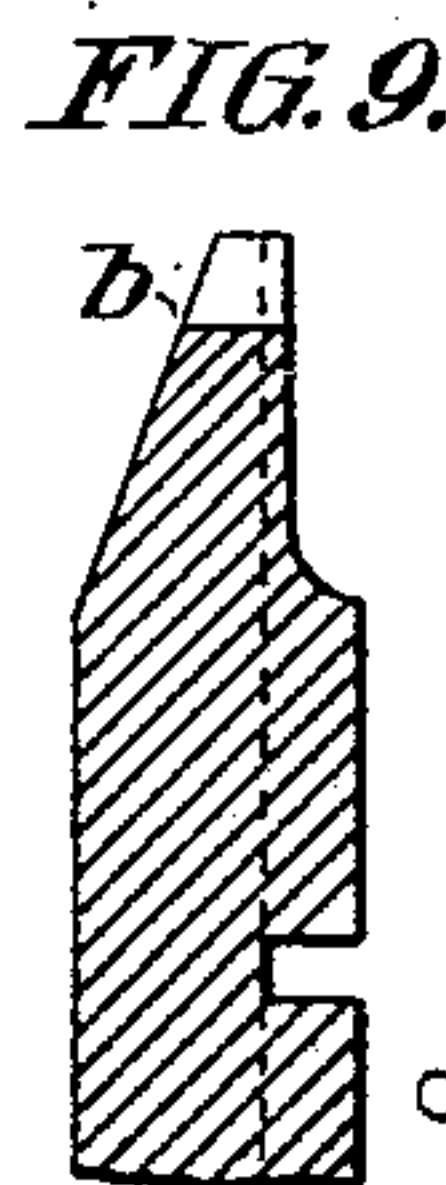
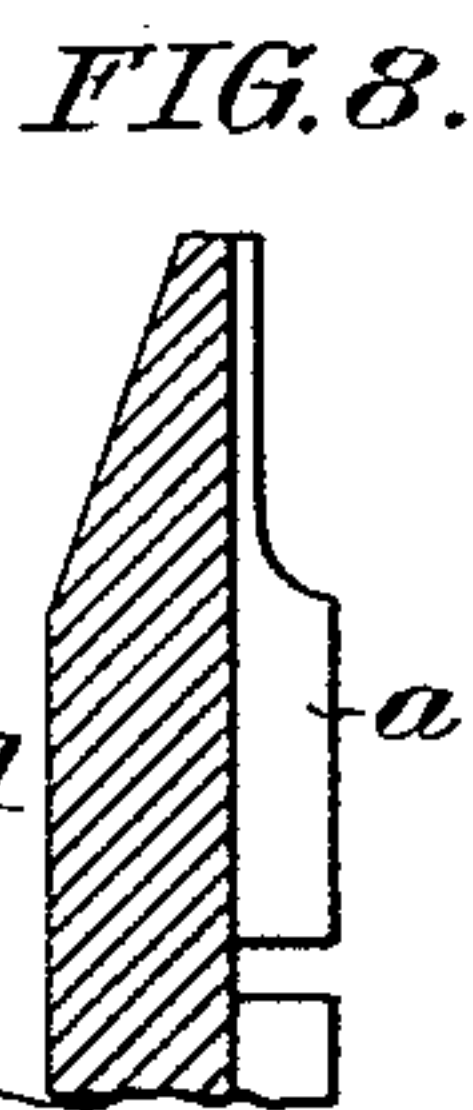
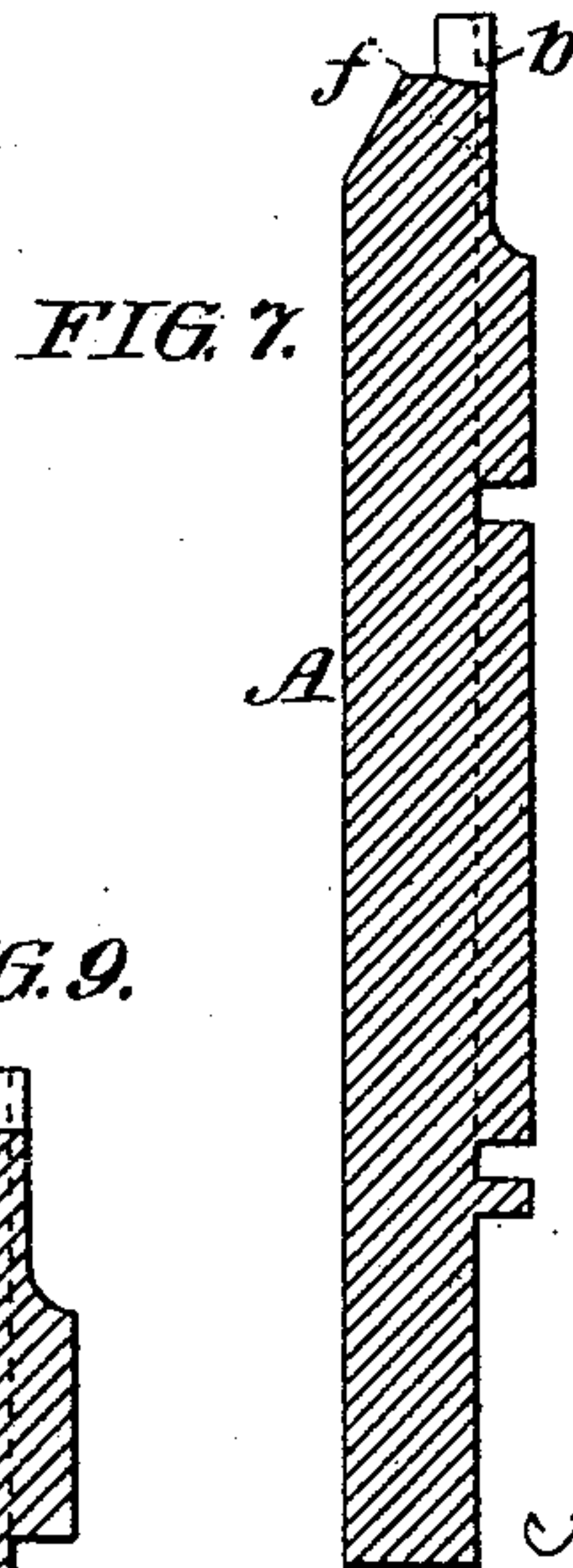
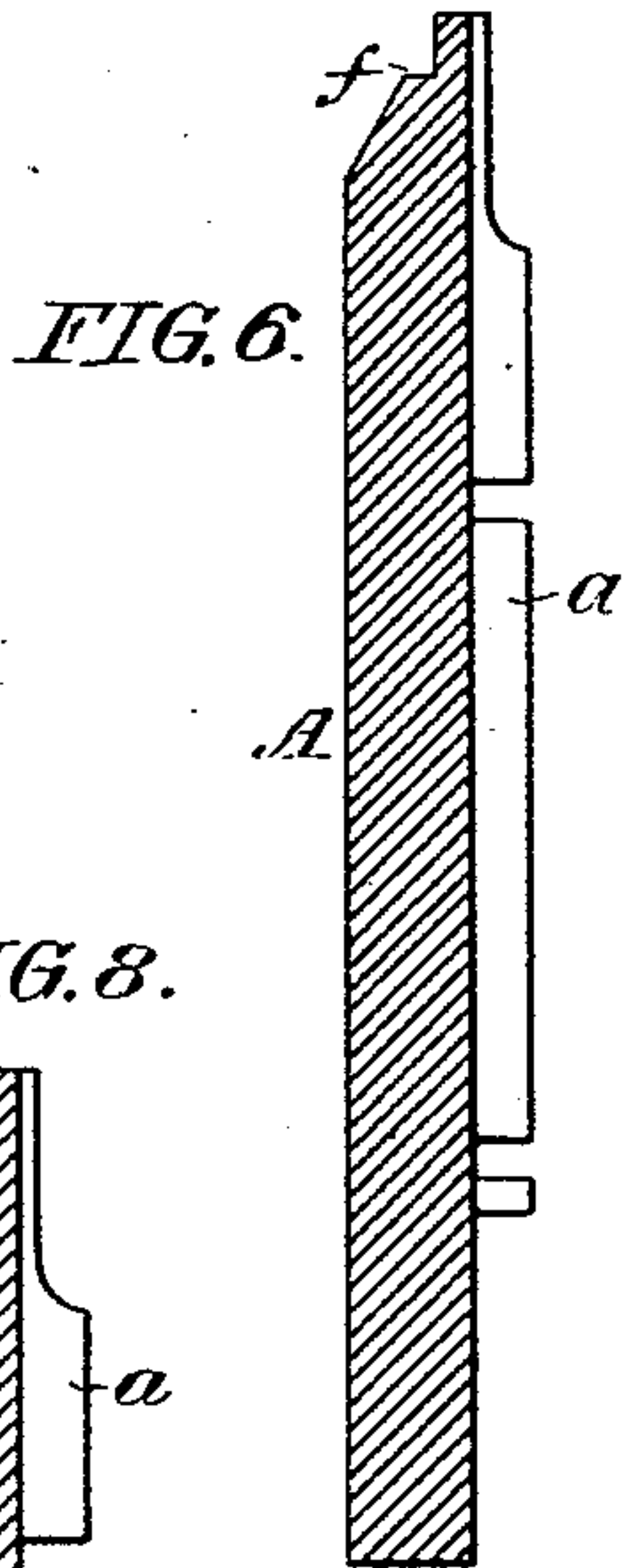
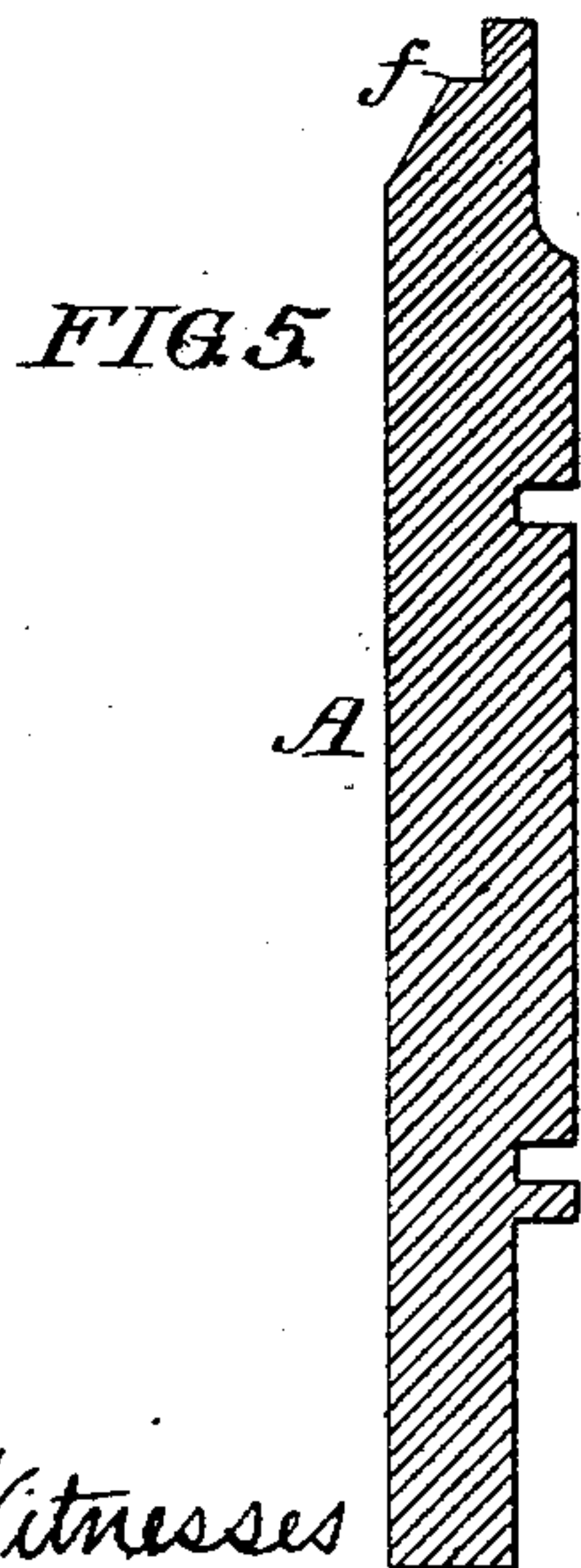
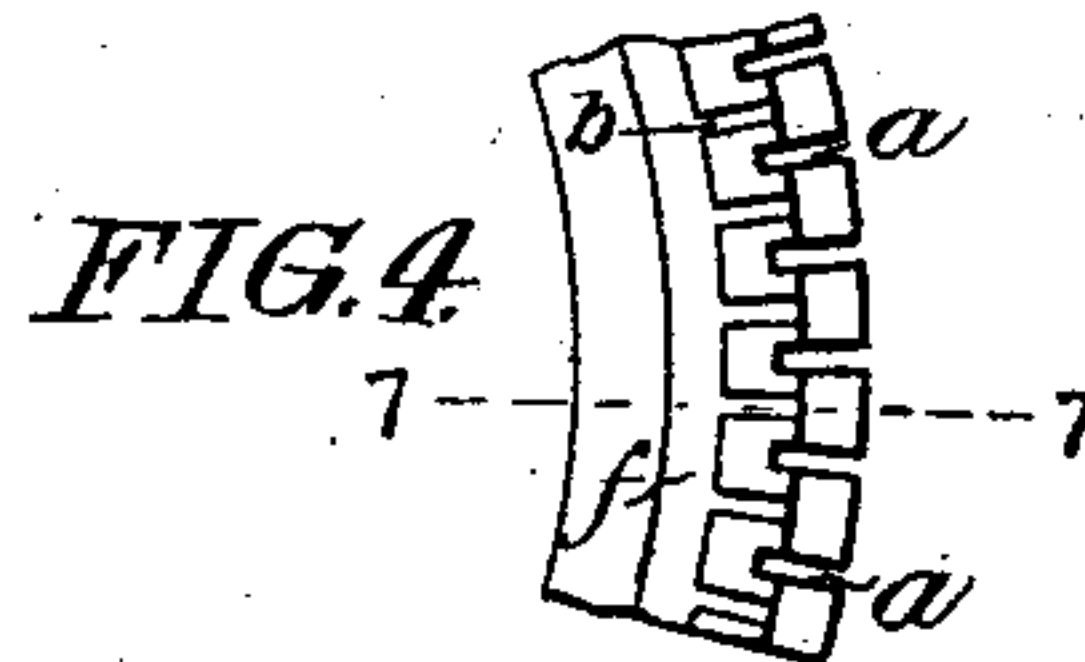
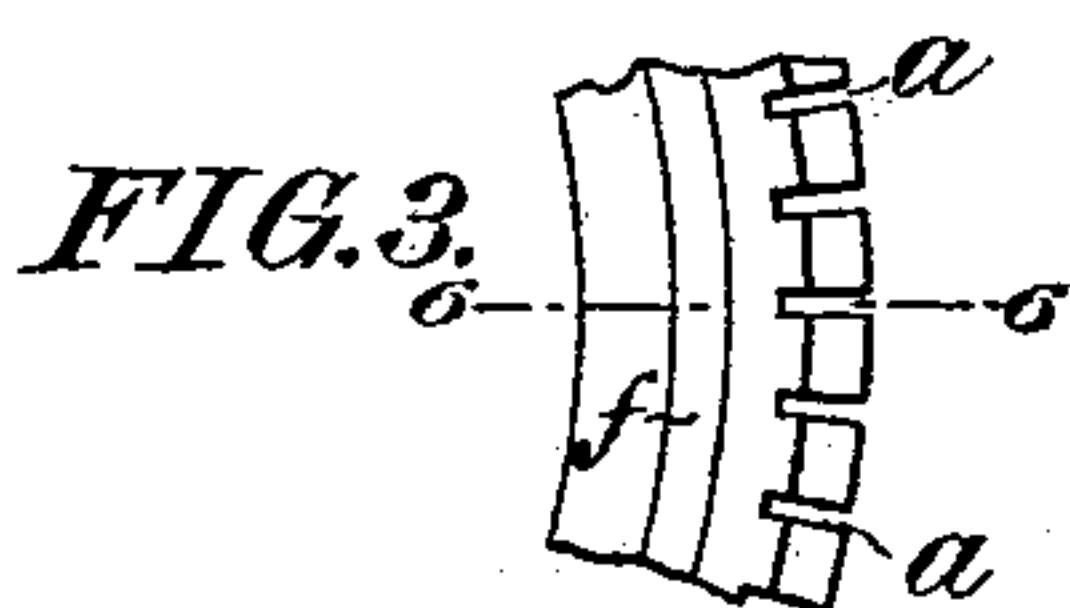
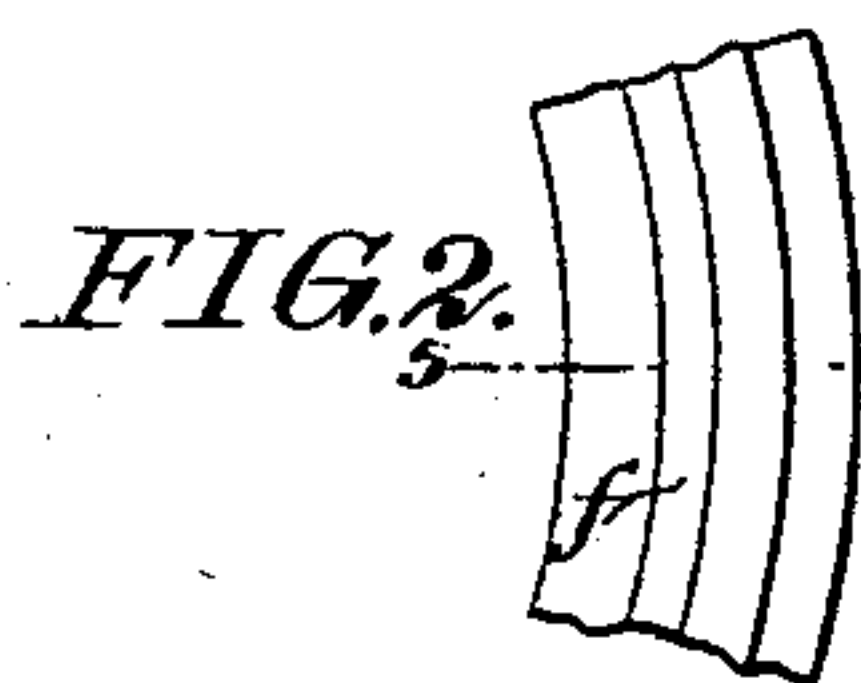
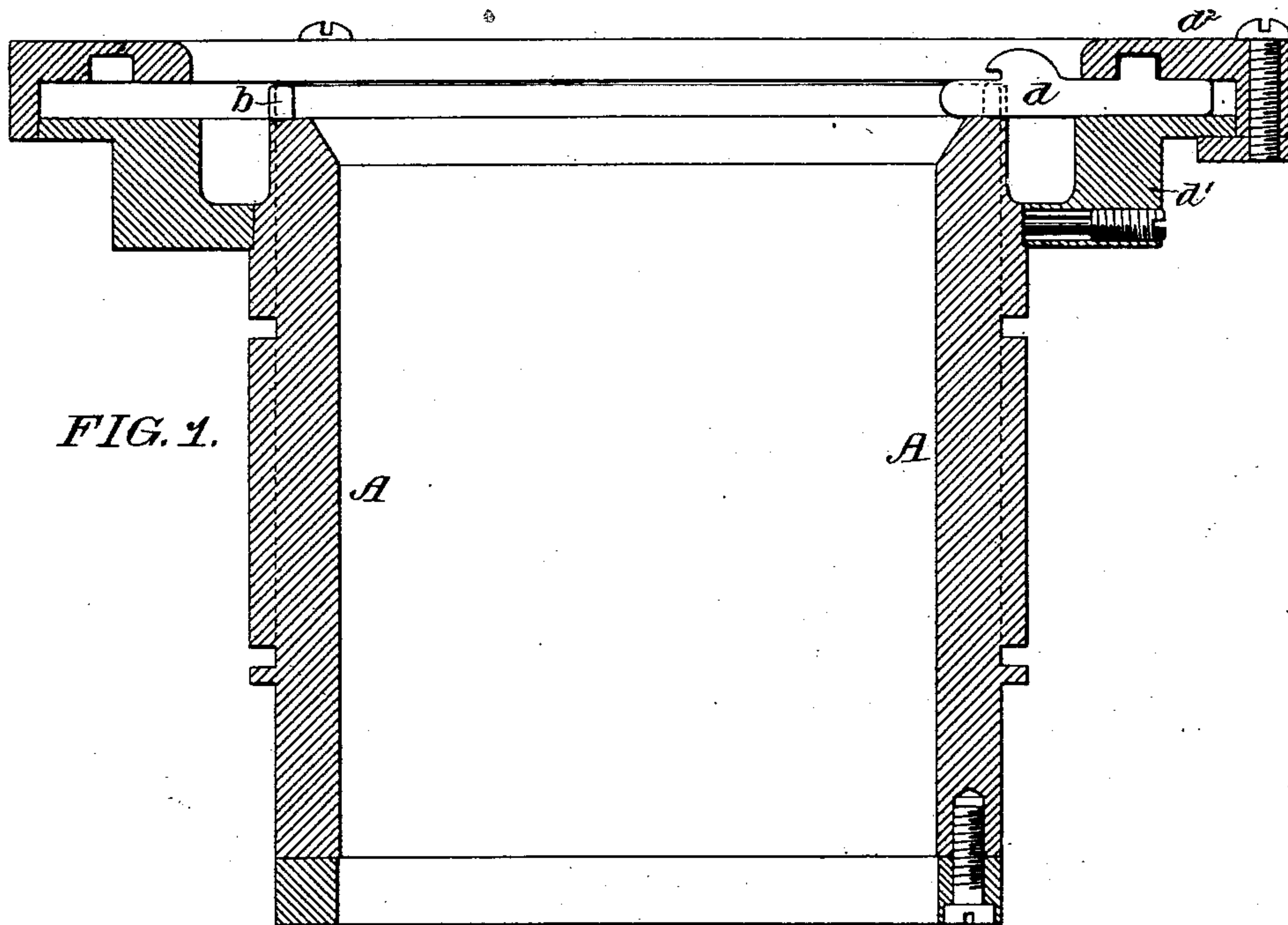


(No Model.)

L. N. D. WILLIAMS.  
KNITTING MACHINE BAR OR CYLINDER.

No. 541,406.

Patented June 18, 1895.



Witnesses  
Murray C. Boyer  
Chas. H. Brown

Inventor  
Louis N. D. Williams  
by his Attorneys  
Howson & Gibson



# UNITED STATES PATENT OFFICE.

LOUIS N. D. WILLIAMS, OF ASHBOURNE, ASSIGNOR OF ONE-HALF TO ROBERT W. SCOTT, OF PHILADELPHIA, PENNSYLVANIA.

## KNITTING-MACHINE BAR OR CYLINDER.

SPECIFICATION forming part of Letters Patent No. 541,406, dated June 18, 1895.

Application filed January 17, 1895. Serial No. 535,274. (No model.)

*To all whom it may concern:*

Be it known that I, LOUIS N. D. WILLIAMS, a citizen of the United States, residing in Ashbourne, Montgomery county, Pennsylvania, have invented certain Improvements in Knitting-Machine Bars or Cylinders, of which the following is a specification.

My invention relates to that class of needle bars or cylinders in connection with which transversely sliding web holders are employed, the object of my invention being to so construct such a needle bar or cylinder that a true bearing will be presented by the same for the said transversely sliding web holders. This object I attain in the manner hereinafter set forth, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical sectional view of a knitting-machine cylinder constructed in accordance with my invention, this view also showing the web-holder ring, one of the web-holders, and the cam-ring for operating said web-holders. Figs. 2, 3, and 4 are plan or top views of a portion of the needle-cylinder, illustrating the appearance of the same in the successive stages of its manufacture. Figs. 5, 6, and 7 are vertical sectional views, respectively, on the lines 5 5, Fig. 2, 6 6, Fig. 3, and 7 7, Fig. 4; and Figs. 8 and 9 are views illustrating the ordinary method of making the cylinder.

Knitting machine needle bars or cylinders A of the character to which my invention relates, have the usual vertical needle guiding grooves *a*, and also, at the top, the transverse grooves *b*, formed in the ribs intervening between the needle grooves, and serving as guides for the transversely reciprocating web holders *d*, which are carried by the ring *d'* mounted upon the needle cylinder and are operated by a cam ring *d''*, the bases of the grooves *b* serving also for the vertical support of the inner ends of the web holders. Usually, in making a knitting machine cylinder of this character, the upper end of the cylinder is turned off, as shown in Fig. 8 so as to form an internal bevel and the vertical needle grooves are then formed in the exterior of the cylinder by means of a longitudinally moving milling tool, after which the transverse grooves *b* are formed in the upper ends

of the intervening ribs by means of a transversely moving milling tool. As each of these grooves *b* is, therefore, independently formed, absolute accuracy is not always attainable, that is to say, it frequently happens that the bases of the grooves are not all in precisely the same plane. Hence the inner ends of some of the web holders are deprived, either wholly or partially, of the support which the upper end of the needle cylinder or bar should afford them. In order to overcome this objection, I form, at a proper distance below the top of the cylinder or bar, in the preliminary preparation of the same, a shoulder *f*, this shoulder being formed either by turning, in the case of a cylinder, or by planing in the case of a straight bar, and being, of course, absolutely true throughout the entire circumference of the cylinder or the entire length of the bar.

In the subsequent formation of the grooves *b*, the milling tool acts only on the projecting rib outside of the shoulder *f* and the cuts are preferably such that the bases of the grooves so formed by the milling tool are below the level of said shoulder, so that the latter constitutes the sole horizontal bearing for the inner ends of the web holders, and, as the shoulder *f* is in the same plane throughout the entire cylinder or bar, it follows that the inner ends of all of the web holders must be uniformly and properly supported, irregularity in the cuts of the milling tool having no effect upon such uniform support, it being understood, of course, that the milling tool is always set so as to cut at least as deeply as the level of the shoulder.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. The mode herein described of preparing the end of a needle bar or cylinder for the guidance of transverse web holders, said mode consisting in first forming, some distance below the end of the bar or cylinder, a shoulder in the same plane throughout, and afterward cutting guiding grooves for the web holders in that portion of the bar or cylinder which is laterally beyond said shoulder, substantially as specified.

2. A knitting machine needle bar or cylinder

der having lateral recesses in the end portion  
of the same for the reception and guidance  
of transversely movable web holders, and hav-  
ing laterally beyond said recesses, a shoulder  
5 for the support of said web holders, said  
shoulder being in the same plane throughout  
the bar or cylinder, substantially as specified.

In testimony whereof I have signed my  
name to this specification in the presence of  
two subscribing witnesses.

LOUIS N. D. WILLIAMS.

Witnesses:

WILL. A. BARR,

FRANK E. BECHTOLD.