(No Model.)

C. W. BOMAN.

PENCIL AND CRAYON HOLDER.

No. 321,786. Patented July 7, 1885.

Fig. 1.

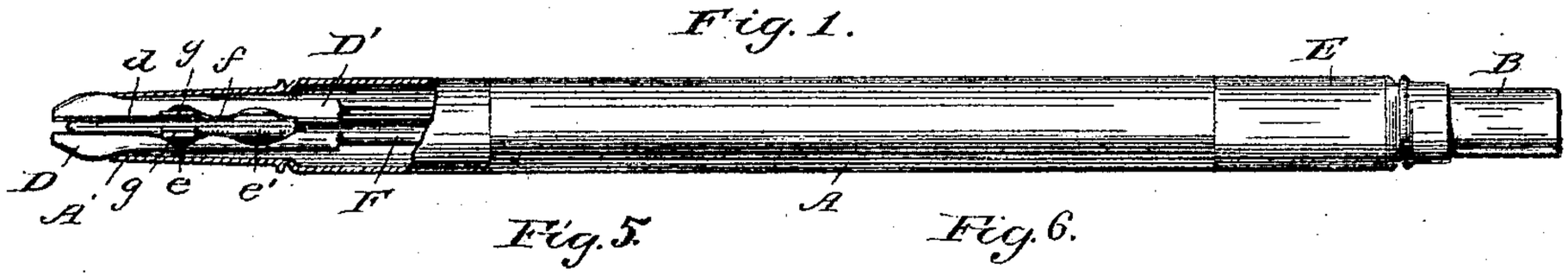


Fig. 5

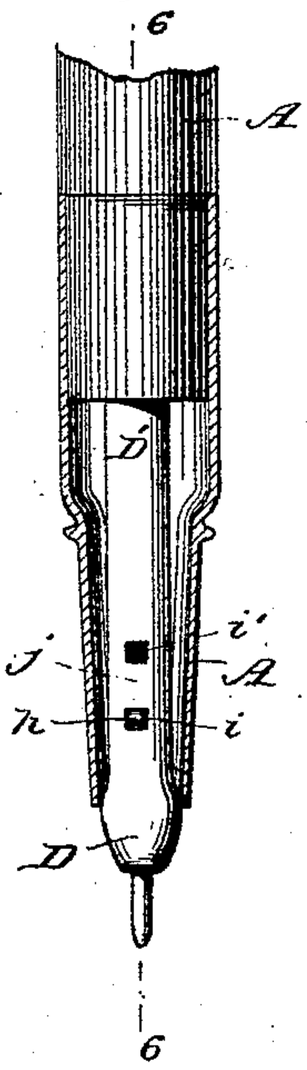


Fig. 6.

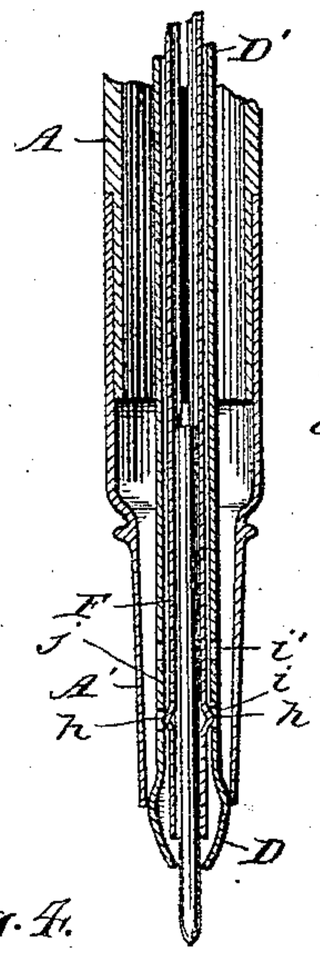


Fig. 2.

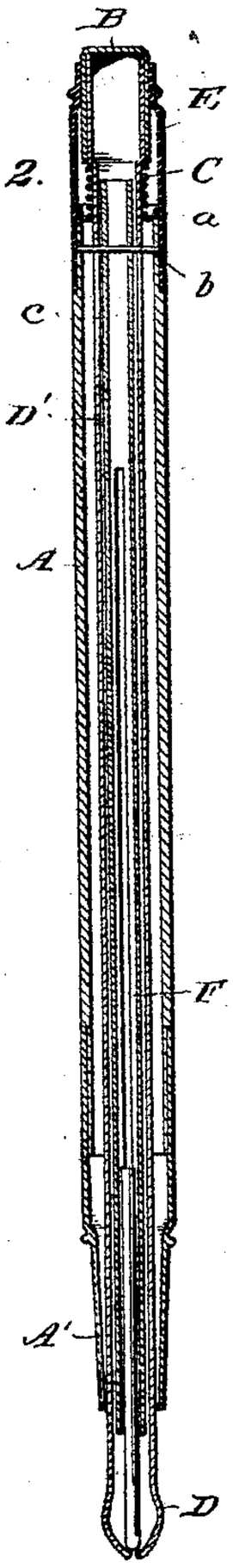


Fig. 3.

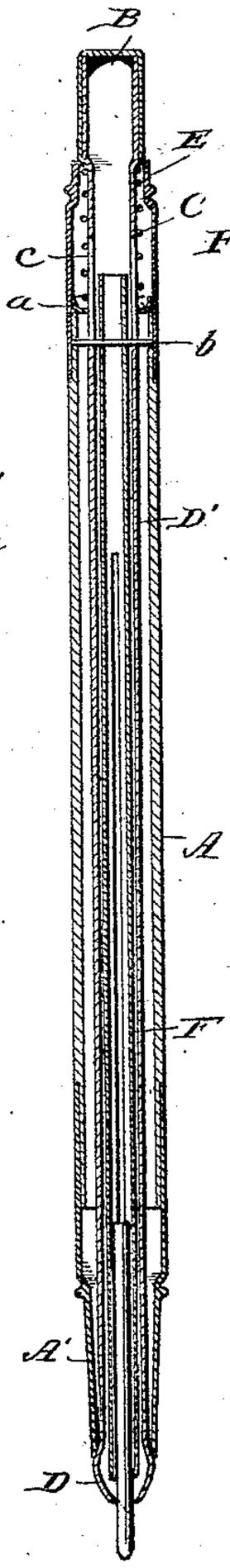
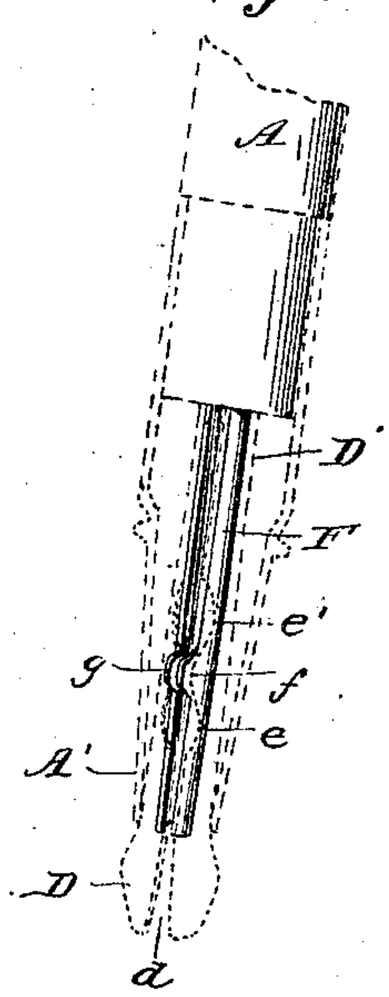


Fig. 4.



Witnesses:

N. N. Lowe

J. Walter Blandford

Inventor:

Claes W. Boman

by Marcellus Bailey

his attorney

BELL BROS., PHOTO-LITHOGRAPHERS, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CLAES WILLIAM BOMAN, OF NEW YORK, N. Y., ASSIGNOR TO THE EAGLE PENCIL COMPANY, OF SAME PLACE.

PENCIL AND CRAYON HOLDER.

SPECIFICATION forming part of Letters Patent No. 321,786, dated July 7, 1885.

Application filed April 7, 1885. (No model.)

To all whom it may concern:

Be it known that I, CLAES W. BOMAN, of the city, county, and State of New York, have invented a certain new and useful Improvement in Lead and Crayon Holders, of which the following is a specification.

My invention relates to that type of lead and crayon holder in which a lead-containing case or sheath and lead clamping or grasping and releasing mechanism are combined with a stop-gage arranged and operating to limit the extent to which the lead when released can drop or protrude from the pencil, and it has more particular reference to and is an improvement upon the stop-gage holder described and claimed in my pending application for Letters Patent of the United States, Serial No. 159,213, filed March 17, 1885, said holder being mainly characterized by the combination of a split or collapsible nozzle, from which the lead protrudes, with stop-gage jaws longitudinally movable with reference to said nozzle, which operate according to the direction of their movement to cause the nozzle to clamp or release the protruded lead, the arrangement being such that when the stop-gage jaws are pushed forward to the required extent the nozzle shall be open to permit the loose lead to drop as far as permitted by the jaws, and that when the said jaws are moving back with reference to the nozzle the latter shall thereby be closed so as to hold the lead protruded while the jaws are returning to normal position, in which position they then act, either mediately or immediately, to clamp the protruded lead in position for use.

Under the improvement I have made upon this kind of holder the collapsible or split nozzle is formed with projections which are intended by their co-operation with the jaws or their stem to cause the contraction and permit the expansion of the said nozzle at predetermined times, the jaws or their stem being for this purpose formed with enlargements or openings into which said projections enter at either extreme of the longitudinal movement of the jaws, and the portions of the jaws or stem intervening between these openings being contracted or equivalently formed, so that the projections on the nozzle upon meeting said narrowed portions will be pressed together, thus causing the contraction of the nozzle. This arrangement insures the accurate and efficient action of the parts, while it is exceedingly simple and inexpensive, and at the same time permits the parts to be brought into small compass, the holder, in fact, differing superficially or in external appearance in no respect from the ordinary "Automatic" holder.

The improvement can best be explained and understood by reference to the accompanying drawings, in which—

Figure 1 is a side elevation of the holder, with a portion of the tubular jaw-carrying stem and the inclosing-sheath broken away to expose the parts within. In this figure the parts are in the position which they occupy when the lead is retracted and lies loosely in the tube or receiver which contains it. Fig. 2 is a longitudinal central section of the holder, with the parts in the position which they assume when the stop-gage jaws are projected to their full extent with the point of the pencil held downward. Fig. 3 is a like section with parts in the position they occupy when the lead is protruded and clamped in position for use. Fig. 4 is a view of the front portion of the split or collapsible tube or nozzle in the position it assumes when the jaws in their backward movement have brought the narrow or contracted portions of the slots which separate them to bear upon the wings of the said tube or nozzle, the jaws and other adjacent parts of the holder being represented in dotted lines. Fig. 5 is a side elevation, partly in section, of a modification. Fig. 6 is a section on line 6 6, Fig. 5.

A is the sheath or handle, provided, as usual, with a metallic contracted tip or front end, A′. B is the pressure-cap. C is the retracting-spring. D are the jaws, which form also the stop-gage, attached to and moving with the pressure-cap, the attachment being effected in the present instance by the stem or tube D′. The retracting-spring is contained in a short metallic sleeve or lining, E, fixed upon the upper end of the sheath, and is confined between the pressure-cap and an annular shoulder, *a*, in the lining E.

The organization thus far does not differ materially from the well-known Automatic pen-

cil, except that the jaws, which have spring action, normally tend to close together, instead of to spread apart, as in the ordinary Automatic.

Within the jaws and their tubular stem is contained a lead tube or receiver, F, at the front end of which is a split or collapsible nozzle. The receptacle and the nozzle are made in one in the present instance, consisting of a light sheet-metal tube split at its front end on both sides, so as to be formed at that point into light spring-jaws, which normally stand apart far enough to exercise no pressure upon the lead. The stop-gage jaws D must be longitudinally movable with reference to the split collapsible nozzle, for which purpose the tube F in the present instance is fixed to the sheath A or the metal lining E thereof by a pin, *b*, which passes through longitudinal slots *c* in the intermediate jaw-carrying stem, D'. The jaws are separated by slots *d*, and each of these slots is formed, as shown, with two enlarged portions, *e e'*, and an intermediate narrow or contracted portion, *f*. Each jaw or part of the split nozzle F is provided on each side with a laterally-projecting wing or fin, *g*, the two fins or wings on each side projecting into the adjoining slot *d* between the jaws D, the arrangement being such that when the wings are in either enlarged portion *e* or *e'* the split nozzle will be permitted to expand to allow the lead to pass through it freely; but when they are in the intermediate contracted portion, *f*, they will be brought together sufficiently to cause the split nozzle to contract and close upon the lead.

The arrangement of the parts is such that when the stop-gage jaws D are at either extreme of their movement—that is to say, in either the position shown in Figs. 1 and 3 or that shown in Fig. 2—the wings will be in either the enlarged portion *e* or the enlarged portion *e'* of the slots *d*, as the case may be.

Such being the organization of the parts, the mode of operation is as follows: Suppose the pencil to be in the condition represented in Fig. 1, and it be desired to protrude the lead for use. The pencil is held point downward and the pressure-cap B is depressed, pushing forward the jaws D to the position indicated in Fig. 2. In this position the wings *g* are brought into the rear enlarged portion, *e'*, of the slots *d;* the split nozzle F consequently is open for the passage of the lead, and the jaws D project some distance beyond the split nozzle and are closed, so that the lead in dropping brings up against them, as seen in the figure last referred to. Pressure is now removed from the pressure-cap, and the retracting-spring C draws back the jaws D to normal position. During this backward movement the wings *g* are first brought into the intermediate contracted portion *f* of the slots *d*, and then finally enter the enlarged front portion, *e*, of the same. The contracted portion *f* of the slots is somewhat narrower in width than the space occupied by the two wings *g* on each side when the split nozzle closes upon the lead. Consequently, so long as the wings are in this portion *f*, the split nozzle, as indicated in Fig. 4, will be closed upon the lead firmly, and at the same time the jaws D will be separated or spread apart by the wings far enough to permit said jaws to clear the lead and to pass back a distance sufficient to allow the point of the lead to project the proper distance beyond them. As soon as the wings clear the contracted portion *f* of the slots and enter the enlarged portion *e* thereof, the jaws D at once close upon the lead and hold it firmly, as seen in Fig. 3.

It will be noted that under this arrangement the length of the contracted portion *f* of the slots *d* virtually determines the extent to which the lead shall protrude. It will also be noted that the wings and jaws mutually act upon one another while the wings are passing through the contracted portion *f* of the slots—the jaws to clamp the split nozzle upon the lead and the wings to spread apart the jaws far enough to permit them to move back the requisite distance without taking hold of the lead.

The jaws D in retracted position are drawn against the contracted tip A', and are caused to grasp or clamp the protruded lead firmly, as seen in Fig. 3. This they may do either mediately, as is the case in the holder described in my aforesaid previously filed application, or immediately or directly, as is the case in the holder illustrated in the drawings just described.

In the modification illustrated in Fig. 5 I dispense with the wings *g*, and in lieu thereof form on each of the parts of split nozzle a projection or protuberance, *h*, and at proper points on each jaw I form two openings or enlargements, *i i'*. These two openings correspond with and have the same function as the end enlargements, *e e'*, and the imperforate part *j* of the jaws intervening between each pair of openings *i i'* corresponds with and has the same function as the intermediate or contracted portion *f*, already described.

The operation of the parts in this modification will be readily understood in view of the explanation hereinbefore given of the mode of operation of the device. At either extreme of the longitudinal movement of the jaws the projections *h* will enter one or the other of the end enlargements, *i i'*, and thus permit the nozzle to expand; but so long as the projections are opposite the parts *j* the nozzle will be contracted.

What I claim herein as new and of my own invention is—

1. The combination, with the longitudinally-movable stop-gage jaws having openings or enlargements and an intermediate contracted or narrowed portion, of the split or collapsible nozzle provided with projections adapted to enter said openings, and to operate

in connection with the jaws during the longitudinal movement of the latter to clamp and release the lead, substantially as and for the purposes hereinbefore set forth.

2. The sheath or case, the pressure-cap, and the retracting-spring, in combination with the longitudinally-movable stop-gage jaws having enlargements or openings and an intervening contracted or narrowed portion, and the split or collapsible nozzle fast to the case or sheath, and provided with projections adapted to enter said openings, and to operate in connection with said jaws to clamp and release the lead, substantially in the manner and for the purposes hereinbefore set forth.

In testimony whereof I have hereunto set my hand this 1st day of April, 1885.

CLAES WM. BOMAN.

Witnesses:
C. S. BRAISTED,
EDWARD DINKEL.