Sept. 15, 1942. J. WALLACE 2,296,127

STYLOGRAPHIC PEN

Filed March 6, 1942

Fig. 1.

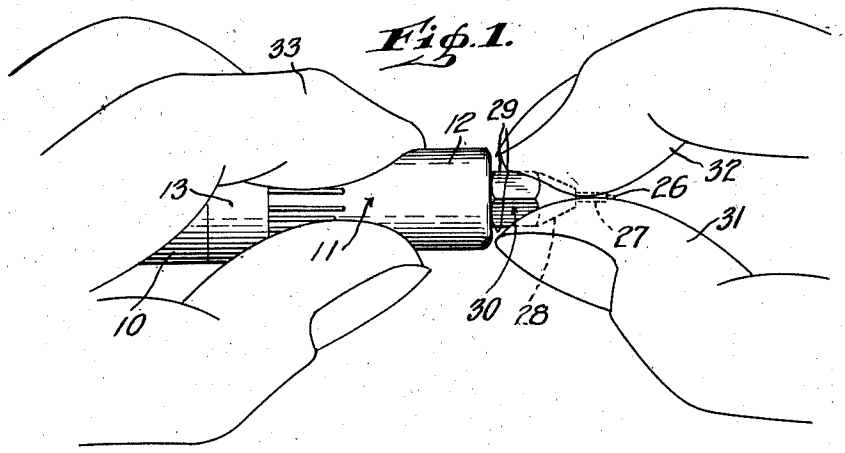


Fig. 2.

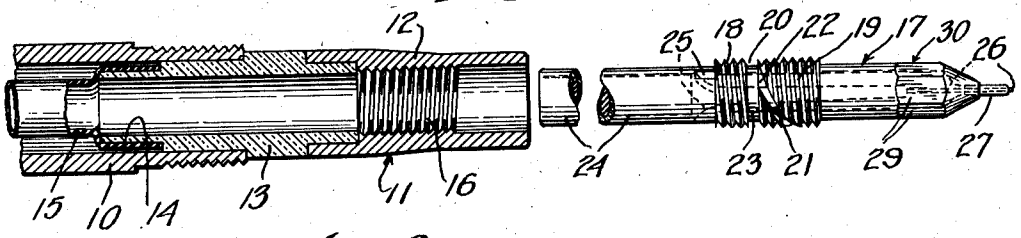


Fig. 3.

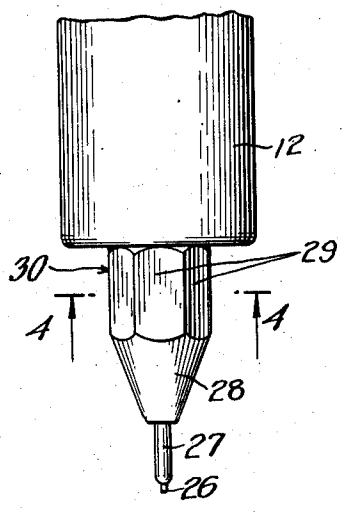
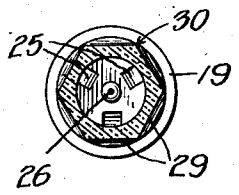


Fig. 4.



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STYLOGRAPHIC PEN

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2 Claims. (Cl. 120—44)

This invention relates to fountain pens of the stylographic type. More particularly, the invention relates to the nozzle of pens of this type and kind to the end of providing on the nozzle beyond the section of the pen means to facilitate rotation of the nozzle in coupling and uncoupling the same with the section. The novel features of the invention will be best understood from the following description when taken together with the accompanying drawing in which certain embodiments of the invention are disclosed and in which the separate parts are designated by suitable reference characters in each of the views and in which:

Fig. 1 is a diagrammatic view illustrating the method of attaching and detaching the nozzle with the pen section.

Fig. 2 is an exploded view of the nozzle and pen section in spaced relation to each other, the pen section being shown in cross section and the nozzle in elevation.

Fig. 3 is an enlarged detail view of the nozzle end of a fountain pen made according to my invention; and

Fig. 4 is a section on the line 4—4 of Fig. 3 and omitting the pen section and barrel.

In the construction of stylographic pens it has been the common practice for many years to provide on the nozzle of the pen a tubular stem portion protruding from the outer end of the pen section, which end portion terminates in a tapered end from which the tubular pen point projects. Also for years extreme difficulty and inconvenience has been experienced, from the standpoint of the user of the pen, the selling agent, and even the manufacturer, in removing the nozzle to clean or repair the pen. For example, it has been substantially impossible for the user to screw out the nozzle by hand, in that the same could not be firmly gripped between the fingers and if strained excessively, the nozzle or the section would break. Still further, the average dealer or store handling the sale of the pen would not be equipped with the necessary tools or implements for easily removing the nozzle and at the same time the manufacturer has experienced difficulty in removing the nozzle, even with the use of proper tools. This latter instance takes place when the nozzle has become frozen due to caking or hardening of the ink around the nozzle or between the nozzle and the section, or from any other cause.

It is the purpose of my invention to provide an improved nozzle construction which consists in providing on the nozzle tube or shank outwardly of the pen section a hexagon or other irregular cross sectional contour, which will provide on the nozzle a gripping surface or area which can be firmly engaged by two fingers of the hand to facilitate attaching and detaching the nozzle with respect to the pen section. By providing a nozzle of this construction the manufacturer of the pen can recommend to the user removal of the nozzle to thoroughly clean the same at each occasion for refilling the pen. In this way the pen will be kept, at all times, in proper operating condition. Heretofore, it was impractical to give such instructions as the average purchaser would not be capable of removing the nozzle in the inability to properly grip the nozzle by hand to unscrew the same. From the foregoing, it will readily appear that in a very simple change or alteration in the structure of the nozzle a means is provided which not only materially lengthens the useful life of a pen but also maintains throughout such life a more efficient operation.

It should also be pointed out that in providing means facilitating removal of the nozzle the vent passages of the nozzle as well as the bore of the nozzle, including the bore of the pen point, may be thoroughly cleaned and dryed before replacing the same in the pen; thus all parts of the pen are maintained in proper writing condition at all times. It will also be apparent that removal of the nozzle also removes the weighted plunger employed which leaves the barrel of the pen or the ink sack open for thorough cleaning without being restricted by the small vent passages employed.

In order to illustrate one adaptation of my invention, I have shown in Fig. 2 of the drawing at 10 part of the barrel of a fountain pen with which is detachably coupled the section 11 composed, in the construction shown, of an opaque outer end 12 and a transparent inner end 13, on the reduced portion 14 of which is secured a compressable sack 15 of rubber or other suitable material. The section 11 is internally threaded, as seen at 16, to receive the nozzle 17. The nozzle comprises an elongated tubular body having at its inner end two enlarged threaded portions 18 and 19 spaced apart by an annular groove 20, the part 19 having on its outer surface a spiral groove 21 which forms a vent and feed passage. Spaced circumferentially with respect to the upper end 22 of the groove 21, where it opens into the groove 20, is a radial port 23 which opens into the bore of the nozzle to communicate with the section 15 in the usual manner. A weighted

plunger 24 is partly seen in Fig. 2 and this plunger has at the lower end thereof ports 25 which place the bore of the nozzle in communication with the bore of the section 11 in which the plunger 24 operates.

The weighted plunger 24 carries a needle 26 which moves inwardly and outwardly through the tubular pen point 27 supported in the lower tapered end 28 of the nozzle 17.

The portion of the nozzle 17 between the enlargement 19 and the tapered end 28 and particularly that portion adjacent the tapered end, is provided with six circumferentially spaced flat surfaces 29 which are elongated with respect to the nozzle to provide on the nozzle what may be termed a gripping portion or area 30. The portion 30 is disposed outwardly of the end 16 of the section 11 so that the thumb 31 and a finger 32 of one hand may freely grip two opposed surfaces 29 of the nozzle beyond the section 11, while the section and remainder of the pen is gripped in the other hand, as partially indicated at 33 in Fig. 1 of the drawing. It will thus be seen that the nozzle 17 may be readily detached from the section and also firmly screwed into position in the regular assemblage of the parts, and if desired and for emergency purposes where the nozzle has become more or less frozen, a socket type of wrench may be supplied with each pin to properly fit the hexagon portion 30 of the nozzle to facilitate removal thereof. In all such latter instances, however, it will be recommended that the entire pen be soaked in water for a period of time in order to soften, as much as possible, the ink in the passages of the pen. These later conditions are not likely to prevail, however, in a pen which is being constantly used, particularly if the pen is cleaned as directed.

It will also be apparent that by thoroughly cleaning the nozzle as previously set forth, it is also natural that the plunger, including the plunger needle 26, will also be cleaned and this will maintain free action of the plunger at all times and proper feed of ink through the bore of the point 27 around the needle 26. This latter cleaning is particularly desirable in a fountain pen of my construction where restricted areas are employed between the needle 26 and the bore of the pen point in what I term "fine writing stylographic pens."

From the foregoing it will appear that by the simple structural change in the nozzle by providing the gripping portion or area thereof, the annoyance, nuisance and inconvenience to the owner is substantially eliminated, particularly from the standpoint of having to return a pen for repair or cleaning, and the loss of the use of the pen in the meantime, and further the time lost by the owner to care for such repairs and alterations, all of which are obviated in the initial proper care of the pen, which now may be simply and easily accomplished. The foregoing also relieves the dealer or merchant of the inconvenience of such repairs and the manufacturer of the service for making the repairs. It will thus be apparent that indefinite life use of the pen is maintained to the complete satisfaction of the user.

From a consideration of Fig. 1 of the drawing it will be apparent that by arranging the gripping area of the nozzle adjacent the tapered end, a finger grip of the nozzle between the fingers is made possible. Furthermore, when an instrument or wrench is used, particularly of the socket type, free guidance of the wrench upon the hexagon gripping area is made possible. Further, as this area terminates at the end of the pen section, the wrench will be kept away from the pen section. Furthermore, the flattened opposed walls which produce the hexagon cross sectional contour do not, in any way, interfere with, but rather encourage the flow of ink into the pen in the filling operation.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. The combination with a stylographic pen, of a nozzle comprising an elongated tubular body, one end portion of the body having enlarged externally threaded means for attaching and detaching said nozzle with the pen, the other outer end portion of said body being tapered and supporting a tubular pen point, and said body intermediate said ends thereof having an area of external irregular contour facilitating firm gripping of said nozzle in attaching and detaching the same with respect to the fountain pen.

2. In a stylographic fountain pen, the combination with the pen section, of a nozzle in threaded engagement with said section for attachment and detachment of said nozzle, the nozzle having an end portion projecting beyond said pen section, said projecting end portion of the nozzle having on opposed surfaces thereof elongated, flat, gripping areas extending longitudinally of the nozzle, a tubular pen point supported in said projecting end portion and extending therebeyond, and said flat areas joining the pen point in a tapered portion.

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