

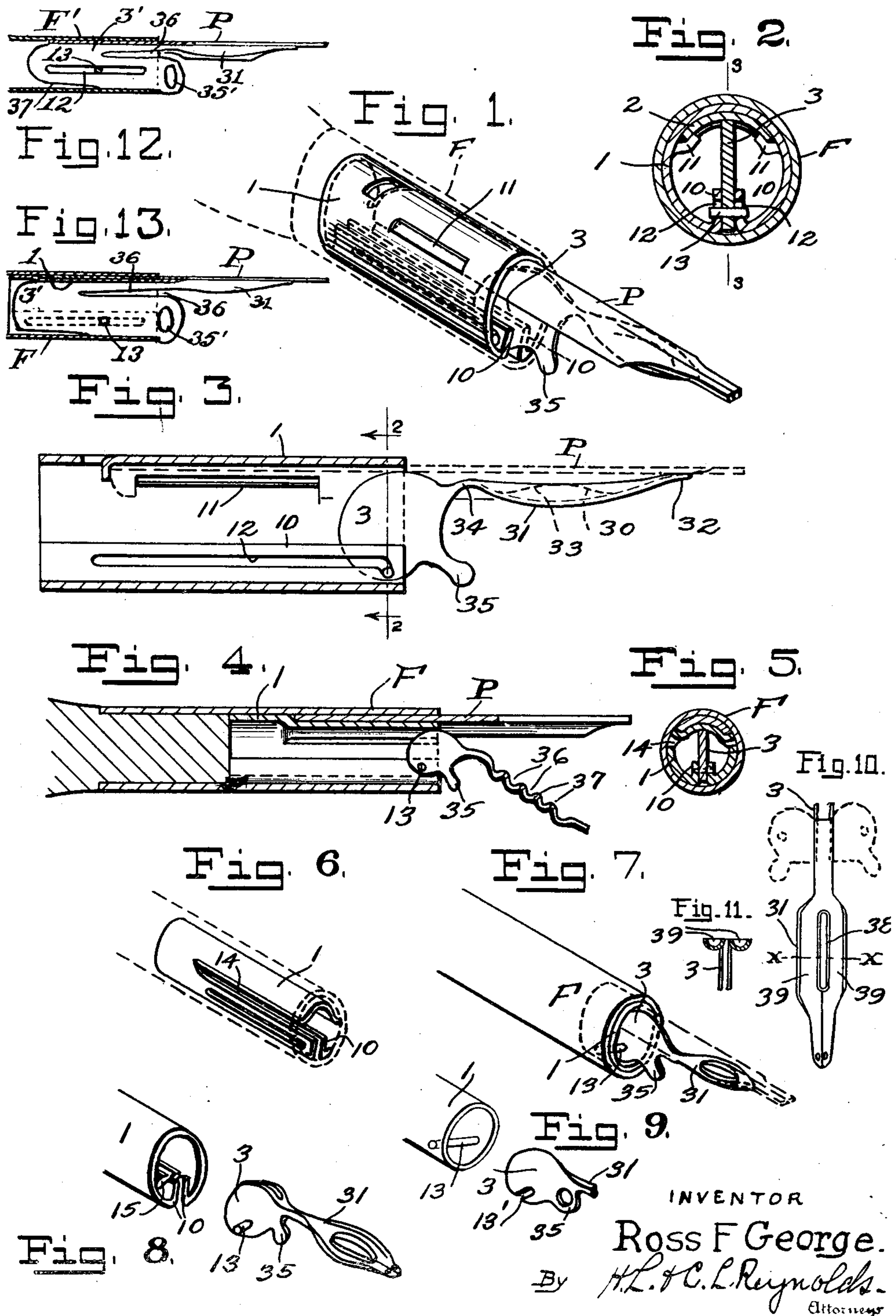
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R. F. GEORGE

PEN CLAMP AND RESERVOIR

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ROSS F. GEORGE, OF SEATTLE, WASHINGTON.

PEN CLAMP AND RESERVOIR.

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My invention relates to devices designed for holding pens in pen holders and with this for also providing a supplemental ink reservoir cooperating with the pen so as to provide a supply of ink such that the pen may be operated for long periods without replenishing.

The object of my invention is to provide a device which may be inserted in the ferrule of an ordinary pen holder to perform the two functions, first of securing the pen firmly in place, and so that it may also be easily removed when desired, and second, to provide supplemental ink reservoirs, thereby increasing the inking capacity of the pen.

My invention consists of the novel constructions and the principles employed therein which will be hereinafter set forth by the description of the preferred forms illustrated in the accompanying drawings.

These accompanying drawings illustrate certain preferred forms of construction which are believed at the time to be best adapted for carrying out the principles of my invention.

Figure 1 is a perspective view showing my pen securing device and its relations to a pen holder when applied thereto.

Figure 2 is a cross section of the same device and the ferrule of the pen holder, the same being taken on approximately the plane indicated by the broken line 2—2 of Figure 3.

Figure 3 is a longitudinal section taken through the ferrule of a pen holder and of my device as applied thereto.

Figure 4 is a similar longitudinal section showing the cam member of the pen clamping device thrown downward into pen releasing position, but in which the construction of the pen clamping device is modified from that shown in Figure 3.

Figure 5 is a transverse section of the device shown in Figure 4, taken on the plane which includes the pivot pin of the pen-clamping cam.

Figure 6 shows in perspective the pivot base member which is intended for insertion within the ferrule of the pen holder, said ferrule being also indicated in its relation thereto by dotted lines.

Figure 7 is a perspective showing the complete device inserted in the ferrule of a pen holder, the pen being indicated by dotted lines.

Figure 8 shows one form of the device in which the pen clamping cam is removable, the said pen-clamping device being shown as removed from the pivot base member.

Figure 9 is a device, in its essential principles the same as that of Figure 8, but in its construction slightly different.

Figure 10 is a top plan view of the pen-clamping cam and the supplemental reservoir which is an integral part thereof, the form of the blank from which it is made being indicated by dotted lines.

Figure 11 is a cross section taken on the line $x-x$ of Figure 10.

Figures 12 and 13 are longitudinal sectional views of modified constructions using wedge-like cams instead of rocking cams to secure the pen.

In my present invention it is designed to provide a device consisting essentially of two parts, first a pen clamping base adapted to be inserted in the ferrule of a pen holder, and the other part consisting of a combined pen clamping cam and supplementary reservoir. The pivot base member is preferably made of at least a partial cylindrical outline and is designed to fit snugly within the ferrule of the pen holder. This is provided with means for receiving the shank of a pen and holding the same securely within the ferrule. The ferrule F is indicated in Figure 1 only by dotted lines outside of the pivot base member 1. The pivot base member 1 is made of a piece of thin sheet metal bent into general cylindrical shape, but this shape is modified by having the meeting ends of the plate turned inward or towards the center line to form two opposed flanges 10. It is also modified in construction as may be necessary to enable the insertion of the shank of the pen. As illustrated in Figures 1, 2 and 3 this has been done by providing two ears 11 placed symmetrically at each side of the central plane which passes between the two pivot ears 10. These ears are bent inwardly and spaced from the body of the cylinder forming the pivot member to accommodate the edges of the pen shank 2, as is clearly indicated by the section of Figure 2.

The pen-clamping cam 3 fits snugly between the pivot ears 10. The pivot pin 13 passes through the pivot clamp and through the pivot ears 10. This pivot connection may be a fixed pivot connection, that is, not

adjustable in position, as has been indicated in Figure 4, or it may be an adjustable pivot connection, as by occupying a slightly depressed portion at the end of a slot 12 formed in the pivot ears. When the latter construction is used, it is possible, by forcing the clamping cam 3 backward into the ferrule, to withdraw into the protection given by the ferrule the supplemental ink reservoir formed by the arm 30 of the cam. This supplemental ink reservoir may be made of considerable variation in shape and size. Its function is to lie close up against the inner or under face of the pen when the device is in working position, and to retain between itself and the pen a quantity of ink which will enable the pen to be continuously used for a much longer time than would otherwise be possible.

As shown in Figure 3 this supplemental ink reservoir is of a breadth to cover a material portion of the inner or under face of the pen points, and is depressed downwardly so as to hold a greater quantity of ink. Its outer end or tip 32 is designed to normally contact with the pen points as close down towards the extreme tips thereof as experience shows to be feasible. The downward depression of this reservoir may be divided into two or more portions, as by having a portion of the central part thereof extending more nearly up to the pen point, as is indicated by the dotted line 33 in Figure 3.

The supplemental ink reservoir referred to, of which one form is shown in Figures 1 and 3, is preferably connected with the pen clamping cam 3 by a neck 34 having a certain amount of flexibility which will act to at all times hold the ink reservoir close up against the pen. The clamping of the pen in place is done by rocking the pen clamp upon its pivot pin 13 so as to swing it from a position indicated by the position of the parts in Figure 4, upward to the position indicated by the same parts in Figure 3. The eccentric surface of the edge of the device will thus be brought to bear upon the inner surface of the pen shank, to force the same outward and securely against the surrounding ferrule or the cylindrical portion of the device, as the case may be. To do this it is necessary to be able to apply a sufficient amount of force to the cam. To secure the flexible action desired in the ink reservoir it is undesirable to use this as the means for operating the cam. I, therefore, provide a separate arm, as 35, which is rigid with the cam 3 and which may be engaged to secure the pen without having to apply force to the ink reservoir 31.

In the device as shown in Figures 4 and 5 the pivot base member 1 is somewhat different in construction from that shown in Figures 2 and 3. In the present device the pen shank, instead of being placed within the pivot base member and being directly en-

gaged by the pen clamp 3, the said clamp is depressed inwardly so as to form a seat in its exterior surface between itself and the ferrule F, as is clearly shown by the section in Figure 5. In this type of construction the pen clamp acts upon the wall of the pivot base itself and forces this outwardly against the surrounding ferrule. In order to provide flexibility of this part of the pivot base so that the necessary motion may be given thereto, the pivot base is longitudinally slitted, as shown as 14 in Figures 4, 5 and 6. This slot extends from the outer end of the pivot base inwardly a distance which may well be substantially the length of the pen shank which is inserted within the ferrule.

The supplemental ink reservoir shown in Figure 4 is different from that shown in Figure 3, as follows. Instead of having a cupped extension 31, the corresponding section is given a crimped appearance, as is clearly indicated in Figure 4. This forms a series of transversely extending reservoirs 36. These reservoirs are preferably provided with air inlet openings 37 placed at the apex of the crimps or convolutions which are next to the pen.

Figures 8 and 9 illustrate a modification of structure in which the pen-clamping cam is removable from the pivot base. In one form the pivot base 1 has the pivot ears 10 provided each with a slot as 15 extending inward from their upper or inner edges so that by proper rocking of the pen clamp 3 the pivot 13 may be removed therefrom, while the other form is the reverse, with the pivot 13 fixed to the pivot base, and the cam slotted at 13' to receive the pin 13. The pen-clamping cam and its attached supplemental ink reservoir are also shown of slightly different construction from those just described. In this case the cam proper is composed of two ears cut from the sheet of metal from which the device is made, these being joined so as to lie along side of each other. The manner of constructing this may be readily seen by referring to Figures 10 and 11.

In Figure 10, which is a view of the top face of the device, the shape of the blank from which it is made has been indicated by the dotted lines. The two ears which form the clamp proper are bent downward into parallelism with each other in the finished product. In Figures 10 and 11 the ink-holding reservoir is shown as provided with a central slot 38 and the side edges of the two branches formed by said slot are turned upwardly so as to form two channels 39 which serve as reservoirs for retaining the ink.

Figures 12 and 13 show the use of a wedge-like cam for securing the pen in place. The part F' of Figure 12 may be considered as the ferrule of a pen holder or as a sleeve adapted to fit in such ferrule. The pen P is held in place by a plate 3' which is of such width

that when inserted together with the pen it will hold the latter securely against the inner surface of the sleeve or ferrule F'.

This wedge cam plate 3' is preferably made integral with the supplemental ink holder 5 31. The latter is separated from the body of plate 3' by a slot 36, as may be needed to give suitable flexibility to the reservoir arm 31.

10 The inner end of the wedge cam plate 3' may be made of less width, as shown at 37 so that when drawn out the pen may be easily inserted. The outer end of the plate 3' is provided with a hole 35' or an analogous construction by which it may be securely en- 15 gaged to withdraw it from the ferrule.

To prevent complete withdrawal and separation of the wedge plate and the ferrule, a pin 13 carried by one enters a slot 12 in the 20 other, whereby insertion and withdrawal is possible, only within certain limits.

In the device as shown in Figure 13, a pivot base sleeve 1 is employed similar in all essen- 25 tials of construction to that shown in Figures 4 and 5.

By use of a device of this sort ordinary pen holders may be used for holding any type of lettering pen having a standard shank. The device secures two functions, the secure 30 holding of the pen in the ferrule, and the provision of a supplemental ink reservoir, and also enables these results to be secured with any type of pen having a standard shank.

35 What I claim as my invention is:

1. A device for securing a pen in a pen holder having a terminal ferrule, comprising a pivot base adapted to snugly fit within the ferrule and having pen supporting ledges 40 adapted to engage the side edges of the pen shank, and a cam pivoted upon said pivot base and adapted to engage the pen shank between its side edges to clamp it in place.

2. A device for securing a pen in a pen 45 holder comprising a pivot base of tubular character adapted to be inserted in the holder with the pen, and a pen-clamping bar pivoted within the end of said pivot base and having a cam surface adapted to engage the pen to 50 secure it, said cam having an operating arm extending through the end of said pivot base, and a second arm having an ink reservoir formed thereon and adapted to swing up under the pen when in clamping position.

55 3. A device for securing a pen in a pen holder comprising a pivot base of tubular character adapted to be inserted in the holder with the pen, and a pen-clamping bar pivoted within the end of said pivot base and having a cam surface adapted to engage the pen to 60 secure it, said cam having an arm adapted to swing up under the pen when in clamping position and to cooperate with the pen to form an ink holding reservoir between them, 65 said cam being movable into and from clamp-

ing position by engagement outwardly of the end of said pivot base.

4. A device for securing a pen in a holder comprising a tubular member insertable in the holder with the pen, a clamping bar 70 pivoted in the outer end of said tubular member and having a cam engaging the pen to hold it, said cam having an arm adapted to swing up against the under face of the pen when the cam is in pen clamping position, 75 said arm being broadened to cover a considerable part of the under surface of the pen.

5. A device for securing a pen in a pen holder ferrule comprising a tubular member 80 receivable within the ferrule with the pen, a pen-clamping member cooperable with said tubular member to clamp the pen shank within the ferrule, and an arm carried by said pen-clamping member and engageable with 85 the pen, when in pen-clamping position, to form therewith an ink-holding reservoir.

6. A device for securing a pen in a pen holder comprising a tubular base member adapted to enter the terminal ferrule of a pen holder and having inwardly extending 90 spaced flanges provided with longitudinal slots, a pen clamping cam having pivots entering said slot and an outwardly extending operating arm, whereby the clamping cam and its operating arm may be passed into the 95 pen ferrule when not in use for securing a pen.

7. A device for holding a pen in a ferrule comprising a pivot base adapted to enter the ferrule with the pen shank, a pen clamping 100 cam pivoted upon said base and having an arm adapted to lie against the under face of the pen point to form therewith an ink-holding reservoir, and an arm on said cam extending through the end of the ferrule, by which 105 arm the cam is turnable.

8. A device for holding a pen in the ferrule of a pen holder comprising a pivot base adapted to enter said ferrule, a cam pivoted 110 upon said pivot base and adapted when properly turned to engage the pen to hold it, said cam having an operating arm extending without the ferrule and an arm adapted to lie close against the under face of the pen point and 115 cupped in its upper face to form an ink holding reservoir in conjunction with the pen point.

9. A device for securing a pen in a holder comprising a pen clamp pivoted in the holder to engage with the pen shank or to release the 120 same, and having an arm adapted to swing therewith, as the clamp moves into clamping position, up against the under surface of the pen point, said arm being broadened to form an ink-holding reservoir between it and the 125 pen point.

Signed at Seattle, King County, Washington, this 10th day of July 1924.

ROSS F. GEORGE.