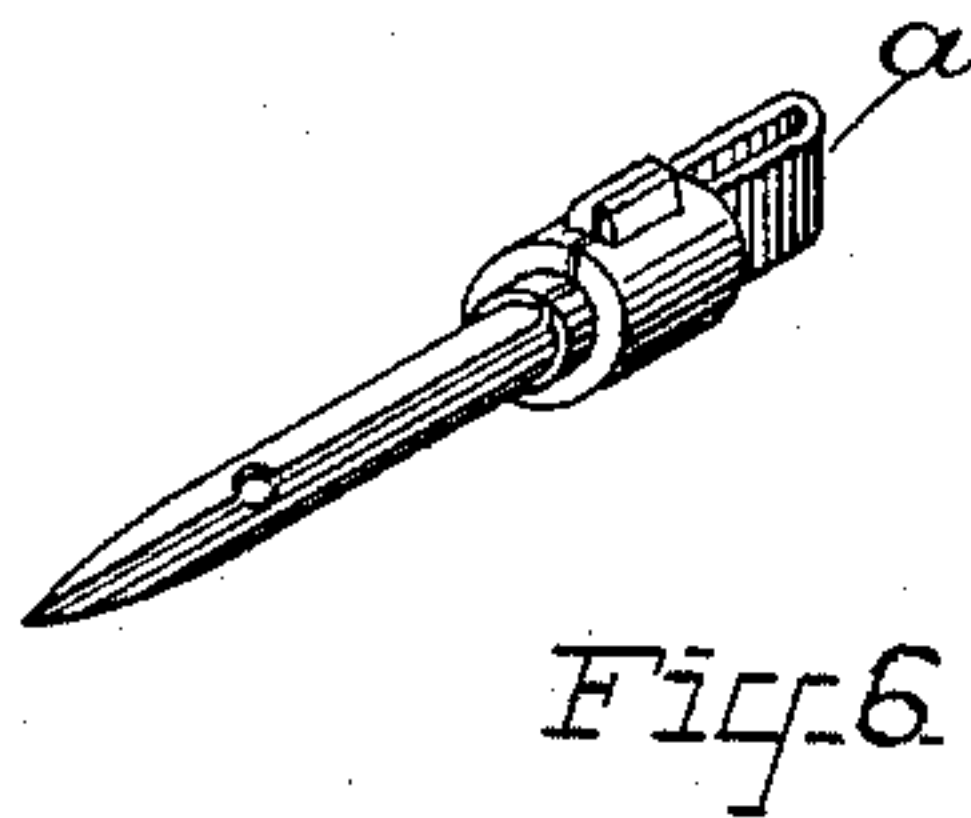
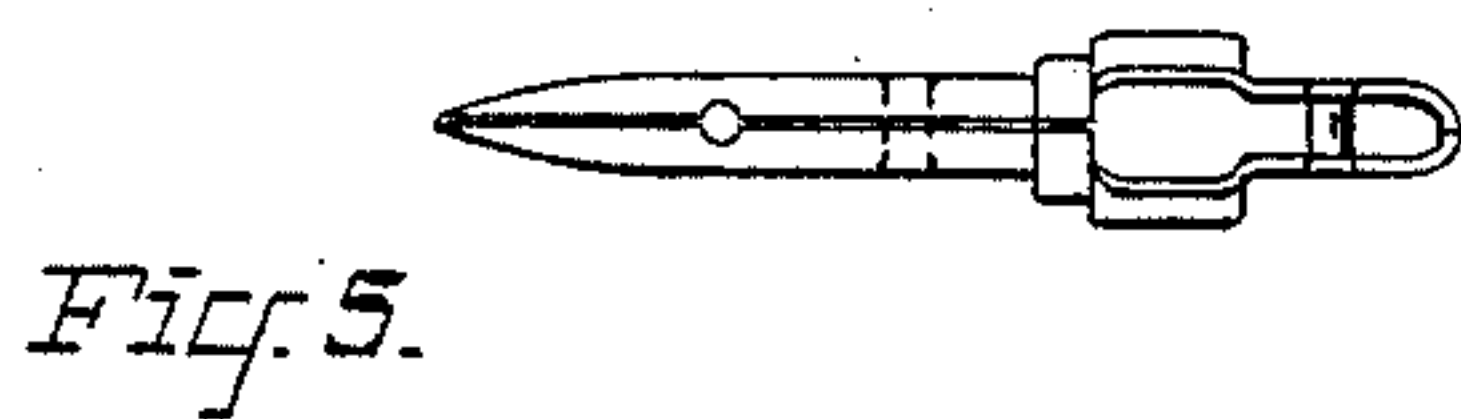
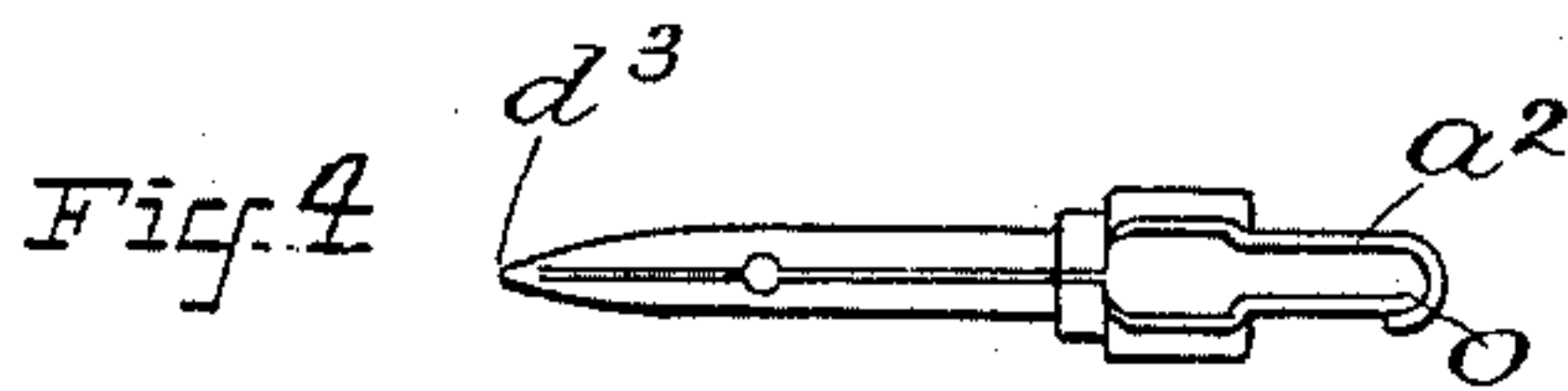
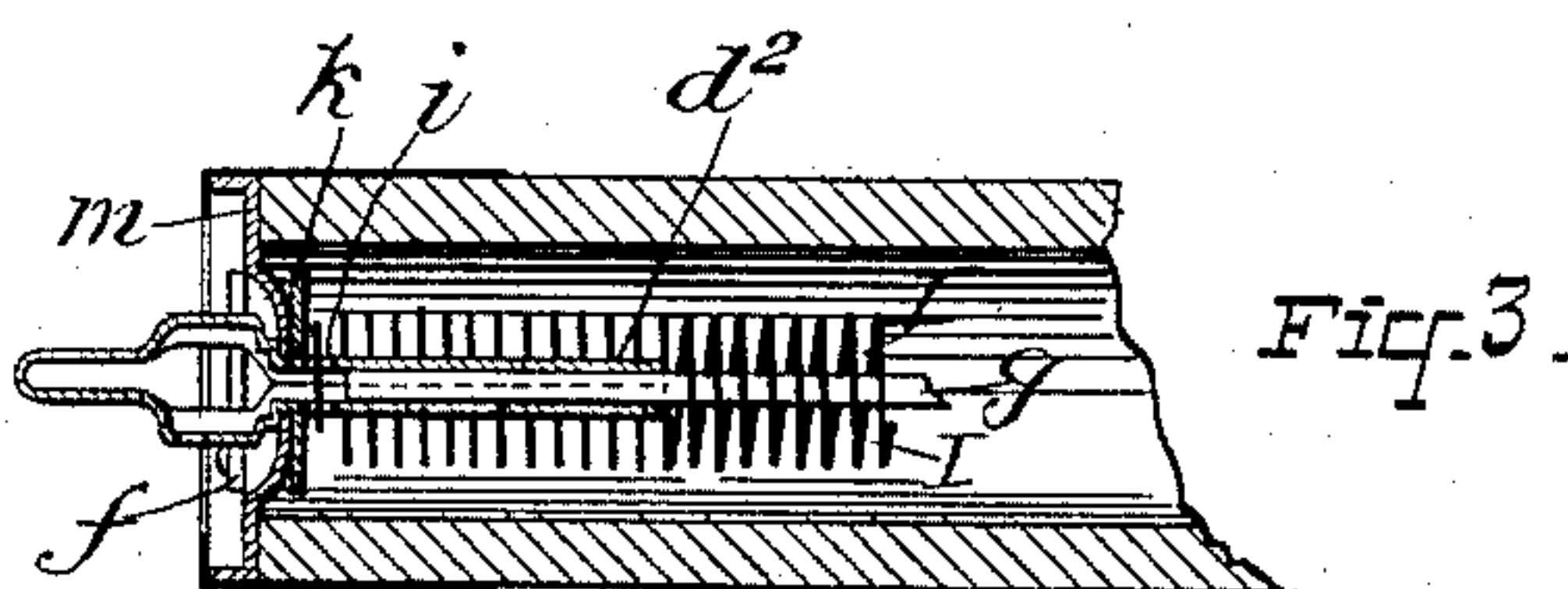
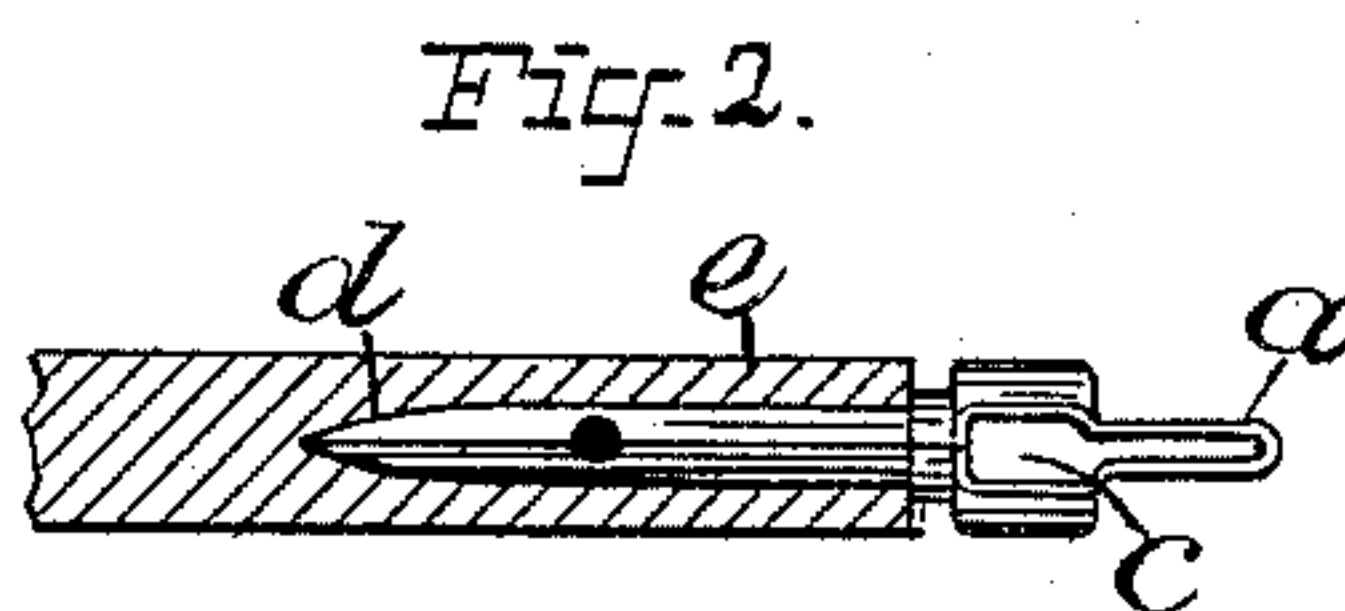
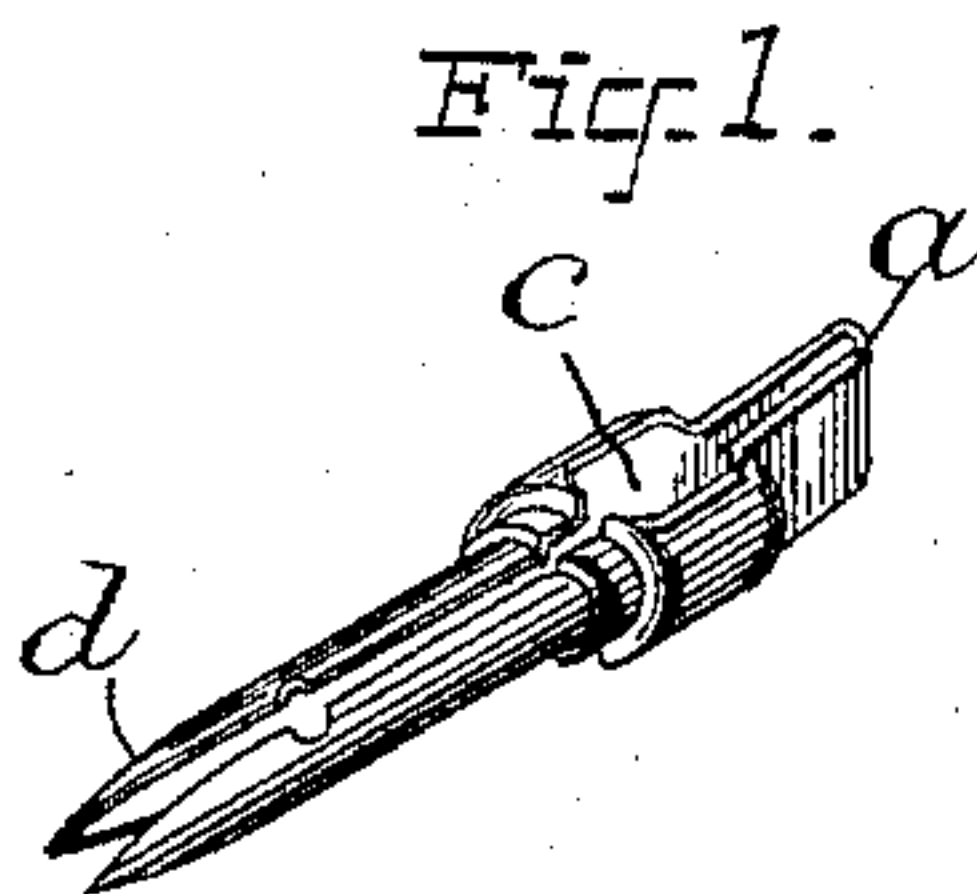


(No Model.)

J. C. PERKINS & L. E. LEIGH.  
SPINDLE TIP FOR SPRING SHADE ROLLERS.

No. 482,563.

Patented Sept. 13, 1892.



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# UNITED STATES PATENT OFFICE.

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PLACE.

## SPINDLE-TIP FOR SPRING SHADE-ROLLERS.

SPECIFICATION forming part of Letters Patent No. 482,563, dated September 13, 1892.

Application filed January 13, 1892. Serial No. 417,918. (No model.)

*To all whom it may concern:*

Be it known that we, JUDSON C. PERKINS and LEWIS E. LEIGH, of Meriden, in the county of New Haven, State of Connecticut, have jointly invented certain new and useful Improvements in Spring Shade-Rollers; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

Our invention relates to that portion or device of a spring-shade-roller fixture or contrivance which is usually denominated the "spindle-tip." Prior to our invention such spindle-tip has usually been made of cast metal and of such form as to comprise three integral members—i. e., first, an outer end portion of polygonal shape in cross-section, adapted to engage with the slot-like receptacle of one of the brackets by which shade-rollers are usually supported; second, a middle or body portion of substantially a cylindrical shape and formed with two opposite longitudinal depressions with which the pawls on the end plate of the roller engaged, and, third, an inner spindle-like portion adapted to be inserted in a cavity designed to receive it in the outer end of the (usually) wooden spindle of the fixture, though sometimes other and somewhat differently-made devices have been used to serve the purposes of such usually or most extensively employed cast-metal spindle-tips.

In the manufacture and use of spindle-tips made, as they have usually heretofore been made, of cast metal some serious objections and difficulties have existed, which it is the main object of our invention to overcome.

Among the practical disadvantages of a cast-metal spindle-tip may be mentioned the liability of breakage, which often occurs by letting the roller fall, so that the projecting or outer end of the spindle-tip will receive the force of the blow, the necessity for an inspection of all the tips manufactured by the maker, in order to have them all alike, and the difficulty in having such small castings, made in large numbers, all exactly alike, and the expense consequent to the manufacture, while among the disadvantages of all spindle-

tips heretofore made with recesses or depressions for the accommodation of the engaging ends of the pawls (of positive-stop spring-rollers) is the very serious one of a great liability of the depressions becoming eventually so partially filled up or clogged with dust and dirt as to seriously impair the designed actions of the pawl and render the pawl-and-ratchet device of the roller uncertain in its operation, to the great annoyance of persons using the shade-roller. We propose by our invention to overcome all these practical objections in the manufacture and use of spindle-tips and to provide for use a better device, which will cost less and be more durable than the usually-made or any prior-known form of spindle-tip; and to these main ends and objects our invention may be said to consist, primarily, of a spindle-tip composed of sheet metal bent and shaped into suitable form, and, secondarily, in a spindle-tip composed of sheet metal and possessing certain novel features of form, all as will be hereinafter more fully explained, and as will be more particularly pointed out in the several claims of this specification.

To enable those skilled in the art to which our invention relates to make and use spindle-tips embracing, either in part or wholly, the several novel features or parts of our invention, we will now proceed to more fully describe the latter, referring by letters to the accompanying drawings, which form part of this specification, and in which we have shown the several and in a measure separable features of our invention carried into effect in those precise forms in which we have so far practiced our invention, though with reference to some parts of our invention many modifications may be made without changing the principles of construction and modes of operation peculiar thereto.

Figure 1 is a perspective view of one form of our improved sheet-metal spindle-tip. Fig. 2 is a longitudinal section of the same driven into the end of an ordinary wooden spindle in the manner that the old-fashioned cast spindle-tip is usually combined with such spindle. Fig. 3 is a partial central longitudinal section of a spring-roller, showing the ar-



rangement therewith of one of our improved  
 spindle-tips, and also illustrating another  
 modification of the device. Fig. 4 is a per-  
 spective view, enlarged scale, of another form  
 5 of our improved spindle-tip. Fig. 5 shows in  
 perspective, same scale, another modification  
 in the form of the new device. Fig. 6 shows  
 in perspective, same scale, still another form  
 of our improved metal spindle-tip.

10 Wherever in the several figures the same  
 part occurs it will be found always designated  
 by the same letter.

By reference now to Fig. 1 it will be seen  
 that we sometimes make our improved spin-  
 15 dle-tip of substantially the general exterior  
 shape and size of the old-fashioned cast arti-  
 cle, but form it of a sheet-metal blank, the  
 halves of which (supposing the blank to be  
 divided by an imaginary line at its middle  
 20 lengthwise) are first struck up or swaged into  
 the proper shapes and the blank then folded  
 on itself at the middle, so as to form, first, an  
 outer member  $a$ , which is of the proper shape  
 and size to engage, non-rotatively, with that  
 25 one of the usual shade-roller brackets which  
 is slotted; second, a middle member, which is  
 substantially cylindrical in shape exteriorly,  
 but has the diametrically-arranged opening  
 $c$ , into the opposite ends of which fall the en-  
 30 gaging ends of the usually-employed pawls,  
 and, third, an inner end member  $d$ , that in  
 its normal condition is composed of two nearly  
 semi-tubular parts slightly separated by the  
 natural spring of the bent-up blank, but  
 35 which parts are forced and held together  
 when the spindle-tip is driven into the spin-  
 dle, as clearly shown at Fig. 2. The said du-  
 plex member  $d$ , having the extremities of its  
 two parts shaped after the fashion, nearly, of  
 40 halves of hollow cones, so that in use in the  
 spindle  $e$ , as seen at Fig. 2, the external shape  
 or pattern of our improved sheet-metal spin-  
 dle-tip is substantially identical with that of  
 the old-fashioned cast spindle-tip, except that  
 45 instead of the two depressions of the cast de-  
 vice our spindle-tip has the aperture  $c$ . This  
 apertured form of the device involves an im-  
 portant feature of our invention, for by reason  
 of the presence of this aperture  $c$  the device  
 50 is rendered wholly incapable of collecting or  
 retaining any dust or dirt in the receptacles  
 with which the usual pawls  $f$  (see Fig. 3) of a  
 ratchet-and-pawl shade-roller engage. This  
 feature of our invention is, however, separa-  
 55 ble from and may be used, it will be seen, in-  
 dependently of any specific form of the spin-  
 dle-tip with reference to its other members.

By reference now particularly to Fig. 3 it  
 will be seen that the spindle-tip may be  
 60 made (as therein shown) with an inner end  
 member  $d^2$ , perfectly tubular, (and circular  
 in cross-section,) adapted to form the hous-  
 ing or socket for the outer end of a metallic  
 spindle  $g$  in that species of spring shade-  
 65 roller in which a spindle  $g$  is stepped at its  
 outer end in the inner end of the spindle-tip.  
 In the use of our invention in this form or

under this modification thereof we make the  
 perforation  $i$  of the inner end member in a  
 diametrically-opposite direction to that seen 70  
 in the first-described form of the device, shown  
 at Figs. 1 and 2 and in use we combine with  
 the split tubular member  $d^2$  a collar or per-  
 forated disk  $k$ , the function of which is to con-  
 fine in proper relative place the parts of the 75  
 member  $d^2$ , in order that the socket may be  
 always in shape to properly receive and hold  
 laterally the end of the spindle  $g$ , and also  
 that the external diameter of the split tube  $d^2$   
 may be gaged to a perfect gage in all the 80  
 fixtures made, (of a given size,) so that the end  
 plates  $m$  (which are all made with the same-  
 sized central aperture) will all fit and work  
 alike on the spindle-tips in assembling the 85  
 parts of the entire roller-fixture. As illus-  
 trated, the outer end of the actuating-spring  
 I of the roller is, in the case of the use of that  
 form of spindle-tip seen at Fig. 3, fastened to  
 the spindle-tip only, instead of to both the 90  
 latter and the wooden spindle  $e$ , as in the use  
 of the form of sheet-metal device shown at  
 Figs. 1 and 2.

The modification shown at Fig. 4 embodies  
 a sheet-metal spindle-tip composed of a dif-  
 ferently-formed blank from those used in 95  
 making the tips shown in the preceding fig-  
 ures, the blank being folded over at the  
 end of the inner end member  $d^3$ , its end por-  
 tions forming the outer end member  $a^2$  of the  
 spindle-tip, and the extremities of the blank 100  
 overlapped, as seen at  $o$ , and so that the over-  
 lapped ends can be sprung slightly toward  
 each other to force the teat  $o$  into the brack-  
 et's slot, from which said teat cannot there-  
 after escape accidentally. In making our im- 105  
 proved device in this form the inner mem-  
 ber is adapted either to be inserted into the  
 end of a wooded spindle or to enter the outer  
 end of a tubular metallic spindle designed to  
 turn freely on its axis. 110

In lieu of any one of the forms seen in the  
 figures so far described our improved device  
 may be made of two separate parts struck up  
 and then riveted or otherwise fastened to- 115  
 gether, as illustrated at Fig. 5, and in thus  
 making our spindle-tip we have contemplated  
 the shaping of the duplicate parts so that  
 when fastened together they will produce a  
 spindle-tip similar in external form to any  
 one of the other forms shown; but this general 120  
 form may, however, be varied by making the  
 device, as seen at Fig. 6, with projections to  
 engage the roller-pawls instead of the aper-  
 tures, thus omitting one feature of our inven-  
 tion. 125

It will be understood that in the manu-  
 facture of spindle-tips according to our in-  
 vention of sheet metal or malleable stock  
 first cut into blanks and then struck up and  
 bent into final form not only can they be pro- 130  
 duced with all the units more exactly alike  
 than it is possible to make the castings, but  
 can be made with greater precision, so that  
 as substitutes or interchangeable duplicates



in assembling all the parts to produce the roller-fixtures complete less trouble and greater perfection in the complete shade-roller fixtures are attained to.

5 Having now so fully described our invention that those skilled in the art can make and use shade-roller fixtures embodying in one or another form either one or all of the separate parts or features thereof, what we claim as  
10 new, and desire to secure by Letters Patent, is—

1. A spindle-tip for spring-rollers, composed of sheet metal bent and shaped into form, comprising an inner end member substantially  
15 cylindrically in contour, a loop-like outer end portion, as specified, and an intermediate enlarged body portion having an opening through it diametrically to permit the engagement with said body portion of the pawl  
20 of the roller and to permit the passage of dirt through said opening, all substantially as hereinbefore set forth.

2. A spindle-tip composed of a sheet metal blank shaped and bent on itself at about its  
25 middle lengthwise to form an outer end member adapted to engage with a slotted bracket, an enlarged middle member or portion, as specified, and a hollow inner end portion com-

prising the end portions of the said blank, all substantially as and for the purposes herein- 30 before set forth.

3. The combination, with a spindle-tip composed of a sheet-metal blank shaped and bent on itself at about its middle lengthwise to form an outer end member adapted to engage  
35 with a slotted bracket, an enlarged middle member or portion, as specified, and a hollow inner end portion comprising the end portions of the blank, of a washer or confining-collar  $\frac{1}{2}$ , all substantially in the manner and for the  
40 purposes hereinbefore set forth.

4. A spindle-tip composed of a sheet-metal blank shaped and bent on itself lengthwise to form an outer end member adapted to engage  
45 with a slotted bracket, an enlarged middle member or portion, as specified, and a hollow inner end member, all substantially as and for the purposes hereinbefore set forth.

In witness whereof we have hereunto set our hands this 29th day of December, 1891.

JUDSON C. PERKINS.  
LEWIS E. LEIGH.

In presence of—

DEXTER W. PARKER,  
ERNEST A. LEIGH.