

No. 793,556.

PATENTED JUNE 27, 1905.

A. G. WILSON & E. TOMPKINS.  
NEEDLE CAP FOR KNITTING MACHINES.

APPLICATION FILED OCT. 15, 1904.

FIG. 1

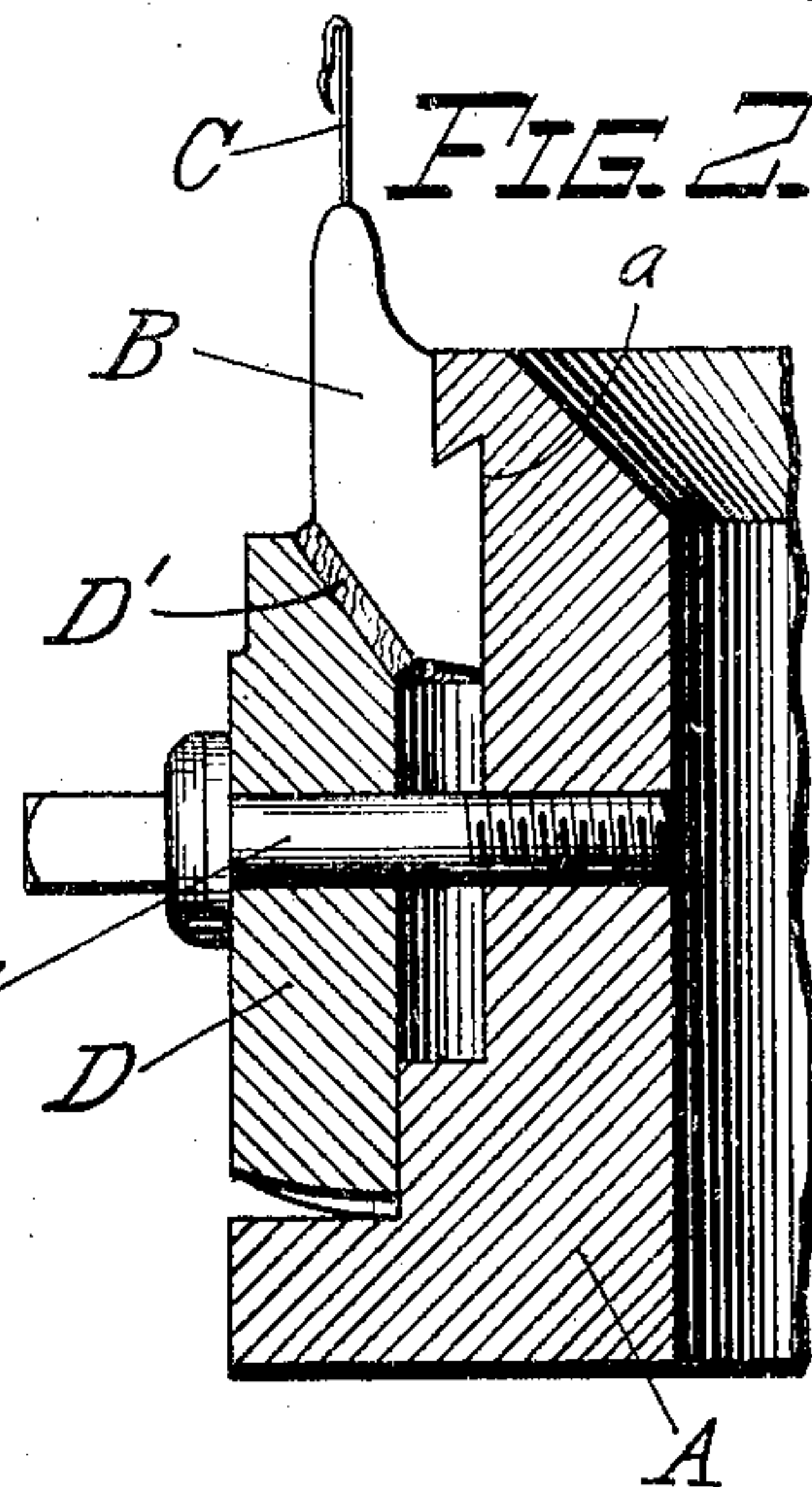
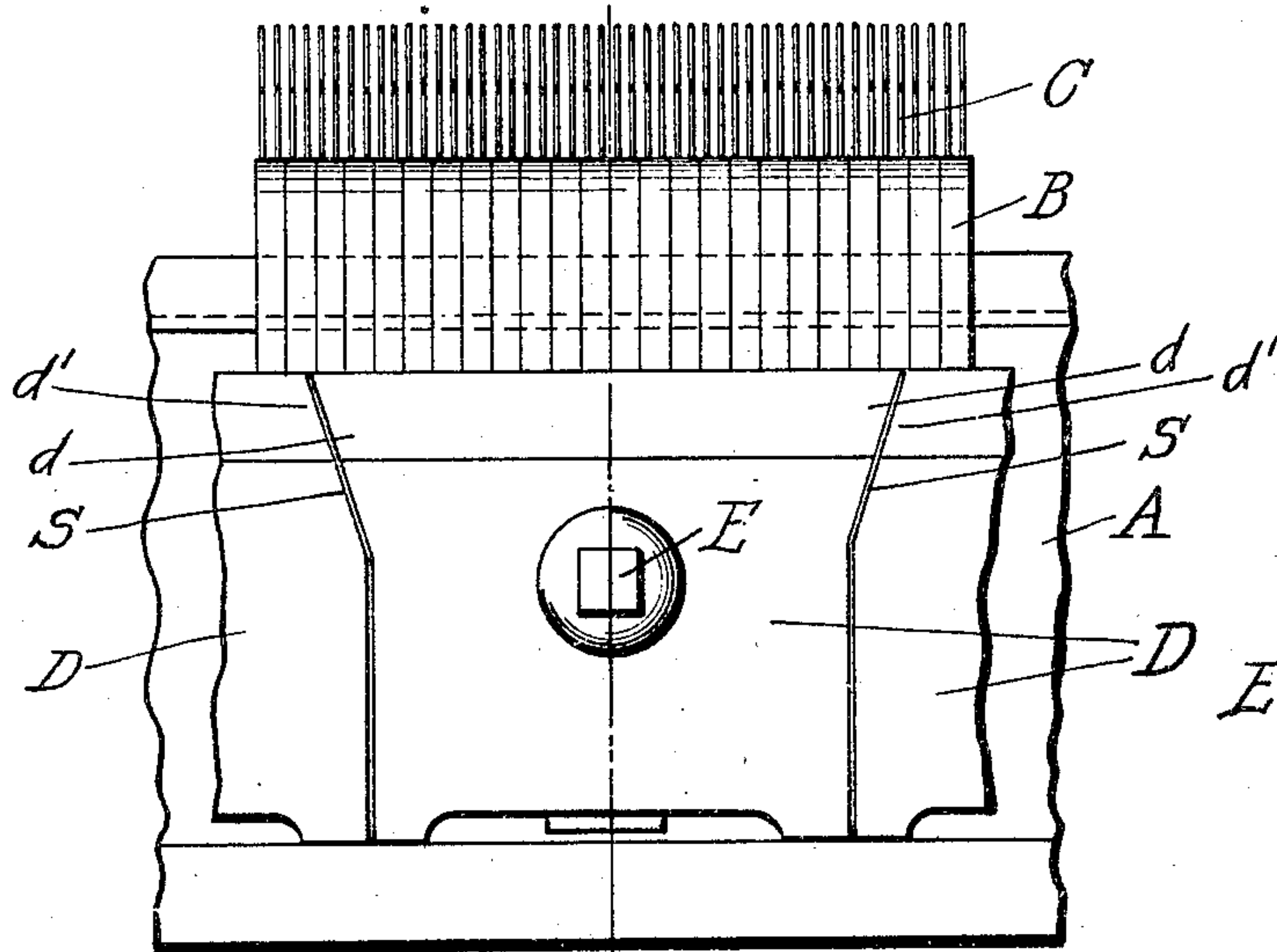


FIG. 3

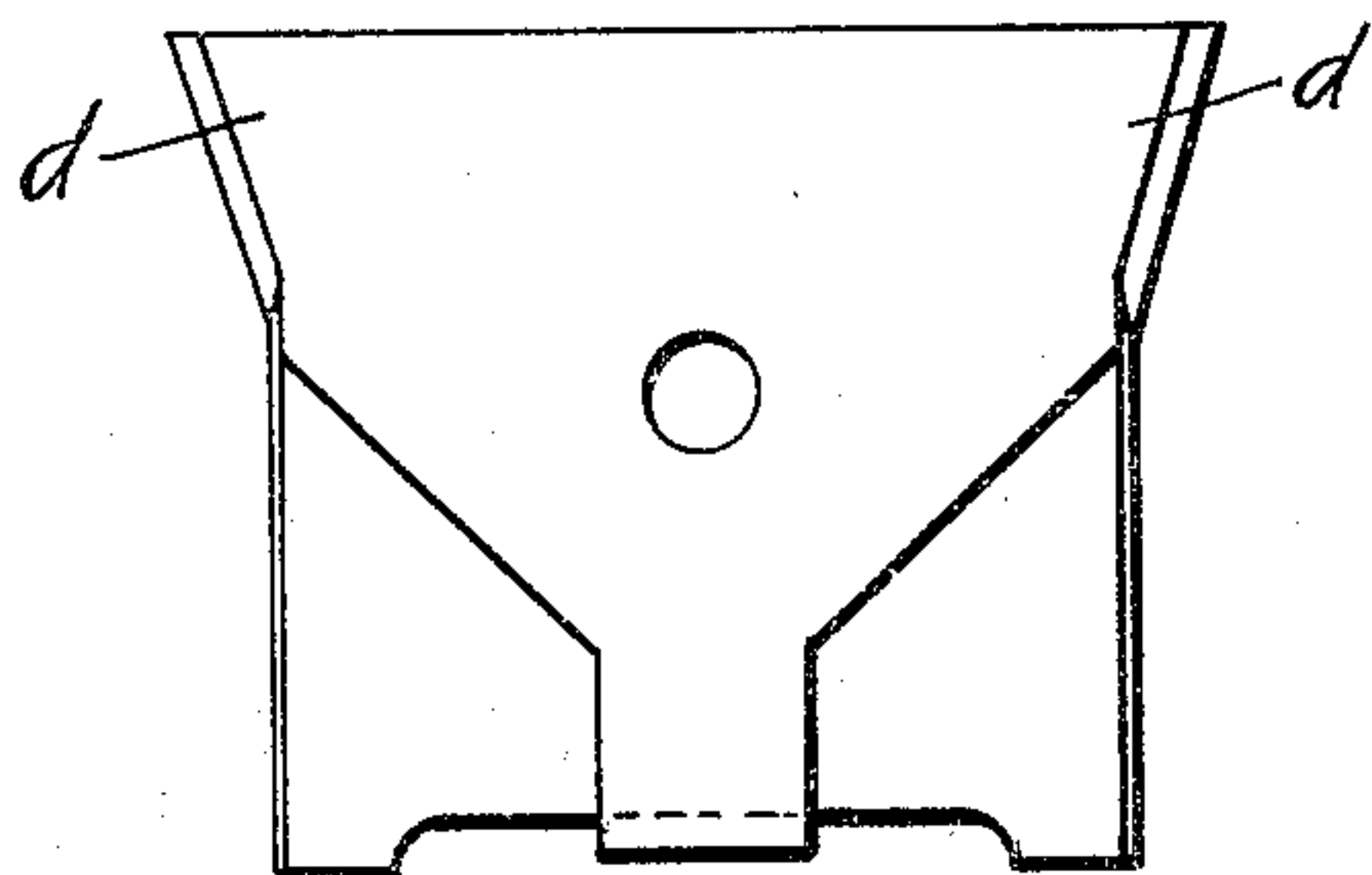


FIG. 4

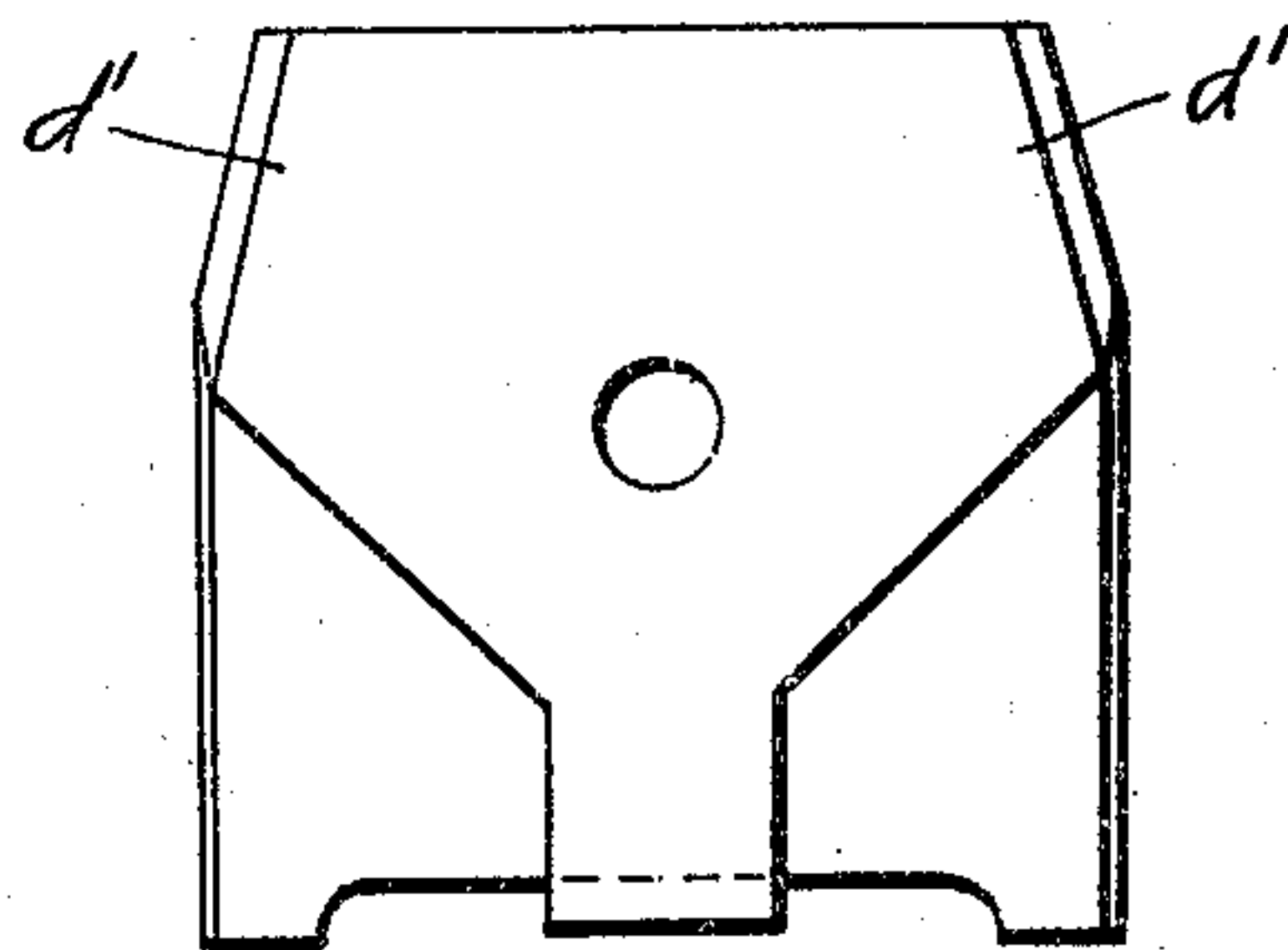
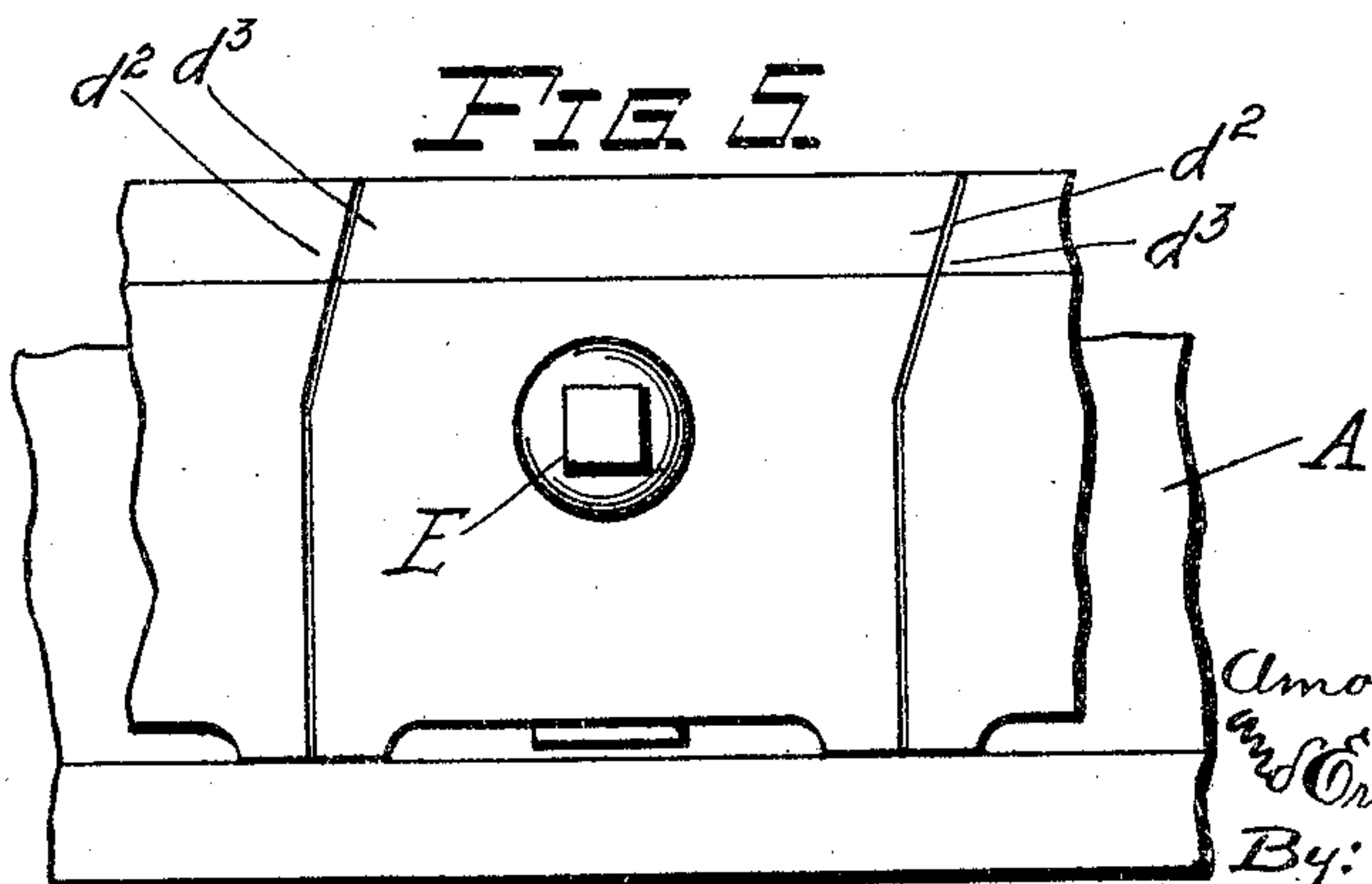


FIG. 5



Witnesses

*P. H. Mallinckrodt.*  
*James F. Mansfield.*

Inventors  
*Amos G. Wilson.*  
*E. Ernest Tompkins.*  
By:  
*Alexander T. Dowell*  
Attorneys.



# UNITED STATES PATENT OFFICE.

AMOS G. WILSON, OF ELMIRA, AND ERNEST TOMPKINS, OF TROY, NEW YORK, ASSIGNORS TO TOMPKINS BROTHERS COMPANY, OF TROY, NEW YORK.

## NEEDLE-CAP FOR KNITTING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 793,556, dated June 27, 1905.

Application filed October 15, 1904. Serial No. 228,533.

*To all whom it may concern:*

Be it known that we, AMOS G. WILSON, of Elmira, Chemung county, and ERNEST TOMPKINS, of Troy, Rensselaer county, New York, have invented certain new and useful Improvements in Needle-Caps for Knitting-Machines; and we hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form part of this specification.

This invention is an improvement in knitting-machines in which the needle-leads are secured to the periphery of the cylinder by means of removable plates or caps which clamp the leads in place on the cylinder. The object of this construction is to facilitate the placing and removal of the needles and to allow different numbers or sizes of needles to be used on one machine, according to the kind or grade of work being performed thereby. These needle-caps are ordinarily faced with leather or some yielding material, so that they will hold a set of needle-leads securely notwithstanding slight variations in the latter. Naturally a space is left between the ends of adjacent needle-caps, and frequently narrow or single needle-leads will work out through such spaces, resulting in breaking of needles and damage to the work or machine.

The object of the present invention is to provide needle-caps which will prevent any such accidents occurring and will always securely and positively retain the leads in position; and it consists in the novel construction of the caps, as hereinafter described and claimed.

In the drawings, Figure 1 is a detail side view of part of a knitting-machine cylinder, needle-leads, and needle-caps embodying our invention. Fig. 2 is a section on line 2-2, Fig. 1. Figs. 3 and 4 are inside face views of the caps. Fig. 5 is a detail view illustrating a slight modification of the caps.

The cylinder A of the knitting-machine is of ordinary construction and has the peripheral lead-receiving groove *a*, in which the bases of the leads B are arranged as usual. Each lead B may carry one or more needles C. The leads are clamped in position by

means of an annular series of needle-caps D, removably attached to the cylinder by means of bolts E, tapped through openings in the caps into threaded holes in the cylinder, as usual. The peculiar novel characteristic of our invention is the making of these needle-caps with overlapping or interlocking ends, so that the spaces S between the adjacent caps D will be at an angle to the spaces between or meeting faces of the leads B. The leads B are fitted closely together, and their meeting faces are perpendicular or parallel with the axis of the cylinder, while the spaces S between the leads will be inclined to the axis of the cylinder, and thus intersect the planes of the leads. By this construction the ends of the one or the other of adjacent needle-caps will overlap narrow leads and any possible practical space between adjacent leads B, so that if a narrow lead comes directly intermediate two adjacent caps it will be held by the overlapped ends of one or both caps and cannot work loose. This construction enhances the utility of the yielding packing D' on the inner faces of the caps and insures a more uniform clamping of all the leads, even if they be of varying widths and slightly varying in thickness.

As shown in Figs. 1 to 4, every alternate cap has divergent projections *d* at its ends, while every other alternate cap has retreating or convergent ends, as at *d'*. The parts *d* and *d'* of adjacent caps therefore overlap or interlock in a measure, so that the spaces S between the adjacent caps are at an angle to the leads, as shown.

In Fig. 5 each cap has one projecting end *d*<sup>2</sup> and one retreating end *d*<sup>3</sup>, the projecting end *d*<sup>2</sup> of one cap overlapping or interlocking the retreating end *d*<sup>3</sup> of the adjacent cap, as shown, and thus the spaces S between parts *d*<sup>2</sup> *d*<sup>3</sup> are inclined to the leads.

Obviously the caps may have their ends otherwise formed to interlock or overlap for the purpose and with the effect stated herein, and therefore the invention is not restricted to the specific forms of caps shown in the drawings.

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

1. For a knitting-machine, needle-caps having their adjacent ends inclined at an angle to the needle-leads, substantially as described.

2. In combination with the needle-cylinder and needle-leads of a knitting-machine; needle-caps having their adjacent ends inclined at an angle to the leads, and means for removably securing said caps to the cylinder, substantially as described.

3. In a knitting-machine, the combination of a cylinder having a lead-receiving groove, and needle-leads fitted in said groove; with needle-caps to retain the needle-leads in such groove, said caps having angular ends so that the spaces between adjacent caps are inclined relatively to the leads, substantially as described.

4. In a knitting-machine, the combination of the needle-cylinder, and needle-leads; with needle-lead-securing caps having interlocking or overlapping ends to prevent working out of the leads between the caps, substantially as described.

5. In a knitting-machine, the combination with the needle-cylinder, and needle-leads, of needle-caps removably attached to the cylinder to retain the leads in place, alternate caps having projecting and retreating ends, for the purpose and substantially as described.

In testimony that we claim the foregoing as our own we affix our signatures in presence of two witnesses.

AMOS G. WILSON.  
ERNEST TOMPKINS.

In presence of—

WM. H. BILBROUGH,  
S. O. GARCIA.