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(54) **Fibre-tip pen**

SCHREIBER MIT FASERSPITZE

Stylo à pointe en fibre

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(73) Proprietor: **Giodi S.P.A.**
10099 San Mauro Torinese (TO) (IT)

(72) Inventor: **Barosso, Luigi**
10099 San Mauro Torinese(TO) (IT)

(74) Representative: **Robba, Pierpaolo et al**
Interpatent,
Via Caboto 35
10129 Torino (IT)

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Description

[0001] The present invention concerns a so-called fibre-tip pen, that is a writing instrument wherein the ink reservoir and the nib consist of fibrous elements.

[0002] In the simplest case, the commercially available pens of such kind comprise, beside the nib and the reservoir, at least three elements made of plastics, namely a body, a closing bottom and a cap (if the nib is directly inserted into the body), or a body closed at one end, a nib-holder and a cap.

[0003] The structure of such pens, even though very simple, entails therefore the manufacture of three pieces made of plastics, two of which, the body and the closing bottom or the body and the nib-holder, must be made with particular care, to avoid possible ink leakage.

[0004] FR 1344073 discloses a writing instrument having a cylindrical ink reservoir made in a single piece which is open and tapered at one end for inserting a nib of small diameter.

[0005] US 2620499 discloses a marking device of the type which can be refilled through insertion in a base reservoir where it can be accommodated upside down. The marker has a cylindrical barrel closed at one end having the other end open and tapered outwardly to accommodate a nib of large dimension.

[0006] EP 0726166 discloses a writing article having a cylindrical ink reservoir made in a single piece which is open and tapered at one end for defining a small passage for the tip of the nib.

[0007] The aim of the invention is to provide a pen with a very simple structure, comprising a number of pieces of plastics reduced to a minimum.

[0008] This aim is attained by a pen that comprises, besides the nib and the reservoir, only two elements of plastics, namely a body closed at one end and a cap.

[0009] It is evident that eliminating one of the elements of plastics reduces the production costs and simplifies the pen assembling operations.

[0010] The above and other aims are attained by the pen made in accordance with the invention, as claimed in the appended claims.

[0011] The above and other aims of the invention will become more apparent from the description of a preferred embodiment, with reference to the accompanying drawing which shows, in cross-sectional view, a pen made in accordance with the present invention,

[0012] As shown in the drawing, the fibre-tip pen according to the invention comprises a body 1 of plastic material, consisting of a tubular element 1a closed at one end by a base 1b which is integral with tubular element 1a.

[0013] Body 1 houses inside it a reservoir 3, consisting of a fibrous tubular element impregnated with ink, and has, at its end opposite to base 1b, an opening arranged to receive a portion 4a of a nib 4, which portion is opposite to tip 4b.

[0014] In effect nib 4, made of a fibrous material, is

directly inserted into pen body 1. The nib comprises a first portion 4a, with such a diameter as to be fitted under pressure into body 1, and a second portion 4b, generally sharpened or rounded, which remains outside body 1 and which will therefore be used for writing. Generally, the inner nib portion 4a is in contact with fibrous element 3 impregnated with ink, as shown in the drawing, so as to transfer the ink from reservoir 3 to nib tip 4b. The diameter of the outer nib portion 4b may be the same as that of inner portion 4a, for simplicity of manufacture, or greater, the latter solution being shown in the drawing. However, during insertion of nib 4 into body 1, the diameter of inner portion 4a decreases, because of the pressure exerted by the internal walls of body 1.

[0015] A cap 5 made of plastics is then applied on the end portion of body 1 and on nib 4, which cap is arranged to protect the nib and to prevent the ink in the reservoir from becoming dry.

[0016] In the structure described above, which forms the subject matter of the invention, body 1 and cap 5 are the only "non-inked" elements, made of plastics in this embodiment, necessary for the pen manufacture. Thus it is possible to eliminate some elements of plastics, like the nib-holder and/or the body-closing bottom, present in all commercially available pens, so that the production costs are reduced and the pen assembling operations are simpler.

Claims

1. Writing instrument of the type comprising a body (1) internally housing an ink reservoir (3) made of fibrous material, a nib (4) co-operating with said reservoir (3) and a removable plastic cap (5) which can be applied on said body to protect said nib (4), said body (1) being made of a single piece of plastics and comprising a tubular element (1a), which is closed at one end by a base (1b) integral with said tubular element and which presents, at the opposite end, an opening for the introduction of a nib (4), said nib (4) comprising a first tubular portion (4a) with such a diameter as to be fitted under pressure into said open end of said tubular body (1), and a second sharpened portion (4b) which remains outside said body (1) and which is used for writing, **characterized in that** said tubular element (1a) has substantially inner and outer constant diameters at its open end, and **in that** the outer portion (4b) of said nib (4) has its maximum diameter comprised between the outer and inner diameters of said tubular element (1a), whereby said outer portion, in correspondence to its maximum diameter, has a cross section substantially of the same extension as the cross section of the tubular body, (1) and said cap (5) can be inserted directly on the tubular body (1) for protecting the nib (4) without interfering with said nib (4).

2. Writing instrument according to claim 1, wherein said inner nib portion (4a) has a diameter smaller than the maximum diameter of said outer nib portion (4b).
3. Writing instrument according to claim 1 or 2, wherein said inner nib portion (4a) is in contact with said ink reservoir (3).

Patentansprüche

1. Schreibgerät in der Ausführung mit einem Gehäuse (1), das im Inneren einen aus Faserstoff hergestellten Tintenspeicher (3) aufnimmt, einer Schreibspitze (4), die mit dem Speicher (3) zusammenwirkt und einer abnehmbaren Plastikkappe (5), die auf jenes Gehäuse aufgebracht werden kann, um jene Schreibspitze (4) zu schützen, wobei das Gehäuse (4) einstückig aus Plastik hergestellt ist und ein Rohrelement (1a) aufweist, das am einen Ende durch einen mit dem Rohrelement integrierten Boden (1 b) geschlossen ist und am entgegengesetzten Ende eine Öffnung für eine Schreibspitze (4) hat, wobei die Schreibspitze (4) einen ersten rohrförmigen Bereich (4a) mit einem Durchmesser aufweist, der durch Einpressen in jenes offene Ende des zylindrischen Gehäuses (1) eingefügt werden kann, sowie einen zweiten, angespitzten Bereich (4b), der außerhalb des Gehäuses (1) verbleibt und zum Schreiben benutzt wird, **dadurch gekennzeichnet, daß** jenes rohrförmige Element (1a) an seinem offenen Ende im wesentlichen konstante Innen- und Außendurchmesser hat und dass der äußere Bereich (4b) der Schreibspitze (4) einen zwischen dem Innen- und Außendurchmesser des rohrförmigen Elements (1a) liegenden maximalen Durchmesser aufweist, wobei der äußere Bereich entsprechend seinem maximalen Durchmesser einen in der Ausdehnung im wesentlichen gleichen Querschnitt wie das rohrförmige Gehäuse (1) besitzt und die Kappe (5) direkt auf das rohrförmige Gehäuse (1) aufgesetzt werden kann, um ohne Beeinträchtigung der Schreibspitze (1) diese zu schützen.
2. Schreibgerät nach Anspruch 1, wobei jener innere Schreibspitzenabschnitt (4a) einen kleineren Durchmesser als der Maximaldurchmesser des äußeren Schreibspitzenabschnitts (4b) aufweist.
3. Schreibgerät nach Anspruch 1 oder 2, wobei jener innere Schreibspitzenabschnitt (4) in Verbindung mit dem Tintenspeicher (3) steht.

Revendications

1. Instrument pour écrire du type comprenant un corps (1) logeant à l'intérieur un réservoir à encre (3) fait en matériau fibreux, une pointe (4) coopérant avec ledit réservoir (3) et un capuchon plastique (5) amovible qui peut être appliqué sur ledit corps pour protéger ladite pointe (4), ledit corps (1) étant constitué d'une pièce unique de matière plastique et comprenant un élément tubulaire (1a), lequel est fermé au niveau d'une extrémité par une base (1b) solidaire dudit élément tubulaire et qui présente, à l'extrémité opposée, une ouverture destinée à l'introduction d'une pointe (4), ladite pointe (4) comportant une première partie tubulaire (4a) d'un diamètre tel qu'il peut être ajusté sous pression dans ladite extrémité ouverte dudit corps tubulaire (1), et une seconde partie pointue (4b) qui reste à l'extérieur dudit corps (1) et qui est utilisée pour écrire, **caractérisé en ce que** ledit élément tubulaire (1a) présente des diamètres intérieur et extérieur sensiblement constants au niveau de son extrémité ouverte, et **en ce que** la partie extérieure (4b) de ladite pointe (4) a son diamètre maximal compris entre les diamètres extérieur et intérieur dudit élément tubulaire (1a), de sorte que ladite partie extérieure, en correspondance avec son diamètre maximal, présente une section transversale essentiellement de la même étendue que la section transversale du corps tubulaire, (1) et **en ce que** ledit capuchon (5) peut être inséré directement sur le corps tubulaire (1) pour protéger la pointe (4) sans interférer avec ladite pointe (4).
2. Instrument pour écrire selon la revendication 1, dans lequel ladite partie de pointe intérieure (4a) présente un diamètre plus petit que le diamètre maximal de ladite partie de pointe extérieure (4b).
3. Instrument pour écrire selon la revendication 1 ou 2, dans lequel ladite partie de pointe intérieure (4a) se trouve en contact avec ledit réservoir à encre (3).

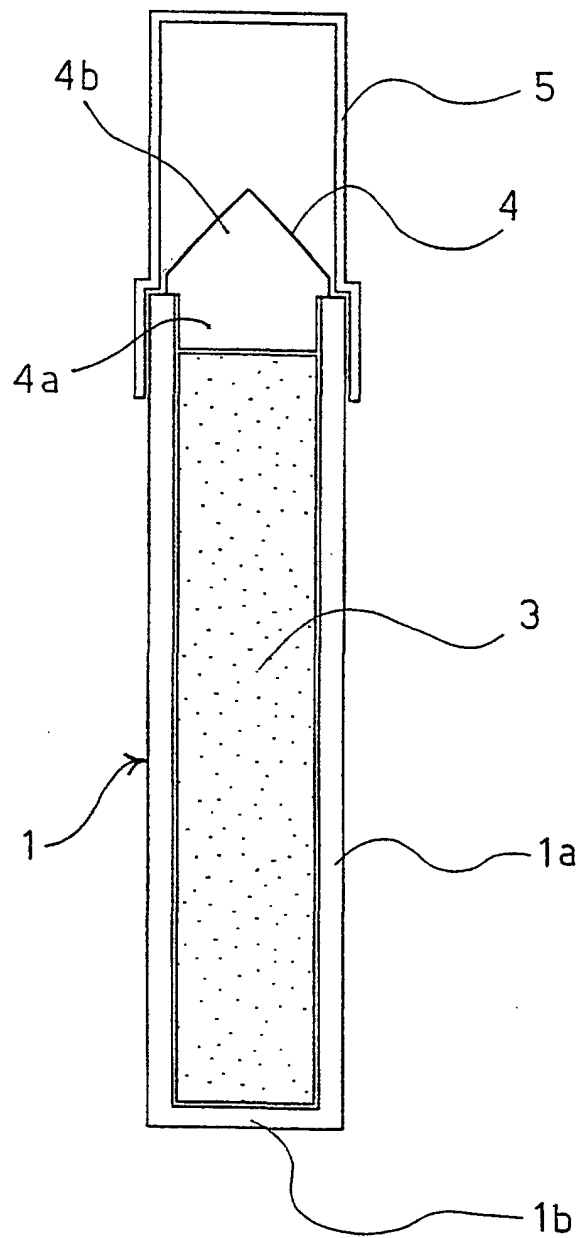


FIG. 1