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METHOD OF MOUNTING ERASERS WITHIN HOLDER MEMBERS

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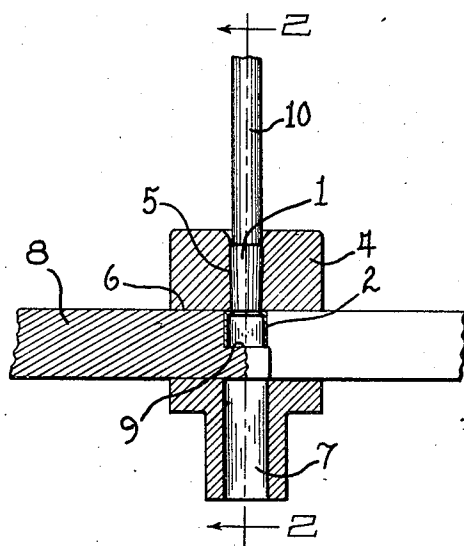


Fig-1

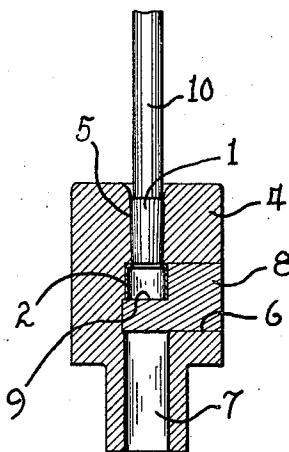


Fig-2

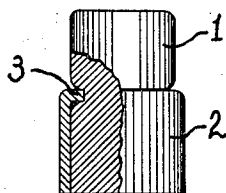


Fig-4

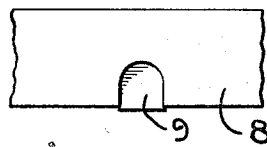


Fig-3

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METHOD OF MOUNTING ERASERS WITHIN HOLDER MEMBERS.

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The invention relates to the mounting of yieldable members, such, for instance, as rubber erasers, within ferrules or hollow holder members having an open end formed with a restricted mouth.

Heretofore erasers have been retained in ferrules by threaded engagement, internal annular ribs or struck-out tongues. In many cases these devices are not satisfactory for securing the erasers in position.

An object of this invention is to provide a simple and efficient method of mounting erasers within holding members.

A further object is to provide a new and improved method of assembling yieldable solids and unyielding holding members which lends itself to increased production with an attendant reduction in cost.

Further objects will hereinafter appear.

For illustrative purposes the invention is shown in the accompanying drawings, in which:

Fig. 1 is a vertical sectional elevation of an apparatus for assembling rubber erasers and metal or unyielding ferrules; Fig. 2 is a view similar to Fig. 1, but showing a different portion of the parts; Fig. 3 is a top plan view of the part for holding the ferrule; and Fig. 4 is an enlarged elevation partly in section of the assembled eraser and ferrule.

In the illustrated embodiment of the invention, there is shown in Fig. 4 an assembly of a ferrule 2 and rubber eraser 1, and it will be observed that one end of the ferrule is formed with an intumed flange 3, providing a restricted mouth which securely grips and retains the eraser 1 in place, a portion of the eraser projecting beyond the end of the ferrule for erasing purposes. The ferrule 2 may be a sheet metal or other substantially unyielding material, and the eraser cylinder may be of rubber or material having similar resilient and yieldable characteristics.

Heretofore, it has been a tedious and troublesome task to assemble the ferrule 2 and eraser 1, but in accordance with this invention the procedure is greatly simplified. In carrying out my method, I provide a block 4 having in its upper portion an outwardly flaring or tapering passage 5, the lower end of which terminates in a transversely extending opening 6 having an open outer end. The upper end portion of the

passage 5 is substantially the size of the eraser, but the lower end thereof is somewhat smaller so that in forcing the eraser through the passage a portion is constricted. In register with the tapering passage and below the transverse opening 6, is a discharge passage 7 through which the assembled erasers and ferrules are discharged.

A lever or bar 8 is movable in and out of the transverse opening 6 in the block 4 and is formed in its outer end with a recessed portion providing a shelf or ledge 9 shaped to receive a ferrule 2, as more clearly shown in Fig. 3. The lever 8 may be moved manually or mechanically in and out of the opening 6 at recurrent intervals, but as the particular form of actuating means forms no part of the present invention, detailed description is not considered necessary.

In operation, a ferrule 2 is first placed on the shelf 9 of the lever 8 with the restricted mouth uppermost. It may be here stated that the diameter of the restricted mouth of the ferrule is approximately the same as the diameter of the smaller end of the tapering passage 5. By inserting the lever into the opening 6 of the block 5, the restricted mouth of the ferrule is brought into register with the smaller end of the passage 5.

An eraser may be then placed in the passage 5, and by means of a plunger 10, manually or mechanically operated as desired, the eraser is forced through the smaller end of the tapering passage and into the ferrule. The portion of the eraser entering the restricted mouth of the ferrule is so constricted that it will readily pass into the ferrule, but owing to the resiliency of the material, will then expand to engage the sides of the ferrule.

After the eraser has been forced to the end of the ferrule, a portion still remains in the tapering passage 5, and this portion holds the ferrule in place when the lever 8 is withdrawn from the opening 6. Thereafter the plunger is forced farther into the tapering opening to eject the eraser therefrom and the assembled unit drops from the block 4 through the discharge passage 7. The above operation may be then repeated to assemble another unit.

It is apparent that erasers and ferrules may be quickly and easily assembled by the above described method. No skill is re-

quired to practice this method owing to its marked simplicity, and it therefore is adapted for quantity production.

While I have shown and described my invention in connection with erasers and ferrules, it is to be understood that it can be used to advantage in the assembly of any yieldable solid and a relatively unyielding annulus. Numerous changes in details of the described method may be effected without departing from the spirit of the invention.

What I claim as new and desire to secure by Letters Patent is:

1. The method of assembling a yieldable solid and an unyielding ferrule having a restricted open end smaller than the cylinder which consists in constricting an end portion of the solid so that the extreme end is of approximately the diameter of the restricted opening in the ferrule, and concomitantly forcing the constricted end of the solid through the restricted opening into the ferrule.

2. The method of assembling a cylinder and ferrule having a restricted mouth which consists in forcing a cylinder through a tapering passage in register with the restricted mouth of the ferrule, the passage being approximately the size of the restricted mouth.

3. The method of assembling a yieldable cylinder and ferrule having an inwardly flanged mouth consisting in providing an inwardly tapering passage, one end of which is approximately the size of the flanged opening, placing the ferrule beneath said passage with the flanged mouth in register with said end, and forcing the cylinder through said passage and into the ferrule.

4. The method of assembling a yieldable cylinder and a ferrule which consists in providing a yieldable cylinder, and a metallic ferrule having a restricted opening at one end of less diameter than the diameter of said cylinder, providing a tapering passage, the smaller end of which is of approximate-

ly the same size as said restricted opening, placing the ferrule with said restricted opening in register with the smaller end of said passage, and forcing the cylinder through the passage into the ferrule.

5. The method of assembling a yieldable cylinder and a ferrule having a restricted opening of less diameter than the diameter of the cylinder which consists in providing a tapering passage with the smaller end thereof approximately the same size as the restricted opening of the ferrule, supporting a ferrule with the restricted opening in register with smaller end of said passage, and forcing the cylinder through said passage into said ferrule.

6. The method of assembling a yieldable cylinder and a ferrule having a restricted open end smaller than the cylinder which consists in providing a tapering passage with the smaller end thereof approximately the size of the restricted open end of the ferrule, supporting the ferrule with the restricted open end in register with the smaller end of the tapering passage, forcing the cylinder through the passage into the ferrule, removing the support for the ferrule, and subsequently discharging the assembled cylinder and ferrule.

7. The method of assembling a yieldable cylinder and a ferrule having a restricted open end smaller than the cylinder, which consists in providing a tapering passage with the smaller end thereof approximately the size of the restricted open end of the ferrule, supporting the ferrule with the restricted open end in register with the smaller end of the tapering passage, forcing a portion of the cylinder through the passage into the ferrule with a portion of the cylinder remaining in the passage, removing the support for the ferrule, and discharging the remainder of the cylinder from the passage.

In testimony whereof I have hereunto signed my name to this specification.

ANDREAS BIENENSTEIN.