(No Model.)

U. BOHREN.

PEN AND PENCIL HOLDER.

No. 420,033. Patented Jan. 28, 1890.

Fig. 1.

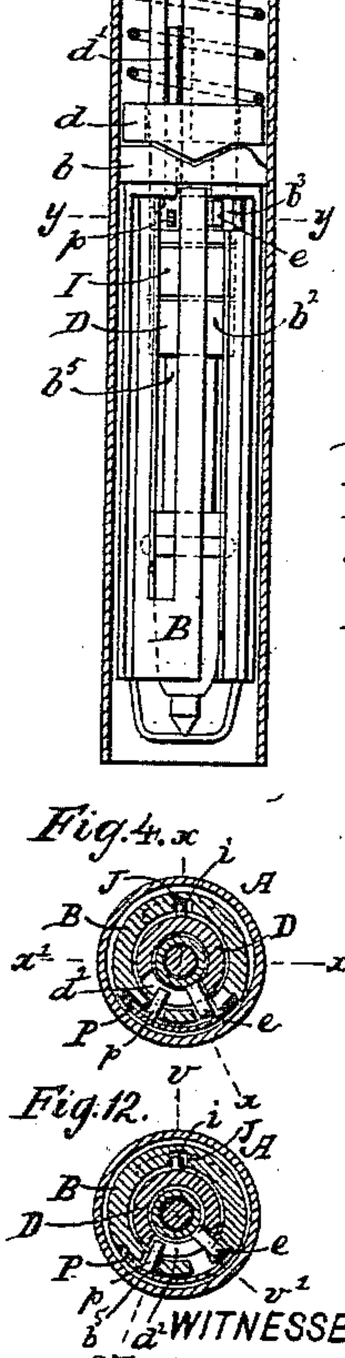

Fig. 2.

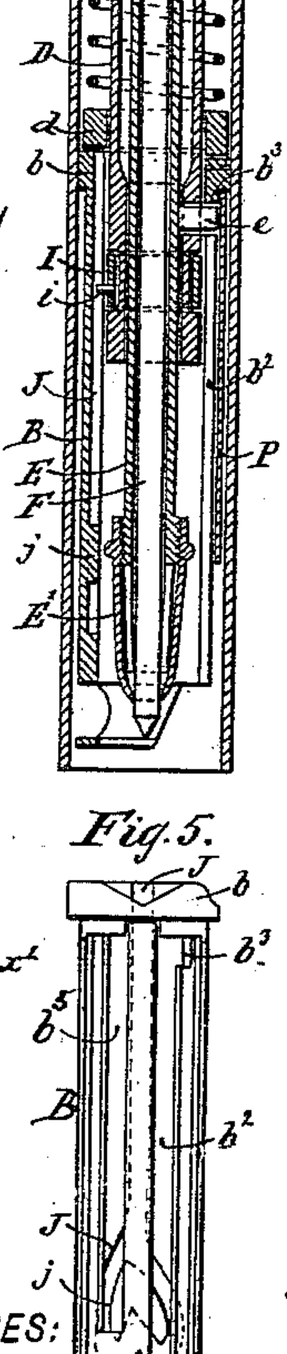

Fig. 8.

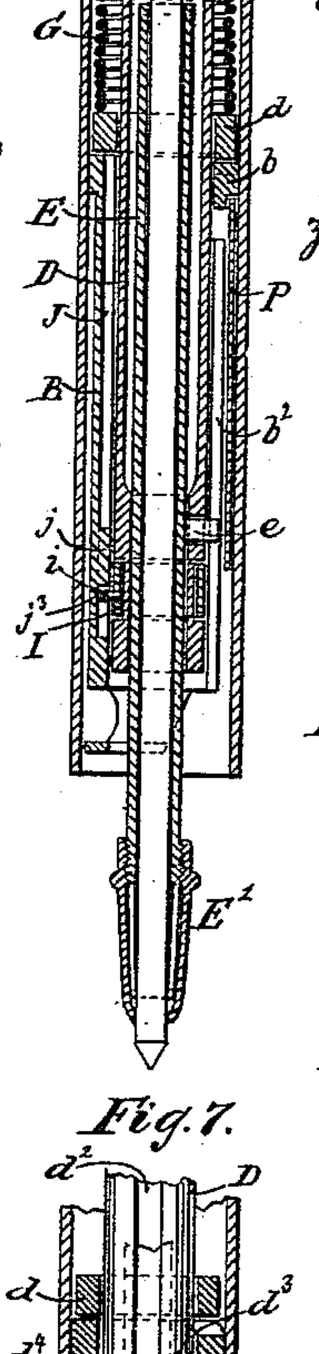

Fig. 3.

Fig. 9.

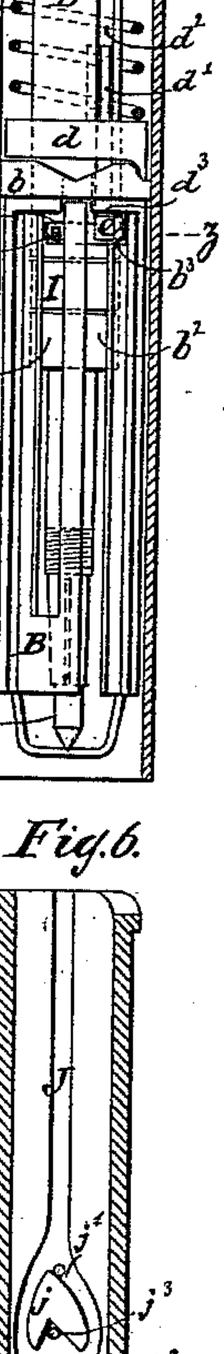

Fig. 10.

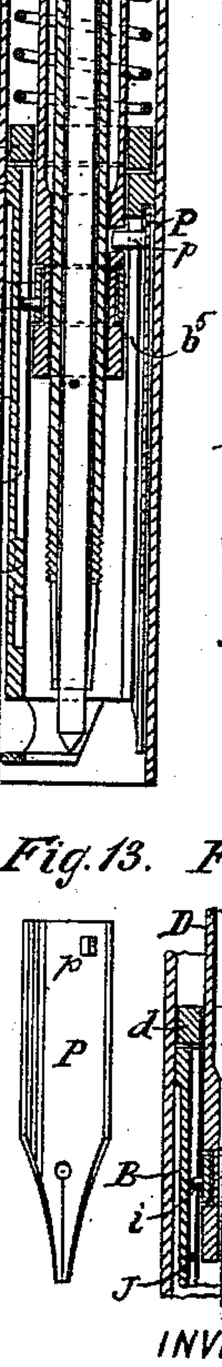

Fig. 11.

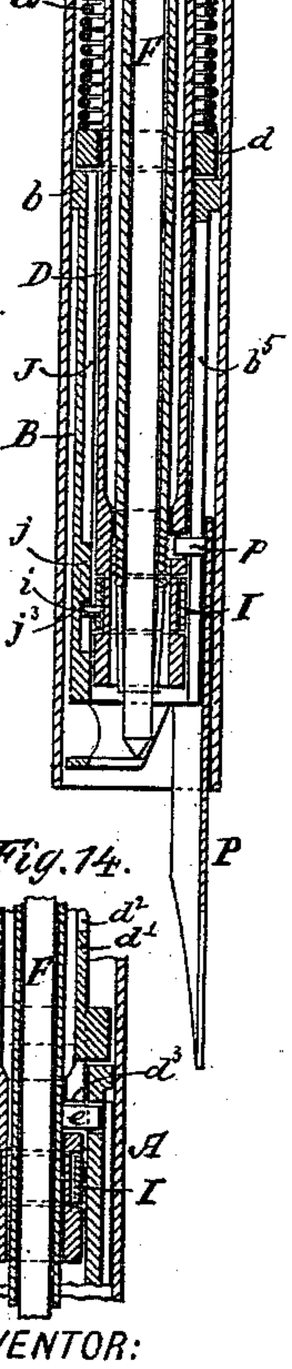

Fig. 4.

Fig. 5.

Fig. 7.

Fig. 6.

Fig. 13.

Fig. 14.

WITNESSES:

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UNITED STATES PATENT OFFICE.

ULRICH BOHREN, OF HOBOKEN, NEW JERSEY.

PEN AND PENCIL HOLDER.

SPECIFICATION forming part of Letters Patent No. 420,033, dated January 28, 1890.

Application filed May 16, 1889. Serial No. 310,986. (No model.)

To all whom it may concern:

Be it known that I, ULRICH BOHREN, a citizen of the United States, residing at Hoboken, in the county of Hudson and State of New Jersey, have invented new and useful Improvements in Pen and Pencil Holders, of which the following is a specification.

This invention relates to a pen and pencil holder of that class which I have described in Letters Patent No. 387,042, granted to me July 31, 1888.

The improvements which constitute the subject-matter of my present application for a patent are pointed out in the following specification and claims, and illustrated in the accompanying drawings, in which—

Figure 1 represents an elevation, the outside casing being partly cut away to expose the working parts when the device is adjusted to operate the pencil, both the pencil and the pen being retracted. Fig. 2 is a longitudinal central section in the plane *x x*, Fig. 4. Fig. 3 is a similar view when the pencil is pushed out ready for use. Fig. 4 is a transverse section in the plane *y y*, Fig. 1. Fig. 5 is an elevation of the tube which contains the guide-groove, which, together with a rotating latch, controls the position of the pen or pencil. Fig. 6 is a longitudinal central section of this tube. Fig. 7 is a longitudinal section of a portion of the pen and pencil holder, showing portions thereof in elevation in the plane *x' x'*, Fig. 4. Fig. 8 is a transverse section in the plane *w w*, Fig. 1. Fig. 9 is a longitudinal central section, partly in elevation, when the holder is adjusted to operate the pen. Fig. 10 is a longitudinal central section in the plane *v v*, Fig. 12, when the pen is retracted. Fig. 11 is a similar section when the pen is pushed out. Fig. 12 is a transverse section in the plane *z z*, Fig. 9. Fig. 13 is an inside elevation of the pen. Fig. 14 is a longitudinal central section of a portion of the holder in the plane *v v'*, Fig. 12.

Similar letters indicate corresponding parts.

In the drawings, the letter A designates the outside casing, which is open at both ends, and into the upper end of this casing is fitted the hollow head C, from which extends a tube D down into a tube B, which is firmly secured in the lower end of the casing A. On the interior of the tube D is situated the sheath E, which contains the lead F, the lower end of said sheath being split to form spring-jaws, which are caused to grasp the lead by means of a cap E' in the manner well known in the art. The tube D is firmly connected to the head C by a rivet or other suitable means, so that it is compelled to turn with said head, and also to move lengthwise with the same. On the tube D is fitted a cam-sleeve *d*, the cam-surface of which bears upon a corresponding cam *b*, formed on the upper end of the tube B, and between the cam-sleeve *d* and the head C is placed a spring G, which has a tendency to force the head up to the position shown in Figs. 1, 2, 9, and 10. From the inner surface of the cam-sleeve *d* projects a key *d'* into a slot d^2, formed in the tube D, so that when this tube is turned the cam-sleeve can be brought from the position which it occupies in Fig. 1 to that which it occupies in Fig. 9.

On the lower part of the tube D is formed a circular groove for the reception of the latch I, which can turn freely in either direction, and from which projects a tooth *i*, which engages a groove J, which is formed in the inner surface of the tube B, Figs. 5, 6, 2, 3, 10, and 4, and the lower portion of which spreads and extends round a heart-shaped projection *j*. When the head C is depressed, the tube D moves down in the tube B, and as the tooth *i* of the latch strikes the projection *j* at the point *j'*, Fig. 6, the latch I is caused to turn, and the tooth *i* finally strikes the depression j^2 at the bottom end of the groove J. If the head C is released and permitted to follow the action of the spring G, the tooth *i* passes into the depression j^3 of the projection *j*, and the further upward movement of the tube D is arrested. If the head C is again depressed, the tooth *i* of the latch I strikes the depression j^4 in the bottom of the groove J, and if the head C is then released and permitted to follow the action of the spring G the tube D rises to its original position. If the sheath E, which carries the lead F, is brought in engagement with the tube D and the head C is depressed and then released, so that the tooth *i* of the latch occupies the position j^3, Figs. 6 and 3, the sheath E is retained in the position shown in Fig. 3, and the lead can be used for writing, and if the pen P is thrown in en-

gagement with the tube D and the head C is depressed and then released, so that the tooth *i* of the latch occupies the position j^3, Figs. 6 and 11, the pen P is retained in its forward position ready for use. By depressing the head C a second time and then releasing it the lead or the pen is retracted.

For the purpose of throwing the sheath E, which carries the lead F, in engagement with the tube D, said sheath is provided with a toe *e*, which extends through the tube D and into the tube B, and in order to permit this toe to pass the slot d^2 in the tube D is provided with a lateral branch d^3, (best seen in Fig. 7,) and the tube B is provided with a slot b^2, Fig. 5, which also has a lateral branch b^3. If the tube D, with its cam *d*, is adjusted in the position shown in Figs. 1, 2, and 3, the lateral branch d^3 of the slot d^2 in said tube catches over the toe *e* of the sheath E. (Best seen in Fig. 7.) If the head C is now depressed and released, the lead F is brought into the position shown in Fig. 3, and retained there ready for use; and if the head C is again depressed and then released the lead F is retracted, as already explained. During these operations the toe *e* moves up and down in the slot b^2 of the tube B.

For the purpose of putting the pen P in engagement with the tube D, said pen is provided with a toe *p*, (best seen in Figs. 11 and 13;) and if the pen is adjusted in the holder its toe *p* extends through a slot b^5 in the tube B and into the slot d^2 of the tube D, which is provided with an additional lateral branch d^4. (Best seen in Fig. 7.) This branch extends in a direction opposite to that of the branch d^3, and it is made narrower than the toe *e* of the sheath E, so that it cannot engage this toe.

When the holder is adjusted to operate the lead F, Figs. 1, 2, and 3, the toe *p* of the pen is situated in line with the slot d^2 of the tube D, and if said tube is depressed the pen remains stationary; but when the tube D is turned to the position shown in Figs. 9, 10, and 11 the toe *e* of the sheath E is thrown out of the lateral branch d^3 and in line with the slot d^2, while the toe *p* of the pen is thrown into the lateral branch d^4, (see Fig. 9;) and if the head is then depressed and released the pen P is brought into the position shown in Fig. 11 and retained there ready for use; and if the head C is again depressed and released the pen is retracted, while the lead F is not moved, since the toe *e* of the sheath E occupies a position in line with the slot d^2 in the tube D and engages the lateral branch b^3 of the tube B.

In order to compel the sheath E to turn with the tube D in either direction without fail, said sheath may be provided with an additional toe *e'*, which engages the slot d^2 in the tube D, Figs. 1 and 8; but this additional toe is not essential.

From the foregoing description it will be seen that the method of operating the pen or lead is substantially the same as that described in Patent No. 387,042, granted to me July 31, 1888; but the mechanism required for this purpose has been considerably simplified, since a single cam-groove J has been substituted for double series of teeth, and this cam-groove can be produced at a single blow of a suitable die, so that I am enabled to manufacture my pen and pencil holder at a sufficiently low price to render the same accessible to the poor as well as to the rich.

I do not claim in this application anything shown and described in my patent, No. 387,042, heretofore referred to.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the casing A, spring-actuated head C, movably fitted into said casing, and the tube D, secured to the head C, of the latch I, carried by the tube D, and the tube B, secured in the casing A and provided with the cam-groove J, which is made to extend round its heart-shaped projection *j*, substantially as described.

2. In a pen and pencil holder, the combination, with the casing A, the spring-actuated head C, movably fitted into said casing, and the tube D, secured to the head C, of the latch I, carried by the tube D, the tube B, secured in the casing A and provided with the cam-groove J, a sheath E, a pen P, and mechanism, substantially as herein described, for throwing either the sheath E or the pen P in engagement with the tube D.

3. In a pen and pencil holder, the combination of the casing A, the spring-actuated head C, movably fitted into said casing, the tube D, secured to the head C and provided with a longitudinal slot d^2, having lateral branches d^3 d^4, the lead-sheath E, having a toe *e*, the pen P, having a toe *p*, the latch I, carried by the tube D, the tube B, secured in the casing A and provided with the cam-groove J, and the cams *b d*, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ULRICH BOHREN.

Witnesses:
J. VAN SANTVOORD,
E. F. KASTENHUBER.