

W. A. WELTY & H. P. RAVN.
 FOUNTAIN PEN.
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1,299,642.

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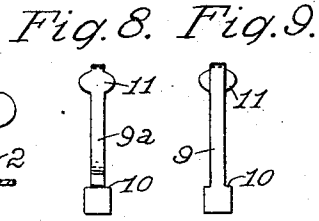
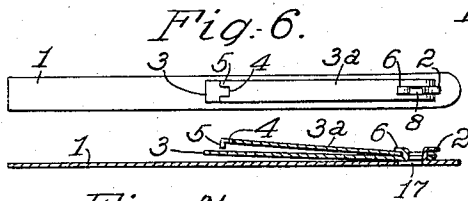
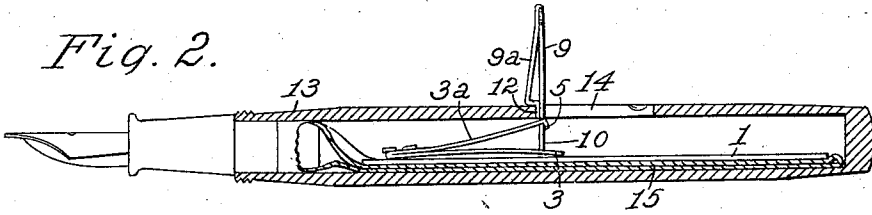
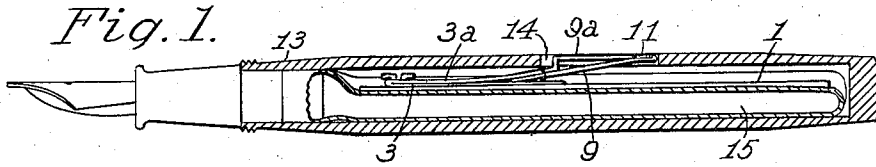


Fig. 7.

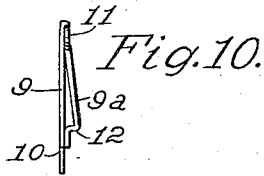
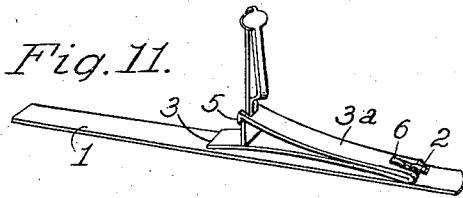


Fig. 3.

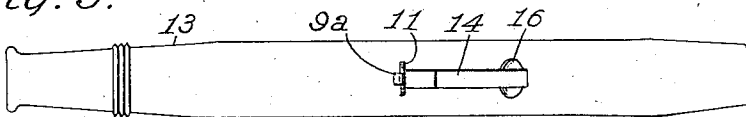


Fig. 4.

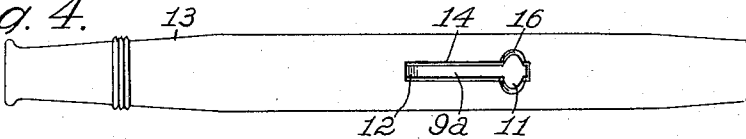
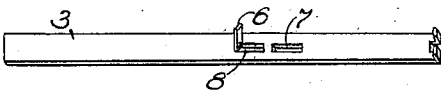


Fig. 5.



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FOUNTAIN-PEN.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, WILLIAM ALBERT WELTY and HANS PETER RAVN, citizens of the United States of America, and residents of Waterloo, Blackhawk county, Iowa, have invented certain new and useful Improvements in Fountain-Pens, of which the following is a specification.

Our invention relates to improvements in fountain pens, and the objects of our improvements are, first, to supply in a fountain pen having a hollow barrel, said barrel having a slot, an elastic collapsible ink-reservoir in said barrel, and operative means operable through said slot to collapse said reservoir and dependent upon the reactive elasticity of the reservoir to maintain the parts of said means in proper working positions and in inactive folded positions: second, to include in said operative means a special type of elastic abutment and a lever fulcrumed upon and limited in its movements by said abutment, and third, to so fashion and form said lever as to best cooperate with said abutment and with the said barrel-slot walls and the barrel's outer surface, in the operation of the device, whether in action to collapse said reservoir, or in other positions relative thereto, said abutment or the barrel.

These objects we have accomplished by the means which are hereinafter described and claimed, and which are illustrated in the accompanying drawings, in which Figure 1 is a medial longitudinal section of the barrel of a fountain pen and of the elastic collapsible ink-reservoir therein, showing in said barrel the means for collapsing said reservoir in their folded or closed and inactive positions, with the reservoir uncollapsed; Fig. 2 is a like sectional view, showing said operating means extended and in the final stage of action in collapsing said ink-reservoir; Fig. 3 is an elevation of said barrel taken at an angle of ninety degrees from Fig. 2, showing the lever part of said operating means in its extended position; Fig. 4 is a like view to said Fig. 3, but showing said lever in its folded over or procumbent position within the barrel-slot; Fig. 5 is a detail view, developed in one plane before bending, of the elastic abutment device; Fig. 6 is a plan view of the ink-reservoir pressure-bar with said abutment device mounted thereon; Fig. 7 is a medial longitudinal section of said Fig. 6; Fig. 8 and Fig. 9 are ele-

vations of the front and rear faces respectively of the lever element of said device, and Fig. 10 is a side elevation thereof, while Fig. 11 is a perspective view of said lever assembled with said abutment and pressure-bar, with the parts in extended position as shown in said Fig. 2.

Similar numerals of reference denote corresponding parts throughout the several views.

The hollow fountain pen barrel 13 has a longitudinal slot 14. Within said barrel is mounted the elastic collapsible hollow ink-reservoir 15. Positioned longitudinally along said reservoir beneath said slot is a flat pressure-bar 1. All these parts are well-known and will not be further described.

The numeral 3 denotes a resilient bar placed upon and pivotally secured to said pressure-bar at the forward end thereof. In its first stage of manufacture, the bar 3 is, to one side of its middle, punched at two longitudinally alined places to produce slots 7 and 8, the slot 7 being fully cut out, while the slot 8 has one end left connected to provide an upwardly projecting rearwardly extending curved tongue 6. The bar 3, hereinafter to be called the abutment or abutment member or carrier-member, is then bent crosswise of said slot 7, as shown in said Fig. 7, to provide two approximated members of nearly equal length, the lower member being slightly longer, and the free end of the upper member 3^a being notched at 4 to furnish two short forks which are bent downwardly to supply detents 5. The tongue 6 is passed upwardly through the rear part of the slot 7 and clenched over upon the top of the member 3^a. The abutting part of the pressure-bar 1 is punched at 17 to provide an upwardly-turned tongue 2 which is curved over forwardly after being passed upwardly through the registering parts of the slots 7 and 8, and clenched upon the top of the member 3^a at the place of bending, to pivotally mount said abutment member 3 upon the pressure-bar, the tongue or hook 2 being preferably left spread a little to allow some swinging movements of the member relative to the pressure-bar.

The numeral 9 denotes a lever, formed integrally from one piece of metal, a bar being bent medially to provide separated members 9 and 9^a, the member 9 being flat, and the member 9^a being directed therefrom at a

small angle, then bent toward the member 9 to provide a shoulder 12, thence bent again to lie in contact with said member 9 for a short distance or as far as a widening of said member 9 at its free end which provides oppositely located shoulders 10. The member 9^a near the bend of the lever is widened elliptically transversely to furnish finger-holds 11.

When the above described parts are assembled, as shown in said Figs. 1 and 2, with the barrel 13 and its contained ink-reservoir 15, the lever 9 has its shoulders 10 engaged with the forward faces of the detents 5 and the superposed parts of the forks of the member 3^a, with its lower end, when erect as shown in Fig. 2, planted upon the underlying end portion of the lower abutment member 3. The narrower body of the lever part 9 is then positioned within the recess 4 between the detented forks 5 and extends upwardly through said barrel-slot 14, with the shoulder 12 of the member 9^a engaging the outer surface of the barrel at the anterior end of said slot 14, in which position the shoulder 12 forms a stop against forward movement, while the detents 5 serve as stops against lateral rocking, that is, will resist displacement of the lever from its vertical position by lateral rocking or twisting by the exercise of moderate forces upon it.

In Fig. 1 is shown the inactive positions, or folded condition of the parts of said operating means. In this view, the lever is shown swung over rearwardly so to position itself within the barrel-slot 14 longitudinally, as also shown in said Fig. 4. The elliptical part 11 is then seated in an elliptical depressed or concave seat 16 in the barrel so as to be flush with the outer surface of the latter, the recess 16 being larger, to permit of insertion of a finger-nail of the user under the part 11 to easily lift or swing up the lever.

In this procumbent position, the lower end of the lever is still engaged with the detents 5 at its shoulders 10 and underlies the end of the carrier-member 3^a as shown in Fig. 1, in which position the reactive resiliency of the ink-reservoir holds up said member 3^a and also the lever within the slot 14 so as to not project therefrom to catch in the clothing or pocket-lining of the user. When the lever has been swung upwardly to its extended position shown in Fig. 2, it fulcrums on said member 3^a so that its lower end 10 sweeps downwardly and compressively against the underlying member 3, to push down the latter and the connected pressure-bar 1 to collapse the reservoir 15 and empty it of its contents. When the lever is swung back to its procumbent position above described, the reaction of the elastic reservoir aids in throwing it over and in holding it in a closed position. It will be observed that

the lever has no pivotal connection with the barrel, is strong, easily assembled or disassembled, and is held in an extended position by the resiliency of said reservoir, and by the upward pull of the engaging shoulders 10 with the member 3^a.

A particularly important combination feature of our invention is the holding-means for the lever when in its extended position, relative to the barrel and the compressed reservoir. In this position the lever stop part 12 is engaged with the outer surface of the barrel at the forward end of the slot 14, while the forks 5 of the member 3^a are engaged by the lever-shoulders 10. The resiliency of the member 3^a acts secondarily only relatively to the action of the stop part 12 to hold the stop 12 tightly against the barrel, the lower end of the lever being thus held in contact with the member 3, to retain the lever erect. The detents on the forks 5 act only in the following ways, first to prevent lateral rocking or twisting of the lever in said slot, but second, to retain the lever in engagement with said forks 5 when the lever is procumbent. This does away with permanent or pivotal fastenings such as a pin-
tle, or other non-detachable securing-means, the said parts being securely held, yet detachable from each other when it is desired to disassemble them.

Having described our invention, what we claim as new, and desire to secure by Letters Patent, is:

1. In a fountain pen, a slotted barrel, an elastic ink-reservoir positioned therein, a pressure-bar between said reservoir and said slot, a resilient carrier-member consisting of a bent elastic element pivoted at its place of bending to said pressure-bar, the upper part of said carrier-member consisting of an elastic bar and having terminal engaging-means, and a lever detachably engaged with said engaging-means and operable in conjunction therewith to compress said reservoir.

2. In a fountain pen, a slotted barrel, an elastic ink-reservoir therein, a pressure-bar between said reservoir and the slot in said barrel, a resilient element mounted on said pressure-bar, and a lever operable through said slot having engaging-means adapted to detachably engage and fulcrum against said resilient element, to bear compressingly against said pressure-bar and ink-reservoir in one position, and to be held procumbent relative to said barrel in another position by the elastic reaction alone of the reservoir upon it.

3. In a fountain pen, a slotted barrel, an elastic ink-reservoir therein, a pressure-bar between said reservoir and slot, a resilient element mounted pivotally on said pressure-bar and having engaging-means thereon, and a lever operable through said slot, en-

gaging detachably the said engaging-means, and having a stop projection adapted to engage the barrel to limit its movement in one direction.

pressure-bar upon said reservoir when swung in one direction, and to be held procumbent relative to the barrel when swung in an opposite direction, being retained in both positions by elastic reaction of the ink-reservoir alone.

5 4. In a fountain pen, a slotted barrel, an elastic ink-reservoir therein, a pressure-bar between said reservoir and said slot, an engaging-device mounted on said pressure-bar, and a lever coacting with said engaging-
10 device, said lever consisting of a bar doubled to provide a stop and having shoulders adapted to coact with said engaging-device, said stop and said shoulders coacting with the barrel and said engaging-device in position to hold the lever in an extended position.

55 8. In a fountain pen, a slotted barrel, an elastic ink-reservoir therein, a pressure-bar between said reservoir and the slot in said barrel, a doubled resilient bar pivoted at its angle of bending to said pressure-bar, a connection between the members of said bar between their ends and adjacent said angle of bending, and a lever adapted to coact with said bar members and operable through said slot to compress one of the members and said pressure-bar against said reservoir when the lever is in its extended position.

15 5. In a fountain pen, a slotted barrel, an elastic ink-reservoir therein, a pressure-bar between said reservoir and said slot, and a lever operable through said slot to compress said pressure-bar against said reservoir, said lever consisting of a doubled body forming spaced approximated members of which one forms a stop shoulder, and said lever having
20 formed at its free extremity lateral ears adapted to overlie parts of said barrel abutting upon the slot, the stop shoulder adapted to engage the barrel to limit movement of the lever in one position.

60 6. In a fountain pen, a slotted barrel, an elastic ink-reservoir therein, a pressure-bar between said reservoir and said slot, a carrier-element mounted upon said pressure-bar, and a lever operable through said slot, said carrier-element being provided with a fulcrum, and said lever having different engaging-devices coacting respectively with said fulcrum and with said barrel to cause the lever when swung in one direction to interlock said devices with said fulcrum and said barrel.

25 6. In a fountain pen, a slotted barrel, an elastic ink-reservoir therein, a pressure-bar between said reservoir and said slot, a carrier-element mounted upon said pressure-bar, and a lever operable through said slot, said carrier-element being provided with a fulcrum, and said lever having different engaging-devices coacting respectively with said fulcrum and with said barrel to cause the lever when swung in one direction to interlock said devices with said fulcrum and said barrel.

65 9. In a fountain pen, a slotted barrel, an elastic ink-reservoir therein, a lever operable through said slot, and a carrier-device mounted within said barrel between said ink-reservoir and the barrel-slot, consisting of a doubled bar having spaced detents terminating one member thereof, said lever positioned between and engaging said detents to fulcrum against the body of said member in one position, and to be stopped by said detents from lateral rocking movements.

30 7. In a fountain pen, a slotted barrel, an elastic ink-reservoir therein, a pressure-bar between said reservoir and said slot, a doubled elastic bar mounted pivotally upon said pressure-bar and having a terminal fulcrum on the free end of its upper member, and a lever operable through said slot against said fulcrum only detachably to compress said

70 10. In a fountain pen, a slotted barrel, an elastic ink-reservoir therein, a lever operable through said slot, and a carrier-device mounted within said barrel between said ink-reservoir and the barrel-slot, consisting of means including a doubled bar having terminal forks with inwardly-directed detents, said lever mounted in said forks and having shoulders engaging same and also engaging said detents, the lever having a stop adapted to engage the outer surface of the barrel when erected, said detents preventing lateral rocking of the lever and also serving to retain the lever in engagement with the carrier-device when the lever is in a procumbent position.

75 80 85 90
Signed at Waterloo, Iowa, this 7th day of March, 1918.

WILLIAM ALBERT WELTY.
HANS PETER RAVN.