

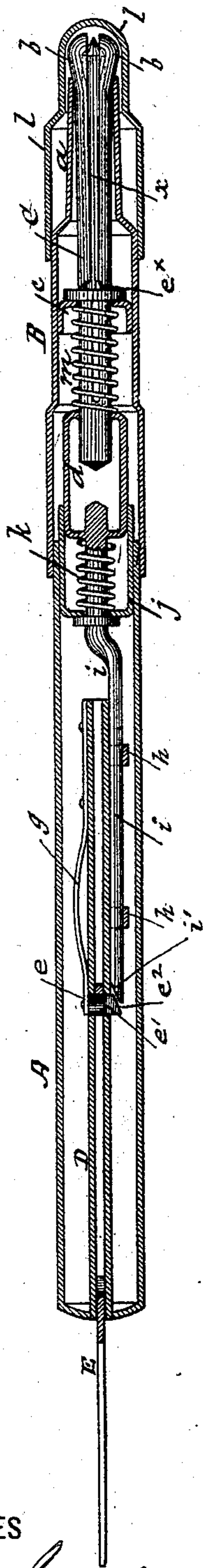
(No Model.)

J. HOFFMAN.
COMBINATION INSTRUMENT.

No. 273,232.

Patented Feb. 27, 1883.

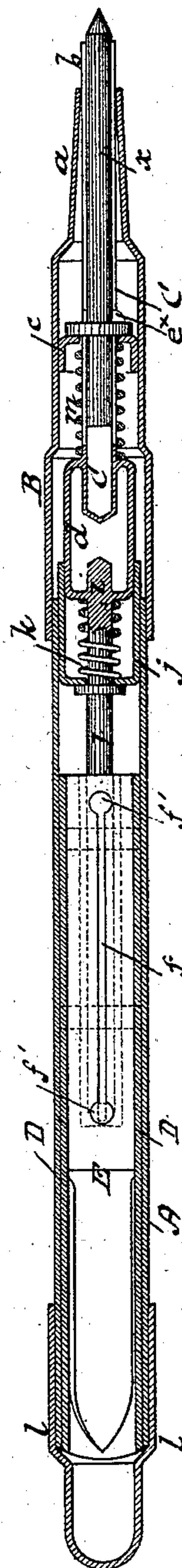
Fig. 1.



WITNESSES

Wm A. Skink
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Fig. 2.



INVENTOR

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UNITED STATES PATENT OFFICE.

JOSEPH HOFFMAN, OF NEW YORK, N. Y., ASSIGNOR TO JOSEPH RECKENDORFER, OF SAME PLACE.

COMBINATION-INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 273,232, dated February 27, 1883.

Application filed December 28, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH HOFFMAN, of the city, county, and State of New York, have invented certain new and useful Improvements in Combination-Instruments, of which the following is a specification.

My invention is directed to a combination-instrument in which each end of the sheath or handle contains a device—such as a pencil, lead, a knife, &c.—which can at will be projected from and withdrawn within its end of the sheath. The instrument embodies in a general way the characteristic of the well-known “automatic” lead and crayon holder now in the market, which is a longitudinally-movable spring-controlled pressure-cap, by means of which the grasping devices are caused to release their hold on the lead; and it is my object to so arrange and combine the parts that either end of the sheath can be used as the pressure-cap for the other.

My invention, to this end, may be stated, in a general way, to consist of an instrument composed of a divided sheath or handle, having its parts longitudinally-movable with respect to one another, and distinct grasping mechanisms—one for each handle—connected together, and each adapted to engage the lead or other device to be contained in its part of the handle, in combination with retracting-spring mechanism, which normally holds the parts of the sheath in a position in which the grasping mechanisms will engage the devices to be held by them.

The preferred embodiment of my invention is an instrument combining an automatic lead and crayon holder and a knife or equivalent device—such, for instance, as a tooth-pick, button-hook, or other thing that can be made flat like the blade of a knife. These two devices are combined in one instrument by placing them so that the lead shall project from one end of the case and the knife-blade from the other, and by so arranging them that the one shall in effect constitute the pressure-cap of the other, so that when the instrument is pressed from one end the result will be to release the lead, and when pressed from the other end to release the knife-blade. The case or sheath of the instrument is made in two parts, which telescope into one another and are capa-

ble of moving lengthwise relatively to one another. The one part contains the lead-holding devices and the other part contains the knife-holding mechanism.

The nature of my invention and the manner in which the same is or may be carried into effect can, however, best be explained and understood by reference to the accompanying drawings, in which I have represented an instrument containing the two devices last above referred to.

In the drawings, Figure 1 is a longitudinal central section of the instrument with the knife-blade protruding from its end of the sheath. Fig. 2 is a like section in a plane at right angles to the plane of section in Fig. 1, representing the lead projecting from its end of the sheath, and the knife-blade is drawn back.

The divided case or handle is lettered A B. A contains the knife and B contains the lead. The two are capable of longitudinal movement with reference to one another, and A telescopes into B. The outer end of B is tapered and contracted to form the usual tip or nozzle, *a*, and within B is placed the lead-containing tube C, longitudinally movable with reference to the case B, and terminating at its front end in lead-grasping jaws *b*, which, when the lead-tube is drawn back, are caused to close upon the lead *x* by the tip or nozzle *a*. This arrangement is the same as that employed in the automatic holder. The tube at its rear passes through a cap or thimble, *c*, fast to the case B, and is drawn back by a retracting-spring, *m*, confined between the head or thimble *c* and the head of a short cylinder, *d*, into which the end of the lead-tube is soldered. Cylinder *d* fits and is adapted to slide in case A. The lead-tube is kept from being drawn back too far by means of a stud or projection, *e*, on it, which brings up against the front of the thimble *c*.

In the part A is a flattened blade-containing tube, D, in which is placed the blade E, which is so arranged that it can freely slide therein, so that it will drop by gravity in one direction or the other, according as one or the other end of the instrument is uppermost. Its movements are confined within certain limits by means of a stud, *e*, which is attached to

and projects through the tube D and extends into and through a slot, *f*, formed in and lengthwise of the shank of blade E. Thus the range of movement of the blade is equal to the length of the slot *f*. In order to lock the blade in position at either extreme of its movement, I make the slot to terminate at each end in a cylindrical hole, *f'*, of a diameter greater than the width of the slot, and I form the part of the stud *e* which is to engage these holes of a like shape and size, the other part *e'* of the stud being flat and of a size to pass through the slot *f* readily. The stud is mounted on the end of a spring-arm, *g*, secured to the exterior of tube D, and this spring presses the stud into the tube, so as to cause the cylindrical part of the stud to snap into holes *f'* when they are brought opposite to it.

In order to press back the stud so as to bring its thin, flat part *e'* into the path of the slot *f* and holes *f'*, and thus release the blade, I make the stud of a length to extend entirely through from one side to the other of the tube D, and I bevel that end of it which projects beyond the tube, as indicated at *e*². Upon that side of the tube from which the beveled end *e*² projects I mount in guides *h* a longitudinally-movable slide, *i*, whose outer end extends up to the beveled end *e*², and is correspondingly beveled, as indicated at *i'*, so that when the slide is pushed outwardly it will press back the end *e*², and thus release the knife-blade. The rear end of the slide-bar passes centrally through the head of a thimble or cap, *j*, attached to A, and extends back into and is soldered to the cylinder *d*, which thus connects solidly the lead-tube and the slide-bar.

Between thimble *j* and the adjoining head of cylinder *d* is interposed a retracting-spring, *k*, by which the slide-bar is held normally out of engagement with the spring-controlled locking-stud *e*. As a part of the instrument, there may be provided a cap, *l*, which fits upon either end of the instrument, and which is put on the pencil end when the knife end is to be used, and vice versa.

In order to project the knife, the case part A is held lowermost, and while it is held pressure is applied from the end B, with the effect of pushing forward the slide and consequently unlocking the blade, which, as soon as released, falls until it is arrested by the locking-stud bringing up against the rear end of the slot.

As soon as pressure is released the slide-bar, by the retracting-spring action, is drawn back and the cylindrical part of the locking-stud enters the hole *f'* at the rear end of the slot, and thus locks the blade in its advanced position.

In order to retire the blade, the point A is held uppermost, and pressure is applied, as before, from the end B, with the result of unlocking the blade, which will then drop back. To work the lead X, substantially the same operation is gone through with, the pressure in this

instance being applied from end A. To a certain extent, no matter from which end pressure is applied, the parts at both ends are brought to a position in which the lead and the blade are released. This, however, in practice occasions no trouble, and whatever inconvenience might otherwise be occasioned can be completely obviated by using the cap *l*.

As before intimated, I can vary the special devices contained in the instrument—as, for instance, I can dispense with the knife and knife-locking mechanism and employ an automatic pencil movement at each end, so that the instrument will in effect be a double-ended automatic holder adapted to receive lead of different kinds.

Having now described my invention and the preferred way of carrying the same into effect, I state in conclusion that I do not restrict myself to the special mechanical details herein shown in illustration of the invention; but

I claim as new, and desire to secure by Letters Patent, the following:

1. A divided sheath or handle having its parts longitudinally movable with respect to one another, and distinct grasping mechanisms—one for each part of the handle—connected together, and each adapted to engage the lead or other device to be contained in its part of the handle, in combination with retracting-spring mechanism which normally holds the parts of the sheath in a position in which the grasping mechanisms will engage the devices to be held by them, substantially as hereinbefore set forth.

2. The case or handle, consisting of two parts longitudinally movable with respect to one another, the knife-blade or its specified equivalent, and blade-locking mechanism contained in one part of the handle and the lead-grasping mechanism contained in the other part of the handle, in combination with intermediate releasing mechanism, operated by pressure upon the ends of the instrument to move the locking mechanisms to a position in which they release the devices held by them, and retracting-spring mechanism which normally maintains the parts in a position in which the grasping and locking mechanisms will engage the devices to be held, substantially as hereinbefore set forth.

3. The lead-tube and grasping-pins and the releasing slide-bar, connected so as to move back and forth bodily and together, combined with the two-part case or handle, the knife-blade, knife-holding tube, and knife-locking mechanism, and the retracting-spring, substantially as and for the purposes hereinbefore set forth.

In testimony whereof I have hereunto set my hand this 21st day of December, 1882.

JOSEPH HOFFMAN.

Witnesses:

LEOPOLD ANSBACHER,
E. B. HOWELL.