

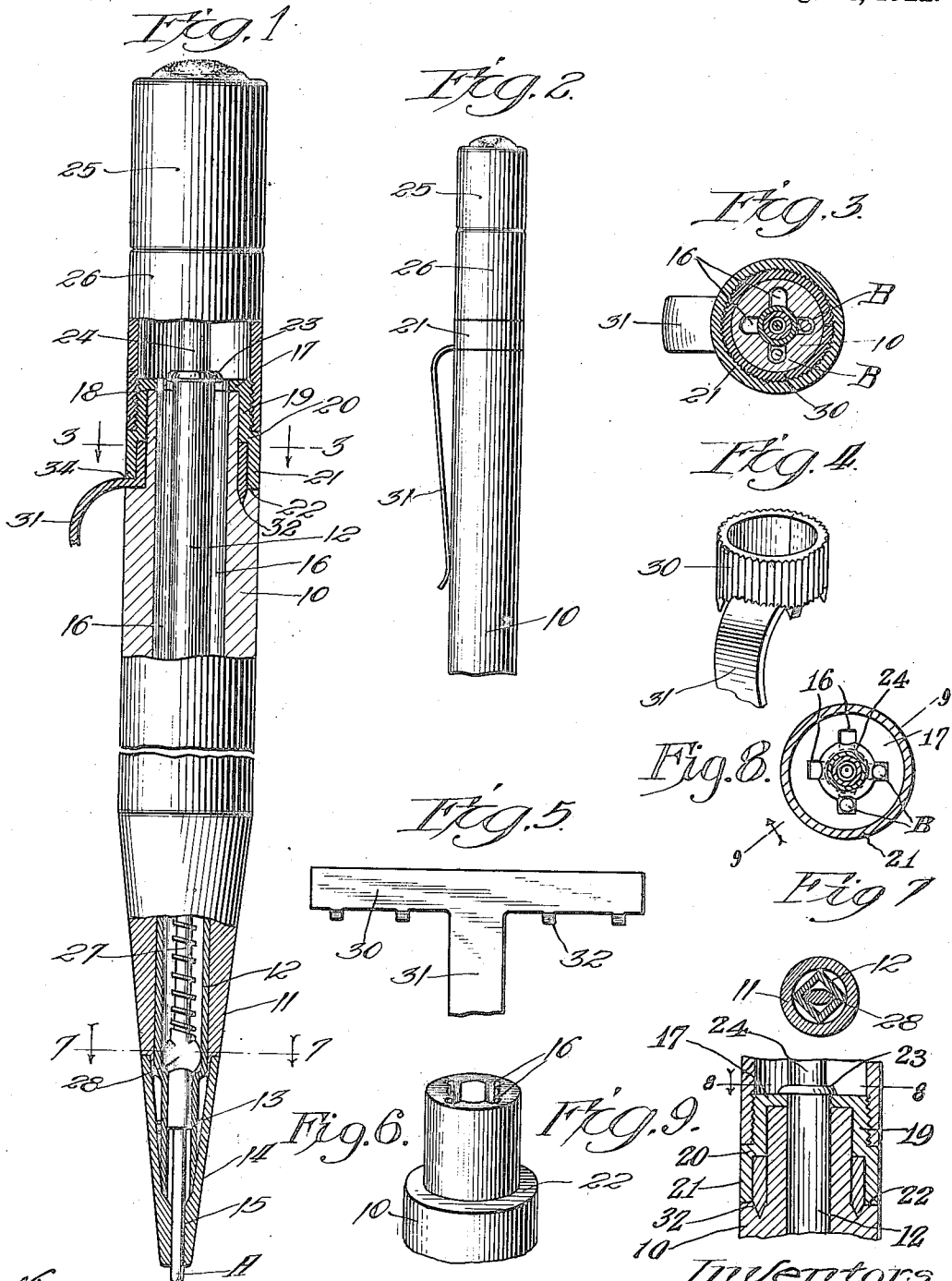
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PENCIL.

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UNITED STATES PATENT OFFICE.

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To all whom it may concern:

Be it known that we, CHARLES R. KEERAN and FRANK R. TAYLOR, both citizens of the United States, and residing at Chicago, Cook County, Illinois, have invented certain new and useful Improvements in Pencils, of which the following is a specification.

This invention relates to a pencil equipped with propelling mechanism interiorly of its body, and operable by means exteriorly thereof, for advancing into operative position a lead at one end, and an eraser at the other. The features of importance to our invention are concerned primarily with a clip of novel construction which is designed for attachment to the pencil body with the aid of other elements which compose part of the operating or propelling mechanism.

In the accompanying drawings certain preferred exemplifications of this invention are shown in the manner following:

Figure 1 is an enlarged longitudinal section partly broken away through a pencil having a tubular body;

Fig. 2 shows in elevation the upper end of the pencil;

Fig. 3 is a transverse section through the pencil taken on line 3—3 of Fig. 1;

Fig. 4 shows in perspective the clip detached from the pencil;

Fig. 5 is a view of the blank from which the clip may be formed;

Fig. 6 is a perspective view of the upper end of a pencil body that is adapted to receive the clip;

Fig. 7 is a transverse section through the pencil taken on line 7—7 of Fig. 1;

Fig. 8 is a similar view taken on line 8—8 of Fig. 9; and

Fig. 9 is a fragmentary longitudinal section of the upper end of the pencil body, taken on line 9—9 of Fig. 8.

In the use that is herein made of the terms "upper" and "lower," it should be understood that we are referring to the pencil as pointed in use,—that is, with the eraser end up, and the writing end down.

In Fig. 1 the pencil body, designated as 10, is represented as having a lower end 11 which terminates bluntly in the form of a truncated cone. Arranged within an axial bore in the body is a tube 12 that is deformed throughout its lower portion to pre-

sent a polygonal cross section, preferably 55 square, as best shown in Fig. 7. At its lower end this tube is desirably reduced, as shown at 13. A combined ferrule and tip 14 may be secured to the tube, as by means of solder or otherwise, the sides of 60 the ferrule being preferably disposed in aligned and flush relation with the tapered walls of the pencil to thereby present a smooth and neat appearance. Within the lower end of the ferrule is an axial bore 65 15 whose walls are suitably constricted to frictionally engage with the lead A that is projected for use.

Interiorly of the pencil body are arranged a number of slots 16 disposed radially of 70 the bore containing the tube 12, these slots extending longitudinally of the pencil from its upper end downwardly for a desired distance to constitute chambers in which reserve leads B may be received. Attached 75 to the upper end of the pencil is a cap 17 provided with a central aperture from which radiate slots 18 which are adapted to register with the body slots 16 to thereby maintain an opening into the reserve 80 lead chambers. Depending from the cap is a circular wall 19 exteriorly threaded and offset as at 20 to provide an outer upper shoulder and an inner under shoulder 85 below which is a lower circular wall portion 21 interiorly serrated and adapted to rest upon a shoulder 22 that is formed near the upper end of the pencil by a proper reduction in the diameter of its body, as best shown in Fig. 6. The cap may be 90 secured in position by extending the upper end of the tube 12 through its central opening, the extremity of the tube being then upset or spun out, as at 23, to overlie the cap so as to thereby lock it in place. 95

The means for propelling a lead through the pencil may be of any suitable kind. As shown in the drawings it is preferred to use a sleeve 24 which is non-rotatably connected with an eraser sleeve 25 which, in 100 turn, is rotatably, but inseparably, secured to a collar 26 interiorly threaded for attachment to the upper end of the cap 17. The sleeve 24 is adapted to telescope within the tube 12 for, perhaps, half its length, being interiorly threaded (not shown in the drawings) to co-operate with a threaded plunger 27 from whose lower end is pro-

jected one or more fins 28. Under all normal operating conditions the lower end of this plunger is disposed within the polygonal portion of the tube 12, as shown in Fig. 1, wherein the fins 28 act to prevent rotation of the plunger relative to the said tube. The plunger being free to move longitudinally, but not otherwise, it may be propelled by rotating the sleeve 24 through the medium of the eraser sleeve 25 whereby a lead may be projected through the constricted opening 15 that is formed axially in the tip. Since these parts which constitute the propelling mechanism for the lead are only incidental to this invention, and may be varied, if desired, further explanation thereof is not deemed essential.

The clip that is novel to this invention, best shown in Fig. 4, is provided with a head 30 in the form of a split collar from whose lower edge extends laterally and then downwardly the usual body 31 adapted to press against the pencil body. A blank from which such a clip may be conveniently formed is shown in Fig. 5. It will be noted that from the lower edge of the head depend several teeth 32 that are adapted to bite into the shoulder 22 of the pencil body when the clip is seated in place. It is preferred that the clip head 30 should be exteriorly serrated or otherwise roughened so that it may co-operate with the inner serrated surface of the lower wall portion 21 of the cap 17. As best shown in Fig. 1, this wall is notched as at 34 to provide an opening within which may lie the laterally extending upper portion of the clip body 31.

When the parts are assembled as shown, the clip head is seated upon the shoulder 22, the lower wall portion of the cap fitting over the head and lying flush with the body of the pencil. Owing to the character of the engaging surfaces on the clip head and cap, by which relative rotation is prevented, and the biting of the teeth 32 into the body of the pencil, the cap itself is maintained non-rotatably in place. With the end 23 of the tube 12 overlying the cap and thereby locking the same upon the pencil, it is apparent also that the clip is permanently secured in place by the same means.

While the preceding description has dwelt to some extent upon the operating parts of this pencil, it is to be understood that our invention is concerned primarily with the clip and the manner of its attachment to the pencil. Modifications in the construction of the clip are, of course, possible, but in so far as they may embody the concept defined in the claims following, regardless of the form of the pencil, we desire that they be included within the scope of this patent.

We claim:

1. A pencil having a body formed exteriorly with an annular shoulder, in combi-

nation with a clip having a head adapted to seat upon the shoulder, means formed on the head adapted to engage with the pencil body for preventing relative rotation therebetween, a clip body extending from the head in adjacent relation to the pencil body, and means for locking the clip in place upon its seat, substantially as described.

2. A pencil having a body formed exteriorly with an annular shoulder, in combination with a clip having a split head adapted to seat upon the shoulder, means adapted to overlie the clip head to conceal its presence, said means being adapted to co-operate with the head to prevent relative rotation between itself and the head, and means to connect the last mentioned means with the pencil body whereby the clip is also secured in place, and a body extending from the clip head to lie in adjacent relation to the body of the pencil, substantially as described.

3. A pencil having its body formed with means constituting a shoulder in combination with a clip having a collar-shaped head adapted to lie adjacent the shoulder, and a body extended therefrom to lie adjacent the pencil body, and a member secured to the upper end of the pencil by means which constitute part of mechanism interiorly of the pencil for propelling a lead therethrough, the member having circular walls adapted to overlie the clip head and being formed with a notch through which the clip body may extend to lie adjacent the pencil body, substantially as described.

4. A pencil having a body reduced at its upper end to provide a shoulder in combination with a clip formed with a collar-shaped head adapted to seat upon the shoulder, elements projecting from the lower edge of the clip head to engage with the pencil body to prevent relative rotation between the clip and pencil, a body for the clip extending laterally and then longitudinally to lie adjacent the pencil body, and means locked to the pencil including a circular wall adapted to overlie the head of the clip and provided with a notch through which the clip body may extend, said means acting to lock the clip in place upon the pencil, substantially as described.

5. A pencil having a body reduced at its upper end to provide a shoulder in combination with a clip attached to the pencil comprising a collar-shaped head adapted to seat upon the shoulder, a body for the clip extending laterally and then longitudinally to lie adjacent the pencil body, a member adapted to overlie the clip head, the engaging surfaces of said member and head co-operating to prevent relative rotation therebetween, and means for locking said member permanently to the pencil whereby the clip is also fixedly held in place, substantially as described.

6. A pencil having a body whose upper end is reduced to provide a shoulder, a clip adapted for attachment to the pencil and consisting of a head in the form of a split collar adapted to surround the pencil adjacent the shoulder thereon, and having a body extending laterally and then longitudinally to lie adjacent the pencil, and means for maintaining the meeting ends of the clip head against the pencil body, said means serving also to conceal the clip head and to lock the same permanently upon the pencil, substantially as described.

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