May 29, 1928. 1,671,393

H. C. ZANTOW

ADJUSTABLE PENCIL ERASER

Filed Oct. 9, 1925

Fig. 1

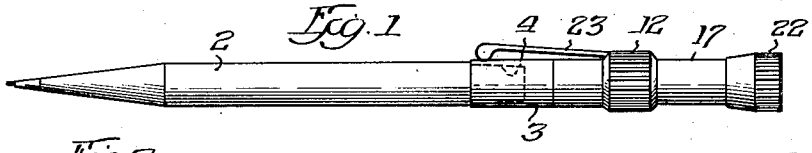


Fig. 2

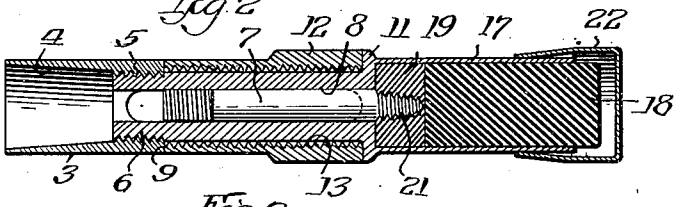


Fig. 4

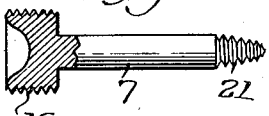


Fig. 5.

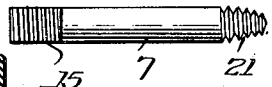


Fig. 3

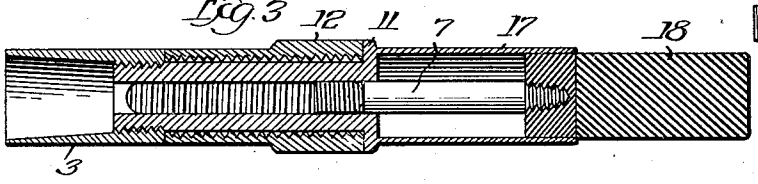


Fig. 6

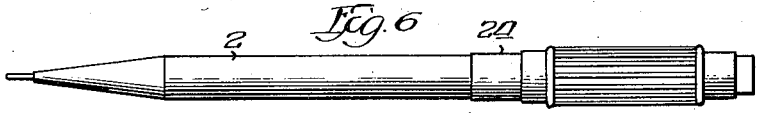


Fig. 7

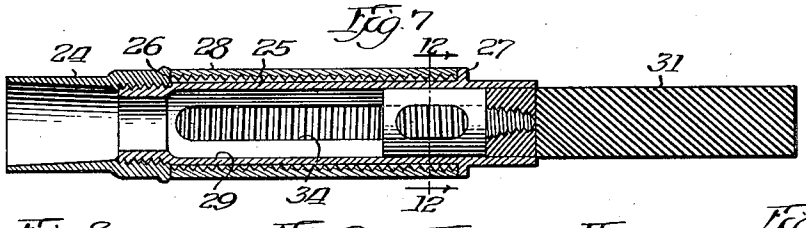


Fig. 8

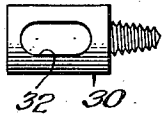


Fig. 9

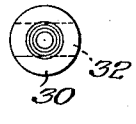


Fig. 10

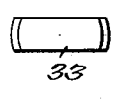


Fig. 11



Fig. 12

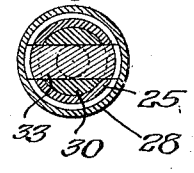


Fig. 16.



Fig. 17

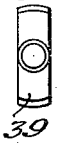


Fig. 18

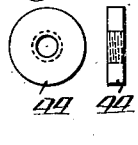


Fig. 13

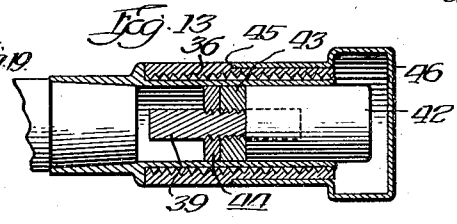


Fig. 14

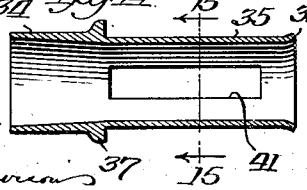
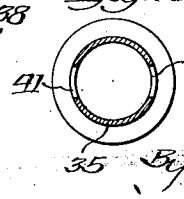


Fig. 15



Witness:
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UNITED STATES PATENT OFFICE.

HENRY C. ZANTOW, OF MADISON, WISCONSIN.

ADJUSTABLE PENCIL ERASER.

Application filed October 9, 1925. Serial No. 61,414.

The invention set forth herein relates to eraser holders adapted to be fixed to pencils or to be removably attached thereto and more particularly to an eraser holder for extension and retraction of the eraser by means of a manually operable member connected to the attachment.

One of the objects of the invention is to provide a simple, inexpensive, durable and compactly constructed device having a positive feed for erasers and the like.

It is a further object to provide an attachment of the character above set forth adapted to be applied to pencils of various diameters, shapes, and characters.

Still further objects of the invention reside in the novel features of construction and the arrangement of the parts as will be clearly apparent after perusing the description and claims and after viewing the drawing in which:

Fig. 1 is an elevation of one form of the invention applied to a pencil and provided with a pocket clip and eraser protecting cap,

Fig. 2 is a longitudinal central section of the device illustrated in Fig. 1 with the pocket clip removed,

Fig. 3 is a view similar to that of Fig. 2 with the cap removed and the eraser fully projected,

Fig. 4 is a side elevation partly in section of the eraser propeller member,

Fig. 5 is another side elevation view of the propeller mechanism taken at right angles to the view of Fig. 4,

Fig. 6 is a plan view of a modified form of the device adapted to receive a long eraser within the barrel of the guide,

Fig. 7 is a longitudinal central section of the pencil attachment shown in Fig. 6,

Figs. 8, 9, 10 and 11 are views of a modified type of an eraser propeller for use with the device of Fig. 6 and Fig. 7,

Fig. 12 is a section taken on the line of 12—12 of Fig. 7,

Fig. 13 is a longitudinal central section of another modification of the invention designed to receive the eraser within the barrel of the guide and to present a shorter ferrule or pencil attaching means formed in one piece with the barrel guide unit,

Fig. 14 is a longitudinal central section of the guide shown in Fig. 13,

Fig. 15 is a section taken on the line 15—15 of Fig. 14,

Fig. 16 is a side elevation of the threaded propeller member for the modification of Fig. 13,

Fig. 17 is an end elevation thereof,

Fig. 18 is an end elevation of a bearing collar adapted for centering the propeller within the guide, and

Fig. 19 is a side elevation thereof.

Referring to the drawings more in detail, 2 indicates a pencil of any character or shape to which my eraser attachment may be applied by means of a ferrule 3 having a tapered opening 4 adapted to snugly fit a similarly tapered end of the pencil 2 and to be secured thereto in any suitable or desired manner. The ferrule is internally threaded as at 5 for engagement with a correspondingly threaded barrel portion 6 forming a guide for a propeller generally designated 7 carried within a slot 8 cut therein.

The ferrule 3 is arranged to provide a circumferential shoulder 9 between which and a shoulder 11 formed integrally with the barrel member 6, a ring or collar 12 having internal threads 13 is adapted to be positioned for rotation about the barrel. Preferably the slot 8 extends diametrically through the barrel 6 and within the slot the propeller 7 having a flattened head 15 provided with threads 16 is adapted to travel longitudinally of the barrel, the threads 16 on the head of this member being engaged with the threads 13 on the collar 12.

Peferably formed integrally with the barrel 6 is an auxiliary barrel 17, and an eraser 18, secured to a suitable non-resilient base 19, in turn engaged with the threaded end 21 of the propeller member 7, is adapted to be received and guided within this auxiliary barrel. A cap 22 may be provided to protect the end of the eraser from dirt when not in use and if desired, the collar 12 may be provided with an extension forming a pocket clip 23.

In operation, rotation of the collar 12 between the shoulders 9 and 11, which prevent longitudinal movement of the barrel, will through interengagement of the threads 16 of the propeller 7 and the interior threads 13 of the collar, cause said propeller to project or retract the eraser 18. In Fig. 2 the eraser is shown in its retracted position and in Fig. 3 it is shown in its full projected or extended position.

In the modification in Fig. 6, the pencil 2

is provided with a slightly modified form of eraser holding and adjusting mechanism wherein the ferrule 24 is similar to the ferrule 3 and engages a tubular or hollow cylindrical barrel 25 to form a shoulder 26 similar in construction and purpose to the shoulder 9 of the previously described form. Between this shoulder 26 and an opposed shoulder 27, a collar 28 is mounted for rotation about the barrel. The construction illustrated in Figs. 6 to 12 inclusive and the operation thereof, is substantially identical with that of the previously described form except that the barrel is bored out or formed with a bore 29 to receive a cylindrical propeller or follower 30 adapted to snugly fit therein and to receive practically the whole length of the eraser 31 when the propeller is retracted fully interiorly of the barrel. The propeller or follower 30 has a diametrical slot 32 through which a threaded key member 33 is adapted to pass for engagement through slots 34 with the threads on the interior of the collar 28.

In the modification illustrated in Figs. 13 to 19 inclusive, which may perhaps be more cheaply manufactured than the forms described above, the ferrule and barrel indicated at 34 and 35 are formed in one piece and for convenience of assembly, the collar 36 may be formed or arranged to oppose the shoulder 38 by pressing or spinning the metal of the end of the barrel 35 to flare it outwardly. The follower or propeller 39 in this case is quite similar to the member 7 shown in Figs. 4 and 5 except that it is much shorter and adapted to snugly fit and be guided by slots 41 cut longitudinally in the barrel and is arranged to carry an eraser 42 also snugly but slidably fitting therein. In this case as in the case of the eraser illustrated in Figs. 2 and 3, it is mounted upon a non-resilient piece of fibre or other material 43 having threaded engagement with the end of the follower 39. The internally threaded collar 44 is designed to hold the follower 39 centrally within the guide barrel. A collar 36 may be cut down circumferentially to provide a shoulder 45 against which the end of the neck of a cap 46 may abut.

I prefer to knurl or otherwise roughen the exterior surfaces of the collars 12, 28 and 36 in order that a firm grip may be had by the fingers and if desired, many other features may be added to improve the appearance of the article for sale. Obviously many modifications and changes may be made within the spirit of the invention without departing therefrom or from the scope of the appended claims.

I claim:

1. A device of the character described comprising a ferrule portion for attachment to pencils, a substantially cylindrical longitudinally slotted guide portion connected to said ferrule at one end and adapted to removably receive an article at its other end, one of said portions having a radially projecting shoulder facing toward said other end and spaced therefrom, a second radially projecting shoulder integral with said guide portion between said other end and the first said shoulder and facing the latter, means in said slot having a part adapted to engage and reciprocate an article held in said other end of said guide and a threaded part projecting radially from said slot between said shoulders, and a one-piece collar rotatably held between said shoulders surrounding said guide and threadedly engaging said threaded part of said means whereby rotation of the collar alternately in opposite directions will reciprocate said means.

2. A device of the character described comprising, a diametrically and longitudinally slotted guide having a ferrule at one end removably attachable to a pencil and having a hollow substantially cylindrical portion at its opposite end, an internally threaded collar surrounding said guide and manually rotatable thereon, circumferentially extending radial shoulders on said guide adapted to secure said collar against longitudinal motion, a propeller within said guide slot adapted to be secured to an article longitudinally movable in the cylindrical portion of the guide, and externally threaded projections on said propeller protruding from said slot on opposite sides of said guide engaging with the threads of said collar, said propeller being propellable longitudinally of said guide by the rotating motion of said collar.

3. A device of the character described comprising, a one-piece slotted guide removably attachable to a pencil, a one-piece internally threaded collar secured around the guide, means for holding said collar against longitudinal displacement along said guide, a non-rotatable propeller movable longitudinally within the slot of said guide, a threaded projection on said propeller extending outwardly from the slot of said guide and engaged with the threads of said collar, and means for removably attaching an article to said propeller.

4. A pencil attachment comprising a one-piece slotted guide adapted to be removably attached to a pencil, an internally threaded one-piece collar around the guide, a propeller movable longitudinally of the guide within the slot thereof, means for securing said collar against longitudinal movements including an integral shoulder and a removable shoulder on said guide at opposite ends of said collar, threaded projections on said propeller extending outwardly through the slots on opposite sides of said guide and engaged with the threads of said collar, and

an eraser holder removably attached to said propeller.

5. A device of the character described comprising, a hollow cylindrical sleeve portion having a longitudinal slot providing a guideway, and having an article receiving opening in one end, a reciprocable member within said sleeve and having a portion non-rotatably but slidably projecting through said slot, a pair of external, radially projecting, circumferential shoulders secured to said sleeve portion in spaced relation and facing one another, the portion of said reciprocable member projecting through said slot having threads thereon for engagement with internal threads on a collar between said shoulders, an internally threaded collar rotatably mounted on said sleeve portion between said shoulders with its threads operatively engaging the threads on said portion of said reciprocable member, and means on said reciprocable member for removably securing an article thereto whereby the article may be reciprocated therewith and projected through said opening.

In witness of the foregoing I affix my signature.

HENRY C. ZANTOW.