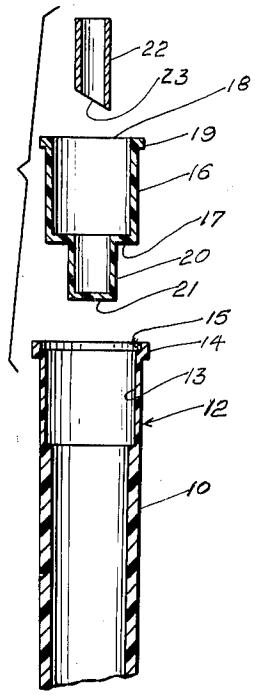
Feb. 15, 1966 G. GIGLI 3,234,918

WRITING IMPLEMENT WITH CARTRIDGE

Filed Jan. 6, 1964

FIG. 1



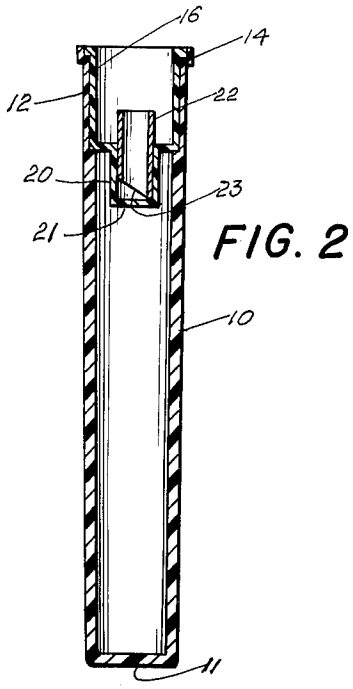
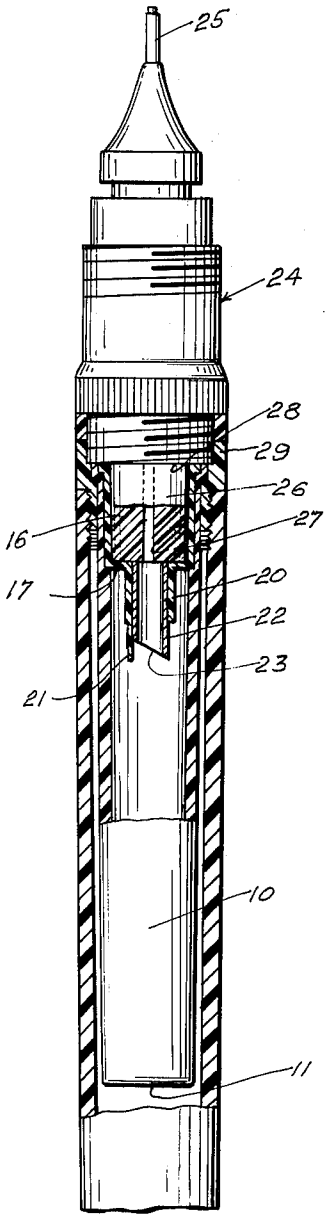


FIG. 2

FIG. 3



INVENTOR.
Giulio Gigli
BY
ATTY.

United States Patent Office 3,234,918 Patented Feb. 15, 1966

3,234,918

WRITING IMPLEMENT WITH CARTRIDGE

Giulio Gigli, Milan, Italy, assignor to L. & C. Hardtmuth, Inc., Bloomsbury, N.J., a corporation of New Jersey

Filed Jan. 6, 1964, Ser. No. 335,729
1 Claim. (Cl. 120—45.4)

This invention relates generally to writing implements provided with means for supplying writing fluid to the writing instrumentality, such as to the nib of the writing implement, and particularly refers to writing implements provided with replaceable ink-carrying cartridges and to the latter's construction, function and cooperation with a writing implement to which it is applied.

As is well known in the art, there have been in use writing implements with ink-holding, replaceable cartridges and with refillable ink-containers, such as resilient, compressible ink-holding bags or piston-operated pump type devices, both of which latter types being normally known as "fountain pens."

The present disclosure deals with writing implements specifically designed for the removable reception of ink-holding cartridges and the latter's structural arrangement and co-function with the writing implement associated therewith.

The principal object of the present invention therefore is the provision of a specifically constructed writing implement for the removable reception of a specifically constructed ink-holding cartridge and the respective cooperation of the two items.

Another object of this disclosure is the provision of an ink-holding cartridge so constructed as to provide a flow of ink to the nib of a writing implement when secured to the latter, but when not so secured to be readily portable and dry.

The foregoing and other important objects of the present invention will become more fully apparent from the ensuing description, in conjunction with the accompanying drawing, which latter, while disclosing a specific embodiment of the present invention, is by no means intended to limit the present disclosure to the specific structure illustrated, since in the course of production changes and improvements may become necessary, without departing from the principle of this invention.

In the drawing:

FIGURE 1 represents an exploded illustration of the cartridge structure, according to the present invention;

FIGURE 2 is a vertical cross section through the assembled cartridge; and

FIGURE 3 is writing implement, partly in section, and an ink-carrying cartridge, showing the cooperation of the two items.

As disclosed in FIGURES 1 and 2, the cartridge body 10, being preferably cylindrical and tubular, has one closed end 11, while its other end 12 is open and recessed at 13 and terminates in an annular flange 14, which is recessed at 15.

An inlay or insert 16, having a closed end 17 and an open end 18 with an annular flange 19 is intended to be permanently associated with recessed portion 13 of the open end 12 of the cartridge body 10 so that its flange 19 is seated in the recess 15 of flange 14.

From closed end 17 of inlay 16 extends outwardly a tubular projection 20, open at the juncture with closed end 17 of inlay 16 and normally closed at its other end 21.

When the cartridge 10 is filled with ink to approximately a point just below the interior end of recess 13, inlay 16 is inserted into the cartridge and flange 19 of inlay 16 is permanently seal-joined (not shown) with recessed flange 14 of the cartridge.

Projection 20 is designed to accommodate a mobile, cylindrical piercing member 22 so that its sharp or cutting end 23 normally rests against closed end 21 of projection 20, while its other end protrudes beyond the open end of the projection.

Referring now to FIGURE 3, there will be seen a writing implement 24 provided with a tubular writing nib 25. In the direction opposite to nib 25 there will be noted a central body extension 26, provided with a through passage 27 for supplying ink to the nib through the body of the implement.

At the largest portion of the implement body there is provided an annular abutment 28 adapted to provide a seat for joined flanges 14 and 19 of the cartridge and the inlay 16, respectively. A clamping ring 29, which is internally threaded and is adapted to engage an externally threaded portion provided at the body of the writing implement. This clamping ring is designed to press the joint flanges of the cartridge and of the inlay against abutment 28 of the writing implement so as to provide a leak-proof joint.

It will be noted that when the cartridge is secured to the writing implement, the end of piercing member 22 protruding from projection 20 is forcibly engaged by central extension 26 of the implement body, thus forcing the sharp end 23 of the piercing member to cut the latter's normally closed end 21, thereby providing communication between the cartridge and the tubular nib 25 by way of through passage 27 in central extension 26; thus ink can now flow from the cartridge to the nib.

As becomes evident from the foregoing, tubular piercing member 22 is mobile within projection 20, and therefore can be moved by central extension 26 to cut closed end 21 of the projection as the cartridge is being attached to the writing implement by means of clamping ring 29.

The illustrations and their description deal with the present preferred form of this invention, but, as stated previously, its structure may have to be altered, for instance, for more efficient production; such alterations are deemed to reside within the scope of the annexed claim.

What is claimed as new is:

In a writing implement having a writing nib, a screw threaded portion and central body extension with a through passage for delivering ink to the nib, an ink-carrying cartridge removably associated with said implement and positioned to receive said body extension, said cartridge comprising a hollow structure closed at one end and recessed at its open end and having a peripheral recessed flange at its extreme open end, an inlay within the recessed end of the cartridge structure and having an open end provided with a peripheral flange and a closed end extending into the cartridge structure, the flange of the inlay resting in the recess of the cartridge flange, the flange of the inlay being permanently associated with the recess of the cartridge flange when the cartridge flange is filled with fluid, a tubular projection extending from the closed end of the inlay into the cartridge and being open at the closed end of the inlay and being closed at its other end, a mobile tubular piercing member frictionally held within said projection and having a sharp interior end adjacent to the closed end of the projection and extending with its other end beyond the open end of said projection, but below said annular flange so that its ex-

tending end can be forcibly engaged by the central body extension of the writing implement, a clamping ring having an annular shoulder therein adapted to engage against the peripheral flange of the hollow structure, said ring having a threaded portion adapted to threadedly engage the screw threaded portion of said writing implement to fasten said cartridge to said implement and thereby causing the sharp interior end of the piercing member to penetrate the closed end of the tubular projection, thus enabling fluid to pass from the cartridge to the nib of the writing implement.

References Cited by the Examiner

UNITED STATES PATENTS

1,449,234	3/1923	Laffin	120—45.4
1,671,125	5/1928	Pollock	120—45.4
1,724,106	8/1929	Pollock	120—45.4

FOREIGN PATENTS

577,918	7/1958	Italy.

EUGENE R. CAPOZIO, *Primary Examiner.*
LAWRENCE CHARLES, *Examiner.*