No. 708,786. Patented Sept. 9, 1902.

H. STOLL.

KNITTING MACHINE.

(Application filed Nov. 4, 1901.)

(No Model.)

Fig. 1.

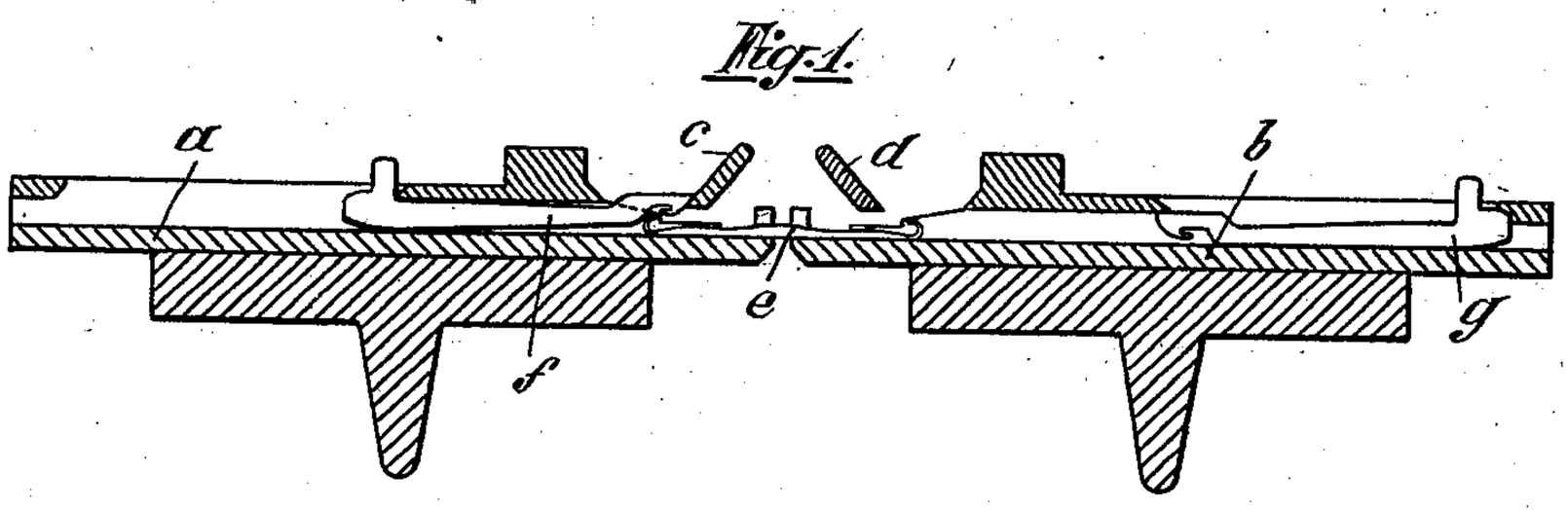


Fig. 2.

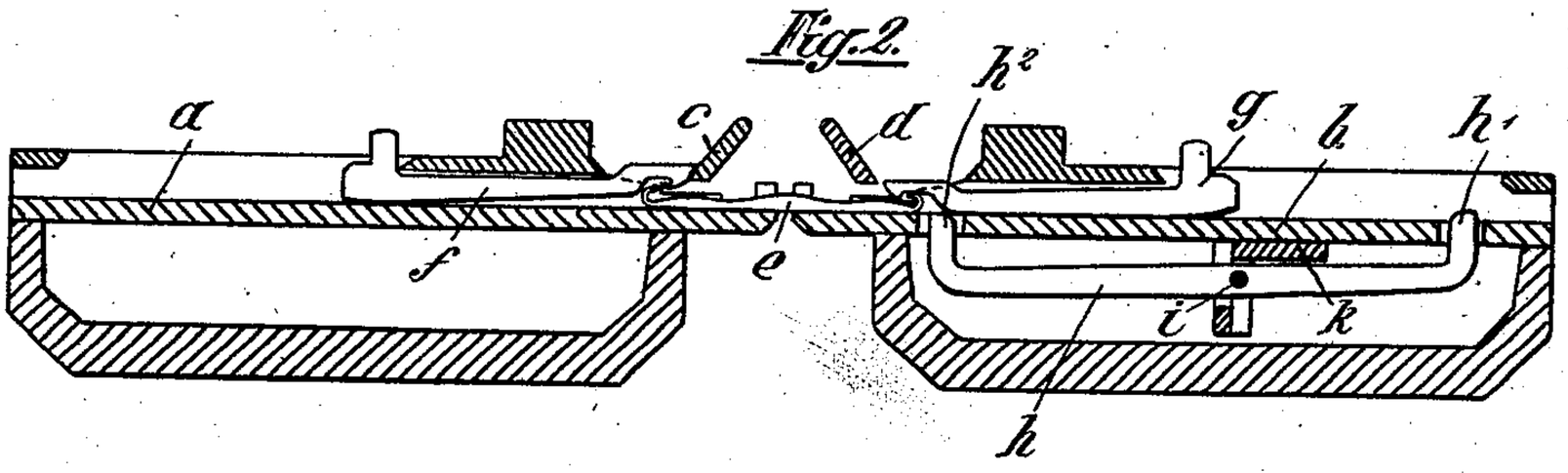
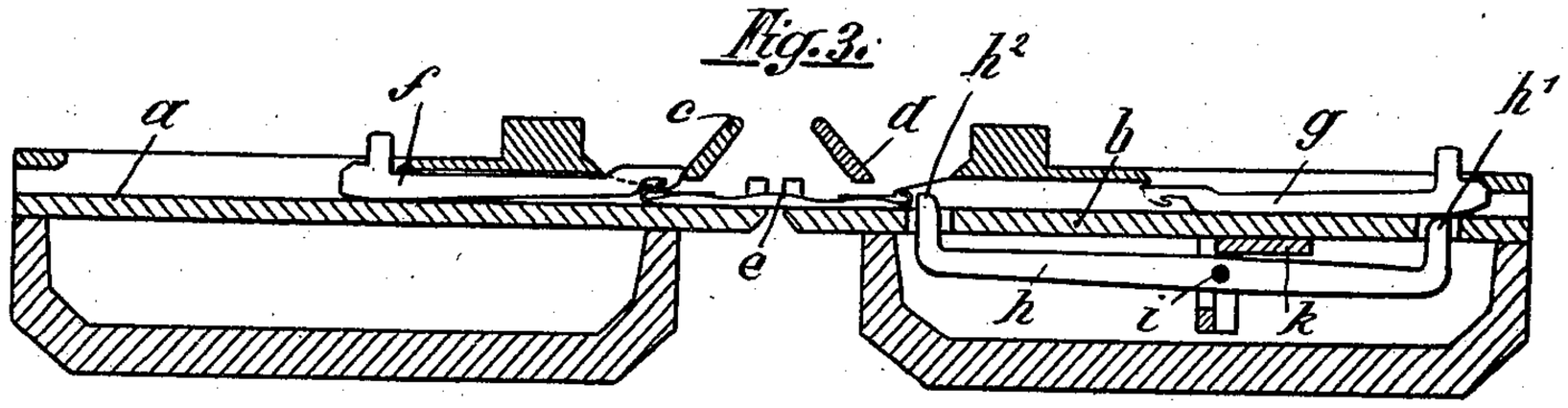


Fig. 3.



Witnesses:
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UNITED STATES PATENT OFFICE.

HEINRICH STOLL, OF REUTLINGEN, GERMANY, ASSIGNOR TO NATIONAL KNITTING CO., OF MILWAUKEE, WISCONSIN.

KNITTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 708,786, dated September 9, 1902.

Application filed November 4, 1901. Serial No. 81,143. (No model.)

To all whom it may concern:

Be it known that I, HEINRICH STOLL, a citizen of the German Empire, residing at Reutlingen, Kingdom of Würtemberg, Germany, have invented certain new and useful Improvements in Knitting-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in knitting-machines, and more especially to machines employing double-end tumbler-needles. In machines of this kind, and particularly such a machine as is described in United States patent to Stoll and Maercklin, No. 523,820, it often occurred that when a partly-flat and partly-ribbed fabric containing regular meshes was knit simultaneously with reversed meshes the needles knitting the regular meshes were thrown out of the jack-hooks when liberated from the jacks. When, therefore, the jacks returned, their hooks could not catch the needles, which then were liable to be broken and frequently were broken by cams passing over them.

The object of the present invention is to provide a mechanism whereby this disadvantage may be obviated. The essential feature of a mechanism embodying my invention consists in providing a lever pivotally arranged within the jack-channel, which lever after withdrawal of its jack operates to prevent its respective needle from being thrown out.

My invention will be fully described in connection with the accompanying drawings and then more particularly pointed out in the claims.

In the drawings, Figure 1 is a sectional view of the needle-bed of an ordinary straight-knitting machine. Figs. 2 and 3 represent a needle-bed embodying the present invention and showing the parts in two different positions.

As well known, in such machines both needle-beds *a* and *b* are in the same plane, and the needle *e* is drawn alternately from one bed into the other for knitting ribbed fabrics, while it remains in the same bed when regular meshes or flat fabrics are to be knit. When the needle passes from one bed to the other, the free extremity of the jack *f* slides against the inclined surface *c*, thereby liberating the needle *e*, which then is caught by the other jack *g* and drawn into the opposite needle-bed. When knitting meshes or flat fabrics, the needle *e* is advanced and retracted by the same jack.

The lever *h*, constituting the main feature of the present invention, is arranged within the needle-channel of the bed *b* and is fulcrumed on a pin *i*. At both extremities it is provided with rectangular projections or arms h' h^2, somewhat beveled or sloping at their inner end surfaces. The arms h' h^2 alternately project into the needle-channel. In Fig. 2 the arm h' and in Fig. 3 the arm h^2 are represented as thus projecting. When now regular meshes are to be knit in the bed *a* and the jacks *g* of the opposite bed are retracted, the projection h' is pressed downward, the lever *h* is tipped, and the upper extremity of the arm or projection h^2 extends into the needle-channel, thereby preventing any further movement of the needle *e*. When reversed meshes are to be produced, the advancing jack presses the arm h^2 downward, so that the needle can pass freely from one bed into the other.

The lever *h* and the pin *i* are supported by an angle-piece *k*, arranged in the needle-bed. Such levers may be provided in one bed alone, as described, or in both beds.

What I claim, and desire to secure by Letters Patent, is—

1. In a knitting-machine, the combination with a needle-bed having a needle-channel, of a double-end needle movable in said channel, a jack arranged to operate said needle, and means operated by the jack for limiting the movement of the needle.

2. In a knitting-machine, the combination with a needle-bed having a needle-channel, of a double-end needle movable in said chan-

nel, a jack arranged to operate said needle, and a lever arranged to be operated by the jack to limit the movement of the needle.

3. In a knitting-machine, the combination with a needle-bed having a needle-channel, of a needle movable in said channel, and a lever pivoted to the bed and having arms arranged to alternately project into the path of the needle and into the path of the jack respectively.

In testimony whereof I affix my signature in presence of two witnesses.

HEINRICH STOLL.

Witnesses:

AUGUST DRAUTZ,

WALTER SCIENAEBRIE.