

No. 883,354.

PATENTED MAR. 31, 1908.

C. A. SMITH.
PENCIL.

APPLICATION FILED DEC. 14, 1907.

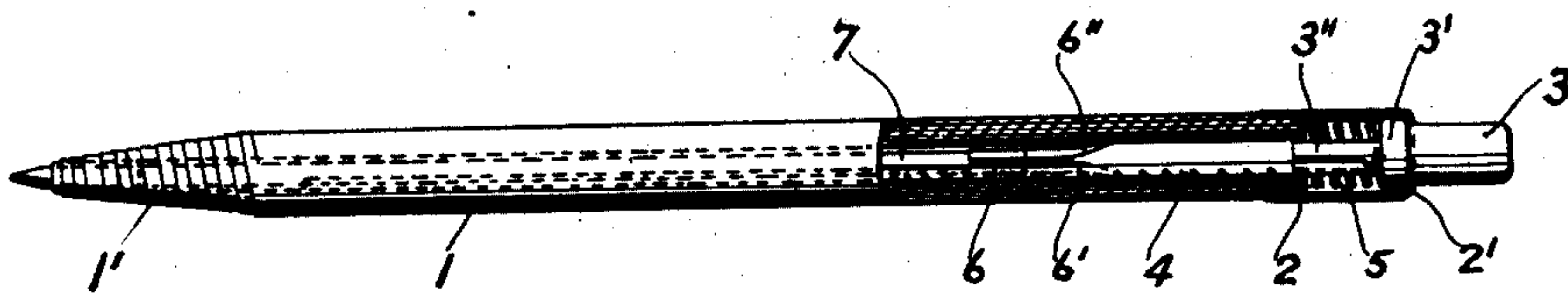


FIG. 1.

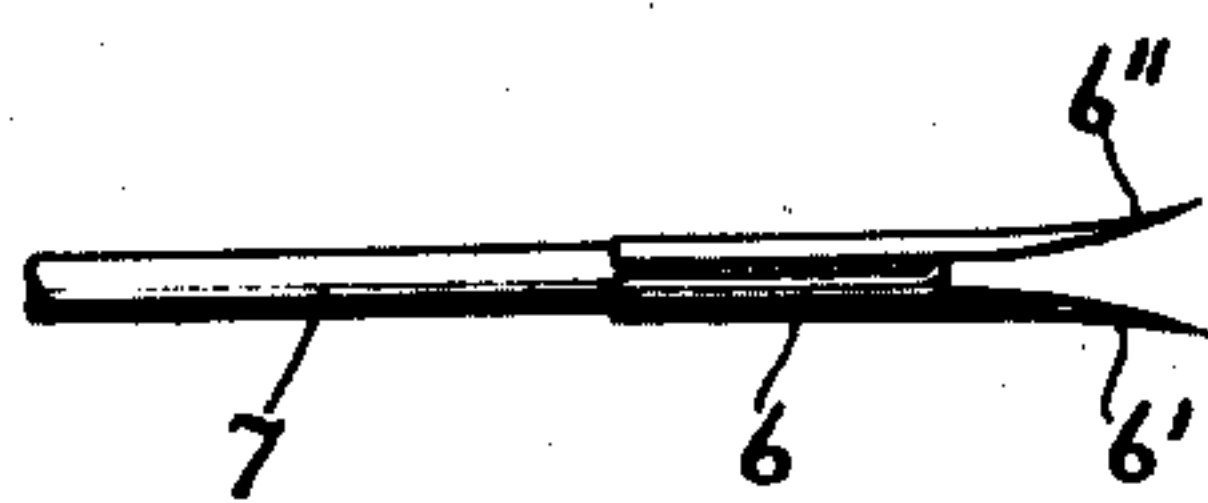


FIG. 2.

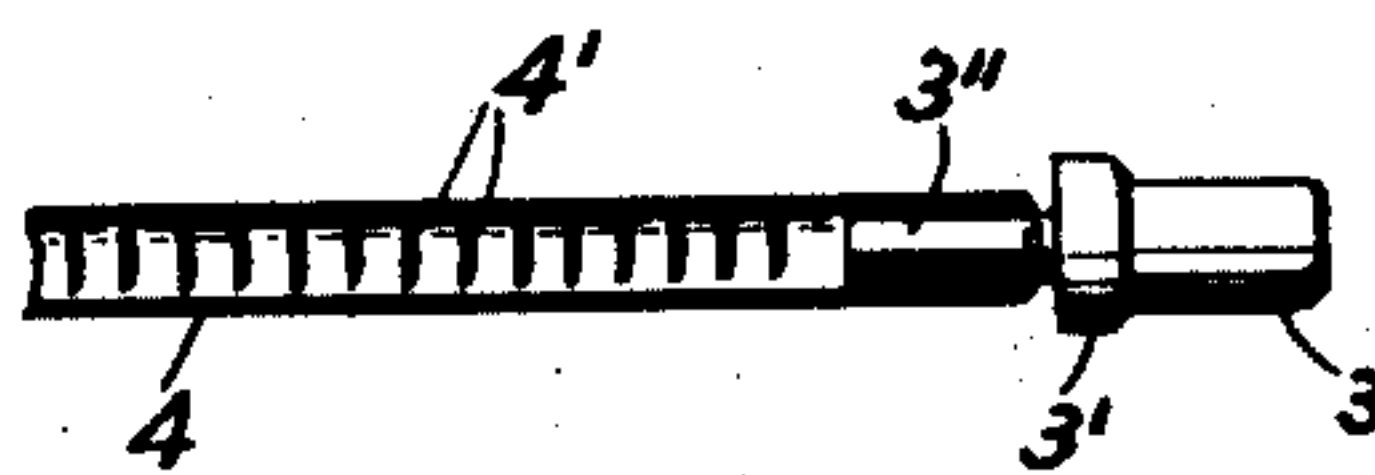


FIG. 3.

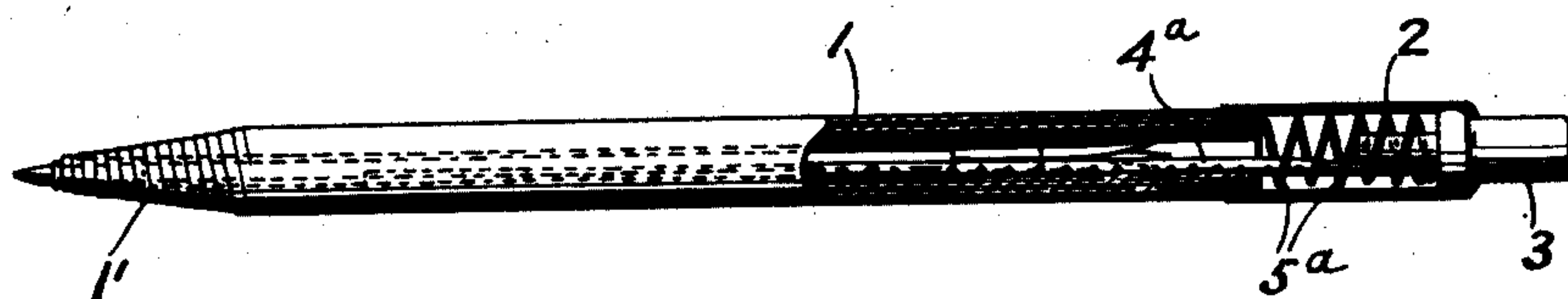


FIG. 4.

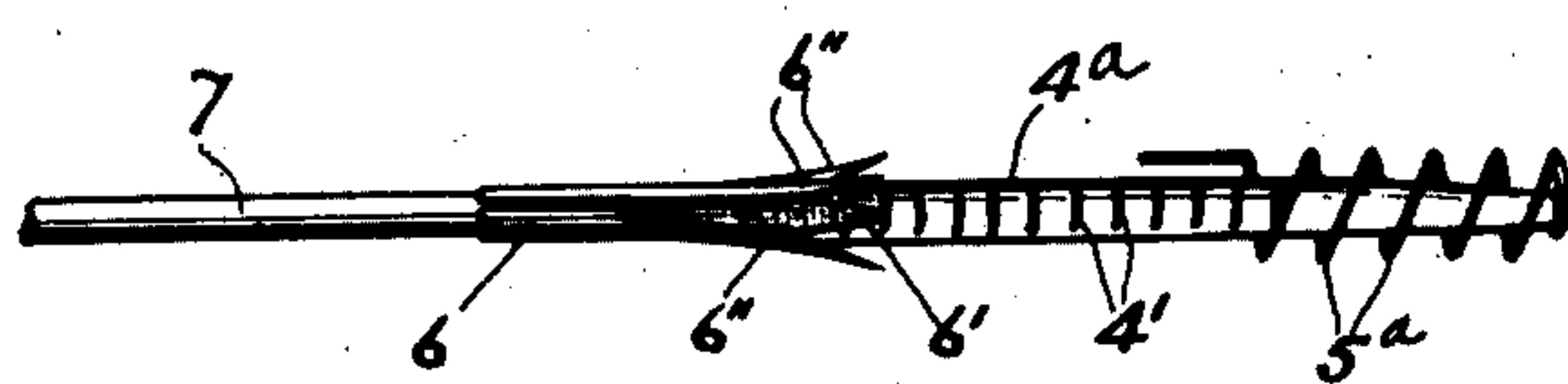


FIG. 5.

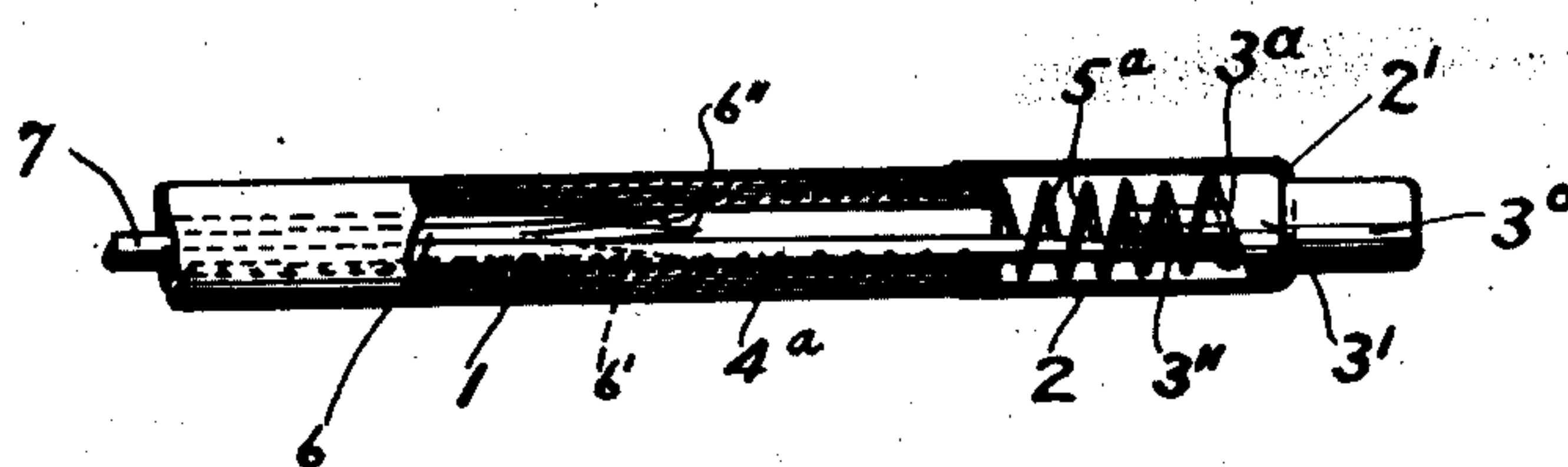


FIG. 6.

WITNESSES:

Robt. R. Kitchell

Jos. G. Denny Jr.

INVENTOR

Charles A. Smith

BY

Charles H. Butler

ATTORNEY

UNITED STATES PATENT OFFICE.

CHARLES A. SMITH, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO BLAISDELL
PAPER PENCIL COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION
OF PENNSYLVANIA.

PENCIL.

No. 883,354.

Specification of Letters Patent.

Patented March 31, 1908.

Application filed December 14, 1907. Serial No. 406,502.

To all whom it may concern:

Be it known that I, CHARLES A. SMITH, a citizen of the United States, residing in the city of Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented certain Improvements in Pencils, of which the following is a specification.

This is a pencil having means for propelling the lead or marking rod. Its leading object is to provide a propelling pencil that is inexpensive, simple and efficient; and to this end it consists, in its preferred form, in the use, in a suitable body, of a ratchet mechanism operated by a button for propelling the marking rod and a spring for retracting the ratch or rack.

In the accompanying drawings, Figure 1 is a sectional elevation representing a form of the invention; Fig. 2 is an elevation of a catching device on a marking rod; Fig. 3 is an elevation of a section of a ratch with a button fixed thereto; Fig. 4 is a sectional elevation of a further form of the invention; Fig. 5 is an elevation of the detached ratch, spring and catches shown in Fig. 4, and Fig. 6 is a sectional view of a further modification of the invention.

As shown in Figs. 1, 2, and 3, the body consists, preferably, of a cylindrical tube 1 having a point 1', which may be formed by winding sheet paper, and a band or collar 2 fixed to the end of the tube opposite the point, the collar having an inturned flange 2'. A button or knob 3 has a flange 3', engaged within the collar by the flange 2', and a shank 3'', adapted to reciprocate within the tube 1. A segmental ratch or rack 4 with holes 4' therein the holes being disposed centrally or between the edges of the segmental channel forming the ratch is fixed to the button shank 3'' and lies within the tube 1, where it is adapted to reciprocate, and a coiled spring 5 lies within the collar 2 between the head of the tube 1 and the button flange 3'. A band or collar 6, having expanding spring catches 6' and 6'' thereon, is fixed to the head of the lead or marking rod 7 within the tube 1, the catch 6' engaging the ratch 4 and the catch or spring 6'' engaging the tube 1 to hold the catch 6' in engagement with the ratch and to prevent the rod 7 from being drawn back in the tube 1. When the button 3 is pressed in, it thrusts the ratch 4 toward the point and propels the marking rod 7 through the engagement of the catch 6' with

a hole 4' in the ratch. The coiled spring 5 having been compressed by the inward movement of the button, the latter, when released, is thrown back to its normal position by the action of the spring and the ratch withdrawn, while the lead is held in the position to which it has been propelled by the engagement of the part 6'' with the tube.

In the form of the invention illustrated in Figs. 4 and 5, the tube 1, with the collar 2 fixed to its top, and the button 3 acting within the collar, are combined with a ratch 4^a connected by the coiled spring 5^a to the tube within which it reciprocates, one end of the coil being fixed to the top of the ratch and the other end to the top of the tube, the collar 6 fixed to the marking rod 7 within the tube having the spring catch 6' for engaging the holes 4' in the ratch and the spring catches 6'' for engaging the tube and holding the catch 6' to its work. As previously described, when the button 3 is pressed in, it advances the ratch 4^a, compressing the spring 5^a, and the ratch acts through the collar 6 with its catches 6' and 6'' to propel the marking rod, the latter being held by the catches 6'' against retraction with the ratch through the action of the spring 5^a on releasing the button.

In the form of the invention shown in Fig. 6, the tube 1 has the collar 2 fixed to the top thereof and contains the ratch 4^a which has its top fixed to the top of the tube by the coiled spring 5^a within the collar. The button 3^o (with the flange 3' within the tube for engaging the flange 2' on the collar and the stem 3''' within the coil for the purpose of control) is provided with the cam surface 3^a which engages the top coil of the spring. When the button 3^o is revolved, the wedging action of the cam 3^a compresses the spring 5^a through a half revolution, thrusts in the ratch 4^a and propels the holder 6 through the action of its catches 6' and 6'', thus propelling the marking rod 7. The deepest part of the cam having passed the highest part of the spring, the latter expands and retracts the ratch, the holding mechanism on the marking rod maintaining the latter in the position to which it has been propelled.

Having described my invention, I claim:—

1. A pencil having a hollow body, a marking rod movable in said body, a catch fixed to said rod, a segmental rack with means between the edges thereof for engaging said

catch to propel said rod, a catch for holding said catch first named in engagement with said rack and engaging said body to prevent the retraction of said rod, and a button for
5 operating said rack.

2. A pencil having a hollow body comprising a cylindrical tube formed by winding sheet material, a marking rod movable in said tube, a perforated channel movable in
10 said body, elastic catches fixed to said rod, one of said catches engaging the perforations of said channel and the other engaging said body, a movable button for operating said channel, and a collar fixed to said body for
15 controlling the movements of said button.

3. A pencil having a hollow body, a ratch movable in said body, a marking rod movable in said body, catches fixed to said rod so as to engage said ratch and said body, a revo-

luble device having a cam connected with said ratch so as to move it in said body, and means for engaging said device to said body.

4. A pencil having a hollow body, a marking rod movable in said body, a catch on said rod, a rack movable in said body to engage
25 said catch and propel said rod, a spring fixed to said body and rack to retract the latter, a button movable to propel said rack, and a collar engaging said button to said body, said collar being fixed to said body and loosely
30 engaging said button.

In testimony whereof I have hereunto set my name this 13th day of December, 1907, in the presence of the subscribing witnesses.

CHARLES A. SMITH.

Witnesses:

ROBERT JAMES EARLEY,
CHAS. N. BUTLER.