

(No Model.)

2 Sheets—Sheet 1.

G. D. GARVIE.

SEWING MACHINE.

No. 271,978.

Patented Feb. 6, 1883.

Fig. 1.

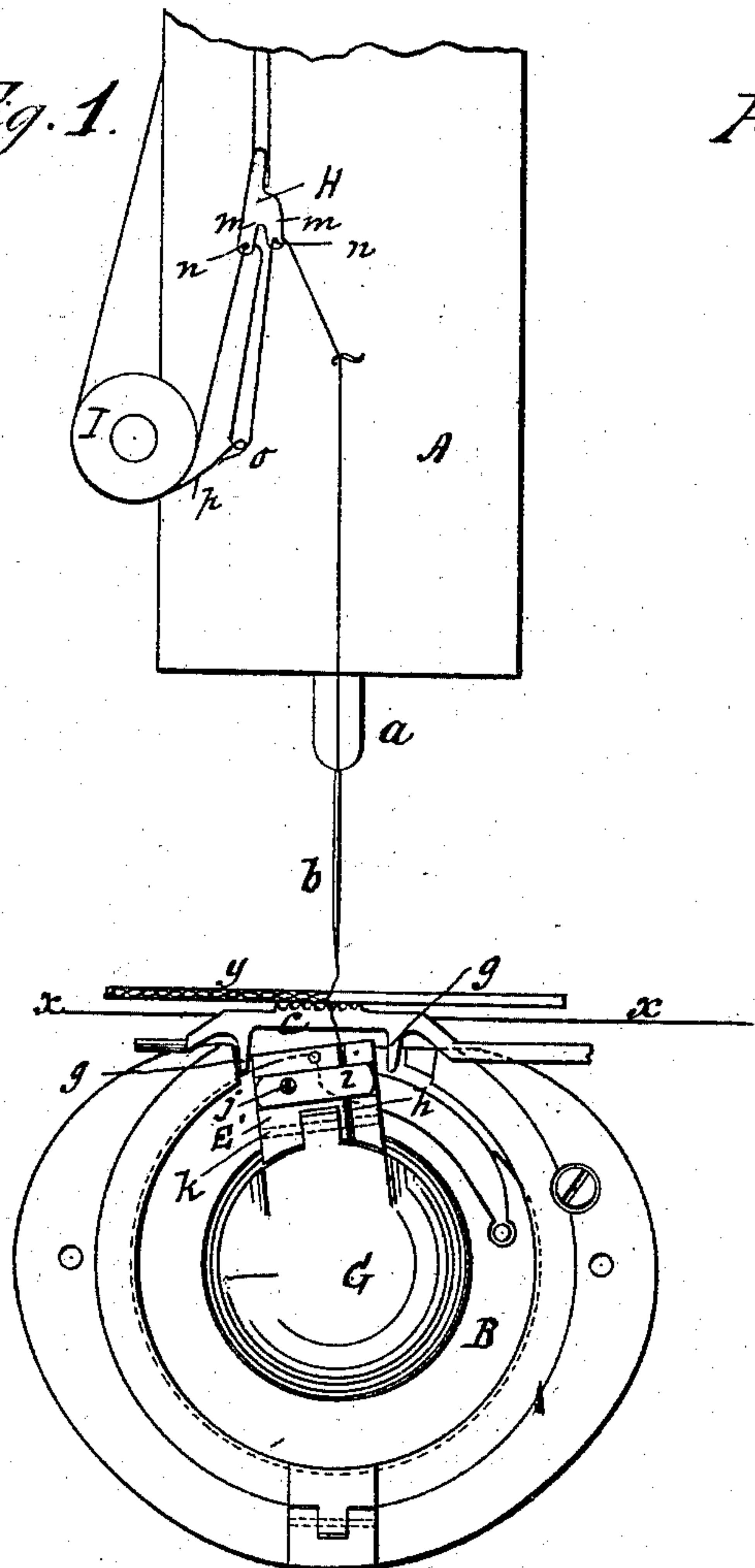


Fig. 2.

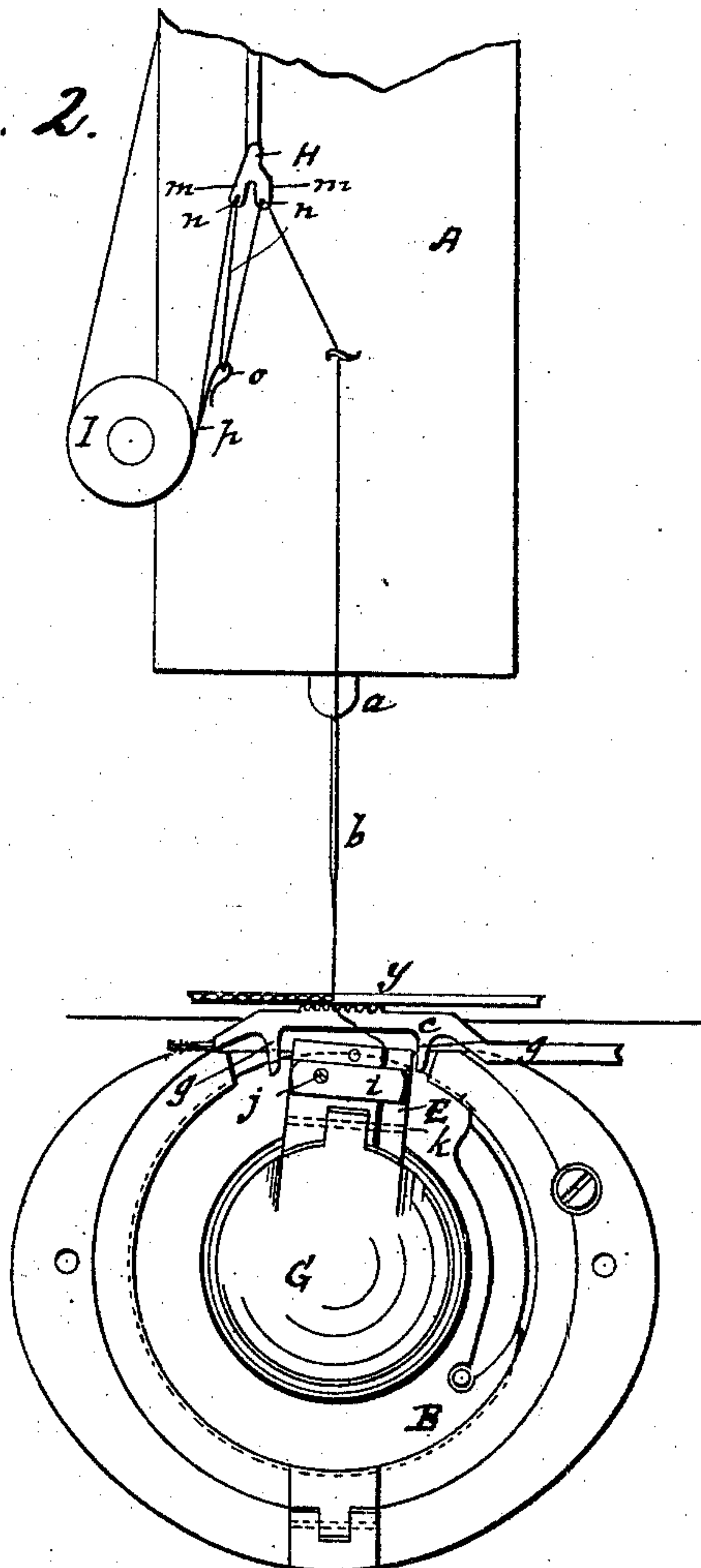
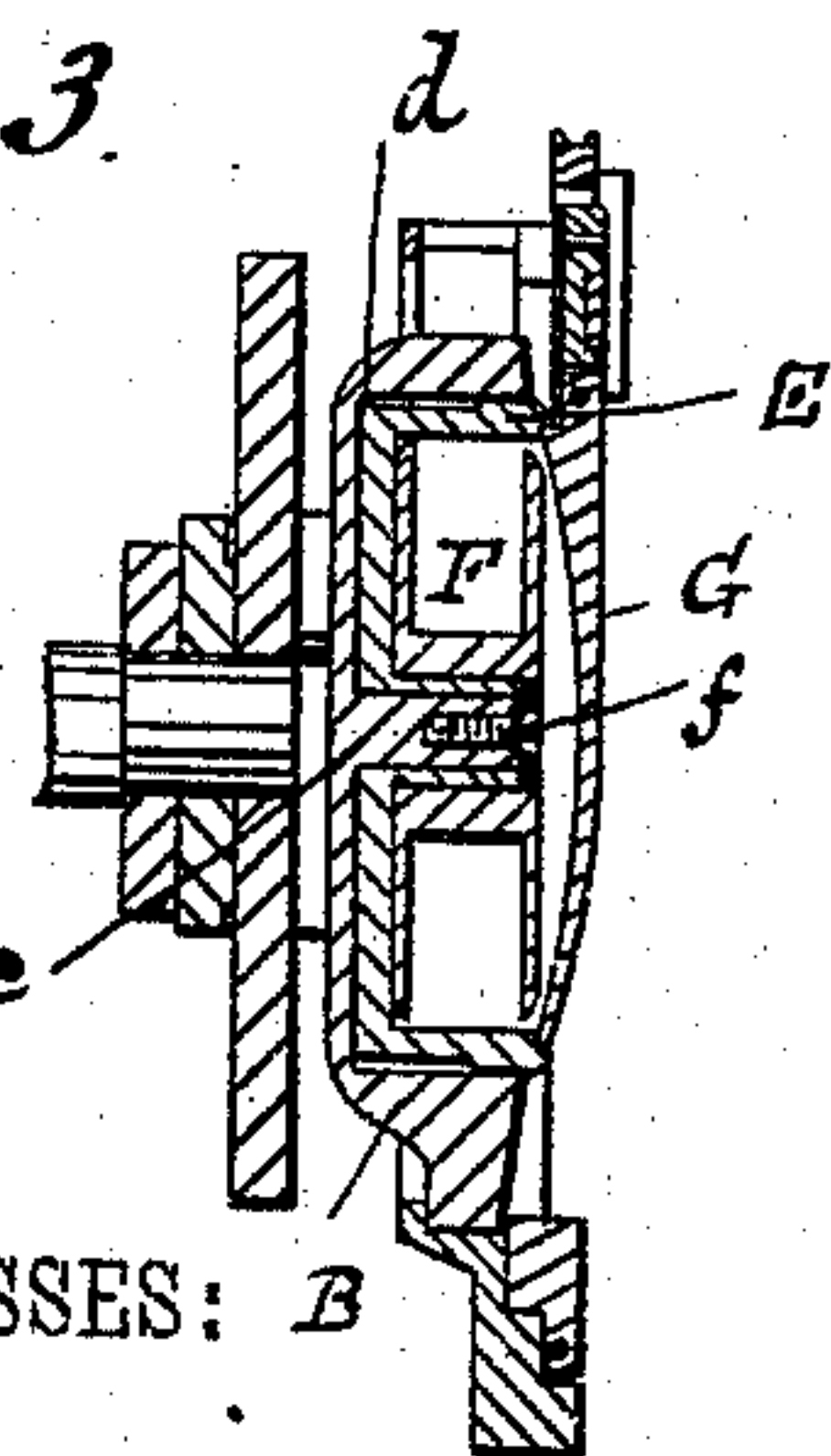


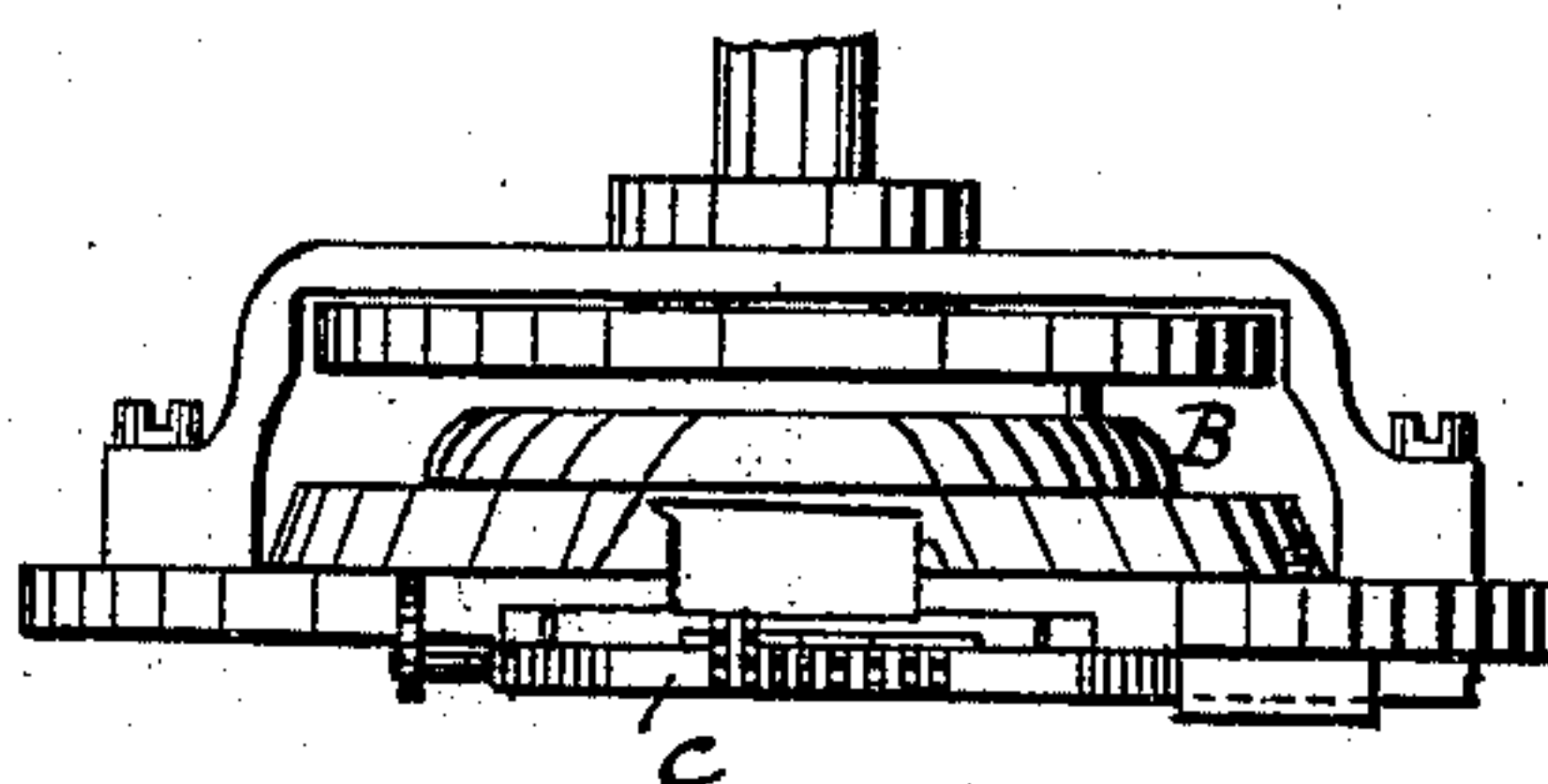
Fig. 3.



WITNESSES: B

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Fig. 4.



INVENTOR

George D. Garvie
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Fig. 5.

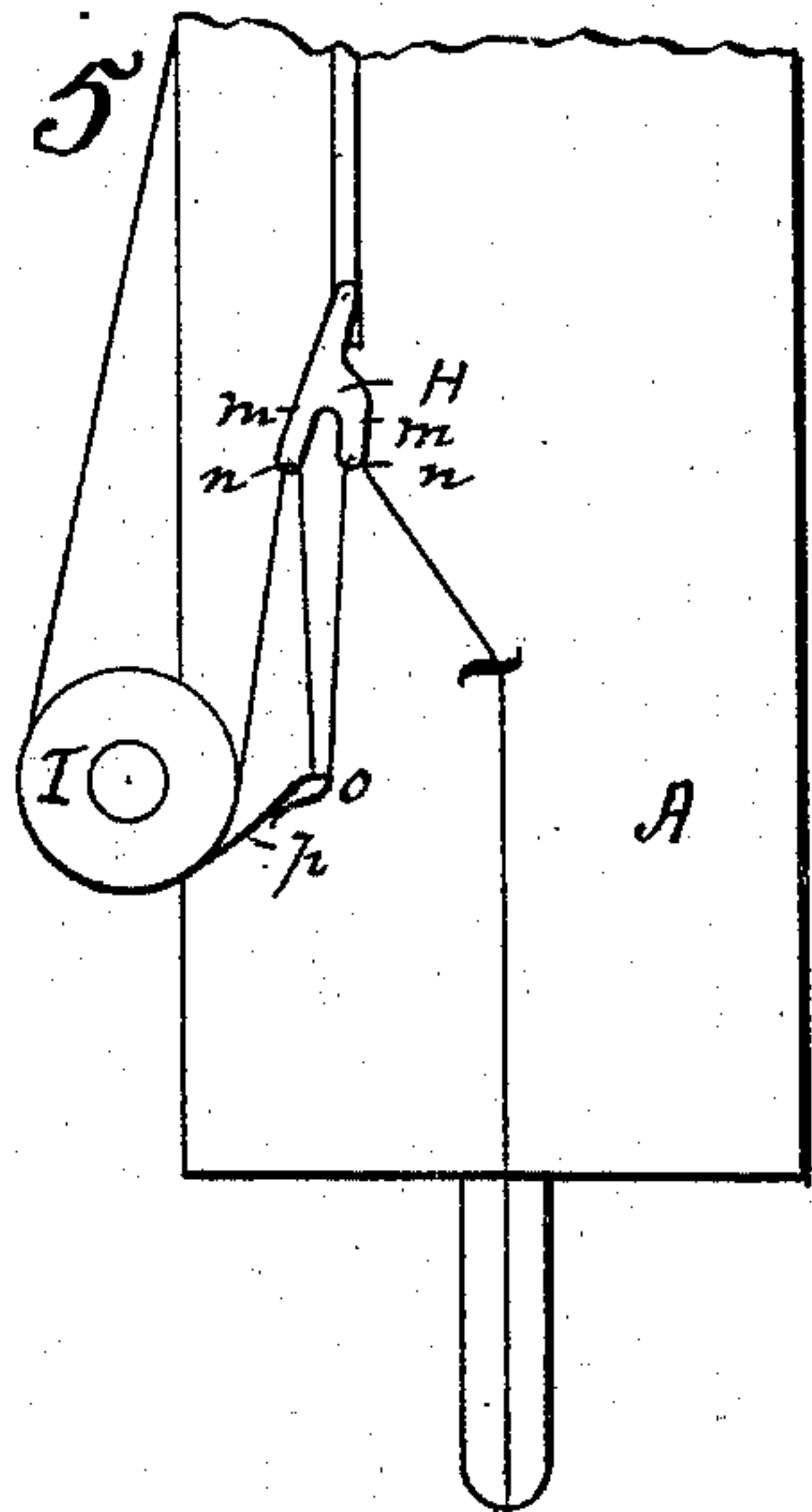


Fig. 6.

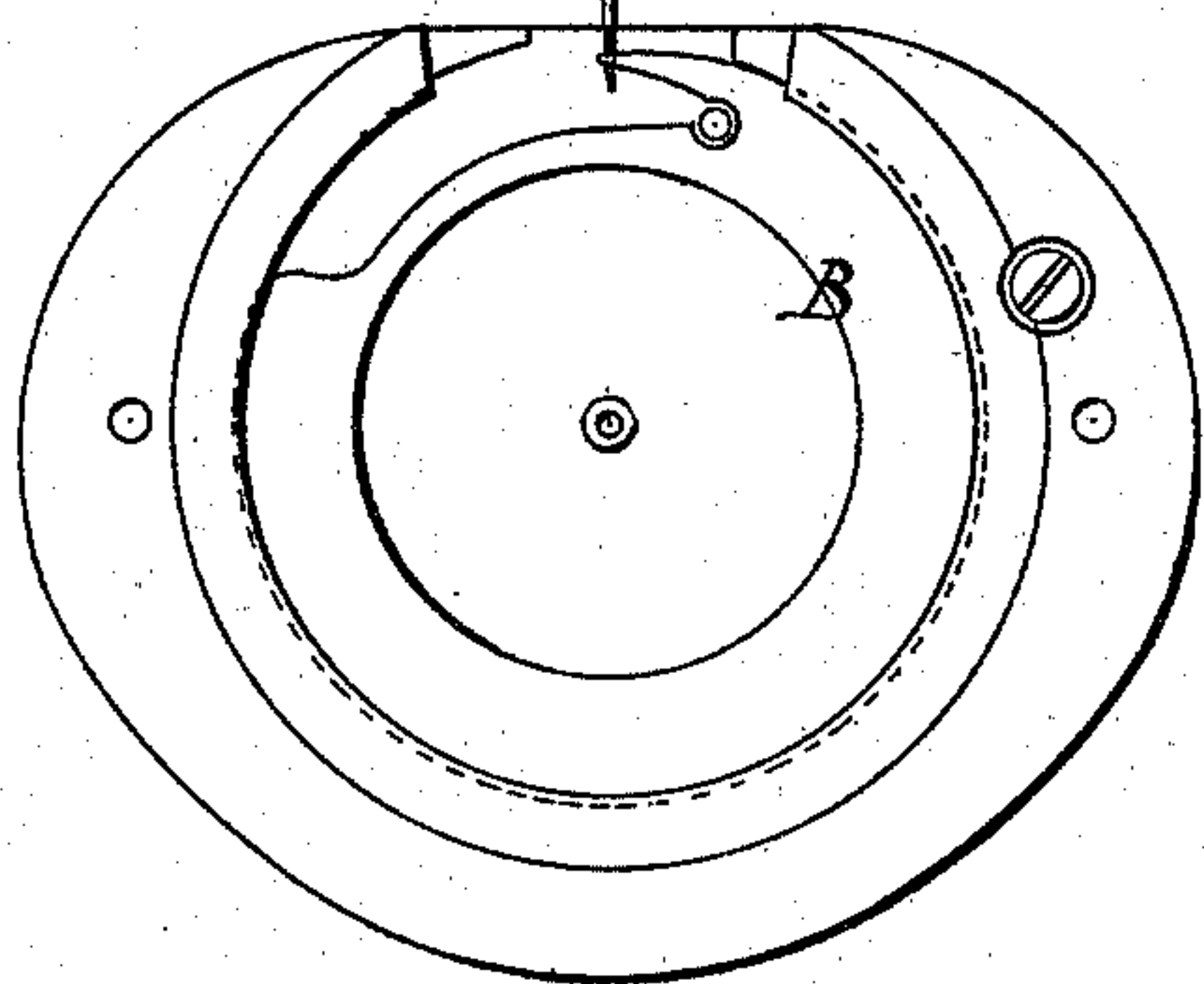
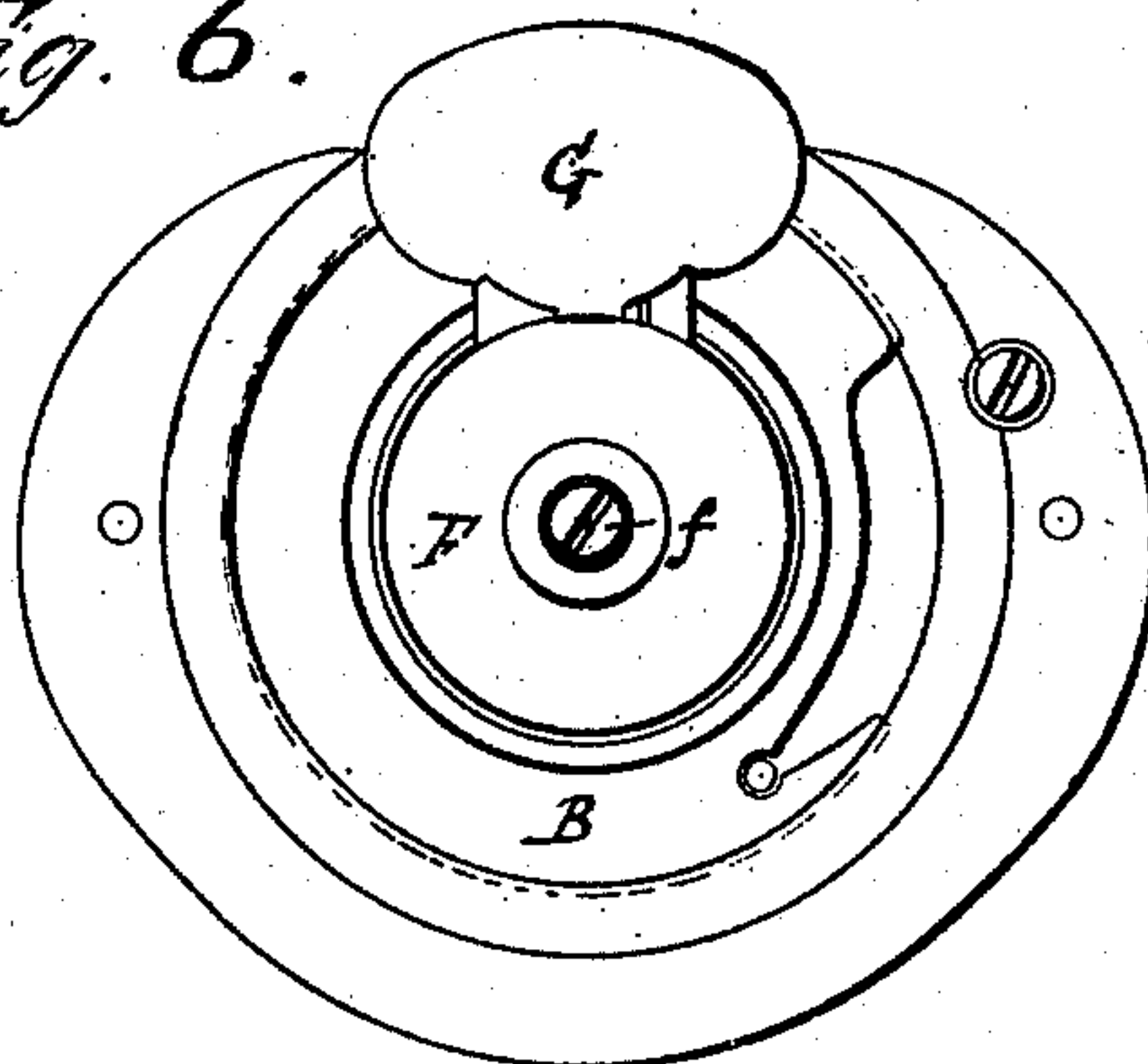


Fig. 7.

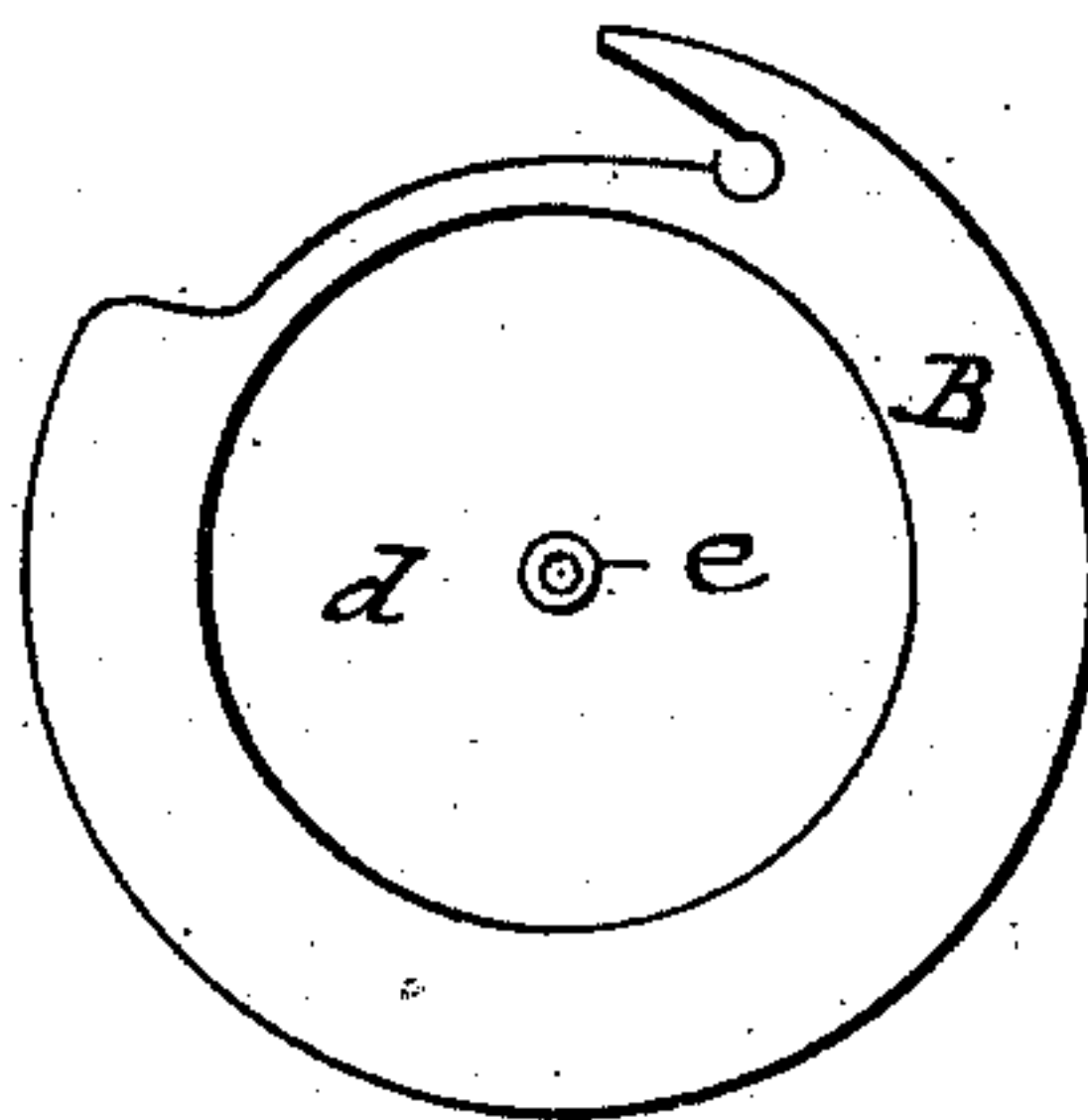


Fig. 8.

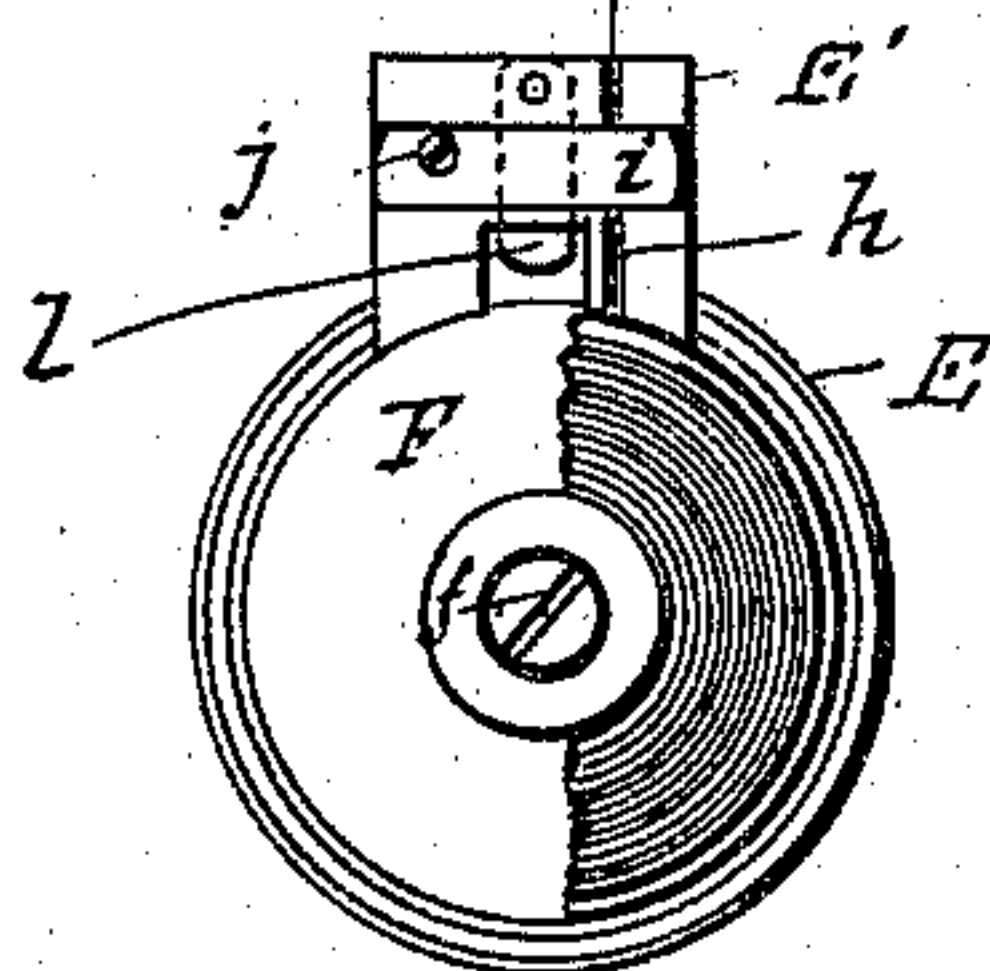


Fig. 9.

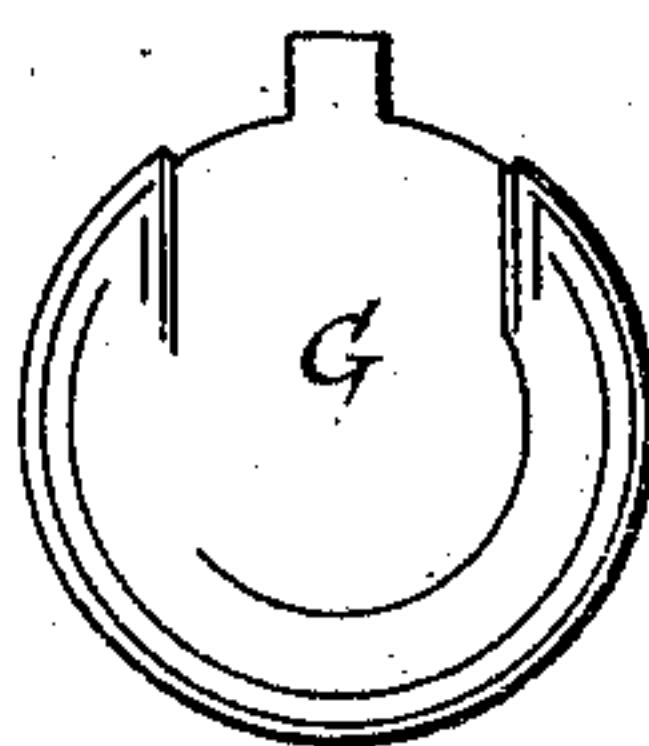
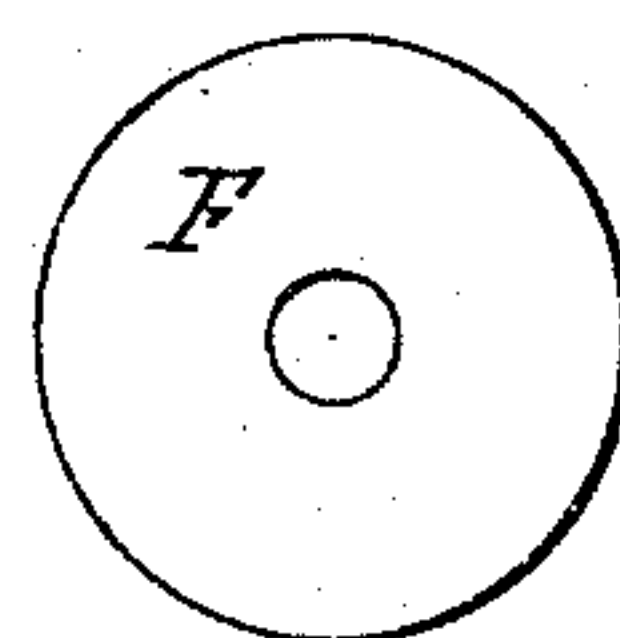


Fig. 10.



WITNESSES:

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R. J. Wood

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UNITED STATES PATENT OFFICE.

GEORGE D. GARVIE, OF NEW YORK, N. Y.

SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 271,978, dated February 6, 1883.

Application filed June 23, 1882. (No model.)

To all whom it may concern:

Be it known that I, GEORGE D. GARVIE, of the city, county, and State of New York, have invented certain new and useful Improvements in Sewing-Machines, of which the following is a specification.

My invention has reference to that class of sewing-machines known as "revolving" or "oscillating" hook machines; and it relates principally to the manner of mounting and holding the bobbin-holder and of controlling the slack of the under thread. The bobbin-holder is mounted in and carried by the hook, but is prevented from rotating therewith by engaging the feed-bar, which latter also imparts an oscillatory movement to the bobbin-holder, with the effect of causing the latter to control the slack of the under thread. It is this feature that principally characterizes my invention. It can best be explained and understood by reference to the accompanying drawings, in which—

Figure 1 is a front elevation of so much of a sewing-machine as needed for the purposes of explanation, with the parts in the position which they assume when the needle is descending and both threads are slack. Fig. 2 is a like view of the same parts in the position which they occupy when the needle is up and both threads are drawn taut. Fig. 3 is a transverse vertical central section of the revolving hook, its race, the bobbin-holder, &c. Fig. 4 is a plan of the same. Fig. 5 is an elevation designed to show the take-up in the position which it occupies when the needle has completed its descent. Fig. 6 is a face view of the hook and bobbin-holder, with the lid of the latter raised. Fig. 7 is a face view of the hook. Fig. 8 is a face view of the bobbin-holder, with the cover or lid removed and a part of one of the beads of the bobbin broken away. Fig. 9 is a face view of the cover. Fig. 10 is a face view of the bobbin. Figs. 1 to 5 are to some extent diagrammatic, it being deemed unnecessary to show a complete machine, including the mechanism by which the several co-operating parts are actuated and driven.

A is the head of an ordinary sewing-machine of the Singer kind, with its reciprocating needle-bar *a* and needle *b*.

The line *x* represents the throat-plate,

through which works a feed-bar, *c*, of the ordinary four-motion type, which is to be mounted in the machine and actuated to move in substantially the same way as any other ordinary four-motion feed-bar.

The cloth or work to be sewed is indicated at *y*.

The hook *B* is supported in a race, *C*, so as to be capable of revolving therein, and is driven by a rotating or oscillating driver, *D*. The hook has on its outer face a cylindrical recess, *d*, for the bobbin-holder, a central stem, *e*, rising from the bottom of the recess to form a stud on which the bobbin-holder may be centered. The bobbin-holder is a shell, *E*, mounted on said stud, with its open face outward, and held in place by a retaining-screw, *f*, which is screwed into the end of the stud *e* in such a manner as not to interfere with the free movement of the bobbin-holder on the stud. Within the bobbin-holder, and upon the central hub thereof, is loosely mounted a bobbin, *F*. In order to prevent the bobbin-holder from following the movement of the hook, I provide it at the top, upon its outer face, with an extension-plate, *E'*, which extends up between the two arms or lugs *g*, depending from the under side of the feed-bar. By this arrangement the bobbin-holder not only is prevented from moving with the hook, but also has imparted to it a movement of its own, by which the slack of the under thread can be controlled. The thread channel or slot for the under thread is formed in the extension-plate at *h*, and a spring, *i*, whose pressure is regulated by a set-screw, *j*, serves to regulate the tension. The thread-channel is so placed that when the feed-bar is back, as indicated in Fig. 2, it will not be in line with the needle-hole in the throat-plate.

The action of the parts, so far as concerns controlling the slack of the under thread, is as follows: The feed-bar starts forward at the same moment the needle-bar starts downward, and the upper and under threads are thus relieved at the same time, as indicated in Fig. 1. On the other hand, as the needle rises the feed-bar moves back, and in so moving carries with it the bobbin-holder from the position shown in Fig. 1 to that represented in Fig. 2. The effect of this will be to take up the slack of the

under thread at the time the upper thread is being taken up, thus giving the proper tension from above and below to the stitch.

The bobbin is covered by a lid, G, hinged at 5 k to the extension-plate of the bobbin-holder, and combined with a spring, l, by which it is held either opened or closed. The extension-plate thus serves as both a tension-bed and a support for the lid.

10 The take-up for the upper thread is shown in Figs. 1, 2, and 5. It is composed of the oscillatory take-up arm H, which is arranged, timed in its movements, and actuated similarly to the ordinary oscillating take-up arm. 15 It however differs from the latter in being forked, each of its arms m being provided with a thread-eye, n. The thread from the spool passes down under disk or roll I, thence up through the first eye, n, thence down 20 through the loop or hook o, which is attached to I, or the support thereof, and is preferably formed upon the end of a spring arm or strip, p, thence up through the second eye, n, and thence through suitable guides to the needle. 25 dle.

Having described my improvements, what I claim as new and of my invention is—

1. The combination, with the hook and the feed-bar, of a freely-moving bobbin-holder

mounted in and carried by the hook, and engaged by said feed-bar, so as to be thereby held from following the rotary or oscillatory movement of said hook, substantially as hereinbefore set forth. 30

2. The combination, with the needle-bar and a take-up for the upper thread, the hook and the feed-bar, of a freely-moving bobbin-holder mounted in and carried by the hook, and engaged and operated by the feed-bar to slacken and tighten the under thread at the times and in the manner substantially as hereinbefore set forth. 35 40

3. The bobbin-holder provided with an adjustable tension plate or spring, and formed with an extension-plate which constitutes the tension-bed for the under thread and a bearing for the hinged lid or cover of said holder, in combination with the hook and the feed-bar, provided with lugs or flanges to engage said extension-plate, substantially as and for the purposes hereinbefore set forth. 45 50

In testimony whereof I have hereunto set my hand this 20th day of June, A. D. 1882.

GEO. D. GARVIE.

Witnesses:

EWELL A. DICK,
R. J. FLOOD.