

No. 834,598.

PATENTED OCT. 30, 1906.

B. WIENER.

KNITTING MACHINE NEEDLE AND HOLDER THEREFOR.

APPLICATION FILED DEC. 6, 1905.

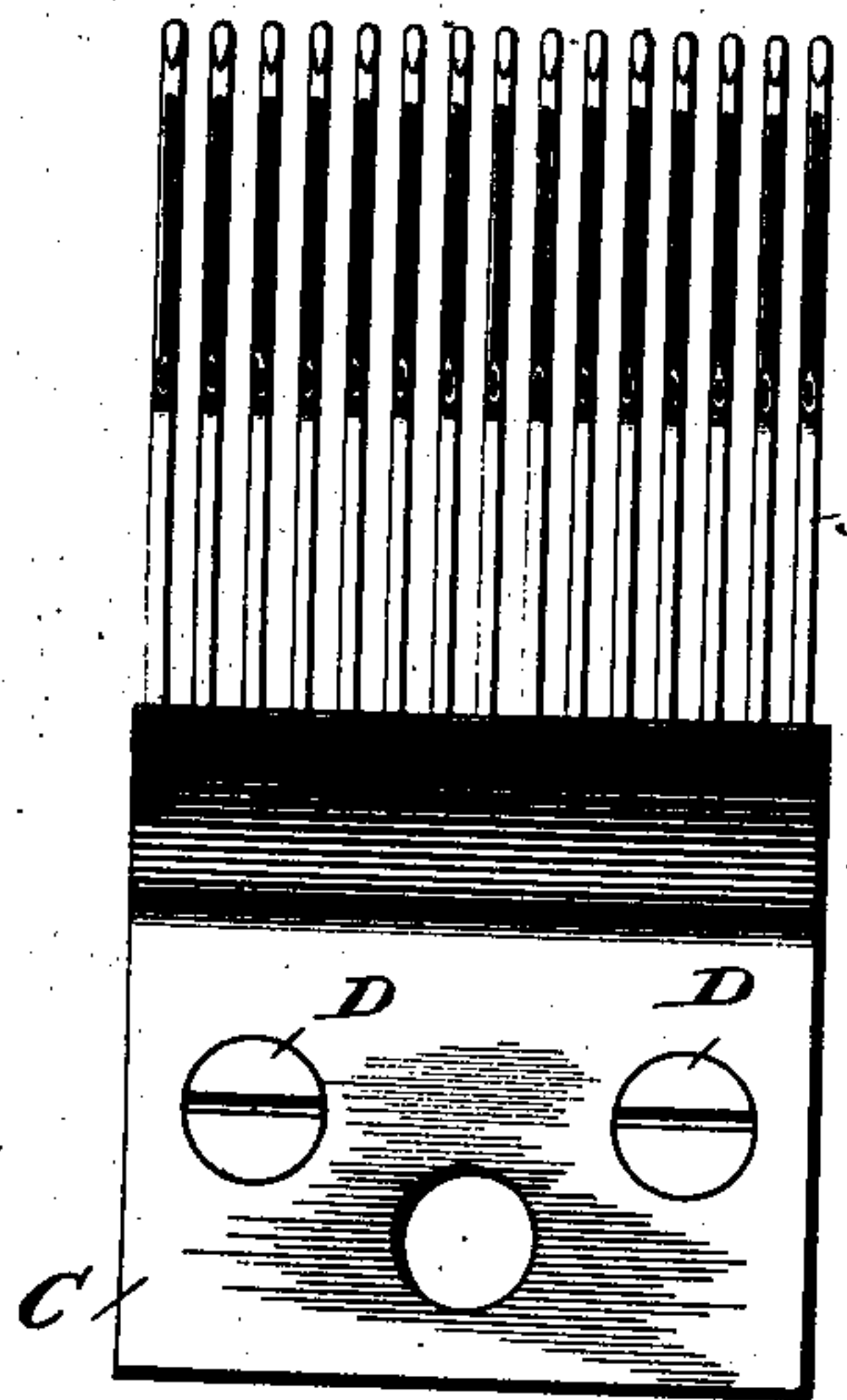


Fig. 1.

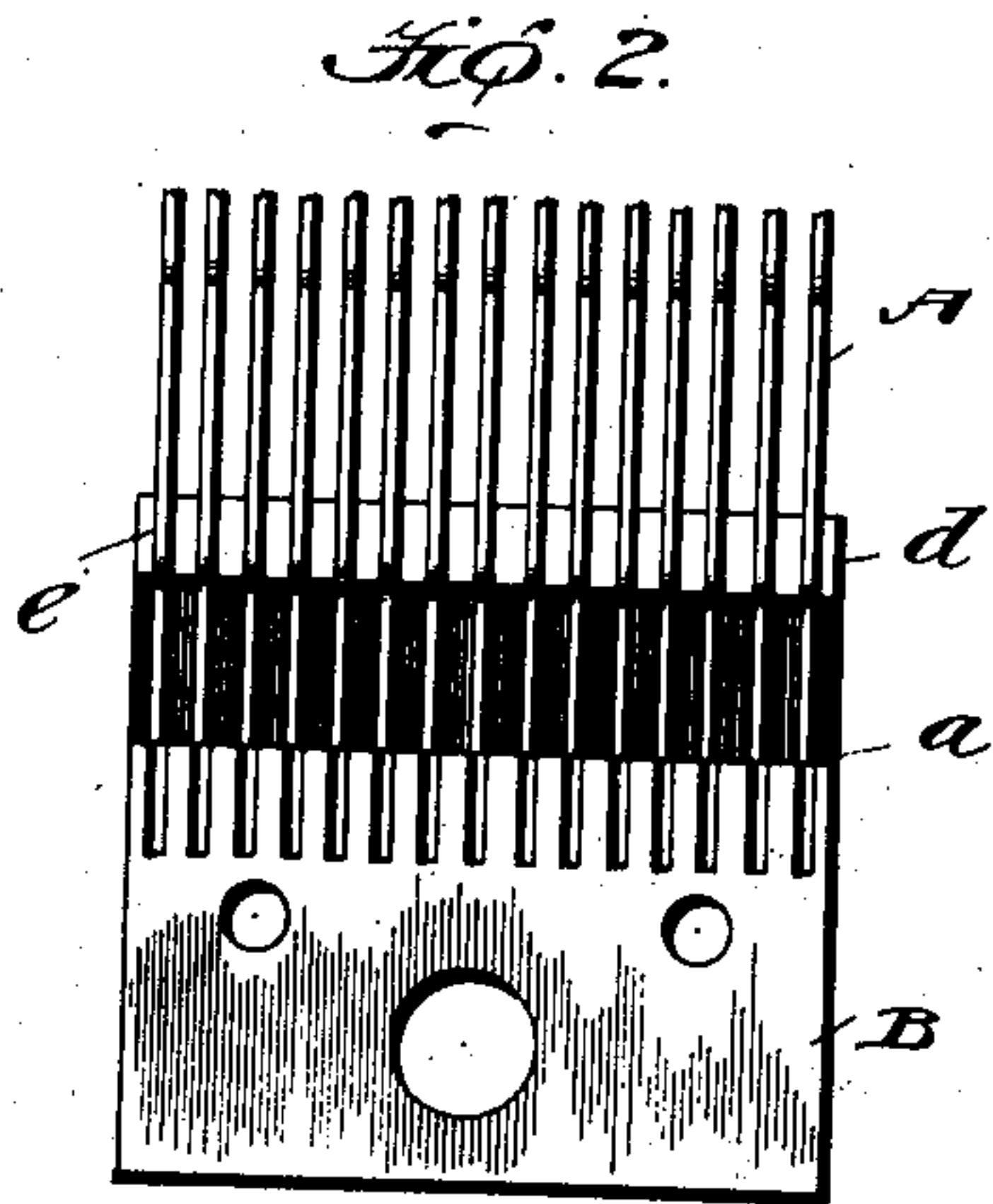


Fig. 2.

Fig. 3.

Fig. 4.

Fig. 6.

Fig. 5.

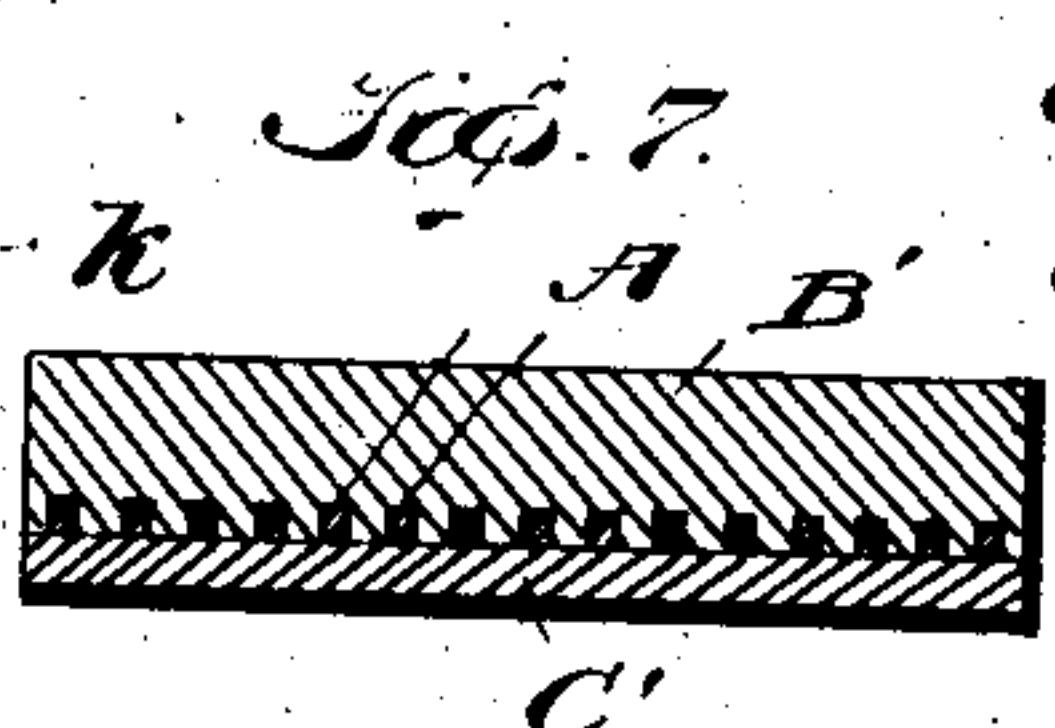
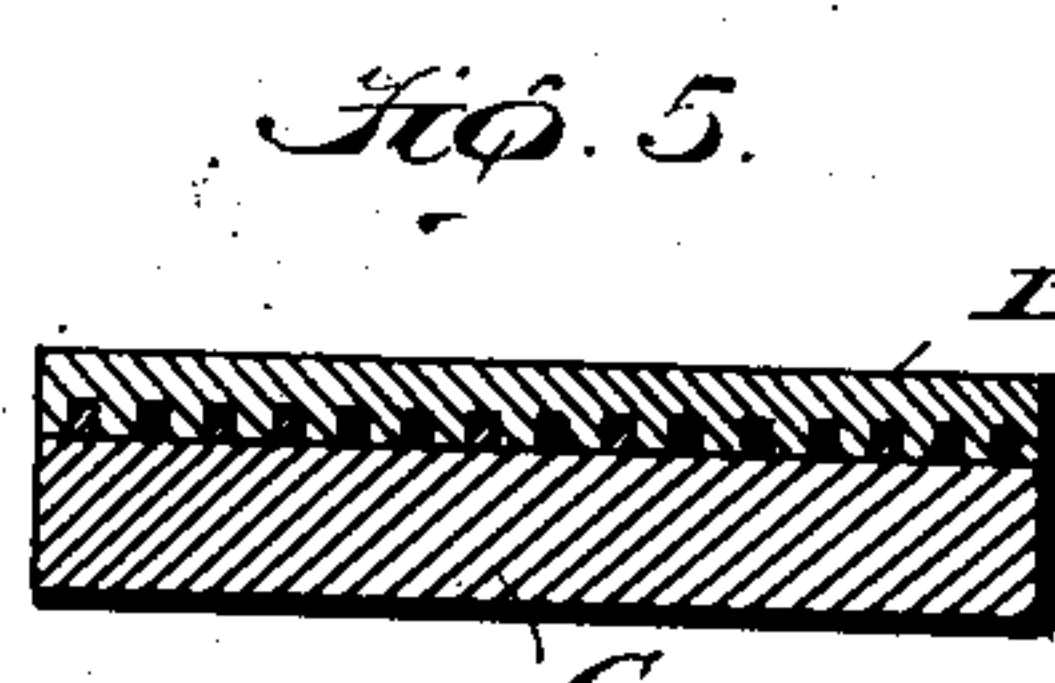
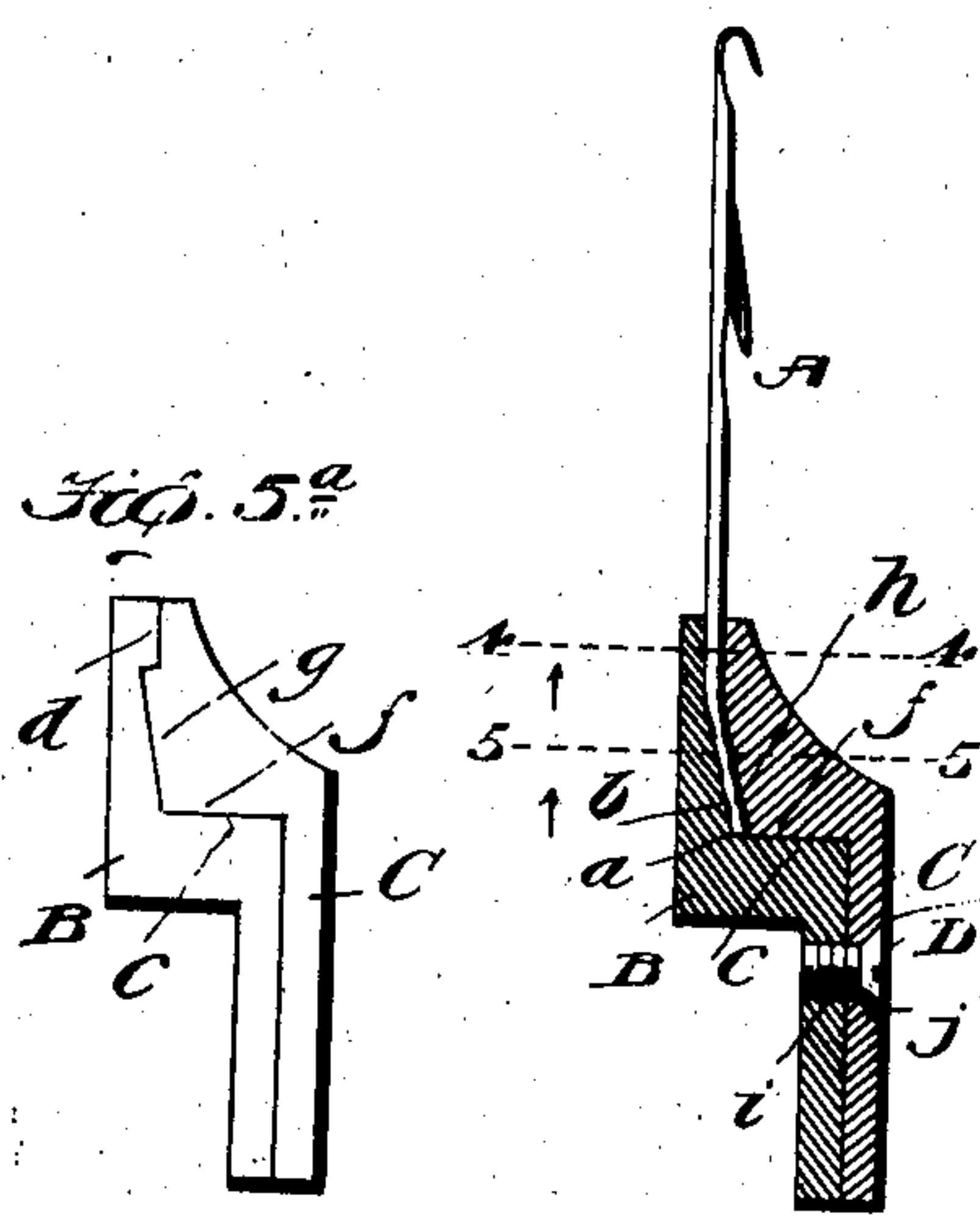


Fig. 7.



Witnesses.
[Signature]
W. E. Healy

Inventor.
B. Wiener.
by *[Signature]*
James Sheehy & Co.

UNITED STATES PATENT OFFICE.

BERTHOLD WIENER, OF CLEVELAND, OHIO.

KNITTING-MACHINE NEEDLE AND HOLDER THEREFOR.

No. 834,598.

Specification of Letters Patent.

Patented Oct. 30, 1906.

Application filed December 6, 1905. Serial No. 290,556.

To all whom it may concern:

Be it known that I, BERTHOLD WIENER, a subject of the German Emperor, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented new and useful Improvements in Knitting-Machine Needles and Holders Therefor, of which the following is a specification.

My invention pertains to knitting-machine needles and means for holding the said needles in their operating position; and it contemplates the provision of needles and a holder therefor of such construction that there is no liability of the needles becoming casually displaced while in use and yet when any one of the needles breaks or is otherwise impaired it may be expeditiously removed and replaced with a perfect needle, and thus without disturbing or in any way impairing the efficiency of the other needles complementary to the holder.

With the foregoing in mind the invention will be fully understood from the following description and claims when the same are considered in connection with the accompanying drawings, forming part of this specification, in which—

Figure 1 is an elevation illustrating a needle-holder constructed in accordance with my invention and its full complement of needles. Fig. 2 is a view illustrating the outer plate of the needle-holder removed and also illustrating the upper portions of the needles broken away. Fig. 3 is a vertical transverse section of the improvement. Figs. 4 and 5 are horizontal sections taken in the planes indicated by the lines 4 4 and 5 5, respectively, of Fig. 3. Fig. 5^a is an edge elevation of the needle-holder. Fig. 6 is an edge elevation, partly in section, of a modification, hereinafter referred to in detail; and Fig. 7 is a horizontal section taken in the plane indicated by the line 7 7 of Fig. 6. Fig. 8 is an enlarged perspective view of the lower portion of one of the needles common to both embodiments.

Referring by letter to the said drawings, and more particularly to Figs. 1 to 5^a thereof, A A are the several needles of my improvement. These needles are preferably of the construction commonly employed in knitting-machines, with the exception that their shanks or heel portions *a* are of angular form in cross-section and are suitably roughened, as indicated by *b*, for a purpose which will be presently set forth.

B is the inner member of the needle-holder. C is the outer member of said holder, and D are the screws which constitute the means which I prefer to employ for connecting the members B and C together and clamping the shanks or heel portions of the needles between said members B and C. The member B of the holder is formed of cast-steel or other material compatible with the purpose of the invention and is provided at an intermediate point of its length with a shoulder or abutment *c*, as best shown in Fig. 3. It is also provided at its upper edge with a rib *d*, in which are a plurality of vertical grooves *e* for seating the upper portions of the needles—i. e., the portions immediately above the shanks—after the manner best shown in Fig. 4, with a view of bracing the needles and in that way lessening the liability of the needles being broken or displaced while in use. The shanks or heel portions *a* of the needles are preferably bent at an obtuse angle to the remainder thereof, this in order to enable the said shanks to rest flat on the portion of the member B intermediate the rib *d* and the abutment or shoulder *c* and abut at their rear or lower ends against the said shoulder or abutment. This arrangement of the needle-shanks is best shown in Fig. 3, and obviously it is calculated to strengthen the connection of the needles to the holder and in that way prolong the usefulness of the needles.

As best shown in Figs. 3 to 5 of the drawings, the outer member C of the needle-holder is provided with a shoulder *f*, arranged above and opposed to the shoulder *c* of member B, and is also provided with a projection *g*, Fig. 5^a, the said projection *g* corresponding in size to the space in member B between the rib *d* and the shoulder or abutment *c* and having vertically-disposed grooves *h* of a size to snugly receive the angular and roughened shanks *a* of the gang of needles A. By virtue of this construction it will be apparent that when the member C of the holder is snugly arranged against and connected to the member B after the manner shown in Fig. 3 the shanks or heel portions *a* will be frictionally held between the said members B and C in such manner that casual displacement or shifting of any of the needles relative to the holder will be precluded, and yet when the member C is disconnected from the member B or the connection between said members is loosened any one of the needles may be readily withdrawn and replaced with

a new needle without disturbing or in any way impairing the other needles of the gang. In this connection it will be noticed that when the connection between the members B and C is loosened the grooves *h* in the projection *g* of the member C hold the roughened shanks or heel portions *a* of the needles and in that way prevent displacement or change in position of the perfect needles incident to the removal of a broken or impaired needle and the insertion of a new needle.

As before stated, I prefer to connect the members B and C of the holder through the medium of screws *D*, which have threaded shanks let into threaded apertures *i* in the lower portion of the member B and also have heads *j* disposed in countersinks *k* in the lower portion of the member C. I desire it distinctly understood, however, that I do not confine myself to the connection of the members B and C through the medium of screws, inasmuch as the said members may be connected by any suitable means compatible with my invention without affecting the same.

In addition to the advantages which I have ascribed to the embodiment of my invention described in the foregoing it will be noticed that the said embodiment is simple and compact in construction and is as well adapted to withstand rough and constant usage as any other part of the mechanism of a knitting machine.

The embodiment of the invention shown in Figs. 6 and 7 comprises holder members B' and C'; needles A, which are similar to the needles A of Figs. 1 to 5—i. e., have roughened or slightly corrugated shanks or heel portions *a*—threaded pins *D'*, extending laterally outward from the lower portion of the member B' and through apertures in the lower portion of the member C', and wing or other suitable nuts *D''*, mounted on the pins *D'* and arranged to bear against the outer side of the member C', so as to clamp and hold said member against the member B'. In common with the member B of the embodiment shown in Figs. 1 to 5 the member B' of the modified construction is provided with an intermediate shoulder or abutment, which is lettered *c'*, and a rib on its upper edge, the said rib being lettered *d'* and provided with vertical grooves *e'*. The needles of the modified construction rest in the grooves *e'* of the member B' and abut at their lower ends against the shoulder *c'* thereof and are secured in such position by the inclined upper portion of the member C'. When the parts are thus arranged, the grooved rib *d'* of the member B' will obviously serve the same purpose as the grooved rib *d* of the embodiment shown in Figs. 1 to 5—that is to say, will brace and lend strength to the needles and at the same time assist in preventing casual displacement or shifting in

position of the perfect needles when the connection between the holder members is loosened and a broken or impaired needle is being removed and replaced with a new needle. In bracing and strengthening the needles the grooved rib *D'* is assisted by the shoulder or abutment *c'*, against which the lower ends of the needles abut, as best shown in Fig. 6.

In addition to the elements mentioned the modified construction of Figs. 6 and 7 comprises a strip *M* of rawhide, stout leather, or other suitable material. This strip *M* is interposed between the shanks *a* of the needles and the upper inclined portion of the holder member C'; and it serves by engaging the roughened or corrugated shanks to securely hold the needle against casual movement or displacement, and it also serves when the connection between the members B' and C' is loosened to hold the perfect needles against shifting while the broken or impaired needle is being removed and a new needle is being substituted therefor.

It will be gathered from the foregoing that the modified embodiment of my invention is almost, if not quite, as simple, compact, and efficient as the construction shown in Figs. 1 to 5.

I claim—

1. The combination with a gang of needles having shanks or heel portions disposed at an obtuse angle to the remainder thereof and roughened or corrugated; of a holder comprising two members detachably connected together and arranged to receive the shanks or heel portions of the needles between them, and means at the inner side of one of the members for engaging the said shank or heel portions of the needles and thereby retaining the same against displacement.

2. The combination with a gang of needles having shanks or heel portions disposed at an obtuse angle to the remainders thereof and roughened or corrugated; of a holder comprising two members detachably connected together and arranged to receive the shanks or heel portions of the needles between them, one of the said members having a shoulder or abutment which is presented to the lower ends of the needles, and means at the inner side of the other member for engaging the said shank or heel portions of the needles and retaining the same against displacement.

3. The combination with a gang of needles having roughened or corrugated shanks or heel portions disposed at an obtuse angle to the remainder thereof; of a holder comprising two members detachably connected together and arranged to receive the shanks or heel portions of the needles between them and provided with means for coacting with the roughened or corrugated shanks of the needles with a view of holding the needles against endwise movement or displacement.

4. The combination with a gang of needles; of a holder comprising a member having an abutment presented to the heels or lower ends of the needles, and also having a rib disposed above the abutment and provided with vertical grooves receiving the needles, a second member detachably connected to the first-mentioned member and arranged to clamp the needles in the grooves thereof, and means at the inner side of the second-mentioned member for engaging and holding the shanks or heel portions of the needles.

5. The combination with a gang of needles having roughened or corrugated shanks disposed at an obtuse angle to the remainders thereof; of a holder comprising a member having an abutment presented to the lower ends of the needles and also having a rib disposed above the abutment and provided with vertical grooves receiving the needles, a second member arranged to hold the needles in the grooves of the first-mentioned member, means at the inner side of the second-mentioned member for engaging the roughened or corrugated shanks of the needles, and means detachably connecting and holding the said members together.

6. The combination with a gang of needles having shanks disposed at an obtuse angle to the remainders thereof; of a holder comprising a member having an abutment presented to the lower ends of the needles and also having a rib provided with grooves receiving the needles, and a member detachably connected to the first-mentioned member and having a shoulder opposed to the abutment thereof and also having a grooved portion arranged intermediate the abutment and rib of the first-mentioned member and receiving in its grooves the shanks of the needles.

7. The combination with a gang of needles having roughened or corrugated shanks dis-

posed at an obtuse angle to their remainders; of a holder comprising a member having an abutment presented to the lower ends of the needles and also having a rib provided with grooves receiving the needles, and a member detachably connected to the first-mentioned member and having a shoulder opposed to the abutment thereof and also having a grooved portion arranged intermediate the abutment and rib of the first-mentioned member and receiving in its grooves the shanks of the needles.

8. The combination with a gang of needles having shanks deflected or disposed at an obtuse angle to the remainders thereof; of a holder having an abutment presented to the lower ends of the needles and also having a rib bearing against the needles above the shanks thereof, and a member detachably connected to the first-mentioned member and having a shoulder opposed to the abutment thereof and also having a grooved portion arranged intermediate the abutment and rib of the first-mentioned member and receiving in its grooves the shanks of the needles.

9. The combination with a gang of needles; of a holder comprising a member having a rib provided with grooves receiving the needles, and a member detachably connected to the first-mentioned member and having a grooved portion arranged to lap the rib of the first-mentioned member and receive in its grooves the needles.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

BERTHOLD WIENER.

Witnesses:

JOS. GOODHART,
S. P. ORTH.