

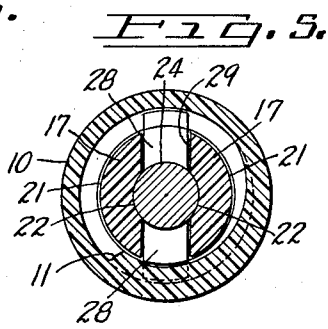
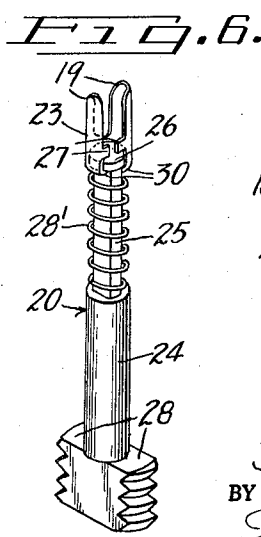
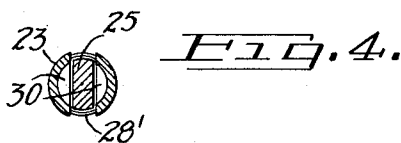
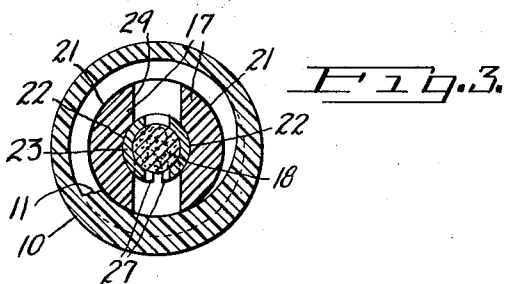
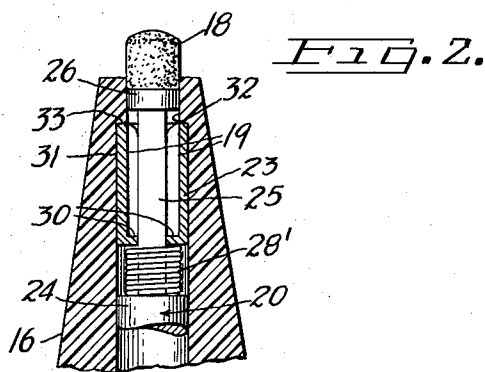
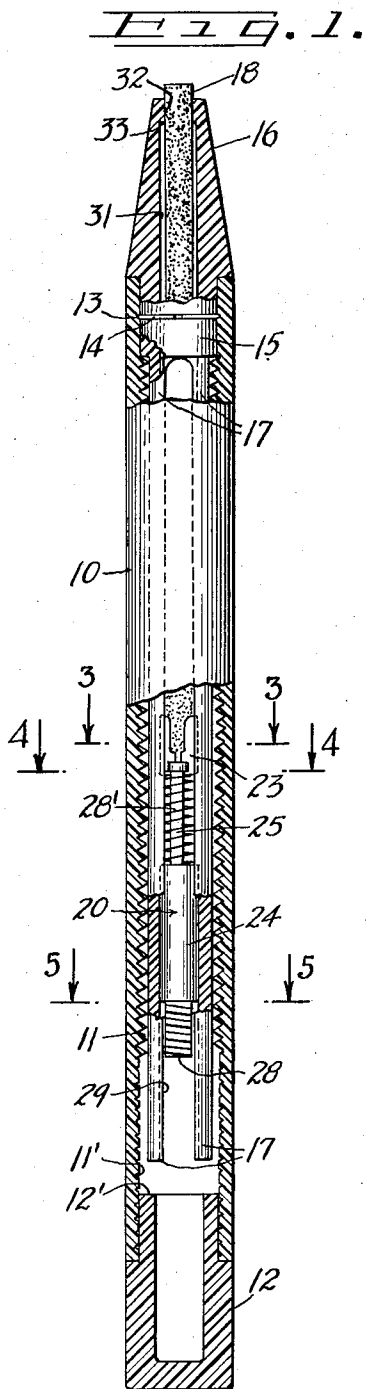
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J. R. FRANK

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MARKING DEVICE WITH FULL EJECTOR FEED

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INVENTOR
JOSEPH R. FRANK
BY *Howard L. Thompson*
ATTORNEY

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3,149,612

MARKING DEVICE WITH FULL EJECTOR FEED

Joseph R. Frank, 88-18 192nd St., Hollis, N.Y.

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12 Claims. (Cl. 120-18)

This invention relates to marking devices employing crayons or the like and, particularly in providing a mounting and feed of crayon for the device which will facilitate substantially full consumption of the crayon and dispensing thereof. More particularly, the invention deals with a device of the class described employing means for checking the loading or inward retraction of the crayon and to facilitate use of relatively long crayons in the device.

The novel features of the invention will be best understood from the following description, when taken together with the accompanying drawing, in which certain embodiments of the invention are disclosed and, in which, the separate parts are designated by suitable reference characters in each of the views and, in which:

FIG. 1 is a side and longitudinal sectional view of a marking device, with parts of the construction broken away and parts shown in elevation.

FIG. 2 is a partial view, similar to FIG. 1, on an enlarged scale, with parts in a different position.

FIG. 3 is an enlarged section on the line 3-3 of FIG. 1.

FIG. 4 is an enlarged partial section on the line 4-4 of FIG. 1.

FIG. 5 is an enlarged section on the line 5-5 of FIG. 1; and

FIG. 6 is an enlarged perspective view of the crayon feed assemblage detached.

In FIG. 1 of the drawing, I have shown a marking device formed, for the most part, of plastic material and, in said figure, 10 represents the barrel, having a full thread 11 extending the major portion of the length thereof and a partial thread 11' extending to the open end. The open end of the barrel has a closure cap 12. The other open end of the barrel has a short plain bore, with a groove 13 therein to receive a spring key pin 14 engaging a short sleeve portion 15 of a conical tip 16 of a crayon actuating element.

Extending from the sleeve portion 15 are a pair of long guides 17, crescent-shaped in cross-sectional form, as seen in FIGS. 3 and 5. It will, thus, be apparent that 15, 16 and 17 collectively form the said crayon actuating element in projecting and retracting a crayon 18 gripped and supported in jaws 19 of a feed assemblage 20. Considering FIG. 1, it will appear that a new or unused crayon 18 is greater in length than half the length of the barrel 10, or the element formed by sleeve portion 15, conical tip 16 and guides 17. The guides 17 have outer curved surfaces 21 which fit within the threads 11, note FIGS. 1, 3 and 5. The guides 17 also have curved inner surfaces 22, in which the split sleeve 23 forming the gripper jaws 19 and the cylinder portion 24 of the assemblage 20 operate, as also indicated in said figures. The assemblage 20 may be said to comprise the crayon feed member.

The member 20, note FIG. 6, has, at one end of 24, a long rectangular shank 25 with a disc head 26 at its free end. The head is sprung into sleeve 23 through an opening in the split side of sleeve 23 and below lugs 27 at said split side. At the other end of 24 are radially extended threaded arms 28, which operate in the elongated slots 29 formed between sides of the guide 17 and extend sufficiently to engage threads 11, 11', as will clearly appear from a consideration of FIGS. 1 and 5. The sleeve 23 has inturned bottom flanges 30, note FIGS. 2 and 4, which lie under the head 26, as seen in FIG. 6 of the drawing.

The tip 16 has a bore 31 terminating in the outer end

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of tip 16 in a discharge bore 32, through which the crayon 18 passes. The reduced bore 32 forms a stop shoulder 33, note FIG. 2, against which the jaws 19 strike in checking outward movement of the sleeve 23. However, the plunger formed by 25 and head 26 can then continue to move outwardly through the sleeve 23 against the tension of a spring 28' mounted on the shank 25 in removing the crayon from grippers 19 and in providing a full feed of the crayon 18, as noted in FIG. 2 and compression of the spring 28' is noted in said figure. A new crayon can be coupled with the jaws 19 and the member 20 retracted by rotation of the barrel 10 in a reverse direction to the normal outward feed of the crayon. By extending the threads at 11', a long crayon can be mounted in the device.

Inward movement of member 20 is checked by the arms 28 striking the inner end 12' of the cap 12. This prevents displacement of the arm from the slots 29 formed by the guides 17.

From the foregoing, it will be apparent that, by gripping the tip 16 in the fingers of one hand, the barrel 10 can be rotated in outward feed of the crayon 18 or, if desired, the tip 16 can be rotated and the barrel held stationary. It will be understood that the cap 12 can have a right frictional fit on the barrel and be forcibly removed if, at any time, it is deemed desirable to remove the feed member 20 for cleaning or other purposes. Extension of the threads, as at 11', will permit the member to be fed to the open end normally closed by the cap 12 for free removal of the member 20.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A marking device of the character defined comprising an elongated barrel having a longitudinal threaded bore, a crayon actuating element mounted in one end of the bore and having a conical tip projecting at said end of the barrel, said element extending the major portion of the length of the barrel, a crayon feed member keyed to and movable longitudinally of said element and having means operatively engaging the threads of said bore, said member in its entirety operating within said element, said member having means engaging and supporting a crayon thereon in feed of a crayon through a discharge aperture at the outer end of the tip of said element, an unused crayon being greater than half the length of the barrel and said element, the means of said member being tensionally supported on a shank of said member forming the plunger of the member, and means on the tip of said element checking outward movement of the crayon supporting means, while permitting continued feed of the plunger of said member for substantially full projection of the crayon through the discharge aperture of said tip.

2. A device as defined in claim 1, wherein the barrel includes a partial thread extending to the other end thereof for full feed of said member longitudinally of the barrel.

3. A device as defined in claim 2, wherein said last named end of the barrel includes a cap forming a closure for the barrel.

4. A device as defined in claim 3, wherein the inner end of the cap forms means checking retraction movement of said member in the barrel.

5. A device as defined in claim 1, wherein said element includes a sleeve portion adjacent the tip, interengaging means between the sleeve portion and the barrel to retain said element against displacement from the barrel, and said element including a pair of long guides generally crescent-shaped on form and providing at opposed sides thereof longitudinally extending slots.

6. A device as defined in claim 5, wherein said member includes at one end radially extending threaded arms

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operating in the slots of said element in keying said member against rotation.

7. A device as defined in claim 1, wherein the plunger of said member includes a head at its free end, and said tensional means comprises a coil spring normally supporting the crayon engaging means of said member adjacent said head.

8. In marking devices of the character described, a barrel, a crayon actuating element mounted in and extending longitudinally of a bore of the barrel and including a tip projecting from one end of the barrel, means keying the element against displacement from the barrel while permitting relative rotation of the barrel and element one with respect to the other, a crayon supporting and feed member mounted in and keyed to said element for movement longitudinally thereof, said member and the bore of the barrel having interengaging means for feed of the member in both directions longitudinally of the barrel in rotation of the barrel and element one with respect to the other, said member including means at one end for gripping a crayon, and the member having a plunger movable relatively to said last named means against tensional means supported on said member in displacing a crayon from the gripper means and extension of substantially the entire crayon through a discharge aperture in said tip.

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9. A device as defined in claim 8, wherein said plunger includes a head operating in the discharge aperture of said tip.

10. A device as defined in claim 9, wherein said gripper means comprises a split sleeve mounted on the plunger of said member, and said sleeve including means engaging the head of said plunger to retain said gripper means against displacement from the plunger.

11. A device as defined in claim 8, wherein the interengaging means between said member and barrel comprises threaded portions on the other end of said member engaging threads extending longitudinally of the major portion of the bore of said barrel.

12. A device as defined in claim 8, wherein said tip inwardly of the discharge aperture includes means engaging said crayon gripper means in retaining the same against movement in independent operation of the plunger relatively to said gripper means.

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