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COMPLETE SPECIFICATION.

Improvements in Fountain-pens.

I, EDUARD REISERT, of 23, Frankfurterstrasse, Hennef-Sieg, in the Province of the Rhine, in the Kingdom of Prussia, German Empire, Engineer, do hereby declare the nature of this invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following
5 statement:—

My invention refers to fountain pens, but more particularly to certain combinations and arrangements of the parts thereof, as fully described hereinafter. Reference being made to the accompanying drawing in which:

10 Figure 1 is a vertical longitudinal section of a fountain-pen embodying my invention.

Figure 2 is a vertical section of a modification thereof.

Figure 3 is a vertical section of a second modification.

Figure 4 is a vertical section of a third modification.

Figure 5 is a vertical section of a fourth modification.

15 In the form of construction represented in Figure 1 a branch a is conveyed to the pen without being in communication with the interior of the reservoir v^1 . The elastic chamber a^1 is formed by a part of the tube which extends along the outside of the reservoir and has a mouth b reaching into said reservoir near to the bottom of the latter. Elastic rings c c^1 , preferably made of india rubber
20 surround the tube a^1 at d and d^1 respectively. The double-armed lever g made of some elastic material such as steel spring or the like, and attached to the holder at f rests upon the rings c c^1 and extends along the outside of chamber a^1 . When pressure is applied to the lower arm of lever g the communication at d is interrupted and the ink contained in chamber a^1 is forced through the opening
25 at d^1 to the branch a and from there to the pen.

The modification shown in Figure 2 may be called, in a certain sense, the reverse of the form just explained. The one branch a^2 of the tube is situated in the interior of the reservoir v^2 and finishes exactly at the bottom of the latter. The other branch containing the elastic chamber a^3 extends along the outside
30 of the reservoir. Elastic rings c^2 c^3 surround the tube at d^2 d^3 respectively. The said rings are arranged in such a manner that the chamber a^3 is in communication with the branch a^2 at d^3 , and that the tube is tightly closed at d^2 when the ink is not allowed to pass to the pen. The elastic lever g^1 which is rigidly attached to the holder at f^1 rests upon the ring c^3 and extends along the outside of
35 chamber a^3 . If pressure is applied to the lever g^1 the ring c^3 is compressed so that the communication of chamber a^3 with the interior of reservoir v^2 is cut off. If, now, the pressure is continued, the walls of chamber a^3 are likewise compressed. The ink contained in this chamber causes the ring c^2 to expand and flows through the opening thus formed at d^2 down to the pen. As soon as the pressure on
40 lever g^1 ceases, the opening at d^2 is shut, and the communication at d^3 is reestablished so that fresh ink can enter the chamber a^3 . The refilling of chamber a^3 will always take place, even when the level of the ink in the reservoir v^2 is near to

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the bottom, since the tube forms a siphon which discharges underneath the bottom of the reservoir. This form of construction has the great advantage that almost the whole of the holder can be used as a reservoir as the elastic chamber a^3 is arranged on the side of the holder:

In Figure 3 I have shown a form of construction which is operated in the following manner. The spring g^2 which is fixed at h exerts a pressure on the lower part of the double-armed lever k , the latter being fulcrummed at n . Thus the bent end of lever k is pressed at l against the india-rubber tube m and closes the same. The top portion k^1 of lever k is operated by means of lever o which is fixed to the reservoir v^3 at p . If pressure is applied to the lever o the passage q becomes closed, while the pipe m remains closed, owing to the play which is arranged between the lower end o^1 of lever o and the top end k^1 of lever k . If still more pressure is applied to the lever o the lower end o^1 presses against the top end of the double-armed lever k , and raises its lower end, thus permitting the ink to pass to the pen through the pipe m .

In the form of construction shown in Figure 4 the upper arm of the double-armed lever k^3 is elongated to form the lever r . This lever r is provided with a piece r^1 which is always in contact with the elastic chamber a^4 .

A most simple form of construction is shown in Figure 5. The elastic chamber a^5 forms again a part of the tube, but is arranged underneath the reservoir v^4 . The rings c c^1 of Figure 1 are dispensed with. Their action is accomplished by the projecting ends s s^1 of the pressing piece t , which is provided with a button t^1 for receiving the thumb of the writing hand. This button is nearer to the end s than to the end s^1 . When the ink is not allowed to pass to the pen the opening at d^5 is shut, while a continual communication with the reservoir v^4 is entertained at d^4 . If pressure is applied to the button t^1 the communication at d^4 is interrupted, and the walls of chamber a^5 are compressed, so that the ink contained in this chamber is forced to leave the latter. As now, the button t^1 is nearer to the end s than to the end s^1 , the pressure exercised at d^5 is greater than at d^4 . In consequence, the ink flows through the opening d^5 to the pen.

Having now particularly described and ascertained the nature of my said invention, and in what manner the same is to be performed, I declare that what I claim is:—

1. In a fountain-pen, the combination with the reservoir for the ink and the pen proper, of an elastic chamber interposed between said reservoir and pen, the chamber forming part of the tube and being arranged on the side of the holder, the mouth b reaching into the reservoir, a double-armed lever g the one arm of which is adapted to compress the chamber, and means such as elastic rings c c^1 for temporarily shutting the chamber at the bottom or at the top respectively as and for the purpose set forth.

2. In a modification of the fountain pen claimed in Claim 1, the combination with the reservoir for the ink and the pen proper, of an elastic chamber interposed between said reservoir and pen, the chamber forming part of the tube and being arranged on the side of the holder, a branch a^2 of the hose reaching into the reservoir, a lever g^1 for compressing the chamber and means such as elastic rings c^2 c^3 for temporarily shutting the chamber, at the top or at the bottom respectively, as and for the purpose set forth.

3. In a modification of the fountain-pen as set forth in the preceding claims the combination with the reservoir for the ink and the pen proper, of an elastic chamber interposed between said reservoir and pen, a lever adapted to be pressed against the said elastic chamber, a second lever or arm of a lever adapted to be withdrawn by the first lever and a spring for pressing the said second lever or arm of a lever against the tube substantially as and for the purpose set forth.

4. In a modification of the fountain-pen as set forth in Claim 1, the combination with the reservoir for the ink and the pen proper, of an elastic chamber interposed between said reservoir and pen, and a pressing piece t extending along the

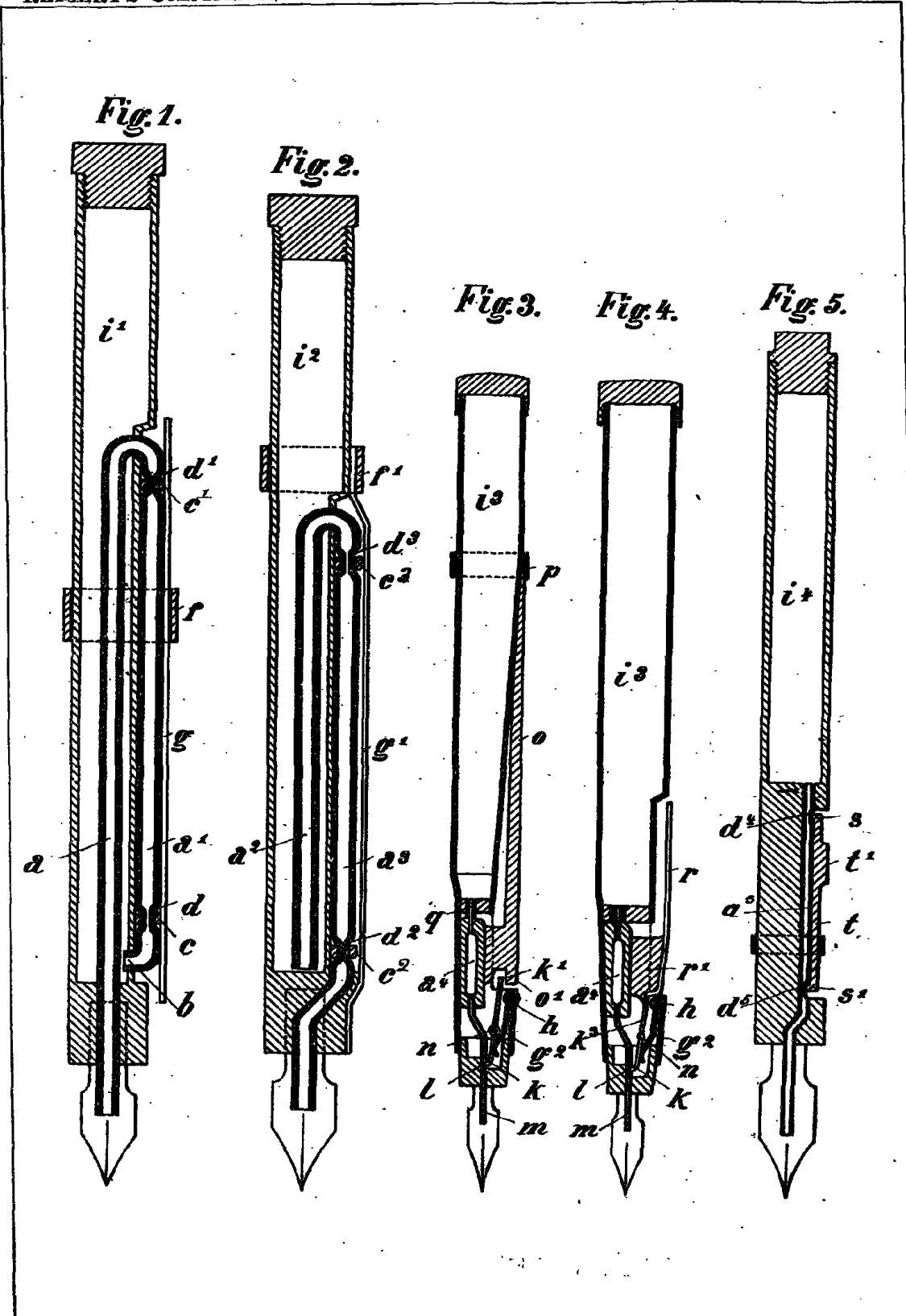
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chamber, and means such as projecting ends *s s*¹ for temporarily shutting the chamber at the bottom or at the top respectively, as and for the purpose set forth.

Dated this 28th day of January 1899.

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[This Drawing is a reproduction of the Original on a reduced scale.]