

(No Model.)

S. S. COOK.

SINKER OR WEB HOLDER FOR KNITTING MACHINES.

No. 504,967.

Patented Sept. 12, 1893.

Fig. 1.

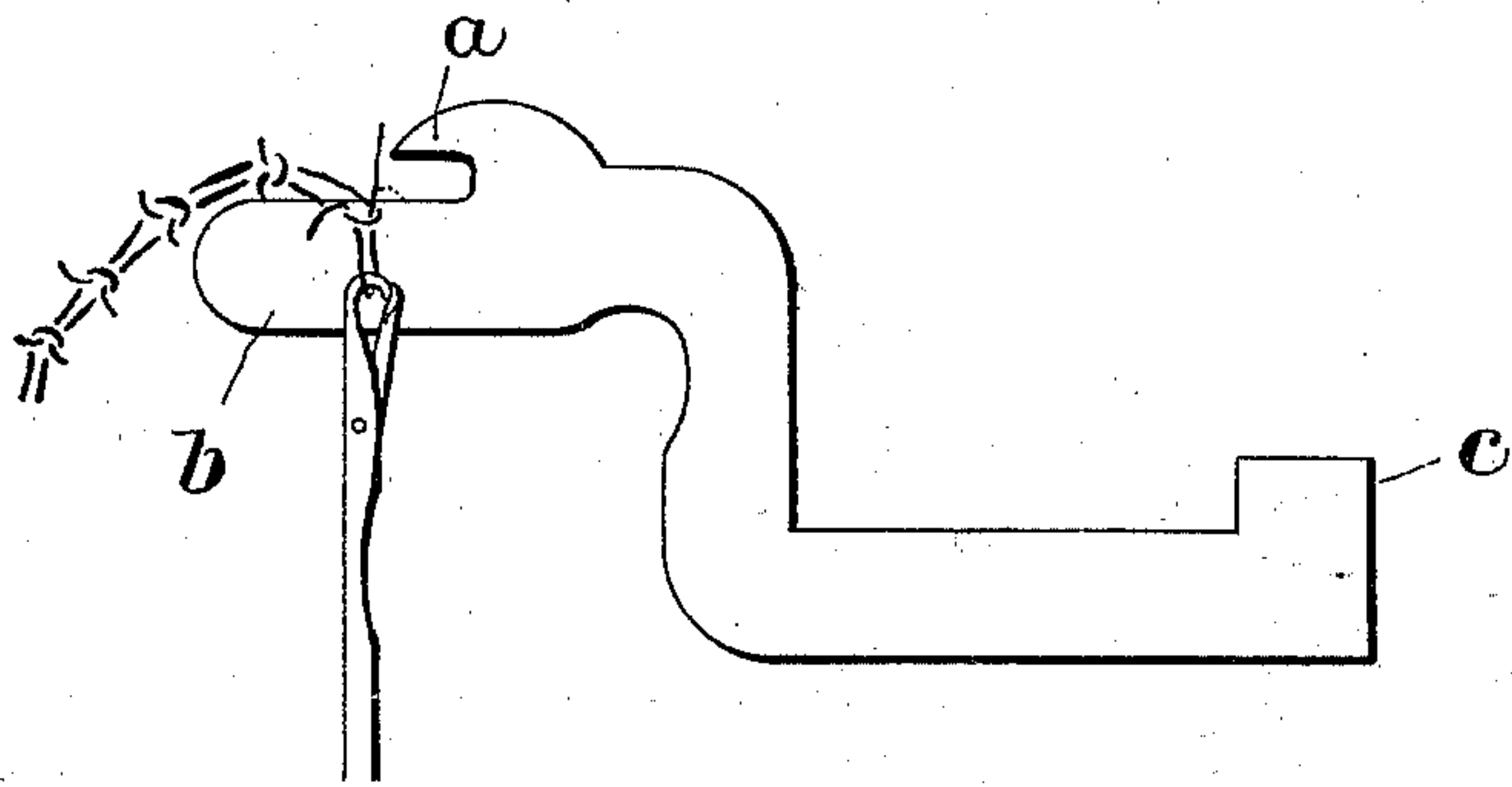


Fig. 2.

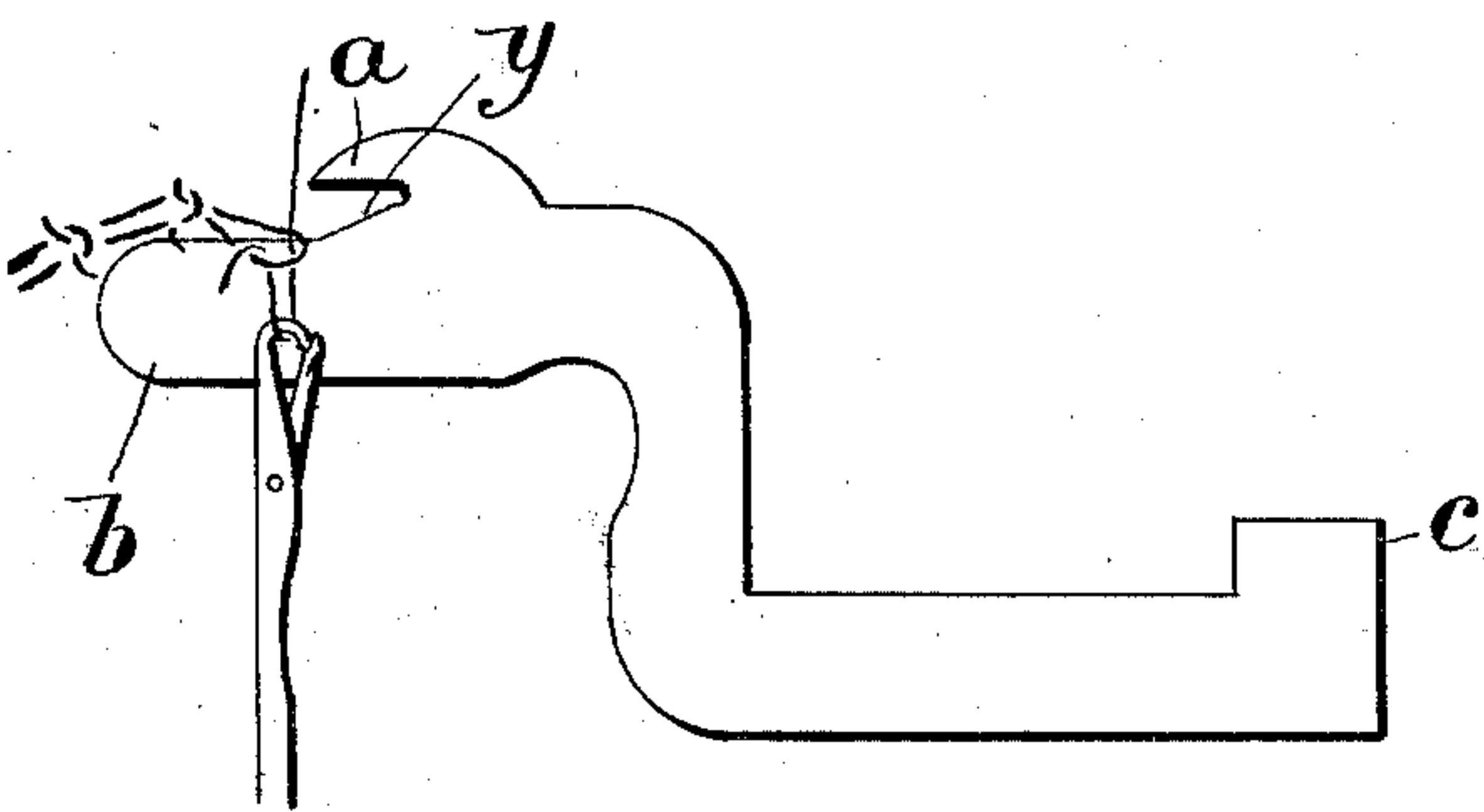


Fig. 3.

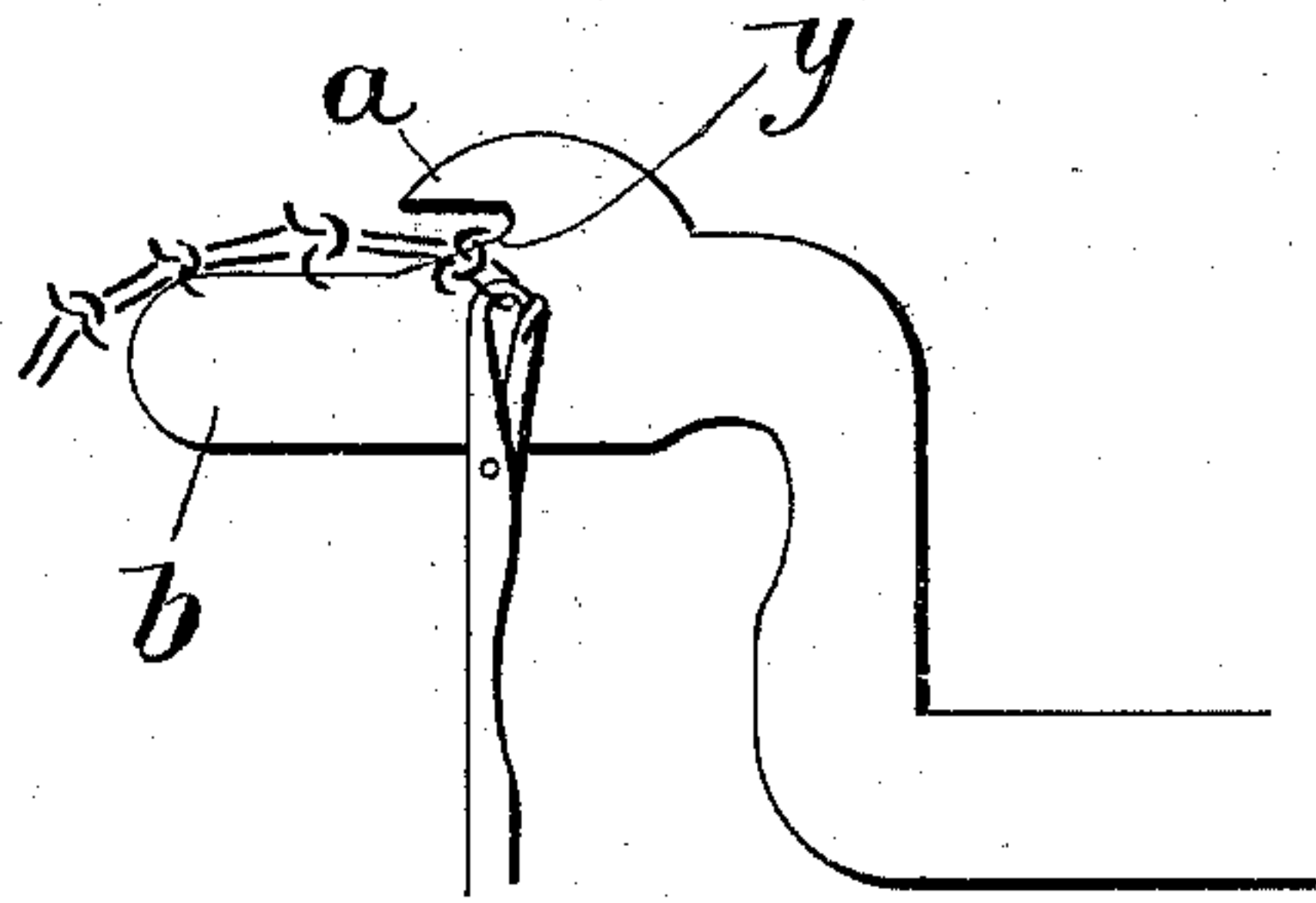


Fig. 6.

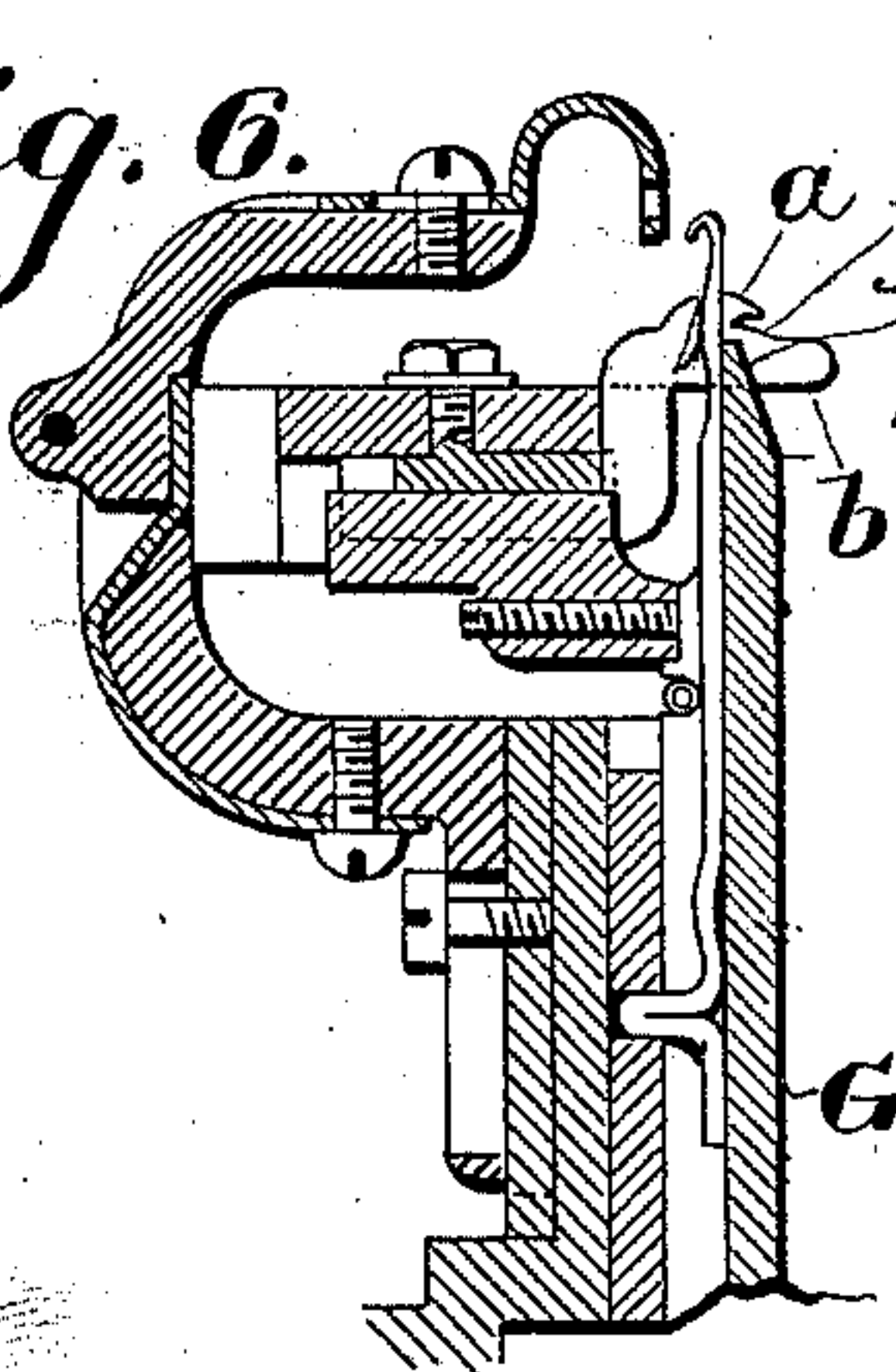


Fig. 4.

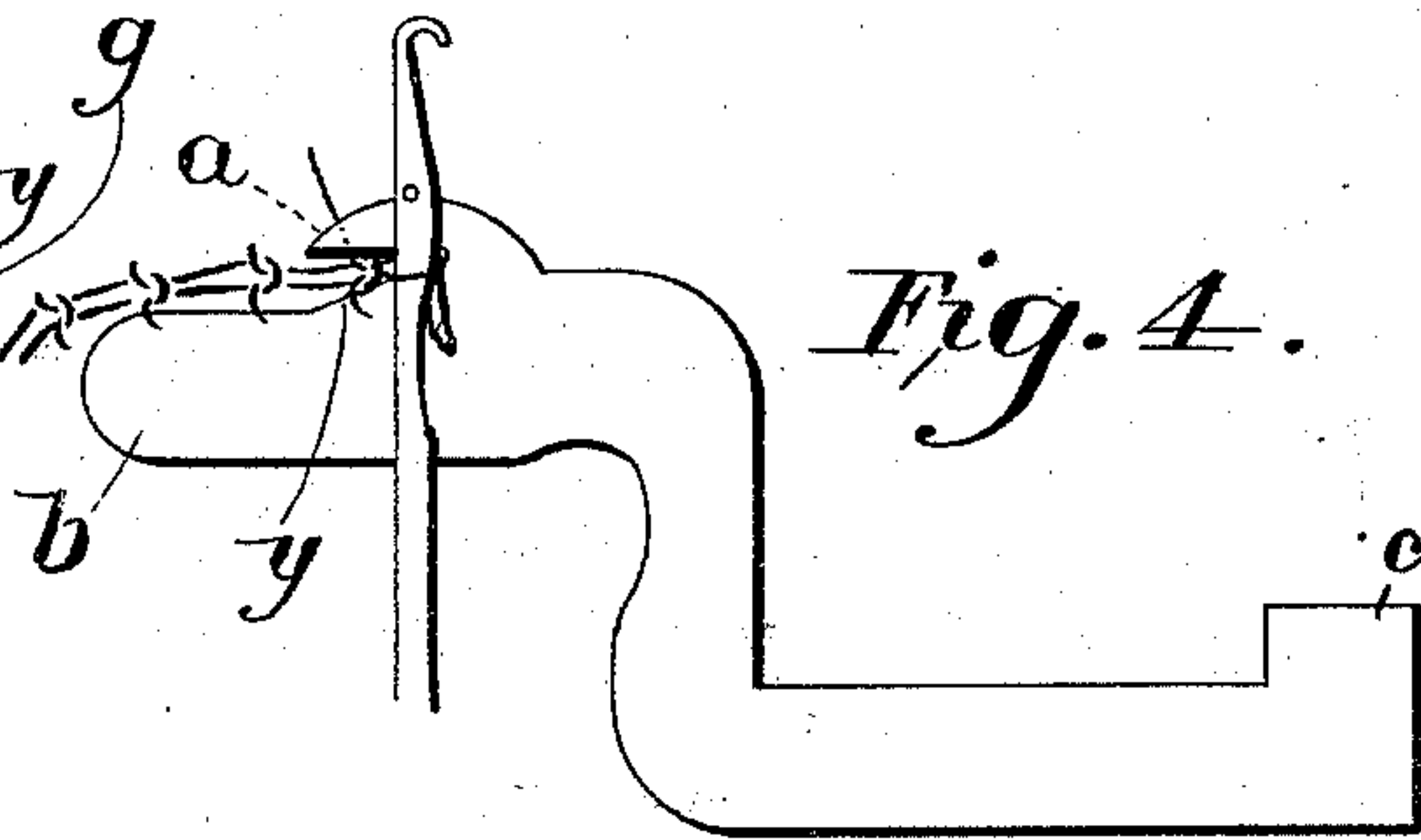
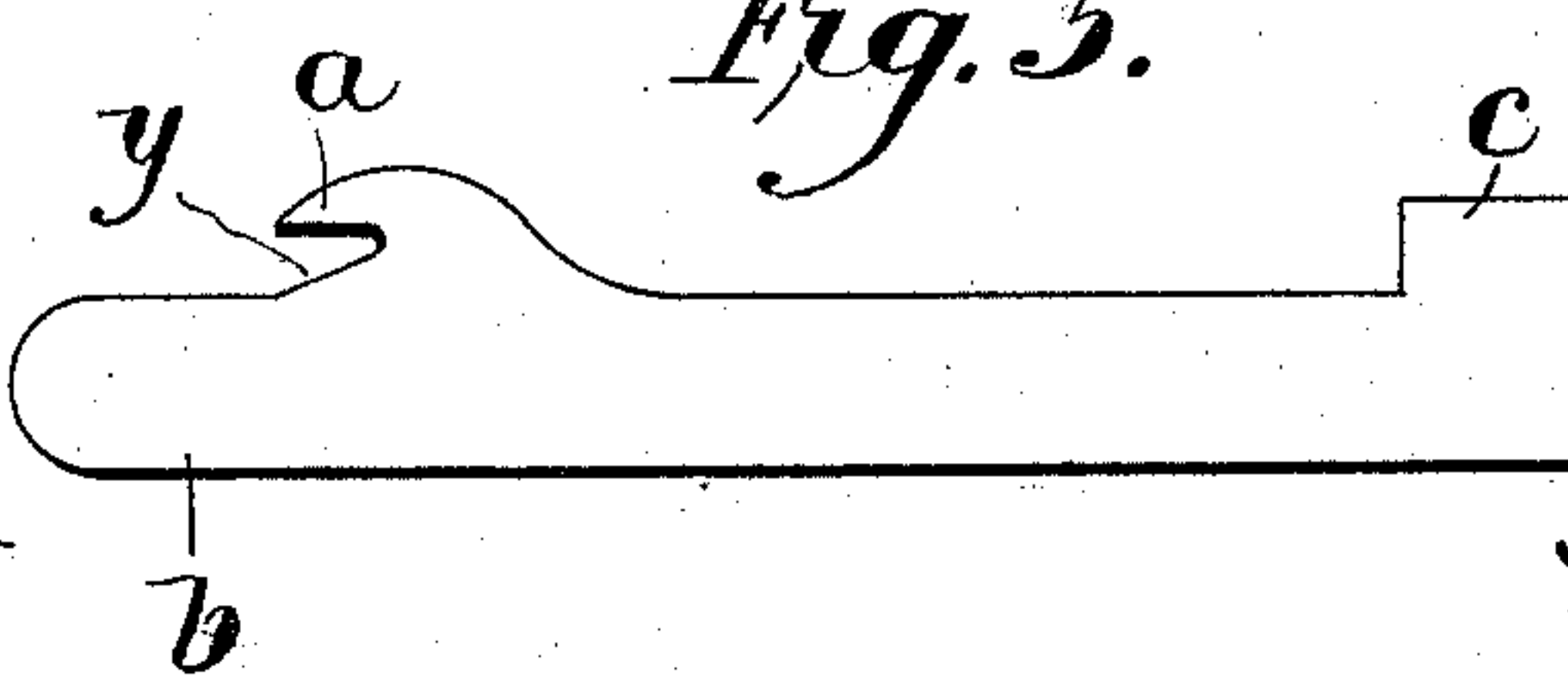


Fig. 5.



Witnesses:

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UNITED STATES PATENT OFFICE.

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SINKER OR WEB-HOLDER FOR KNITTING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 504,967, dated September 12, 1893.

Application filed April 27, 1893. Serial No. 472,008. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN S. COOK, a citizen of the United States, residing in the city and county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Sinkers or Web-Holders for Knitting-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

This invention relates to the construction of reciprocative sinker or web holder devices for knitting machines, the same being especially applicable to those devices that are provided with finger or tail portions upon which the wales are supported during the formation of the adjacent stitches, such, for example, as illustrated in Letters Patent of the United States No. 445,494, granted January 27, 1891, to Henry Brinton.

My improvement consists in providing the finger or tail portion of the device with an inclined portion which is designed to insure the disposition rearward of the needle of the stitches as they are produced, and thus obviate all liability of the stitches being re-engaged by the hook of the ascending needle, as will be hereinafter set forth in detail.

In the drawings—Figure 1 is a view of a sinker or web holder of the Brinton type, as in its retracted position relative to the needle immediately upon the formation of the stitch. Fig. 2 is a view of my improved sinker or web holder in the same relation to the needle. Fig. 3 is a view thereof as partially advanced, showing the action of the incline upon the wale and stitch. Fig. 4 is a view showing the device wholly advanced and its hook engaged with the web. Fig. 5 illustrates my improvement as applied to a sinker or web holder with a straight body portion. Fig. 6 is a partial vertical section through the head of a knitting machine equipped with my improved sinker or web holder.

Briefly described, the sinker or web holder mechanism to which my improvement is applied, comprises a series of metallic plates or blades alternating with the needles and being adapted to slide in a plane at right angles thereto, or substantially so. The upper edges of these plates are each provided with

an overhanging hook which is adapted to act upon the wales as the adjacent stitches are produced. The inner portion of each plate or blade beyond the hook comprises a tail or finger which projects inward between the needles sufficiently to be always in contact with the web during its formation, and the outer portion of the plate or blade is provided with a lug which is engaged with and actuated by an appropriate cam moving in concert with the knitting cams. Such a plate or blade is represented in Fig. 1, *a* being the hook; *b* the horizontal tail or finger, and *c* the cam-engaging lug. The normal position of each device is inward or advanced the hook *a* being in engagement with the upper round of wales in the web. During the formation of the stitches, by the reciprocating needles, the adjacent sinkers are sufficiently retracted to free their hooks from the web and permit the needles, in their descent, to form the loops adjacent to the finger or tail portions. Preparatory to the succeeding ascent of the needles, upon the completion of the stitches, the sinkers are again advanced, to feed the web forward.

The difficulty attending the use of the sinker or web holder devices, as previously constructed, is that it merely acts to press the web forward, the old loop not being thrown over the end of the needle when the new loop or stitch is formed, but, instead, simply dropping forward into the hook of the needle with the new loop and effecting the formation of what is generally termed a "tuck stitch." This is especially the case during the operation of forming the heel and toe parts of a stocking or sock in "seamless machines," the last stitch of each course during the reciprocation of the knitting cams being the one affected. To overcome this defect I construct the sinker or web holder blade as shown in Figs. 2 to 5 inclusive,—that is to say, I form an incline, *y*, thereon, rearward of the finger or tail piece, this incline commencing directly below the point of the hook, or substantially so, and rising to the rear of the latter. With this construction the wale, during the formation of the stitch adjacent thereto, is supported upon the tail as heretofore, that is, in advance of the hook (as indicated in Fig. 2),

but immediately upon the inward movement of the sinker or web holder blade, as or just before the needle is about to ascend, the incline acts against and under the opposed wale, thereby raising the stitch above and disposing it rearwardly over the needle hook. See Figs. 3 and 4.

As illustrated in Fig. 6 the tail of the blade is let into a radial groove, *g*, in the head of the needle cylinder *G*, so as to bring flush with the top of the cylinder that part of the tail upon which the wale is supported, the incline or raising portion *y* thus extending above the cylinder. Hence the incline in its action will raise the stitch above and clear of the edge of the cylinder. If the upper edge of the straight portion of the tail were below the top of the cylinder the yarn would be drawn between and cut by the co-acting edges of the groove and the tail, and, on the other hand, if it were above the top of the cylinder the length of the stitches would be affected.

In the previous form of sinker or web holder blade an extreme inward throw thereof is required to move the stitches rearward of the needle, thereby occasioning a strain on the yarn, particularly so in tight stitch work. By

my form, however, less inward throw of the blade is needed, and hence such strain is avoided.

I claim as my invention—

1. A sinker or web holder device constructed with a cam-engaging portion, an overhanging hook or web engaging portion, a tail or web-supporting portion, and an incline or stitch-raising portion, rising rearward of the point upon which the wale is supported during the formation of a stitch, substantially as described.

2. The combination with a needle cylinder and needle, of a sinker or web holder provided with a tail or finger having a wale supporting portion and an inclined or raising portion, the supporting portion being in line with the top of the cylinder and the raising portion being extended above the same, substantially as described.

In testimony whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

STEPHEN S. COOK.

Witnesses:

JOHN R. NOLAN,
JESSE B. HELLER.