(No Model.)

E. W. YOUNG.

CEMENT INJECTOR FOR PNEUMATIC TIRES.

No. 590,607. Patented Sept. 28, 1897.

Fig. 1.

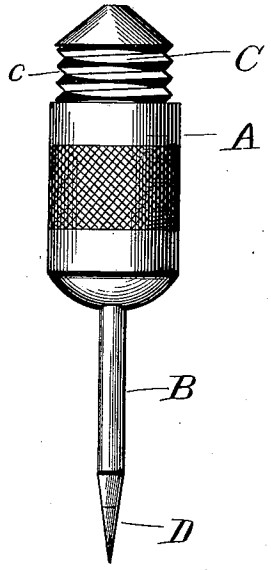


Fig. 2.

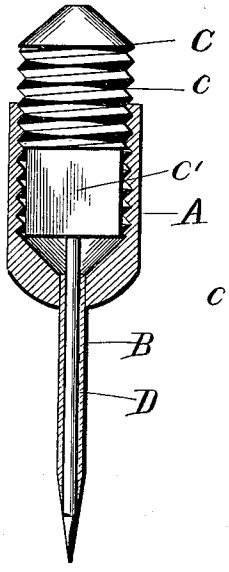


Fig. 4.

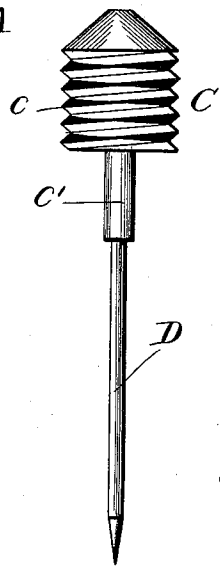
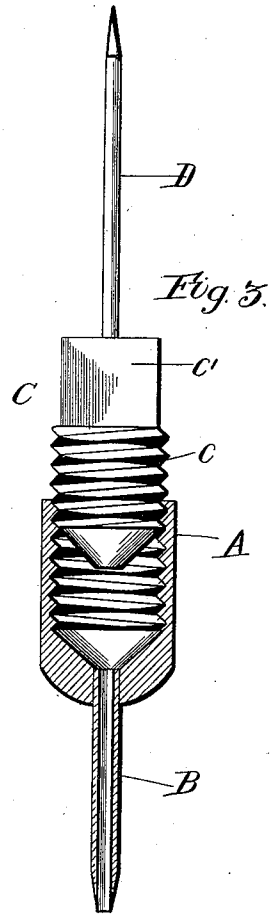


Fig. 3.



Witnesses:
A. F. Durand.
A. M. Belfield.

Inventor:
Ernest W. Young
by Page & Belfield,
attys.

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UNITED STATES PATENT OFFICE.

ERNEST W. YOUNG, OF AUSTIN, ILLINOIS, ASSIGNOR TO THE MORGAN & WRIGHT, OF CHICAGO, ILLINOIS.

CEMENT-INJECTOR FOR PNEUMATIC TIRES.

SPECIFICATION forming part of Letters Patent No. 590,607, dated September 28, 1897.

Application filed March 9, 1897. Serial No. 626,625. (No model.)

To all whom it may concern:

Be it known that I, ERNEST W. YOUNG, a citizen of the United States, residing at Austin, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Cement-Injectors for Pneumatic Tires, of which the following is a specification.

My invention relates to a construction of cement-injector described in Letters Patent of the United States No. 537,099, granted and issued April 9, 1895, and contemplates an improvement thereon whereby the insertion of the nozzle into the tire without injury to the latter is rendered more certain and the plunger adapted to be more readily handled. In said Letters Patent the cement-injector shown comprises a screw-threaded cylindric body provided at one end with a needle and adapted to screw into the threaded cup having a discharge-nozzle. Before introducing liquid cement into said cup the plunger is arranged and screwed down into the cup, so as to extend the needle through the discharge-nozzle, whereby the point of the needle may project beyond the discharge end of such nozzle and form a sharp point for the same. When thus arranged, the nozzle can be inserted in the tire, and after such insertion the plunger with its needle can be withdrawn, cement introduced into the cup, and the plunger reversed and again screwed into the cup, so as to force the cement through the discharge-nozzle. It frequently happens, however, that the user will not in the first instance screw the plunger into the cup to an extent to cause the needle-point to project from the discharge end of the nozzle to an extent to form a perfect point therefor, and as a result the inner tube of the tire is often unnecessarily and undesirably torn by the operation of introducing the nozzle of the cement-injector. As a means for overcoming such objectionable feature I thread the plunger for a portion only of its length, so as to leave an unthreaded portion, which extends back from the end of the plunger to which the needle is secured, by which arrangement a comparatively slight rotary movement of the plunger will serve to properly project the pointed end of the needle from the nozzle, while, on the other hand, after removing and reversing the plunger the latter can be introduced within and screwed down to the bottom of the cup for the purpose of ejecting the cement. The unthreaded portion of the plunger also forms a convenient handle portion, and for such purpose it is preferably flattened.

In the accompanying drawings, Figure 1 represents the cement-injector in side elevation, the plunger being arranged to permit the pointed end of the needle to project from and form a point for the nozzle. Fig. 2 is a section taken centrally and longitudinally through the cup and nozzle, the plunger being shown in elevation. Fig. 3 is a like view with the plunger reversed. Fig. 4 shows the plunger in elevation.

The cup A is internally threaded and is provided at one end with a discharge-nozzle B. The plunger C is threaded for a portion of its length, as at *c*, the remaining portion *c'* of its length being unthreaded, so that practically the thread is cut away for a portion of the length of the plunger. The needle D is formed with or secured to the unthreaded end portion of the plunger and is of a length to project from and form a proper point for the discharge end of the nozzle when the end of the unthreaded portion *c'* of the plunger abuts against the bottom of the cup, as in Fig. 2.

The length of the unthreaded portion of the plunger relatively to the depth of the cup is such that when the plunger is arranged as in Figs. 1 and 2 and screwed to a comparatively limited extent into the cup the end of its unthreaded portion will abut against the bottom of the cup, at which juncture the point of the needle will be in position to form a suitable point for the nozzle. In this way the unthreaded portion of the plunger forms a stop or gage which determines the proper position of the needle-point when it is desired to cause the latter to form a point for the nozzle. Also a limited extent of rotary adjustment on the part of the plunger—for example, a couple of turns—will be sufficient to bring such stop against the bottom end of the cup.

As a matter of further improvement I flatten the unthreaded end portion of the plunger,

so that when it is reversed, as in Fig. 3, for the purpose of ejecting cement from the cup such flattened portion can be conveniently taken hold of by the user, and thereby allow the plunger to be readily turned. This is also of particular advantage where in removing the plunger from the cup the plunger sticks to the latter by reason of cement tending to cause their opposing surfaces to adhere. Also should the plunger be left in the cup for any length of time and the use of a tool be found necessary a wrench or the like can be readily applied to this flattened portion of the plunger.

What I claim as my invention is—

1. A cement-injector for pneumatic tires, comprising an internally-threaded cup having a discharge-nozzle, and a reversible plunger which is threaded for a portion of its length along one of its end portions, and unthreaded along its remaining end portion, the latter being provided with a needle which forms a point for the nozzle when the plunger is screwed into the cup to an extent to cause the end of its unthreaded portion to abut against the bottom end of the cup, substantially as and for the purpose described.

2. A cement-injector comprising an internally-threaded cup having a discharge-nozzle, and a reversible plunger which is threaded for a portion of its length and along one of its end portions provided at the end of its opposite unthreaded end portion with a needle, the unthreaded end portion of the plunger being flattened and adapted for service, substantially as described.

ERNEST W. YOUNG.

Witnesses:

ARTHUR F. DURAND,

ANDREW MILLER BELFIELD.