Dec. 19, 1933. J. JENSEN 1,940,548

POCKET WRITING IMPLEMENT

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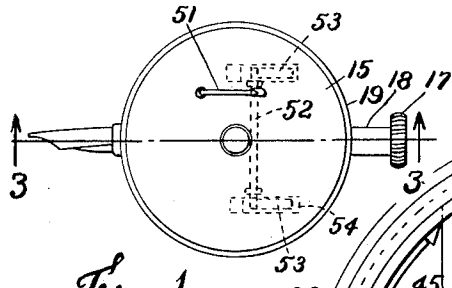


Fig. 1.

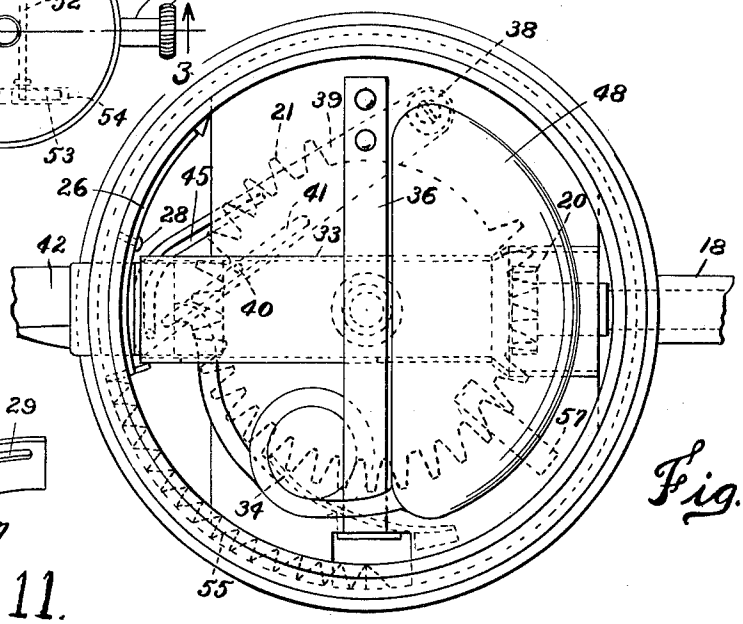


Fig. 2.

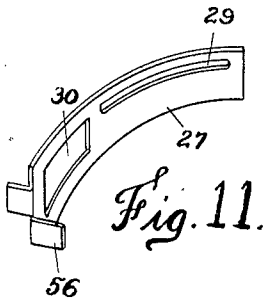


Fig. 11.

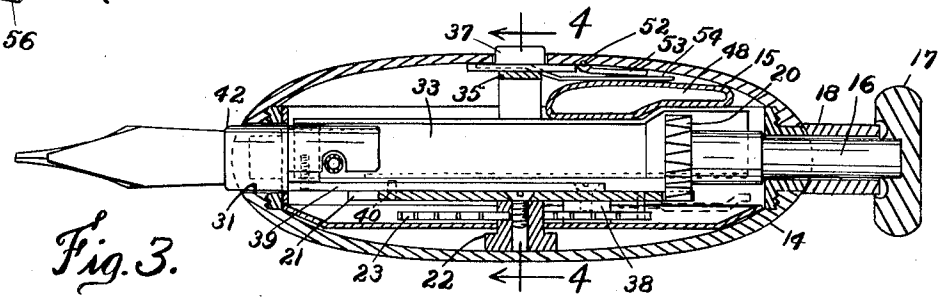


Fig. 3.

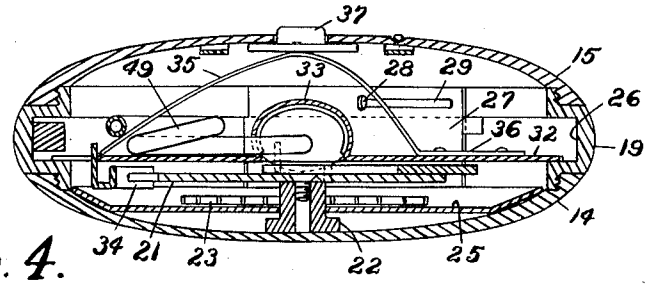


Fig. 4.

Inventor

John Jensen

By Murray and Zugelter

Attorneys

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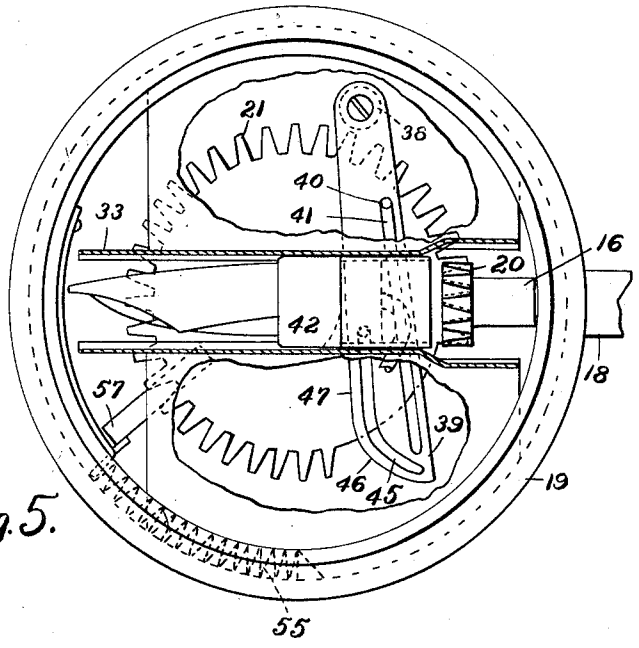


Fig. 5.

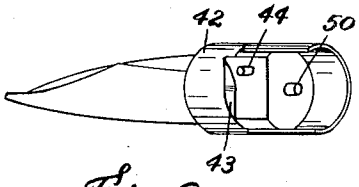


Fig. 6.

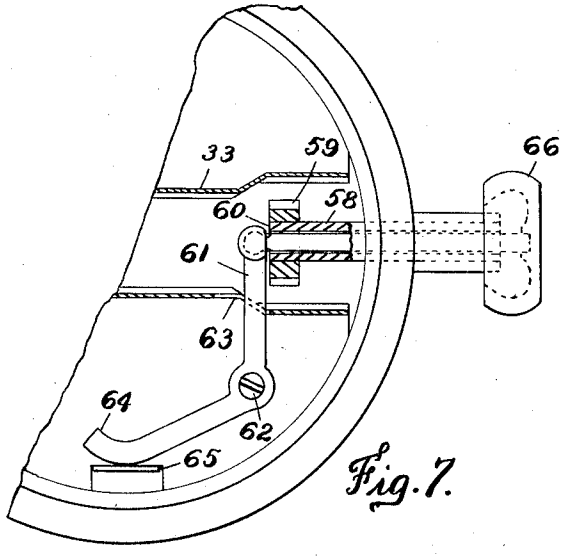


Fig. 7.

Inventor

John Jensen

By Murray and Zugelter

Attorneys

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POCKET WRITING IMPLEMENT

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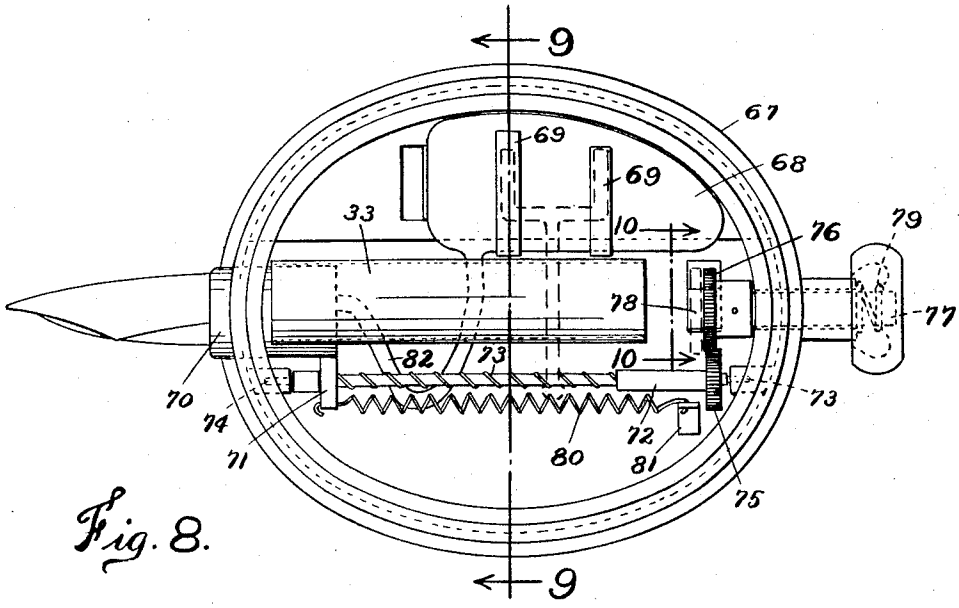


Fig. 8.

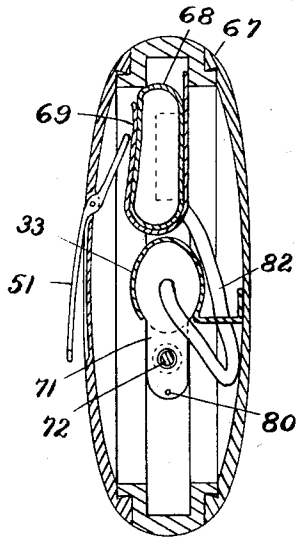


Fig. 9.

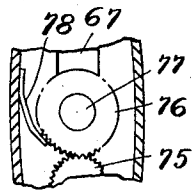


Fig. 10.

Inventor
John Jensen

By Murray and Zugelter
Attorneys

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UNITED STATES PATENT OFFICE

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POCKET WRITING IMPLEMENT

John Jensen, Cincinnati, Ohio

Application February 15, 1932. Serial No. 592,870

8 Claims. (Cl. 120—49)

The present invention relates to writing implements of the general type that are normally carried in the pocket or purse and has for its principal object the provision of such an implement wherein the writing point is protected and out of danger of catching on the clothing and which is nevertheless devoid of any separable cover or cap.

Another object of the invention is to provide an implement of this kind wherein the protective means automatically moves to inoperative position when the writing point is projected for use and resumes its operative position automatically when the writing point is retracted.

Another object is to provide a device having these advantageous features and wherein all of the manipulations may be accomplished easily with one hand.

Another object is to provide such a writing implement as will require no holding clip or chain, but which may be dropped into the pocket or purse in much the same way as a watch, thus being easy to remove, manipulate, use and return.

These and other objects are accomplished by the means described herein and disclosed in the accompanying drawings, in which:

Fig. 1 is a plan view of one embodiment of the invention, shown in condition for use.

Fig. 2 is an enlarged view showing the interior of the device of Fig. 1.

Fig. 3 is a view taken on line 3—3 of Fig. 1.

Fig. 4 is a view taken on line 4—4 of Fig. 3.

Fig. 5 is an interior view of the device of Fig. 1 with the writing point retracted and the casing closed.

Fig. 6 is an enlarged detail of the writing point.

Fig. 7 is a fragmental view showing a modified detail of the release mechanism for the retracting means of the invention.

Fig. 8 is a view showing a modified shape of casing structure and a modified form of operating mechanism.

Fig. 9 is a view taken on line 9—9 of Fig. 8.

Fig. 10 is a detail of the retractive release mechanism, being a view taken on line 10—10 of Fig. 8.

Fig. 11 is a perspective view of the closure member for device of Fig. 2.

In the development of the present invention it has been found that it has been a matter of adherence to custom and habit, rather than one of necessity, that writing implements have retained a generally elongated, rod like shape. It has been discovered also that the ordinary person can write as well without a long handled writing implement if the breadth of the handle body is sufficient to rest comfortably within the hand, regardless of whether the individual uses the so called "finger movement" or "arm movement" in writing.

It is understood that the present invention embraces both that class of writing implement characterized by the lead pencil and that class characterized by the pocket pen, especially the fountain pen. The latter, because of its necessity for a cover cap, usually separable, and its limitations in ink carrying capacity, finds especial advantages in the present invention, over and above those of convenience and compactness.

In describing the invention the pocket fountain pen will be exemplified since it is obvious that its adaptation to the insertible lead type of pencil will include broadly the same general combination of cooperating parts but will be generally simpler and freer of mechanical difficulties and physical problems.

Referring now to the drawings the writing implement of this invention comprises a flat and preferably rounded casing comprising a bottom 14 and a cover 15 between which are contained the operating elements. A suitable stem or shaft 16 which may be rotated by a thumb piece constitutes the exterior part whereby the pen is projected from its inoperative and protectively enclosed position (shown in Fig. 5) to an operative writing position (shown in Figs. 1 and 3). A short sleeve 18 formed on the ring section 19 of bottom 14 serves as a journal for stem 16. A bevel pinion 20 on stem 16 meshes with a gear 21 journalled on a stud 22 fixed to or integral with bottom 14. A winding coil spring 23 has one end fixed to the gear and the other secured to the stud so that when the gear is turned in one direction the spring 23 will be wound and will tend to return the gear to its original position. A plate 25 may be employed as an item of convenience in assembly if desired although it is otherwise unnecessary to the successful operation of the device. In the form herein shown ring section 19 has an internal annular groove 26 in which closure member 27 is slidably retained as by a headed pin 28 extending through a slot 29 in the closure or seal member. This member 27 also has an aperture 30 which coincides with aperture 31 in ring member when the writing point is projected through the ring member 19. A table 32 serves as a support for the writing point slide and also isolates the moving parts from the ink bag. The slide or guide member 33 may be integral with or attached to table 32. A spring

pawl 34 normally precludes movement of gear 21 under the influence of spring 23 but is yieldably removed from engagement from the gear by means of flexible actuator 35 which is fixed at 36 to table 32 and is subject to elongation whenever button 37 is depressed.

Pivoted on a lug 38, which may be carried by member 25, and disposed beyond the periphery of gear 21, is an arm or cam member 39. A pin 40 in gear 21 lies in slot 41 in cam 39. This pin and slot connection limits the rotary movement of the gear 21 and also serves to move the cam arm 39 from the position shown in Fig. 5 to the position shown in Fig. 2 when stem 16 is manually rotated. This action also winds spring 23, the tension being held by engagement of spring pawl 34 engaging the gear 21. When the pawl is disengaged by depressing button 37 the gear is rotated in the opposite direction and carries the cam arm 39 back to the position shown in Fig. 5.

This movement of the cam arm 39 is employed to project the writing point which may constitute the pen point and mounting indicated generally as 42, and which is slidable in the guide member 33. The writing point 42 is cut away to provide an inclined shoulder 43 adjacent which is a pin 44 which extends into a cam slot 45 in cam arm 39. The cam arm lies in the cut away portion and the curved portion 46 of the arm and the adjacent edge 47 thereof bears against said shoulder 43 to project point 42 through the guide 33 to an operative position. The pin and slot connection 40—41 effect the retractive movement of the point 42.

A large flexible ink reservoir 48 lies on table 32 and across guide 33 and from it extends a freely flexible but preferably noncollapsible tube 49 which connects with the nipple 50 which supplies the writing point with ink in the usual manner.

The tube preferably has a complete coil in it so that there will be no tendency to ejection of ink when the writing point is moved into or from the casing. Any approved means may be used to compress the ink reservoir to accomplish the so-called "self-filling". As shown, this may comprise a normally countersunk lever 51 which turns a pivoted rod 52 with spaced fingers 53 fixed thereon and serving to press a pair of spaced plates 54 toward table 32. It will be understood that if the pawl release member 35 is replaced by the more compact form of device illustrated in Fig. 7 a much larger ink reservoir may be employed. This form of release will be explained later.

The actuation of the closure member 27 simultaneously with the reciprocation of the writing point is effected by a spring 55 housed in groove 26 whereby the lug 56 of the closure member is yieldably urged to move the closure member to a position wherein the opening 30 coincides with the open end of guide 33 and the aperture in member 19. This assures clearance of the aperture in advance of the movement of the writing point to an operative position. A lug 57 on gear 21 moves lug 56 in the opposite direction to compress spring 55 and close the aperture after the writing point is fully retracted.

The release mechanism illustrated in Fig. 7 is a compact modified form which includes a tubular stem 58 which carries the pinion 59 corresponding to pinion 20. A reciprocating pin 60 actuates a bell crank 61 pivoted at 62 and operating through a slot in the rear end of guide 33. The opposite end 64 of the bell crank lever constitutes the holding pawl and is yieldably retained in engagement with the teeth of gear 21 by a spring member 65. The thumb piece 66 may be turned to rotate the tubular stem 58 and may also be depressed to actuate the pawl whereby the gear is released to the influence of the coil spring.

Fig. 9 illustrates a modified form of operating mechanism and also a modified shape of casing. It will be understood that either casing shape or operating mechanism may be used in various combinations. In this embodiment the casing 67 takes the form of a somewhat flattened oval and carries within it an ink reservoir 68 which may be placed within suitable guides 69 to hold it in position. A writing point 70, constructed somewhat after the fashion of Fig. 6 is reciprocable in a guide 33. The writing point 70 has a perforate boss 71 through which extends a rotatably mounted screw shaft 72 which has threads 73 of a steep or "rapid" pitch which engage in similar female threads in the lug 71. Shaft 72 is suitably journalled at opposite ends 74 interiorly of the casing and at the end opposite the writing point carries a pinion 75. A gear 76 is mounted on a winding stem 77 and meshes with the pinion 75. A spring pawl 78 limits the rotation of the gears to one direction under normal conditions. A stem 77, however, may be depressed against the yielding resistance of a spring 79 so that gear 76 is moved out of mesh with pinion 75 but remains under the influence of pawl 78. A tension spring 80 is hooked upon a suitable lug 81 on the casing at its one end and upon lug 71 at its opposite end. From the foregoing it will be apparent that when stem 77 is turned in a clockwise direction the shaft 72 will be rotated and will project the pen or writing point 70 forwardly through the guide by reason of the engagement of the thread lug 71 thereon. This will place spring 80 under tension. The pawl 78 will hold the writing point in its projected position so that the pen or writing implement may be used in the usual way. In the present instance the tube 82 connects the ink reservoir 68 with the point 70. When it is desired to retire the writing point, it is necessary only to depress the stem 77 against resistance of the spring 79 whereupon, gear 76 and pinion 75 being disengaged, the spring 80 will exert a strong pull upon lug 71 and retract the point 70 into the guide 33. The pinion 75 is of course free to turn during this movement.

It will be appreciated that the means for projecting and retracting the writing point may be modified within the spirit and scope of this invention and that the casing need not be limited to a circular or oval disk shape but may also be modified to any shape which may be considered adaptable to convenient holding within the hand and which will be subject, on account of its breadth in comparison to the usual rod-like holder or handle for pens and pencils, to facile holding and manipulation during the act of writing.

The operation of the device will be readily apparent. The device in its closed condition would normally be carried in the purse or in any pocket which may be considered convenient, the device being normally about the size of an ordinary watch. The writer, desiring to use the writing implement, would remove the device from his pocket and with the thumb and finger of one hand be able to turn the stem to project the writing point.

The device would then be held with one of the relative flat sides against the thumb and, with

the index and second fingers lightly holding against the opposite flattened side of the casing, the pen or pencil may be used with surprising facility. Upon completion of writing a mere depression of the stem, or of the lateral button 37, as the case may be, will automatically retract the writing point whereupon the implement may be restored to the pocket without the necessity of engaging clips or the like.

What is claimed is:

1. In combination a substantially flat hollow casing, a guide member in said casing, a writing member reciprocable in the guide and movable into and from the casing, an externally disposed manually rotatable member, means within the casing actuatable by said rotatable member to project the writing member to an operative position, means conditioned by the projecting movement of the writing member tending to retract the writing member into the casing and an externally controlled means for releasing the writing means to the action of said retracting means.

2. An odd shaped writing implement comprising a flattened hollow casing, a cooperating gear and pinion within the casing, exteriorly operating means for actuating the gear and pinion, spring means tending to oppose movement of the gear and pinion, a guide, a writing point reciprocable in the guide, means actuated in one direction through the agency of the gear and pinion to project the writing point outwardly of the guide, means to release the writing point from the influence of the gear and pinion whereby the writing point is retracted under the influence of said spring, and a cover member automatically opening and closing the end of the guide way as the writing point is projected and retracted.

3. In combination a flat hollow casing having an opening in the edge thereof, a guide in said casing, a writing point reciprocable in said guide and through the opening, an exteriorly rotatable stem supported by said casing, means within the casing and operable by said stem for moving the writing point along the guide and through the opening, means yieldably resisting said last mentioned movement, and means releasable from the exterior of the casing for rendering said yielding means active for withdrawing the writing point into the guide.

4. In a writing implement the combination of a hollow flat casing having an opening in the edge thereof, a writing point, a guide for the point interiorly of the casing, a stem member rotatable for effecting movement of the point through the guide and said opening in the casing, spring means resisting said last mentioned movement and tending to return the point into the casing, means retaining the point in said extended position and means for releasing said last mentioned means to effect automatic retraction of the point.

5. In a device of the class described the combination of a hollow flat casing, a writing point member slidably mounted therein, an intermeshing gear and pinion within said casing, a stem exteriorly of the casing for rotating said intermeshing members, means connected to the writing point and rendered operative by said intermeshing members for moving the point to an operative position wherein the point protrudes from the casing, means tending to retract the point, means normally precluding retraction of said point and rendered inoperative for permitting such retraction, a compressible ink reservoir in said casing and a flexible tube connecting the point with the reservoir.

6. In a device of the class described the combination of a hollow flat casing, a gear rotatable therein, a pinion meshing with the gear, a stem operable exteriorly of the casing for turning said pinion, a spring adapted to be wound when the gear is turned by the pinion, a spring pawl serving to hold the gear against the influence of the spring, a cam arm pivoted in the casing and overhanging said gear, pin and slot connections between said arm and gear, a guide, a writing point slidable in the guide, a pin and slot connection between the point and said arm whereby the arm, when moved under the influence of the spring and gear, retracts the point into the guide in the casing and a shoulder on said point engagable by said arm for projecting the point when the gear is turned by the pinion.

7. In a device of the class described the combination of a casing having an aperture therein, a writing point movable through the aperture into said casing, a gear and cam arm in the casing operative to reciprocate said writing point to operative and inoperative positions, means to turn said gear in opposite directions, a spring urged closure for said aperture in the casing and means on said gear operative to open the closure in advance of the projection of the point.

8. In a device of the class described the combination of a casing, a writing point reciprocably mounted therein, the casing being apertured to permit the said point to project from the casing at one of its limits of reciprocation, a guide for said point, a lug projecting from the point, a screw journalled at opposite ends in the casing and threadedly engaging said lug, means for turning the screw whereby the point is projected from the casing, a spring operative on the lug to retract the writing point and means normally precluding operation of the spring and releasable from the exterior of said casing.

JOHN JENSEN.