(No Model.)

G. M. TAYLOR & C. S. SMITH.

PROCESS OF MANUFACTURING TIPS FOR FERRULES.

No. 436,388. Patented Sept. 16, 1890.

FIG. 1.

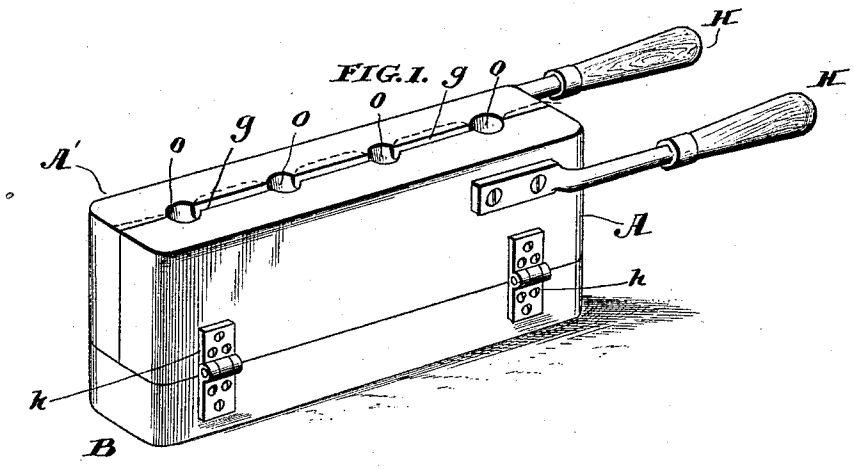


FIG. 2.

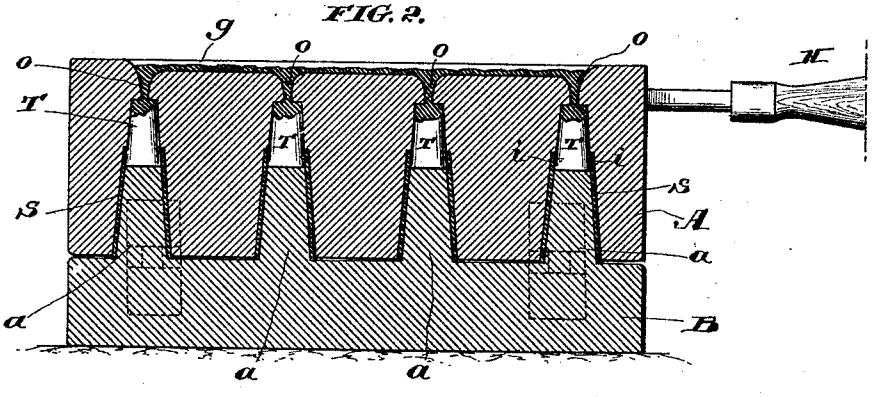


FIG. 3.

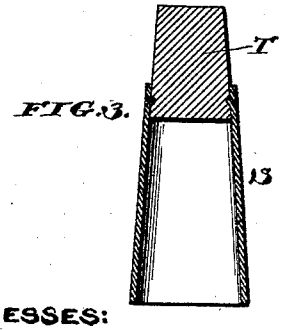
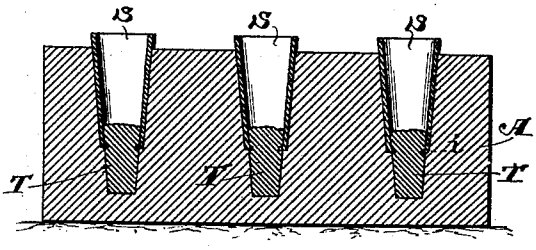


FIG. 4.



WITNESSES:

Walter C. Weeks.

R. F. Fleischmann

INVENTOR:

George Norman Taylor,
Cooly S. Smith.
By their Attorneys
Horace Pettit.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

GEORGE MORRISON TAYLOR AND COMLY S. SMITH, OF RIVERSIDE, NEW JERSEY.

PROCESS OF MANUFACTURING TIPS FOR FERRULES.

SPECIFICATION forming part of Letters Patent No. 436,388, dated September 16, 1890.

Application filed June 21, 1890. Serial No. 356,236. (No model.)

To all whom it may concern:

Be it known that we, GEORGE MORRISON TAYLOR and COMLY S. SMITH, both of Riverside, county of Burlington, and State of New Jersey, have invented a certain new and useful Improvement in the Process of Manufacturing Tips for Ferrules and in applying and securing the tip to the shank of the ferrule, and the improved ferrule having a cast-metal tip; and we do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification.

Our invention has relation to ferrules having cast-metal tips, and the manufacture, adjusting, and securing of tips to the shanks of ferrules for umbrellas, canes, &c.; and it consists in the process and tip thereby produced, hereinafter particularly described.

The object of our invention is to provide a ferrule-shank having a cast-metal tip by a process whereby tips are cast directly into the shanks of ferrules and secured thereto with a great saving of time and labor, at the same time producing a ferrule-tip equal, if not superior, to the wrought-metal lathe-turned tips.

In the accompanying drawings two forms of molds are illustrated which may be employed in our improved process, though we do not limit ourserves to any particular form of mold.

In the drawings, similar letters of reference refer to similar parts throughout.

Figure 1 is a perspective view of one form of mold for carrying out our improved process. Fig. 2 is a longitudinal sectional view of Fig. 1. Fig. 3 is a longitudinal sectional view of ferrule with the cast tip secured thereto. Fig. 4 shows another desirable form of mold, but of an inverted pattern to that shown in Figs. 1 and 2.

In carrying out our invention we employ a mold—such as represented in the drawings—having cores *a*, secured or affixed to a base B, conforming to the interior diameter of the ferrule-shank S, into which the tip T is to be cast, but somewhat shorter to the extent that the tip T is to enter the shank S.

In the construction of mold shown in Figs. 1 and 2 sides A A′ are hinged to the base B by the hinges *h*, and are provided with handles H H, so that sides A A′ may be thrown apart and the cores *a* exposed. The interior of the sides of the mold A A′ is shaped to fit neatly around the shank S when adjusted on the cores *a* and is shaped above the shank to form the size and style of tip desired to be cast. A gutter *g* is provided, as shown, in the top of the mold, and communicates by a small orifice *o* with the tip-mold.

Another desirable form of mold is that shown in Fig. 4 in an inverted position to that shown in Figs. 1 and 2. The metal frame A is provided with orifices conforming to the outside circumference of the ferrule-shank to allow the same to snugly fit therein, but of a depth somewhat less than the length of the shank S, so that the upper end of the shank may protrude to allow of its being readily removed when desired. Below the shank orifice or bore the frame A is provided with an orifice or bore conforming to the size and shape of the tip T. Metal is poured in a molten state into each of the shanks S in sufficient quantity to form the tip T and to allow of its protruding into the end of the shank S to secure it thereto. When the metal is sufficiently cooled, the shanks S, with the cast-metal tips thus formed and secured thereto, are readily removed by grasping the protruding upper end with tongs or by any suitable means.

Referring to the mold shown in Figs. 1 and 2, the ferrule-shank S is dropped upon the cores *a*, any desirable number being capable of being employed, as in the other style of mold, and the mold-frame is then tightly closed and secured, and the molten metal—such as iron or any desired metal—is poured into the gutter *g*, which, communicating thereupon with the orifices *o*, runs into the upper ends of the shanks S upon the ends of the cores *a*, and, filling the tip-molds, forms the desired tip T, secured and attached to and within the shank S. After cooling, the mold is then thrown open and the shanks S removed from the cores *a*, having the ferrule-tips T attached thereto, when the gates to the tips are broken off in the usual way and the tips dressed, if necessary. The tips T having thus been cast and attached to

the shanks S, if necessary, they are then further secured to the shanks S by soldering or by other known means. Tips thus cast into the shanks may be firmly secured to the shank without further soldering by fusing or by indenting the end of the shank before the metal is cast therein, as by points or indentations *i*, as shown in Figs. 2, 3, and 4.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. The mode or process herein described, in the manufacture of ferrules, of casting ferrule-tips, substantially in the manner and for the purposes as set forth.

2. The mode or process, herein described of casting ferrule-tips directly to the shanks of ferrules, in the manner and for the purpose substantially hereinbefore set forth.

3. The mode or process, in the manufacture of ferrules, as herein described, of casting ferrule-tips from molten metal to the shanks inclosed within a mold-frame, substantially as set forth.

4. The mode or process herein described, in the manufacture of ferrules, of casting ferrule-tips from molten metal into the ferrule-shanks, and in securing the tips thereto by means of indentations provided on the shank around which the molten metal forms, in the manner and for the purposes substantially as set forth.

5. The mode or process herein described, in the manufacture of ferrules, of running molten metal directly into the ferrule-shank set within a mold, and of securing the tip thereto by means substantially as herein set forth.

6. In the manufacture of ferrules, the mode or process herein described of running molten metal directly into the upper end of a ferrule-shank set within a mold to form a cast-metal tip in the lower end thereof without seams or gates, and the whole being removable from the said mold without breaking the same, substantially as set forth.

7. In a ferrule, a cast-metal tip secured to and in combination with the shank of the ferrule, in the manner and for the purposes as hereinbefore set forth and described.

8. In a ferrule, a cast-metal tip secured to and in combination with the shank of the ferrule, provided with indentations or points *i*, around which the cast-metal tip is formed and by means of which it is secured and held firmly in position, substantially as hereinbefore set forth and described.

In witness whereof we have hereunto set our hands this 17th day of June, A. D. 1890.

GEORGE MORRISON TAYLOR.
COMLY S. SMITH.

Witnesses:
WM. L. NEVIN,
HORACE PETTIT.