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M. I. AARON

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DOUBLE-END BALL-POINT PEN

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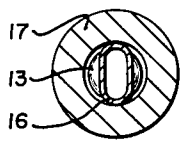
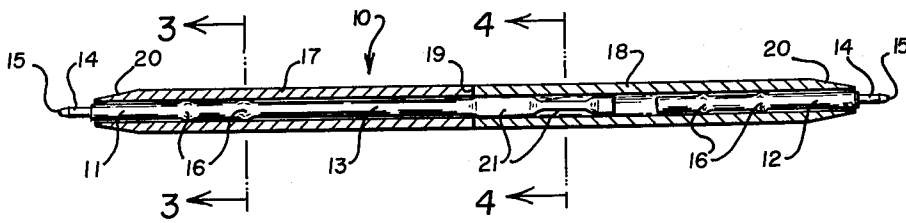
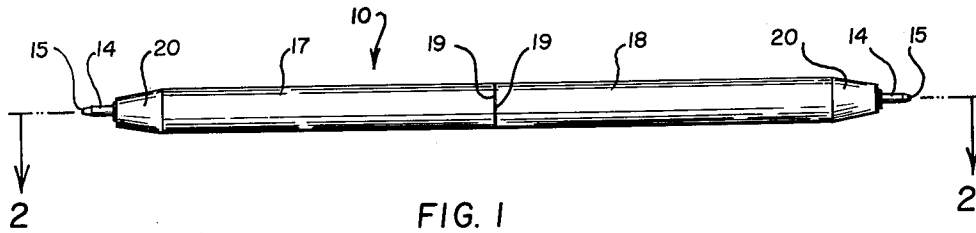


FIG. 3

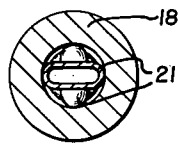


FIG. 4

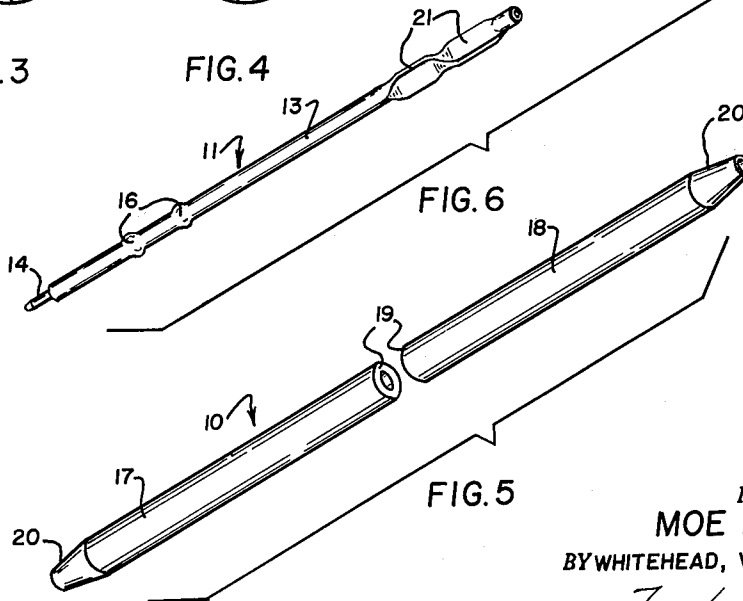
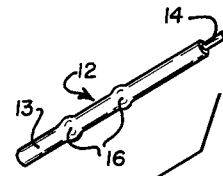


FIG. 6

FIG. 5

INVENTOR.
MOE I. AARON
BY WHITEHEAD, VOGL & LOWE
PER *Frank C. Lowe*
ATTORNEYS

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DOUBLE-END BALL-POINT PEN

Moe I. Aaron, Denver, Colo., assignor to American Stencil Manufacturing Co., Denver, Colo., a partnership
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This invention relates to writing pens and more particularly to ball point pens of the type which include an ink-fluid cartridge within the body of the pen that extends to the point of the pen as a tubular head having an ink dispensing ball at the tip thereof. The primary object of the invention is to provide a novel and improved construction of a ball point pen and more specifically of a ball point pen having a writing head or point at each end of the pen, preferably with fluids of different color at the opposing ends.

Another object of the invention is to provide a novel and improved two-point, two-color ball point pen which is especially adapted for use by bookkeepers, clerks and others who are required to write with different colors of ink in the course of their work.

Another object of the invention is to provide a novel and improved two-point, two-color ball point pen having a minimum of component elements which may be assembled to an arrangement of utmost simplicity as a low cost unit that may be discarded when the ink fluid supply within the pen is used up.

Yet another object of the invention is to provide a novel and improved two-point, two-color ball point pen for bookkeeping or like occupations which require writing in different colors of ink, wherein the structure of the pen is balanced to obtain a maximum ink supply within the body of the pen yet also have selected amounts of each color of ink in an arrangement proportioned to the comparative writing requirements for the different colors, whereby the ink supply of both colors will be used up substantially at the same time to give the pen a maximum useful life.

Still other objects of the invention are to provide a novel and improved two-point, two-color ball point pen which is a low-cost, neat-appearing unit adapted for many uses.

With the foregoing and other objects in view, all of which more fully hereinafter appear, my invention comprises certain novel and improved constructions, combinations and arrangements of parts and elements as hereinafter described, defined in the appended claims and illustrated in preferred embodiment in the accompanying drawing in which:

FIGURE 1 is a side elevational view of a two-point, two-color ball point pen constructed in accordance with my invention.

FIGURE 2 is a longitudinal sectional view of the pen as taken from the indicated line 2-2 at FIG. 1.

FIGURE 3 is a transverse sectional view as taken from the indicated line 3-3 at FIG. 2, but on an enlarged scale.

FIGURE 4 is a transverse sectional view as taken from the indicated line 4-4 at FIG. 2, but on an enlarged scale.

FIGURE 5 is an exploded perspective view of body elements of the pen.

FIGURE 6 is an exploded perspective view of cartridge elements of the pen.

Various types of ball point pens are available all of which include the same basic elements: a tubular body or casing, a supply cartridge within the body containing a viscous ink fluid and a short tubular head at one end of the cartridge with a small ball at the tip of the head, the point of the pen. The ink within the cartridge flows

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to the ball as the ball rolls a line of ink onto writing paper or a like surface when the pen is in use. Ball point pens have been improved and perfected and have replaced other pens and pencils to a large extent. Both permanent and disposable ball point pens are now in use which write fine lines with clarity, and they are being used by bookkeepers and others who do considerable exacting writing. In such occupations, different colors of writing ink are often required. For example, a bookkeeper requires both black and red inks for his entries and normally two pens are used for this purpose.

In occupations such as this there is often a definite advantage in having, and a need for, a single pen which will write in two colors. Certain lead-feeding types of pencils have been developed in the past which have two points for two colors to meet this need, but such pencils are generally more expensive than two individual pencils for two sets of lead feeding mechanisms must be mounted within a cramped space in the casing of a single pencil. Such two-point pencils are not in general use; likewise, a two-point fountain pen would be completely impractical.

In view of the foregoing limitations and the obvious and recognized need for a good two-point, two-color pen, the present invention was conceived and developed and comprises, in essence, a two-point, two-color ball point pen of a very simple form and construction which may be manufactured and sold as a disposable unit. Moreover, this pen takes into full consideration the fact that one ink color will be used considerably more than the other ink color, and selected quantities of ink are provided which are apportioned according to the normal use of the pen, all as hereinafter set forth in detail.

Referring more particularly to the drawing, the basic elements of a two-point ball point pen constructed according to my invention include a handle or casing having the general form of a thick-walled cylindrical tube with a conventional ball point cartridge inserted into each end of the casing 10. The cartridges, a major cartridge 11 and a minor cartridge 12, are formed according to conventional practice to provide for a convenient low-cost disposable unit. Each cartridge includes a metallic cylindrical tube 13 forming the ink reservoir and a short reduced-diameter head 14 at one end thereof having a ball-holding writing tip 15.

The diameter of each tube 13 is such that it will fit into the tubular casing 10 with a snug sliding fit, and when the elements forming the pen are assembled, the tube 13 of each cartridge, 11 and 12, is inserted completely within the casing 10 with only the head 14 protruding therefrom to form a point of the pen. Prior to inserting the tubes 13 into the casing, each tube is crimped at several points, as at 16, to provide a tight fit and prevent further movement of the cartridge into the casing as by pressure against the ball point when writing with the pen.

The casing 10 comprises two identically-formed opposing sections, a major color section 17 and a minor color section 18, which abut together as a single shaft-like member. Each section is a thick-walled tubular member and each abutting end 19 is planed flat to snugly abut against the corresponding end 19 of the other section with the appearance of a transverse dividing line at the center of the casing. Each section, 17 and 18, is cone tapered at its extended end to provide for a cone-like point 20 from whence the cartridge head 14 extends, all to give an appearance and form of a conventional pencil-like tip. These casing sections 17 and 18 are preferably formed of extruded plastic material to provide low cost units, and it is contemplated that the color of one section will be different from the color of the other section to correspond with the color of the ink in the respective cartridges which they hold and permit easy ink color

identification of the points by a user. This is necessary since the color of ink in a ball point pen is often difficult to determine by a glance at the head 14 and point 15.

In practically all bookkeeping and other work where writing in two colors is required, there will be as much as 90 percent of the writing with one of the colors only. This color will usually be black, and it is contemplated that the major cartridge 11 will be charged with black ink and will be of an extended length to contain a larger supply of ink for the major use. On the other hand, a minor cartridge 12 will be charged with red ink, or like color ink, for a minor use, and will be of a reduced length since considerably less ink will be required to obtain a balance of ink to correspond with the comparative requirements for writing in different color. The length of the tube 13 of the major cartridge is thus greater than the length of its casing section 17, and it will extend a substantial distance into the casing section 18 of the minor color in order to provide for a maximum total ink supply within the pen. This arrangement will give the pen a maximum useful life and permit both ink supplies to be substantially used up by the time the pen is ready for discard.

The metallic cylindrical tube 13 of the major cartridge also provides a novel means for joining the two casing sections together. The portion of this tube which extends into the minor-color casing section 18 is crimped, as at 21, in a manner which provides for a tight fit into this casing section 18. Upon assembly, these sections are held together while the major and minor cartridges, 11 and 12, are pressed into place in any suitable sequence of operations. Because of the crimps 16 and 21, the final fit of the sections 17 and 18 is so tight that ordinary and even rough use of the pen will not disturb its general appearance of the two casing sections being integral except for the different colors.

This arrangement of interconnecting the component elements of the pen provides for an absolute minimum of individual parts to form the pen with a desired two-color casing. The connection is of utmost simplicity and the usual threaded telescopic connections found in conventional two-point pencils, and the like, are completely eliminated. The construction herein disclosed is of such low cost as to permit the pen to be manufactured and sold as a disposable unit. In merchandising the pen illustrated at FIG. 1, it may also include certain auxiliary items such as a pocket clip and point covers which are not illustrated herein since they are commonly used with such pens.

I have now described my invention in considerable detail, and it is obvious that others, skilled in the art, can devise and build alternate and equivalent constructions which are within the spirit and scope of my invention. Hence I desire that my protection be limited, not by the construction illustrated and described, but only by the proper scope of the appended claims.

I claim:

1. A two-point, two-color ball point pen having a first ink supply cartridge containing an ink of a first color, formed as a rigid tube with a ball-type tip at one end thereof; a second ink supply cartridge containing an ink of a second color formed as a rigid tube with a ball-type

tip at one end thereof; a two-piece, two-color casing formed by two separate, rigid, relatively thick-walled tubular members abutted end to end, one casing member being colored to indicate the ink color of the first said cartridge and the other casing member being colored to indicate the ink color of the second said cartridge, said casing members having restricted bores therethrough, slightly larger than the space required for said cartridge, being adapted to telescopically receive therein the cartridges with the ball tip of the first said cartridge extending from the outward end of the first mentioned casing member and the ball tip of the second said cartridge extending from the outward end of the second mentioned casing member, and distortions joined on each of said cartridges to frictionally retain the cartridges in their respective casing members, at least one of said cartridges extending beyond the inner end of its casing member and into frictional engagement with the bore of the other casing member, the latter frictional engagement being effected by distortions in said cartridge, whereby the casings are securely held together in abutting alignment of said cartridge.

2. A two-point, two-color ball point pen comprising a first ink supply cartridge containing an ink of a first color, formed as a rigid tube with a ball-type tip at one end thereof, a second ink supply cartridge containing an ink of a second color, formed as a rigid tube with a ball-type tip at the other end thereof, a two-piece, two-color casing formed by two separate, rigid thick-walled tubular members abutted end to end and being substantially of the same length, one of said casing members being colored to indicate the ink color of the first said cartridge and the second casing member being colored to indicate the ink color of the second said cartridge, said casing members having restricted bores of substantially constant diameter adapted to telescopically receive the cartridges with the ball tip of the first said cartridge extending from the outward end of the first mentioned casing member and the ball tip of the second said cartridge extending from the outward end of the second mentioned casing member, the length of the first cartridge exceeding the length of the first mentioned casing member, and the length of the second cartridge being less than the length of the second mentioned casing member, whereby the first cartridge extends through the first casing member and into the second casing member, and crimps formed in said cartridges at the portions thereof within the casing members adapted to grip the inner walls of said members with a tight frictional fit and thereby hold the cartridges in position in their respective members and simultaneously hold the members together and in alignment upon the first said cartridge.

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