(No Model.)

2 Sheets—Sheet 1.

A. T. CROSS.

CRAYON HOLDER.

No. 296,539

Patented Apr. 8, 1884.

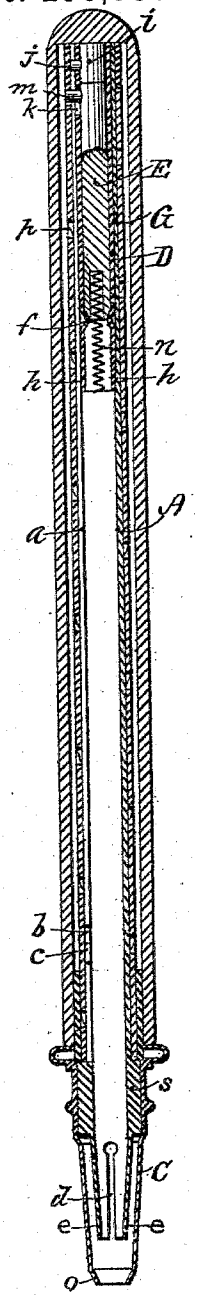


FIG. 1.

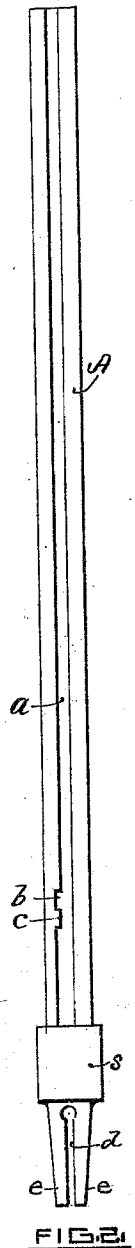


FIG. 2.

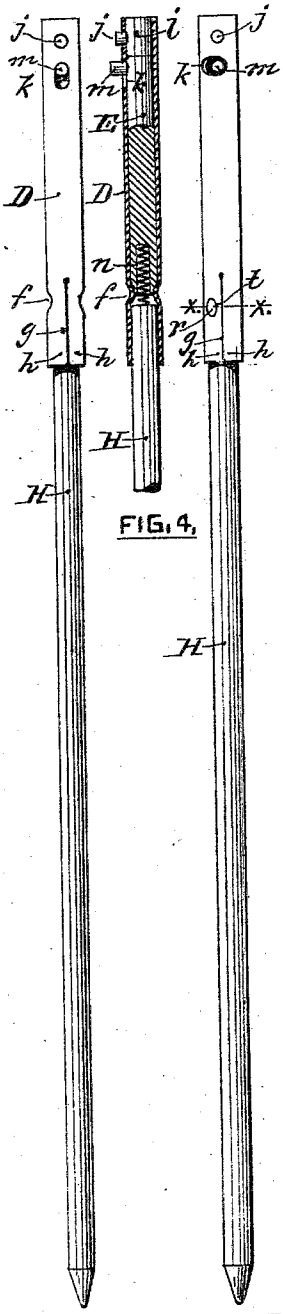


FIG. 4.

FIG. 5.

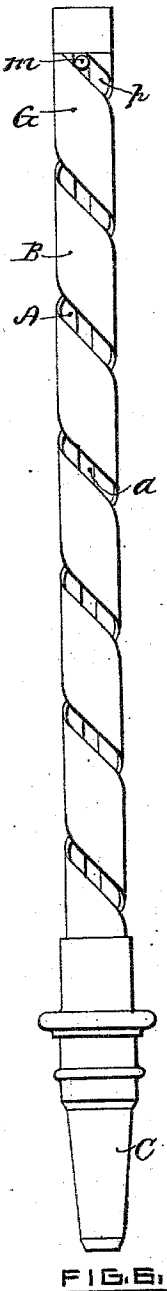


FIG. 6.

FIG. 3.

WITNESSES.

Alba R. Abbott

Socrates Scholfield

INVENTOR

Alonzo T. Cross

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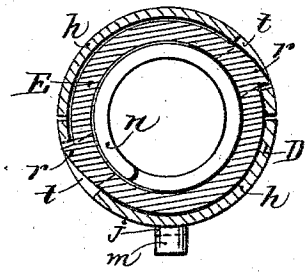
(No Model.) 2 Sheets—Sheet 2.

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Fig. 7.



Witnesses.

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UNITED STATES PATENT OFFICE.

ALONZO T. CROSS, OF PROVIDENCE, RHODE ISLAND.

CRAYON-HOLDER.

SPECIFICATION forming part of Letters Patent No. 296,539, dated April 8, 1884.

Application filed October 29, 1883. (No model.)

To all whom it may concern:

Be it known that I, ALONZO T. CROSS, of Providence, in the State of Rhode Island, have invented an Improvement in Crayon-Holders, of which the following is a specification.

My invention relates to an improvement in that class of crayon-holders in which the unused stub of the crayon is discharged from the carrier by means of a spring; and it consists in the combination of a carrier-tube provided with a split end for frictionally holding the crayon, with means for forcibly opening the holding-jaws formed at the split end of the carrier-tube, and a spring for forcibly ejecting the crayon-stub when released from the grip of the holding-jaws of the carrier-tube, as hereinafter fully set forth.

Figure 1 represents an axial section of a crayon-holder having a carrier provided with my improvement. Fig. 2 is an elevation of the slotted screw-holding tube. Fig. 3 is an elevation of the carrier with an inserted crayon. Fig. 4 is a longitudinal section of the carrier. Figs. 5 and 7 show a modification of my improvement. Fig. 6 represents the several parts of the screw mechanism as secured to each other preparatory to the final attachment of the case of the holder.

In the accompanying drawings, A is a slotted tube, upon which the screw B is made to revolve, and which is provided at the lower end of the slot with the lateral notch *b*, and the side of the slot *a* below the notch *b* is cut away, leaving a projecting spur, *c*, at the lower side of the notch. The lower end of the tube A is provided with the opposite slots, *d*, and the two jaws *e e*, so formed, are arranged to spring toward each other, in order to clasp and steady the crayon, and upon the tube A, between the slots *a* and *c*, is secured the collar *s*, by means of which the point-tube C is secured to the tube A. The carrier for the crayon is formed of a tube, D, made to fit loosely within the bore of the tube A, and provided at its lower end with a contraction, *f*, and with opposite slits, *g*, thus forming the opposite jaws, *h h*, adapted to frictionally hold the crayon H, which is to be forced between the holding-jaws of the carrier until its end brings up against the inner surface of the contraction of the tube, as shown in Fig. 4. The upper end of the carrier-tube is provided with a fixed plug, *i*, and also with a pin, *j*, adapted to enter the slot *a* of the tube A. The carrier-tube is also provided with a short slot, *k*, adapted to receive the pin *m*, which projects from the side of the sliding bar E, the lower end of which is bored out to receive the spring *n*, and also beveled to fit the incline of the contraction *f* of the carrier-tube. The spring *n* is to be soldered at the bottom of the bore of the bar E, or otherwise secured therein against danger of escape and loss. The carrier is to be inserted into the bore of the slotted tube A, at the upper end of the same, the pin *m* of the sliding bar E passing through the slot *a* in the tube A, and entering the groove *p* of the screw G, whereas the pin *j*, which projects from the side of the carrier-tube, enters the slot *a* only, and does not enter the groove *p* of the screw, and the insertion of the crayon into the lower end of the carrier-tube serves to force back the spring *n*, as shown in Fig. 4, and upon turning the screw G in the proper direction the crayon will be fed downward to the point *o* of the holder; but when the crayon has been nearly used up the pin *j* will reach the notch *b* in the slot *a*, and the continued movement of the screw, which operates against the pin *m*, will cause the lateral movement of the pin *j* to a position within the notch *b*, and also the forward movement of the sliding bar E within the carrier-tube, and the tapering forward end of the bar will act against the inclined inner side of the contraction *f*, thus causing the holding-jaws to open and gradually release the crayon from the frictional grip of the jaws, which at a certain point will be overcome by the resilience of the spring *m*, which, by sudden extension, will cause the unused stub of the crayon to be forcibly expelled to a considerable distance from the point of the holder. A fresh crayon may now be inserted into the carrier-tube, and immediately upon reversing the former movement of the screw the pin *m* will be allowed to move back to the upper end of the slot *k*, the sliding bar E being forced back by the springing together of the jaws, which operate against the inclined end of the sliding bar at the contraction *f* of the carrier-tube, and the continued movement of the screw will cause the movement of the pin *j* from the notch *b* to the straight side of the slot *a*, and

the gradual retraction of the crayon within the bore of the tube A.

A modification of my invention is shown in Figs. 5 and 7, Fig. 7 being an enlarged section taken in the line *x x* of Fig. 5, and in this case the proper opening of the jaws *h h* will be effected by means of the partial revolution of the bar E, to which are attached the opposite pins, *r r*, the outer ends of which are beveled, as shown in Fig. 7, thus forming cams, which, extending into the opposite perforations, *t t*, in the carrier-tube, will serve to open the jaws *h h* upon the partial revolution of the bar E, and in this case the lower portion of the slot *a* of the tube A is to be laterally enlarged, in order to allow sufficient movement to the pin *m*, to cause the proper opening of the jaws *h h*, to insure the forcible ejection of the stub of the crayon by means of the spring *n* after the pin *j* has brought up against the bottom of the notch *b*. The split, contracted tube, cam-bar, and stub-ejecting spring are also applicable to the carrier of ordinary slide-pencils in which the screw mechanism is not employed, and in carrying out my invention, in such pencils I secure the slide to the cam-bar E by means of the pin *m*, and arrange a proper stop for the carrier-tube at the lower end of the holder, so that upon the arrival of the carrier-tube at the stop the required movement may be imparted to the cam-bar by means of the slide, which is held between the thumb and finger of the operator, thus effecting the forcible discharge of the crayon-stub.

I do not, of course, limit my invention to the specific construction of the forcer or cam which serves to laterally open the jaws of the carrier-tube, nor to the specific mode of operating the same in order to open the jaws. In my application for Letters Patent for an improvement in crayon-holders, No. 103,773, filed August 15, 1883, I have described and claimed the combination of a spring with the forcer of a crayon-carrier when the initial movement of the crayon-stub is imparted by the forcer, the spring being arranged to act at a certain point during the gradual forward movement of the stub; but in the present application the forcer is made to act as a cam to laterally open the spring-jaws of the carrier-tube, and thus cause the sudden forcible ejectment of the crayon-stub without necessarily imparting a preparatory forward movement thereto; and I am aware that the main parts of the crayon-carrier other than the devices for opening the jaws of the carrier-tube have been heretofore described. I do not therefore make a claim to any of such parts in the present application; but

I claim as my invention—

In a crayon-holder, the combination of the carrier-tube provided with jaws for frictionally holding the crayon, and means, substantially as described, for laterally opening the jaws of the carrier-tube, with a spring held within the bore of the carrier-tube and adapted to forcibly eject the crayon-stub upon the lateral spreading of the jaws, substantially as described.

ALONZO T. CROSS.

Witnesses:
SOCRATES SCHOLFIELD,
JOHN S. LYNCH.