, the receptacle including a plurality of ribs spaced peripherally along the perimeter of the opening in the receptacle, each rib having a crest and extending longitudinally, projecting inwardly and being peripherally spaced from an adjacent rib such that the ribs define a configuration including a plurality of outwardly directed grooves between the ribs, said marking pen comprising:

a body having a finger-grip portion and including a writing tip;
a plurality of further ribs spaced peripherally along the finger-grip portion of the body of the pen, each further rib having a crest and extending longitudinally along the body, projecting outwardly and being peripherally spaced from an adjacent further rib such that the further ribs define a further configuration including a plurality of inwardly directed further grooves between the further ribs, and the pen body may be gripped at the finger-grip portion along the crests of the further ribs;

the finger-grip portion of the pen body being receivable within the opening of the receptacle to bring the writing tip into contact with the ink supply with the configurations of the pen body portion and the opening engageable such that the ribs of the pen body will project into the grooves of the receptacle and the ribs of the receptacle will project into the grooves of the pen body and any ink wiped from the writing tip onto the periphery of the opening by insertion or withdrawal of the pen into or out of the receptacle will lie on the crests of the grooves of the receptacle

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and will be excluded from the crests of the ribs of the pen body.

6. The marking pen of claim 5 wherein:

the finger-grip portion is generally cylindrical; and
the ribs of the pen body and the grooves of the pen body are spaced circumferentially around the perimeter of the finger-grip portion of the pen body.

7. The marking pen of claim 5 wherein:

the finger-grip portion of the pen body is generally parallelepipedal and includes pairs of opposed faces; and

the ribs of the pen body and the grooves of the pen body are spaced laterally along at least one pair of opposed faces of the finger-grip portion of the pen body.

8. An ink-dispensing receptacle for use in a marking apparatus which includes a marking pen having a body with a finger-grip portion, a writing tip and a plurality of ribs spaced peripherally along the finger-grip portion of the body of the pen, each rib having a crest and extending longitudinally along the body, projecting outwardly and being peripherally spaced from an adjacent rib such that the ribs define a configuration including a plurality of inwardly directed grooves between the ribs and the pen body may be gripped at the finger-grip portion along the crests of the ribs, said receptacle comprising:

a vessel for containing an ink supply and having an opening therein for receiving at least a portion of the body of the pen including the writing tip thereof; and
a plurality of further ribs spaced peripherally along the perimeter of the opening in the receptacle, each further rib having a crest and extending longitudinally, projecting inwardly and being peripherally spaced from an adjacent further rib such that the further ribs define a further configuration at least partially complementary with the configuration of the pen body portion and including a plurality of outwardly directed further grooves between the further ribs and the finger-grip portion of the pen body may be received within the opening of the receptacle to bring the writing tip into contact with the ink supply with the configuration of the finger-grip portion of the pen body engaging the further configuration of the opening such that the ribs of the finger-grip portion of the pen body project into the grooves of the opening and the ribs of the opening project into the grooves of the finger-grip portion of the pen body and any ink wiped from the writing tip onto the periphery of the opening by insertion or withdrawal of the pen into or out of the receptacle will lie on the crests of the ribs of the opening and will be excluded from the crests of the ribs of finger-grip portion of the pen body.

9. The ink-dispensing receptacle of claim 8 wherein: the opening in the vessel is generally cylindrical; and the ribs of the opening and the grooves of the opening are spaced circumferentially around the perimeter of the opening.

10. The ink-dispensing receptacle of claim 8 wherein: the opening in the vessel is generally parallelepipedal and includes pairs of opposite faces; and
the ribs of the opening and the grooves of the opening are spaced laterally along at least one pair of the opposed faces of the opening.

References Cited

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LAWRENCE CHARLES, Primary Examiner

U.S. Cl. X.R.

401-118, 122

UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,480,371 Dated November 25, 1969

Inventor(s) JAMES H. LEE

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 2, line 4, between "finger-grip" and "of" insert -- portion --; Column 5, line 18, "configuration" should read -- configurations --.

Signed and sealed this 7th day of July 1970.

(SEAL)
Attest:

EDWARD M. FLETCHER, JR.
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WILLIAM E. SCHUYLER, JR.
Commissioner of Patents