

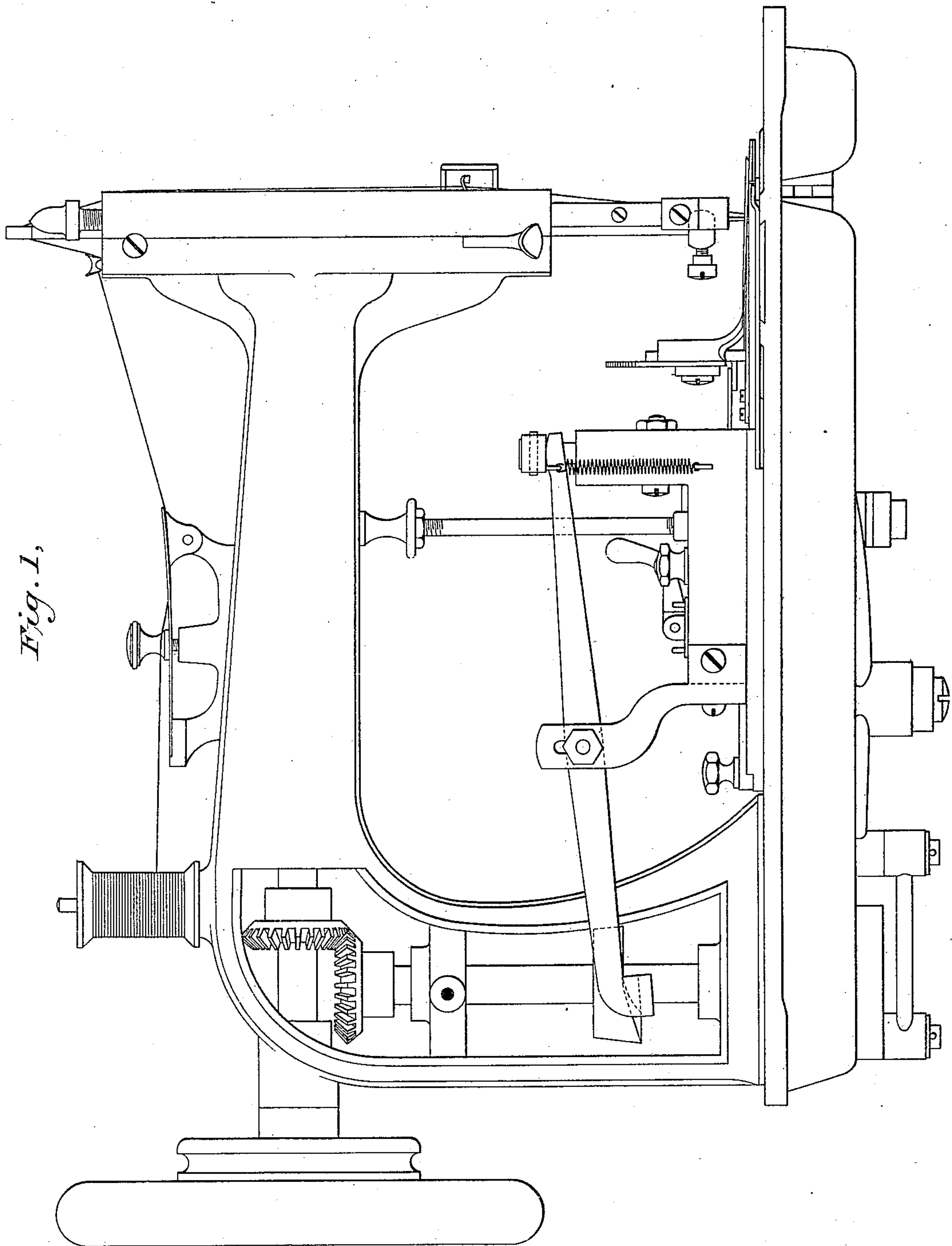
(No Model.)

3 Sheets—Sheet 1.

C. A. SJOBERG.
SEWING MACHINE.

No. 246,425.

Patented Aug. 30, 1881.



WITNESSES

Wm. A. Slink.
Geo. W. Breck

By his Attorneys

Baldwin, Hopkins, & Peyton.

INVENTOR
Carl A. Sjöberg

(No Model.)

3 Sheets—Sheet 2.

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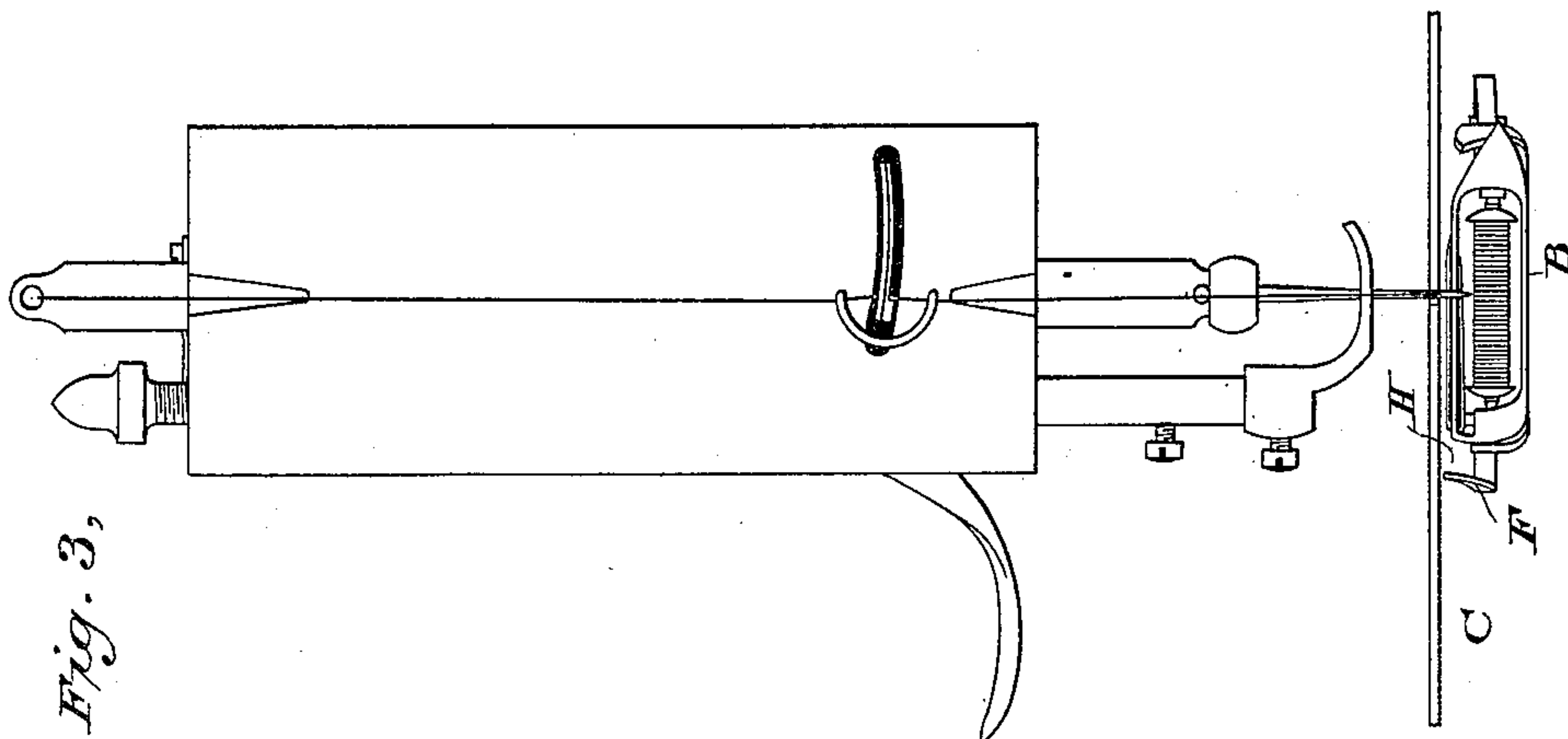
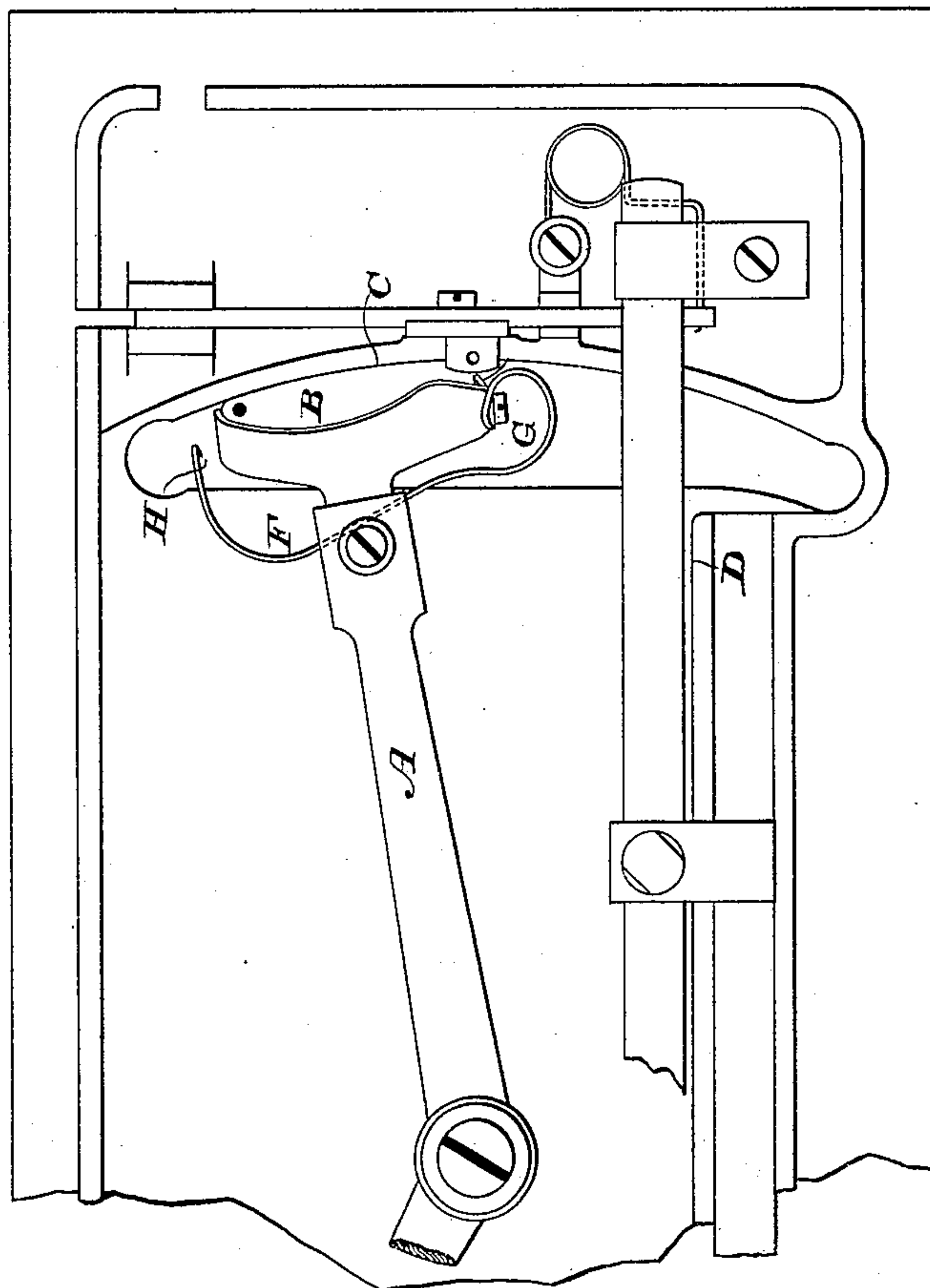


Fig. 2,



WITNESSES

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Fig. 4,

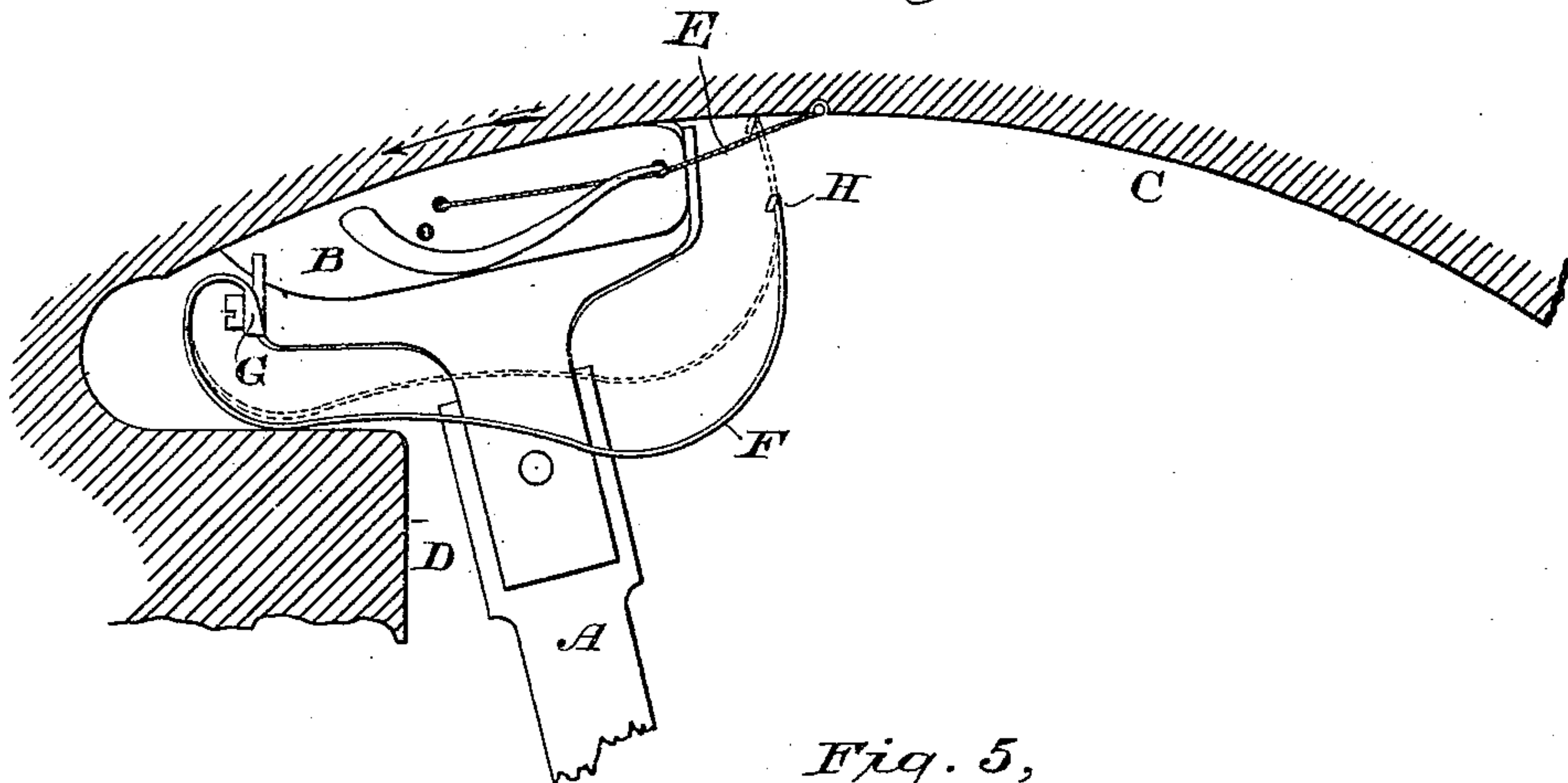


Fig. 5,

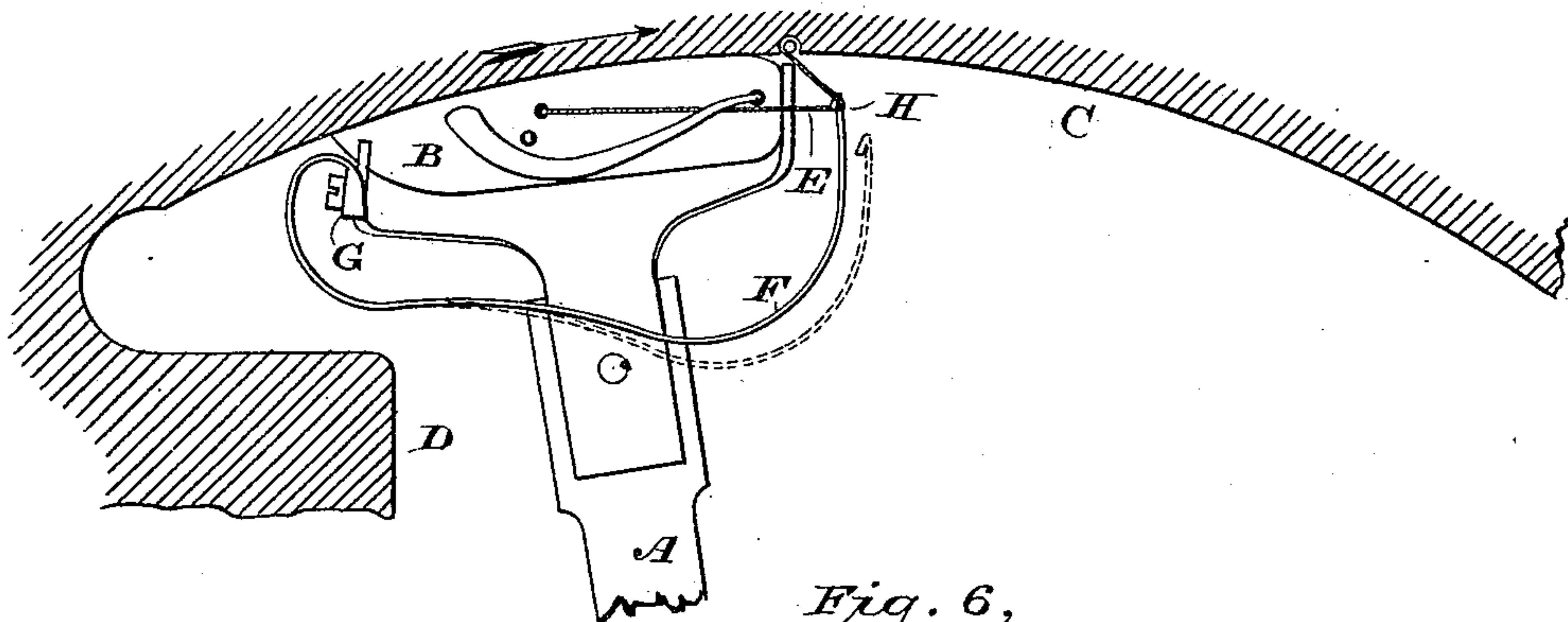
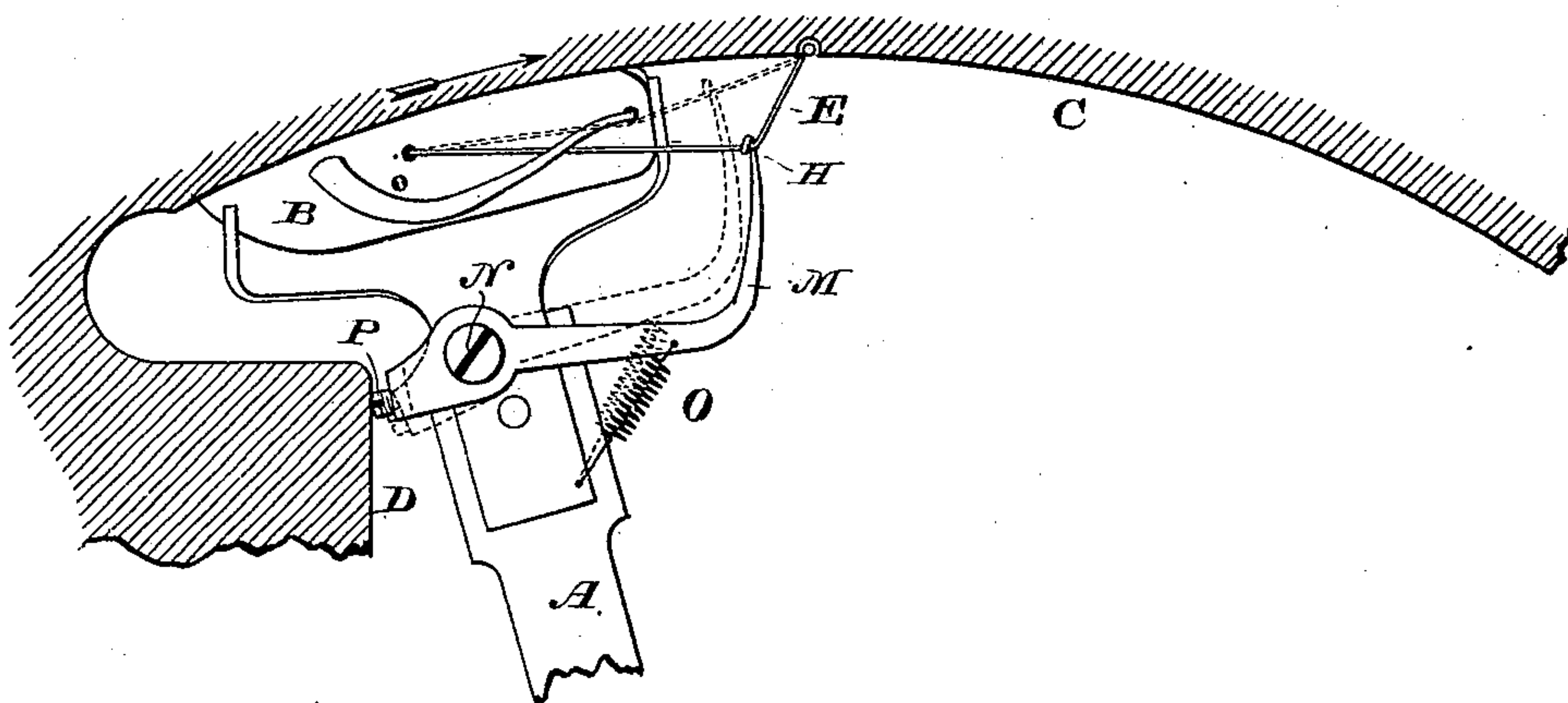


Fig. 6,



WITNESSES

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UNITED STATES PATENT OFFICE.

CARL A. SJOBERG, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR, BY MESNE ASSIGNMENTS, TO WM. E. TRULL, TRUSTEE, OF NEW YORK, N. Y.

SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 246,425, dated August 30, 1881.

Application filed April 25, 1881. (No model.)

To all whom it may concern:

Be it known that I, CARL A. SJOBERG, of Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain
5 new and useful Improvements in Sewing-Machines, of which the following is a specification, reference being had to the accompanying drawings.

In working button-holes with a certain class
10 of sewing-machines difficulty has been experienced by reason of the lower or shuttle thread not having been suitably controlled or drawn sufficiently taut in the operation to tie the two
15 threads—the upper and lower—properly together to form a tight stitch or knot. This defective working by such machines occurs from the fact that in operation the shuttle carrying the lower thread completes one of its move-
20 ments of reciprocation and begins its reverse stroke or return movement before the ordinary take-up mechanism of the upper or needle thread completes its work, the result of which operation is that there is slack or an unstrained loop formed in the lower thread by this return
25 reciprocation or reverse movement of the shuttle, which slack causes a loose and imperfect stitch to be made, unfit for button-holes.

My object is to overcome this difficulty, and in accordance with my invention I provide
30 mechanism operated by the shuttle-carrier to catch and hold the lower thread at the proper time (upon the reverse movement of the shuttle and while the upper or needle thread loop is being taken up) and take up its slack or
35 cause it to be drawn taut as the upper thread is, thus forming a perfect stitch or knot.

My improvement is intended to apply more particularly to those sewing-machines in which a complete stitch is not made before the com-
40 mence of a succeeding stitch, and in which the movement of the parts in commencing a succeeding stitch serves to complete the preceding stitch—such, for example, as the “New Home,” the “Domestic,” “Household,” and
45 others timed in like manner.

My invention consists in the combination, with the reciprocating shuttle-carrier of a sewing-machine, of mechanism attached to and
50 operated by the movements of the shuttle-carrier for controlling the lower or shuttle thread

and compensating slack therein, as will hereinafter be explained preparatory to a designation of the subject-matter claimed.

In the accompanying drawings, illustrating my invention, Figure 1 is a rear elevation of
55 an ordinary sewing-machine of the New Home pattern having a button-hole attachment applied to it. Fig. 2 is a bottom-plan view of parts of the same with my improvement applied. Fig. 3 is an end elevation, showing the
60 shuttle beneath the cloth-plate. Fig. 4 is a plan view of the shuttle-carrier with my improved attachment, as seen with the slides ordinarily covering the shuttle-race removed. Fig. 5 is a
65 similar view, showing the carrier and attached parts in a different position in its path of reciprocation. Fig. 6 is a similar view, showing a modified form of my improved tension at-
70 tachment or shuttle-thread controller.

Referring now to the drawings by the let-
75 ters marked thereon, A indicates the oscillating shuttle-carrier; B, the shuttle; C, the shuttle-race, and D a projection, which, in this instance, is a part of the casting of the bed-plate of the sewing-machine.

E indicates the lower or shuttle thread of an ordinary sewing-machine using two threads.

F indicates a spring-arm, secured to the carrier at G, and provided with a hook, H, for
80 catching the shuttle-thread.

The operation of my device is as follows: As the shuttle-carrier moves to the left in the direction of the arrow, Fig. 4, the spring-arm F will strike against the projection D, which will cause its hook H to move forward gradu-
85 ally as the carrier proceeds to the end of its reciprocation to the left, and to pass under the thread, as indicated in dotted lines. As the carrier returns the hook will catch the thread and the spring-arm will, by its resiliency, draw
90 back toward its original position, pulling the thread taut, as illustrated in Fig. 5. The hook H is inclined to one side a little, as illustrated, so that the thread will slip off from it at the right time for the commencement of a new stitch.
95 At the same time the hook is acting upon the lower thread the ordinary tension device will operate upon the upper thread, and a perfectly tight stitch or knot will be formed and com-
100 pleted before the commencement of another

stitch, somewhat in the manner of hand-sewing with "waxed ends." In Fig. 4 the spring-arm is illustrated as just about to advance with its hook toward the thread. In Fig. 5 it is illustrated as having seized the thread and pulled it out in the position to release it. The dotted lines indicate the position the spring-arm takes after it has released the thread.

Instead of having a projection, D, forming a part of the casting, as illustrated, any other suitable projection or attachment in proper position in the path of the spring-arm during its reciprocation to the left, as indicated by the arrow, Fig. 4, will serve the purpose, and the form of the spring-arm and its point of attachment upon the carrier may be varied to suit convenience and to adapt the improvement to any different form of sewing-machine using a reciprocating shuttle, the essence of my invention being the use of such a spring-arm or equivalent in connection with the shuttle-carrier and the lower thread to perform the function described.

This improvement is not merely useful in connection with the formation of button-holes, but is also useful in connection with ordinary sewing with machines using two threads.

In Fig. 6 I illustrate a formal modification of my improvement, in which the hook is shown in the position of pulling the thread about intermediate between that illustrated in Fig. 4 and that illustrated in Fig. 5. In this figure, instead of having a spring-arm, such as shown in the other figures, I provide an arm, M, pivoted at N, and provided with a retracting-spring, O. It is also provided with a set-screw,

P, for the purpose of adjusting it accurately and compensating for any loss of resiliency of the retracting-spring.

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

1. The combination, with a reciprocating shuttle-carrier, of mechanism, substantially such as set forth, attached to and actuated by the movements of said carrier for compensating slack in the lower or shuttle thread and drawing said thread taut during the return movement of the shuttle, substantially as and for the purpose hereinbefore set forth.

2. The combination of a reciprocating shuttle, its carrier, mechanism substantially such as set forth, attached to the carrier, for drawing tight or compensating slack in the lower or shuttle thread, and take-up and tension mechanism, by which the upper thread is controlled or drawn tight simultaneously with the operation of the lower-thread-tightening mechanism, whereby each stitch is positively formed before the commencing of the formation of a succeeding stitch, substantially as hereinbefore set forth.

3. The combination of a shuttle-carrier, A, a shuttle, B, a projection, D, and a hooked arm, F, substantially as and for the purposes specified.

In testimony whereof I have hereunto subscribed my name.

CARL ADOLPH SJOBERG.

Witnesses:

ISAAC LU FERRIS,
ROBERT L. SEWARD.