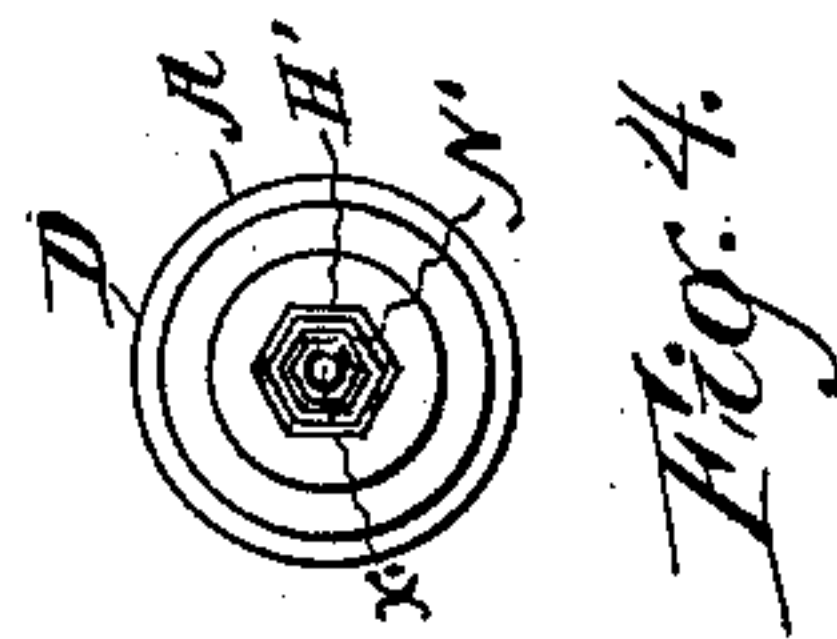
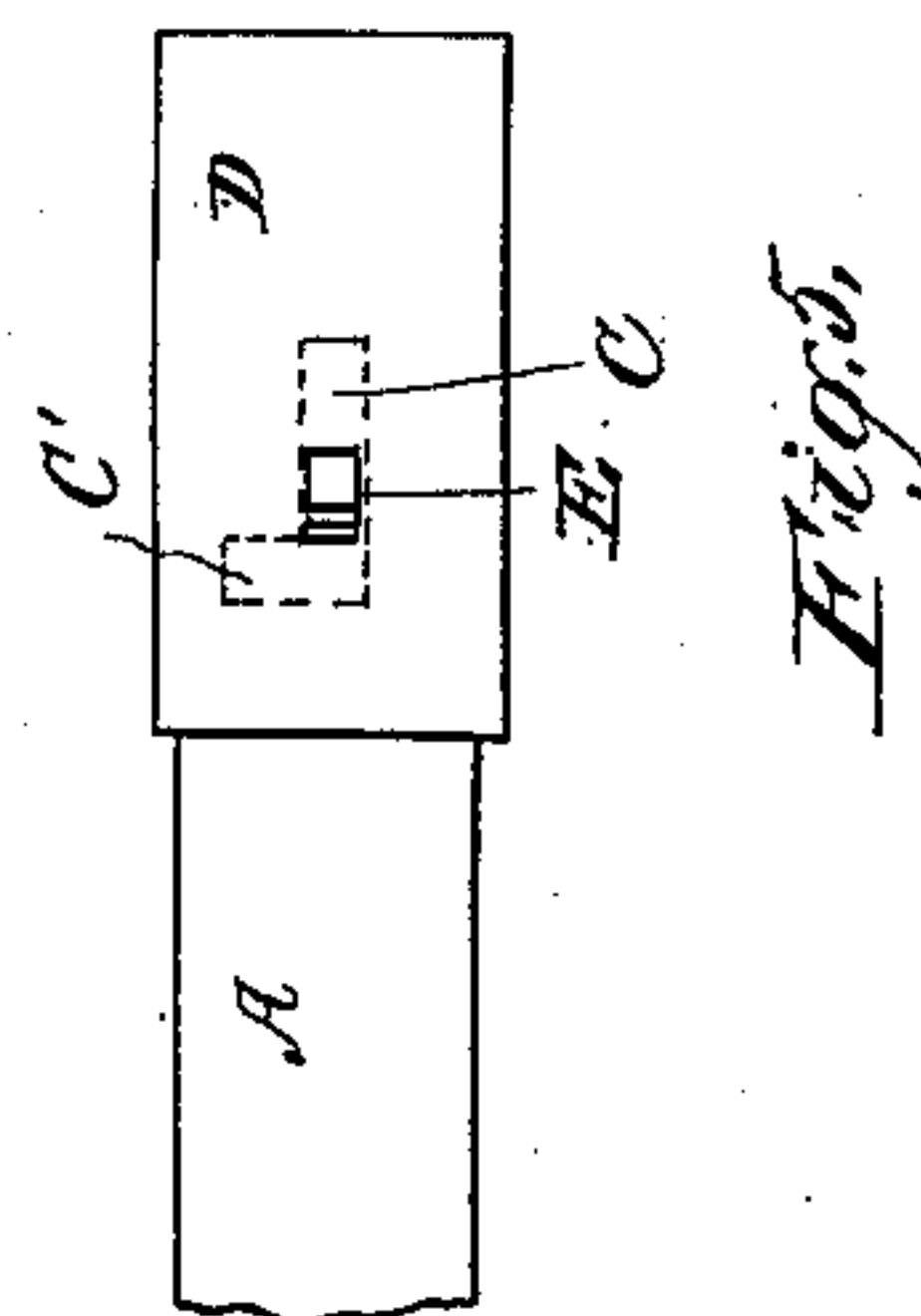
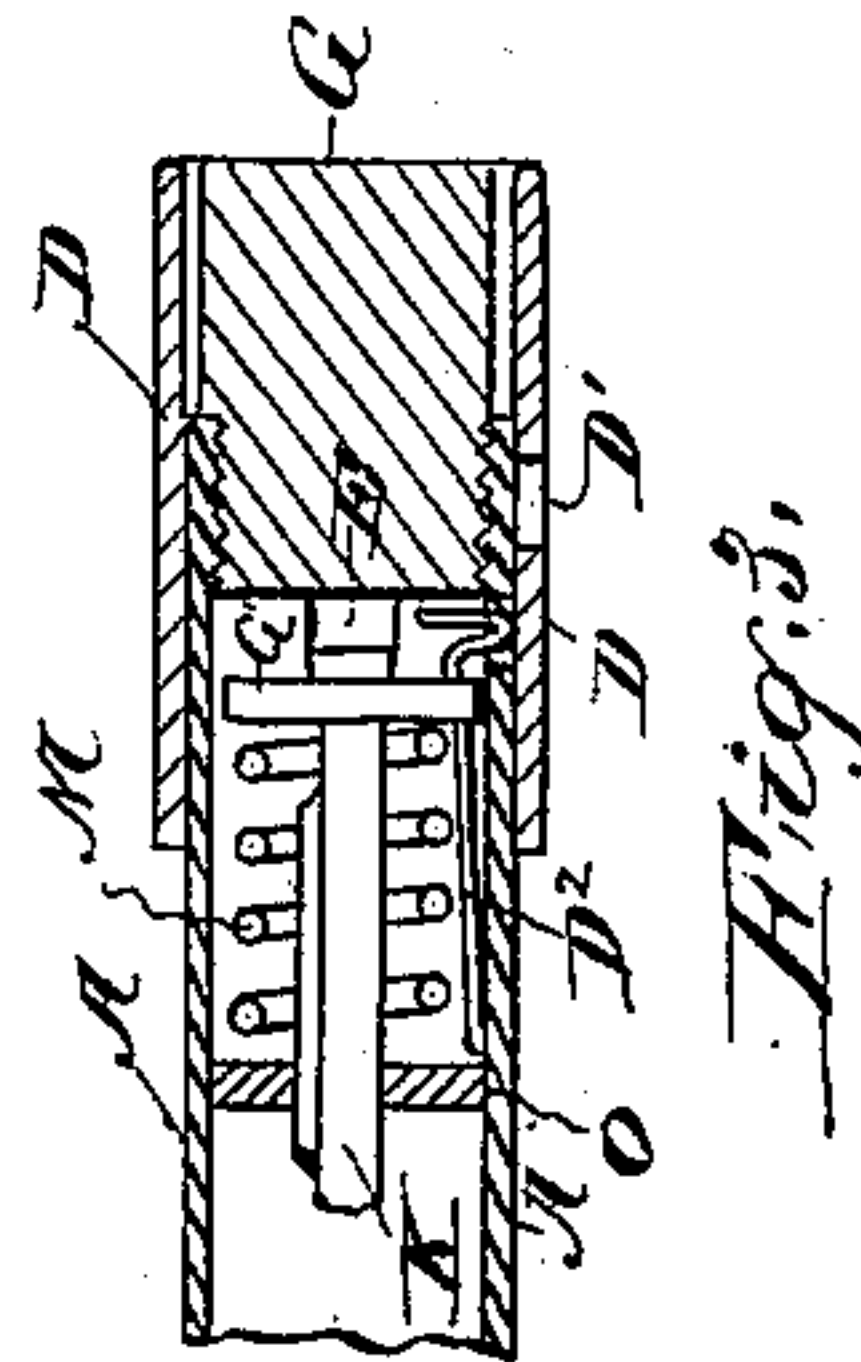
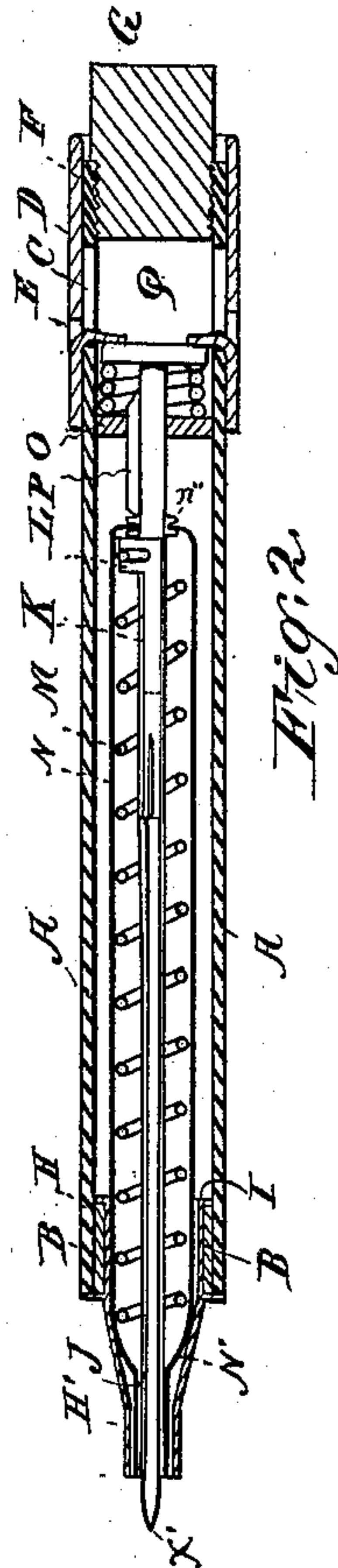
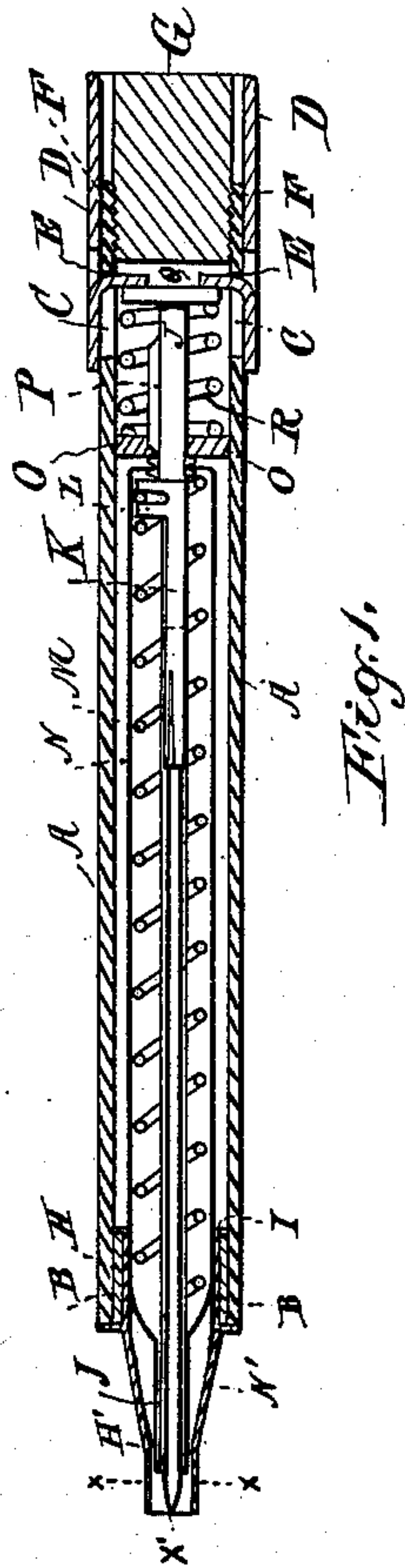


(No Model.)

J. HOFFMAN.  
PROPELLER PENCIL.

No. 381,877.

Patented Apr. 24, 1888.



**WITNESSES:**

J. Hammett, Norton.  
John H. Love.

**INVENTOR.**

INVENTOR.  
Joseph Hoffman  
BY Phillips Abbott.  
his ATTORNEY.



# UNITED STATES PATENT OFFICE.

JOSEPH HOFFMAN, OF HOBOKEN, NEW JERSEY, ASSIGNOR TO GUSTAVUS A. GOLDSMITH, OF NEW YORK, N. Y.

## PROPELLER-PENCIL.

SPECIFICATION forming part of Letters Patent No. 381,877, dated April 24, 1888.

Application filed July 25, 1887. Serial No. 245,270. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH HOFFMAN, a citizen of the United States, and a resident of Hoboken, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Propeller-Pencils, &c., of which the following is a specification.

My invention relates to improvements in automatic propeller-pencils; and it consists, broadly speaking, of an external case or handle having a movable spring-actuated cap on its rear end and a spring-catch which engages with a suitably-located notch or recess formed on or in the cap, whereby the cap will be held against the stress of the spring and a spring-actuated propeller-pencil or equivalent implement which is normally retracted by the spring within the case, and is held in a projected position for use by the depression of the cap before referred to.

My invention also includes an extension of the case or handle for the reception of a piece of rubber, which is covered by the cap when in its retracted position.

In the drawings the same reference-letters indicate the same parts in all the figures.

Figure 1 illustrates a longitudinal section of the pencil, the propeller being retracted. Fig. 2 illustrates the same, the propeller being projected. Fig. 3 illustrates in section the rear of the pencil and cap, showing the construction and arrangement of the spring-catch. Fig. 4 illustrates a cross-section on the line X X of Fig. 1. Fig. 5 illustrates an alternative method of locking the propeller in its projected position.

I will describe my invention as used in connection with a propeller lead-pencil. It may be used, however, equally well with a pen, tooth-pick, knife-blade, or like implement in place of the lead by suitable alteration well understood by those familiar with this art.

A is the external case or handle, hereinafter called the "case." It is a tube made of such material as may be preferred.

B is a collar or flange fastened interiorly at its forward end, and C C are two slots cut in it near its rear end.

D is a cap which slides on the case A. It is provided with two inwardly-extending lugs,

E E, which are preferably stamped out of the cap itself and bent inwardly, as shown; but they may be made in any other desired manner. These lugs fit in and slide through the slots C C in the case. The cap D has also a hole, D', into which a spring-catch, D'', which is fastened to the interior of the case A, enters to hold the parts in their projected position, as hereinafter explained.

The upper end of the case is extended, as at F, for the reception of a rubber eraser, G. This part of the case may be threaded or roughened internally, if desired, the better to hold the rubber.

H is the tip of the pencil. It is provided with flanges I I, or other equivalent means, which engage with the collar or flange B in such manner that the tip may be revolved irrespective of the case A, but will be prevented from longitudinal movement. The forward part, H', of this tip is made polygonal in shape.

J is the lead-tube of the propeller.

K is the usual lead holder and feeder of the propeller. It is provided with the rider L, which works through a longitudinal slot in the lead-tube J, as usual, and engages with the usual thread or worm, M, fastened to the interior of a tube, N, or its equivalent. The tube N, at its forward end, N', passes through the tip H, and is made polygonal to conform to the shape of the part H' of the tip. Thus the tube N has free longitudinal movement irrespective of the tip H and case A, it sliding through them, but cannot rotate axially excepting with the tip. The lead-tube J is extended rearwardly and passes through a washer, O, rigidly fastened within the case A, and is provided with a feather, P, which slides through a slot cut in the washer O, thus preventing the turning of the lead-tube, excepting with the case A, but allowing free independent longitudinal movement.

Q is a washer or flange made on the end of the lead-tube.

R is a spiral spring, which abuts at one end against the washer Q and at the other against the washer O.

X' is the lead.

The tube N is attached to the tube J by means of collars N'', attached to the tube, be-



tween which the turned-in end of the tube N is held, whereby it can be freely turned, but cannot move longitudinally, excepting with the lead-tube J.

5 The operation is as follows, assuming the parts to be in the position shown in Fig. 1: To project the lead or other implement for use, the cap D is slid down the case, the lugs E transmit its motion to the lead-tube J, and the  
10 spring R is compressed. The propeller is carried forward until its end is coincident with or projected somewhat beyond the end H' of the tip H. When fully projected, the spring-catch D' comes opposite the hole D' in the cap  
15 and springs outwardly and locks into that hole, projecting slightly beyond the surface of the cap, thus holding all the parts in their projected position, as shown in Fig. 2. If the lead is not sufficiently projected beyond the  
20 end of the propeller, the tip H is turned with one hand while the case is held by the other, which operates the propeller and advances the lead, all as well understood. When it is desired to put the pencil away—as, for instance,  
25 in the pocket—the spring-catch D' is pressed inwardly until it is disengaged from the hole D', and the spring R then immediately retracts all the parts, returning them to the position shown in Fig. 1, thus protecting and hiding  
30 the lead or other implement within the tip H and covering the rubber by the cap D.

It is obvious that the catch D' may be attached to the movable cap and engage with a hole or recess on or in the case, instead of being constructed as shown; and instead of the  
35 spring-catch a bayonet-joint, as shown in Fig. 4, may be employed, the slots C in the case A having right angular extensions C', into which the lugs E may be moved by slightly  
40 twisting the cap when it is projected. It is, moreover, obvious that other means than the spring R may be used to retract the propeller and its coacting parts. For instance, the propeller may be withdrawn by hand and locked  
45 in its retracted position by another spring-catch or bayonet-joint suitably located, or equivalent means, the gist of the invention being that a self-feeding or propeller pencil be capable of projection and retraction by  
50 movement bodily through the case or handle, the feeding of the lead being secured by means of the propelling mechanism.

Having described my invention, I claim—

1. The combination of a spring-actuated propeller, consisting of a lead-tube, J, lead-holder 55 K, rider L, and worm M, having longitudinal movement within an outer case or handle, a longitudinally-movable cap, and a catch operated from the exterior of the pencil, which locks the cap to the case and projects to the outside 60 of the case and holds the propeller-pencil in its projected position against the stress of the retractile spring, substantially as set forth.

2. The combination of a spring-actuated propeller, consisting of a lead-tube, J, lead-holder 65 K, rider L, and worm M, having longitudinal movement within an outer case or handle, a case or handle extended rearwardly for the reception of a rubber eraser, and a longitudinally-movable cap provided with a spring-catch 70 which locks the cap to the case, the cap being constructed and arranged to cover the rubber when retracted, substantially as set forth.

3. The combination of a propeller longitudinally movable within a case or handle, and 75 provided with a feather or equivalent device which engages with the case to allow longitudinal but not axial movement irrespective of the case, and a tip attached to the case in such manner as to allow of axial but not 80 longitudinal movement irrespective of the case, and engaged with the propeller in such manner as to allow longitudinal but not axial movement irrespective thereof, substantially 85 as set forth.

4. The combination of propeller mechanism, consisting of a lead-tube, J, lead-holder K, rider L, and worm M, having longitudinal 90 movement within an outer case or handle, the case or handle being extended rearwardly for the reception of an erasive material, and locking devices, whereby the propeller may be locked in its projected and also retracted position, substantially as set forth.

Signed at New York, in the county of New 95 York and State of New York, this 7th day of July, A. D. 1887.

JOSEPH HOFFMAN.

Witnesses:

F. HAMMATT NORTON,  
GEORGE A. VOSS.