

No. 646,875.

Patented Apr. 3, 1900.

G. A. SCHNEEBELI & H. S. TOWNSEND.
KNITTING MACHINERY.

(No Model.)

(Application filed June 14, 1899.)

2 Sheets—Sheet 1

FIG. 1.

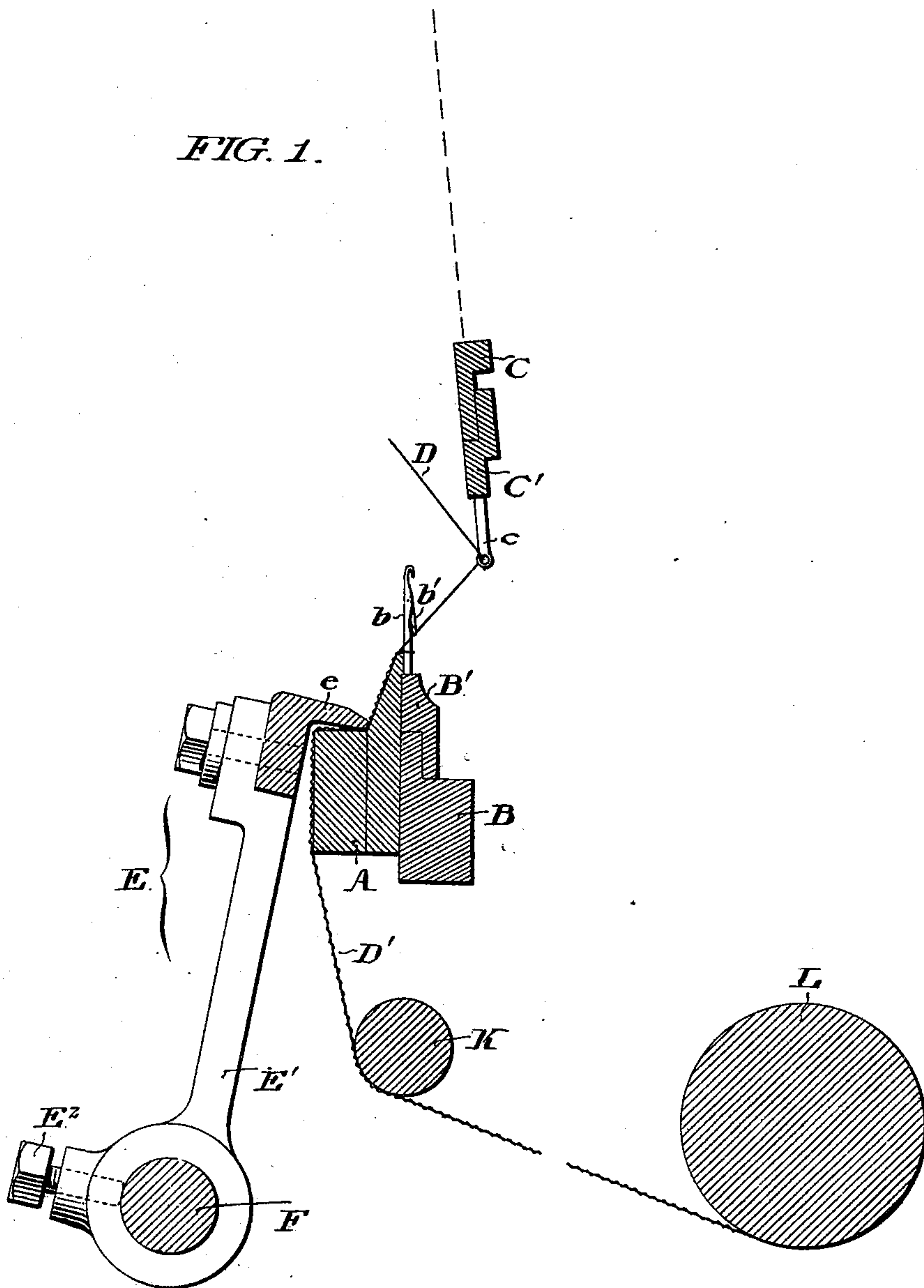
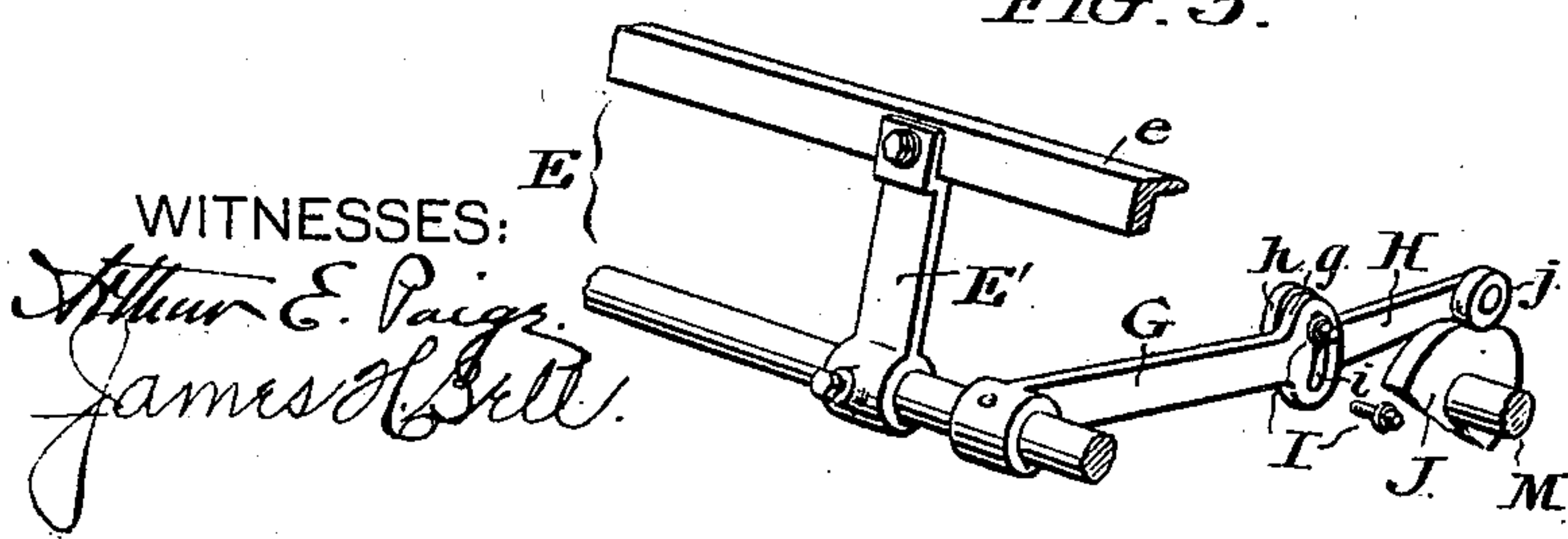


FIG. 3.



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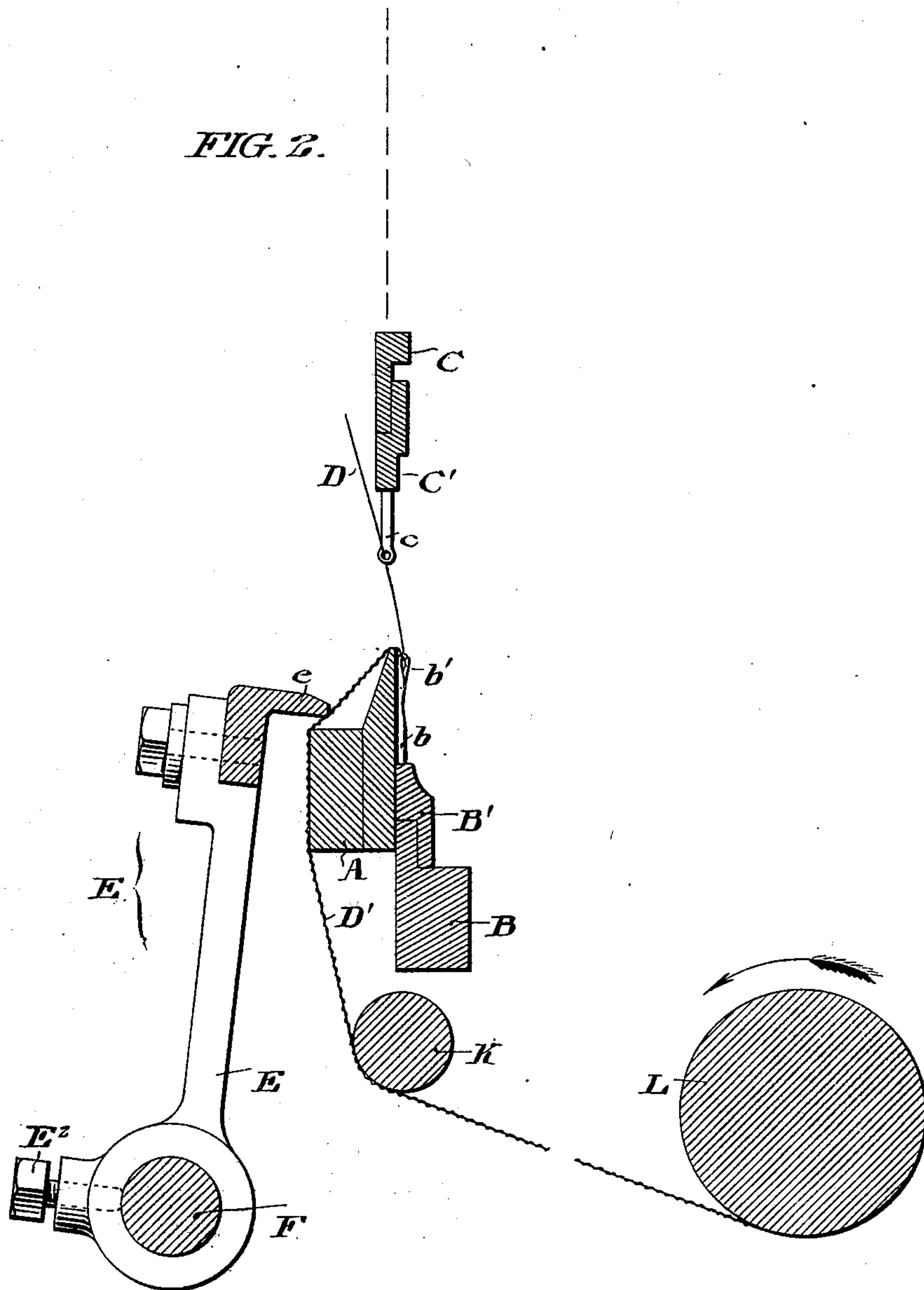
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FIG. 2.



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UNITED STATES PATENT OFFICE.

GUSTAF A. SCHNEEBELI, OF NAZARETH, AND HARRY S. TOWNSEND, OF
PHILADELPHIA, PENNSYLVANIA.

KNITTING MACHINERY.

SPECIFICATION forming part of Letters Patent No. 646,875, dated April 3, 1900.

Application filed June 14, 1899. Serial No. 720,470. (No model.)

To all whom it may concern:

Be it known that we, GUSTAF A. SCHNEEBELI, of Nazareth, and HARRY S. TOWNSEND, of Philadelphia, Pennsylvania, have invented
5 certain new and useful Improvements in Knitting Machinery, whereof the following is a specification, reference being had to the accompanying drawings.

Our invention relates to straight-knitting
10 machines, and has heretofore been usually employed by us in connection with the manufacture of trimmings or edgings, which are formed by individual needles arranged side by side and operating simultaneously, but which
15 do not form a continuous web across the entire frame, the product being a series of independent chains. Obviously, however, the device can be utilized in connection with straight machines in which a continuous fabric
20 is formed by the coöperation of all the needles.

In the drawings, Figure 1 represents a partial sectional view of the device, certain of the working parts being illustrated diagram-
25 matically, the important parts being shown in one extreme position which they assume. Fig. 2 is a similar view showing said parts in the other extreme position. Fig. 3 is a perspective view illustrating certain of the work-
30 ing parts in detail.

Referring to the drawings, A indicates a transverse stationary bar or frame, upon the face of which the needle-bed B works. The
35 needles are indicated at *b* and their latches at *b'*, said needles being directly mounted in blocks B' and the necessary movements of the needle-bed being of course effected by the well-known actuating mechanism.

For the purposes of the present description
40 it is only necessary to refer to the up-and-down movements of the needle, which latter is shown in Fig. 1 in its uppermost or raised position ready to receive the thread D, which is supplied thereto in proper relation to the needle
45 movements by the oscillating thread-carrier C C', having a thread-eye *c*.

For purposes of convenience the thread-supplying devices will be referred to as the
50 "swinging frame." The fabric formed by the needles (indicated at D') is carried over a friction-roller K to the take-up roller L, which is

intermittently actuated in the proper relation to the needle movements.

In the rear of the stationary cross-bar A is the holddown device E, which constitutes the
55 important working element of our invention. This consists of an angle-bar *e*, whose projecting flange overhangs the rabbeted upper edge of the bar A and is adapted to form in conjunction therewith a holding edge to clamp the fabric. In passing from the position shown in Fig.
60 2 to that shown in Fig. 1 the angle-bar in pressing the fabric into the angle of the rabbet draws said fabric forwardly or away from the needles. Then when the angle-bar moves out-
65 wardly the take-up-roll L takes up the slack and holds the fabric taut over the rabbet, as in Fig. 2. Said angle-bar *e* is mounted upon lever-arms E', (only one of which is shown in the
70 drawings,) said lever-arms being in turn rigidly but adjustably attached by means of a set-screw E² to a rock-shaft F, running parallel to the angle-bar *e*. Said rock-shaft is provided
75 with a rigidly-attached lever-arm G, which is adjustably connected to a second arm H, as shown in Fig. 3, the meeting end of the two lever-arms being enlarged to form bearing-surfaces, as shown at *g h*, respectively,
80 and being secured together by tap-bolts I, threaded in the enlargement *h*, but passing through a slot *i* in the enlargement *g*, so that the angular position of said arms may be varied to an extent permitted by the range of
85 said slot. The other extremity of the arm H is provided with a friction-roller *j*, which rests upon the surface of a disk cam J, rotated by
90 suitable mechanism applied to its shaft M. The cam-surface is of such configuration as to produce a slight rising-and-falling motion of the composite lever-arm G H, and thus rock
95 the shaft F backward and forward, and the actuating mechanism for said cam is so correlated with the actuating mechanism of the knitting devices and the take-up devices as to produce the following sequence of move-

ments:
In Fig. 1 the needles have risen so as to clear
the latch *b'* from the loop and are preparing
to take the thread for the succeeding loop.
The swinging feed-frame is in one extreme
100 position and is about to swing toward the needles for the purpose of delivering the thread.

At this moment the roller *j* rests upon the low portion of the cam-surface, and consequently the rock-shaft *F* is in such a rotative position as to throw the holding edge *e* of the holddown device into contact with the fabric, and thus draw forward and clamp the latter against the face of the bar *A*. The swinging frame then moves toward the needles and supplies the thread thereto, and as the needles descend to take the thread and form the new loop the roller *j* mounts the incline of the cam and by raising the composite lever *G H* rocks the shaft *F*, so as to throw the holddown away from the bar *A*, and thus release the fabric. This position of the parts is shown in Fig. 2. The new loop being formed, the take-up operates, and when the needles are again about to rise the cam is rotated, so as to throw the roller *j* upon the low portion of its surface, and thus rock the shaft *F*, so as to throw the holddown against the fabric and clamp it to prevent displacement during the period of the upward movement of the needles. Thereupon the sequence of movements above described recurs.

Having thus described our invention, we claim—

1. The combination, with the stationary bar having a rabbeted upper edge, the vertically-reciprocating needle-carrying bed, the swinging frame above the stationary bar and needle-bed and actuating mechanism for the needle-bed and swinging frame, of an oscillating holddown having fixed bearings and provided with an edge adapted to force the fabric into the angle of the said rabbet, and there clamp it, and means for imparting an intermittent movement to the said holddown in proper relation to the needle; substantially as described.

2. The combination, with the stationary bar, the vertically-reciprocating needle-carrying bed, the swinging frame above said bar and bed, actuating mechanism for said bed and frame, and a take-up mechanism, of the holddown comprising an angle-bar the horizontal member of which overhangs the upper edge of said stationary bar to clamp the fabric thereon, a rock-shaft therebelow mounted in fixed bearings, arms rigidly connecting the angle-bar to the rock-shaft, a lever-arm projecting from said rock-shaft and formed in two sections, one of which is provided with a segmental slot through which pass adjusting-screws which enter apertures in the other section, and a cam engaging the free end of said composite lever and imparting an intermittent movement thereto; substantially as described.

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Witnesses:

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