

(Model.)

2 Sheets—Sheet 1.

W. J. STEWART.

SEWING MACHINE.

No. 330,272.

Patented Nov. 10, 1885.

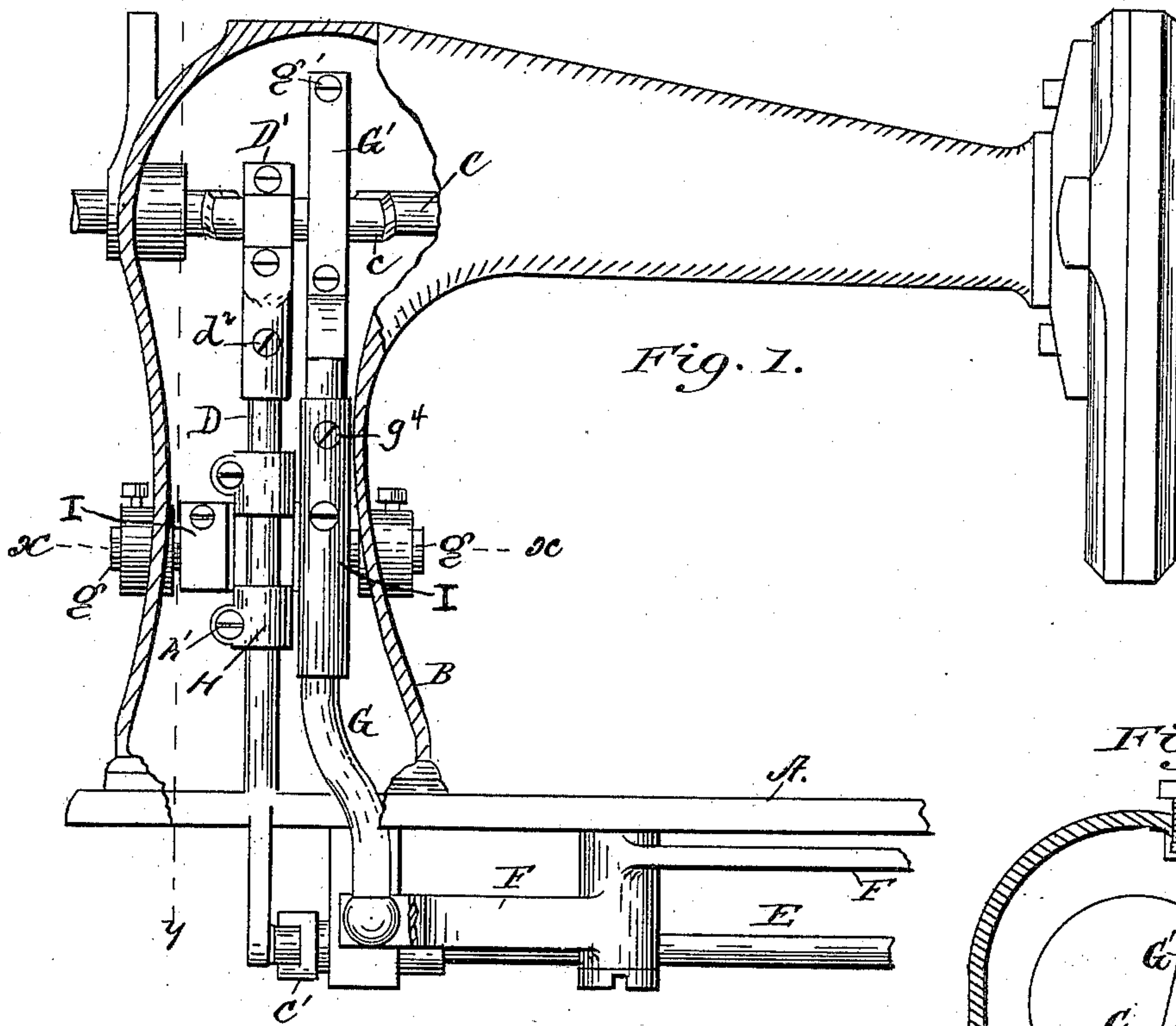


Fig. 1.

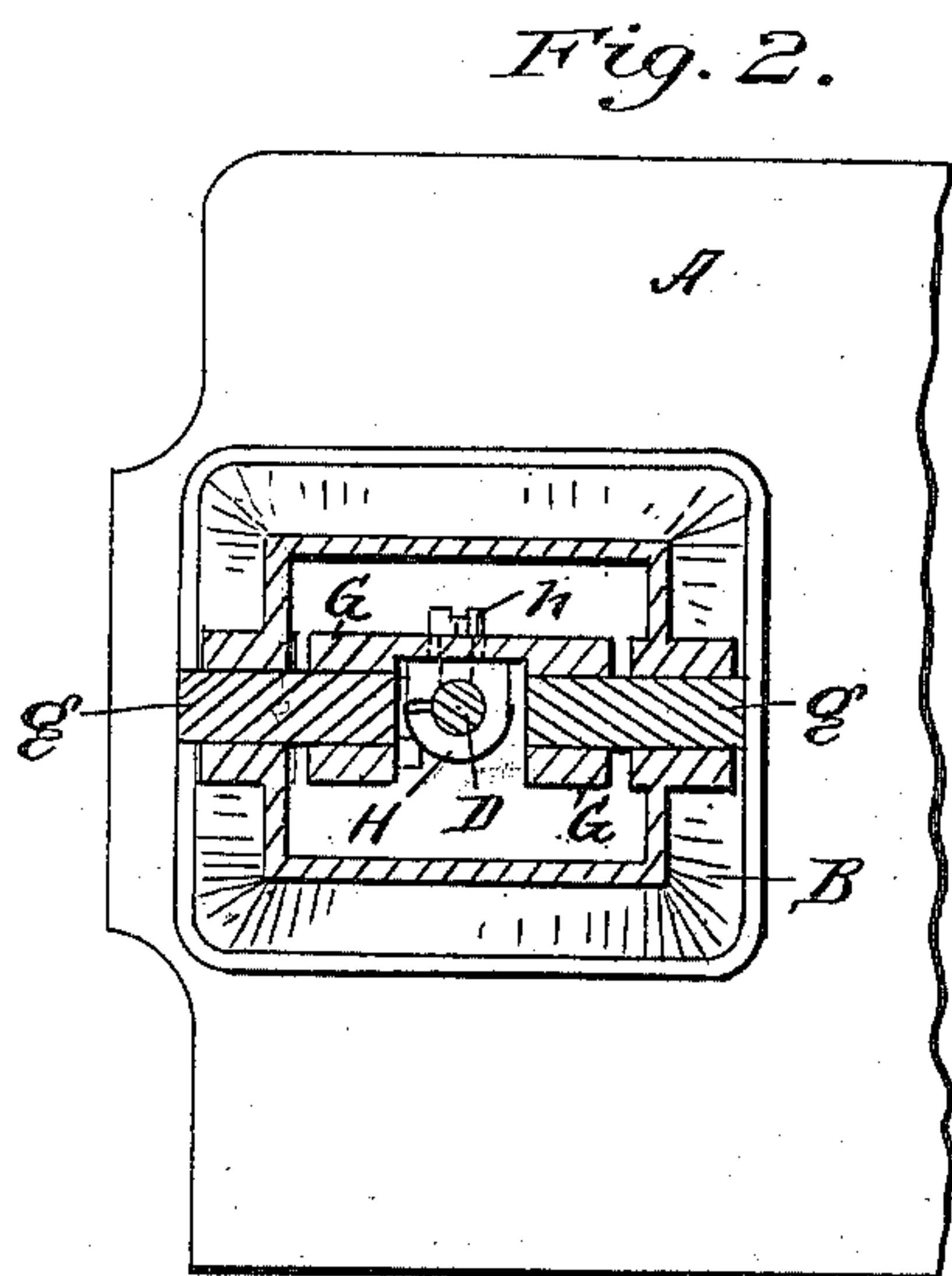


Fig. 2.

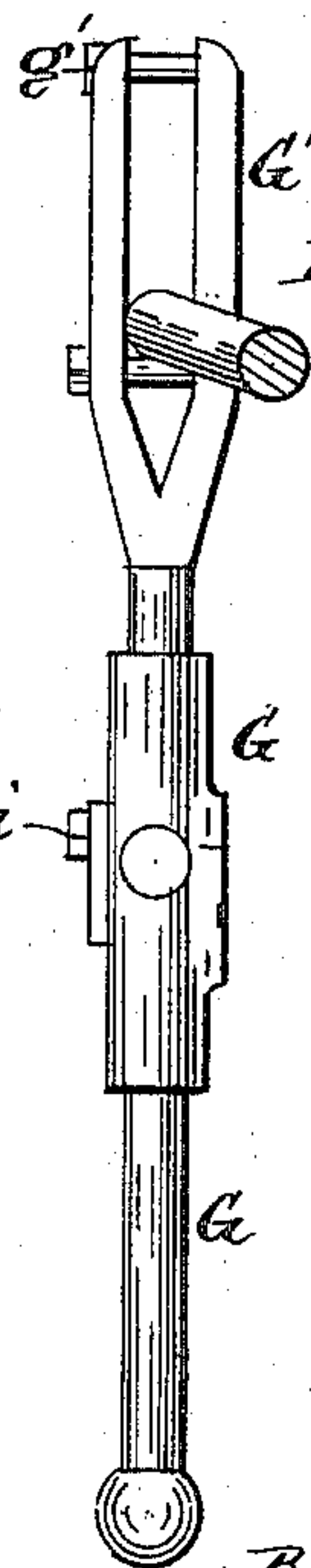


Fig. 4.

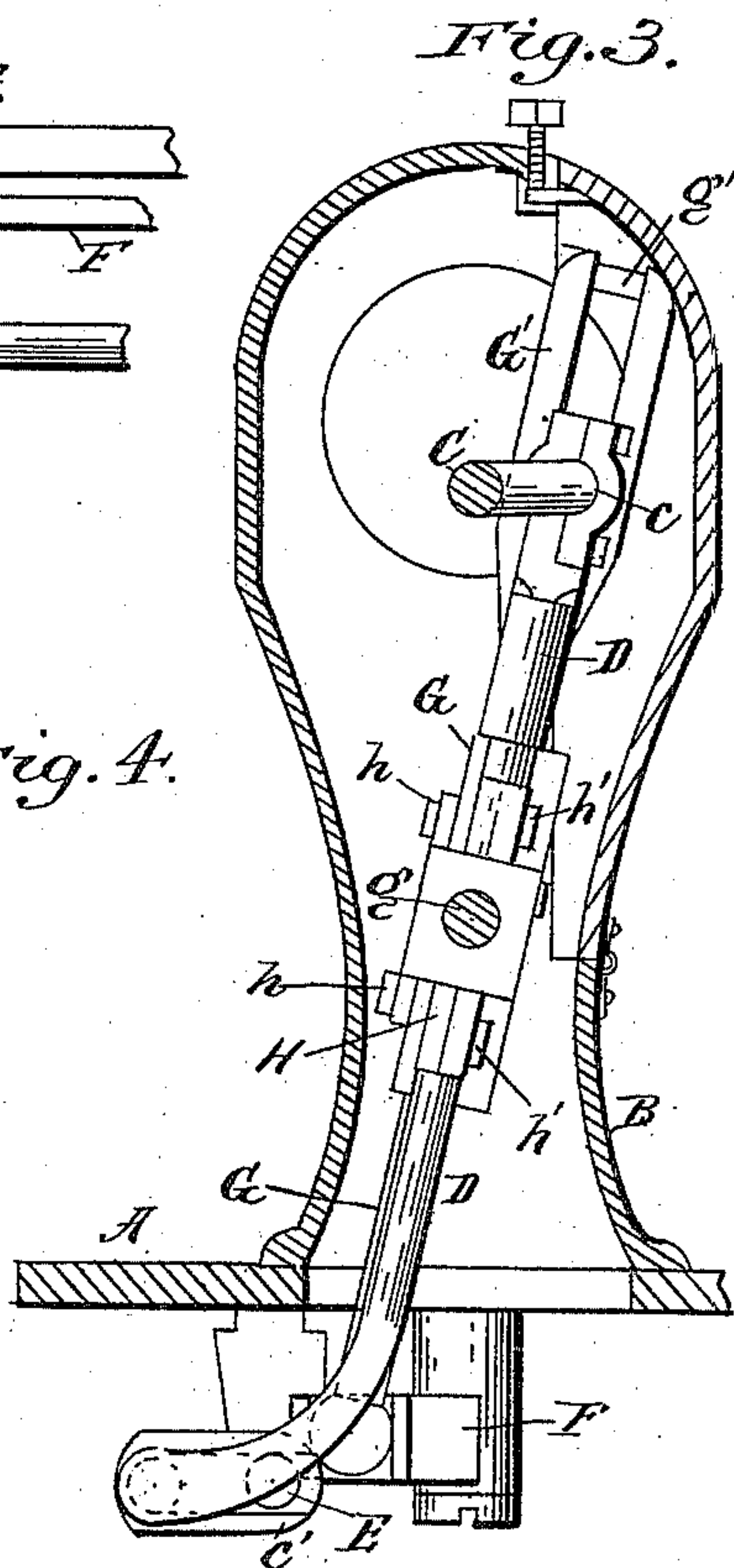


Fig. 3.

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(Model.)

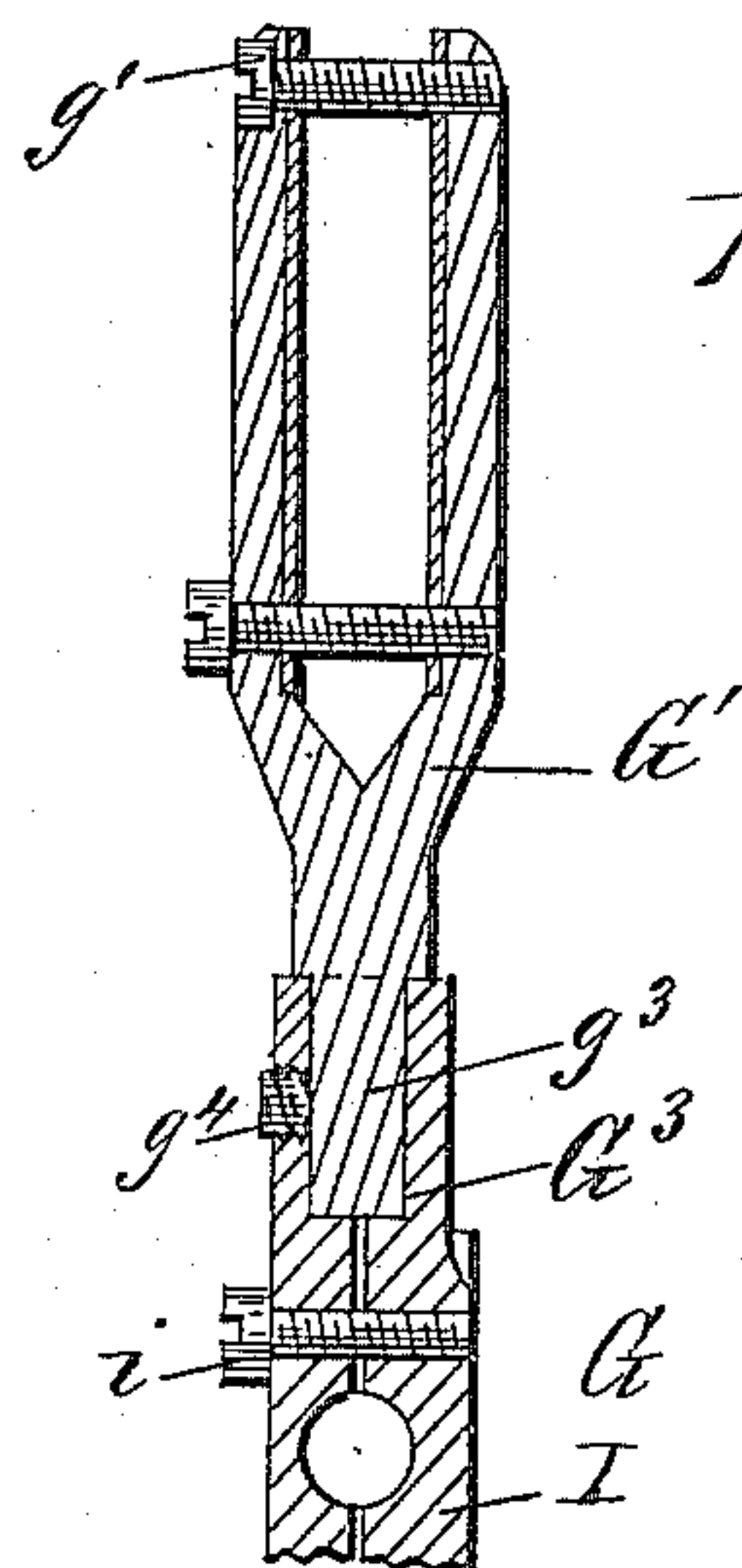
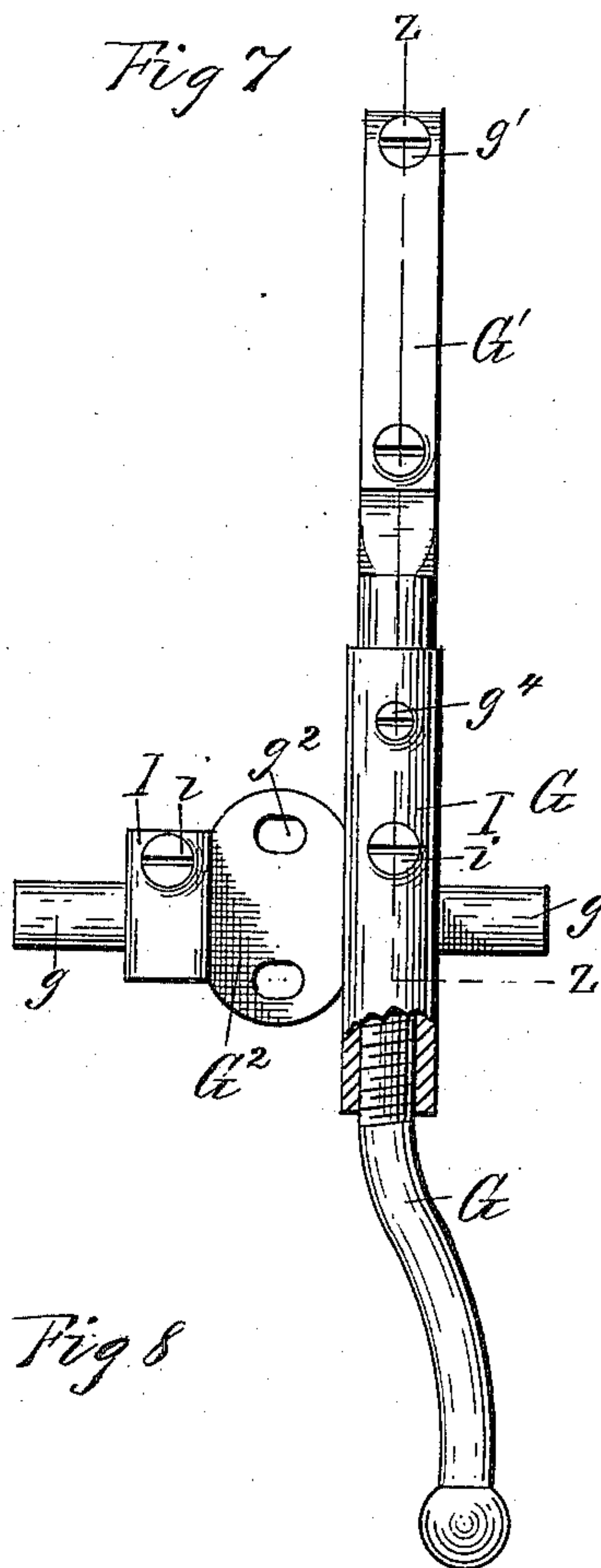
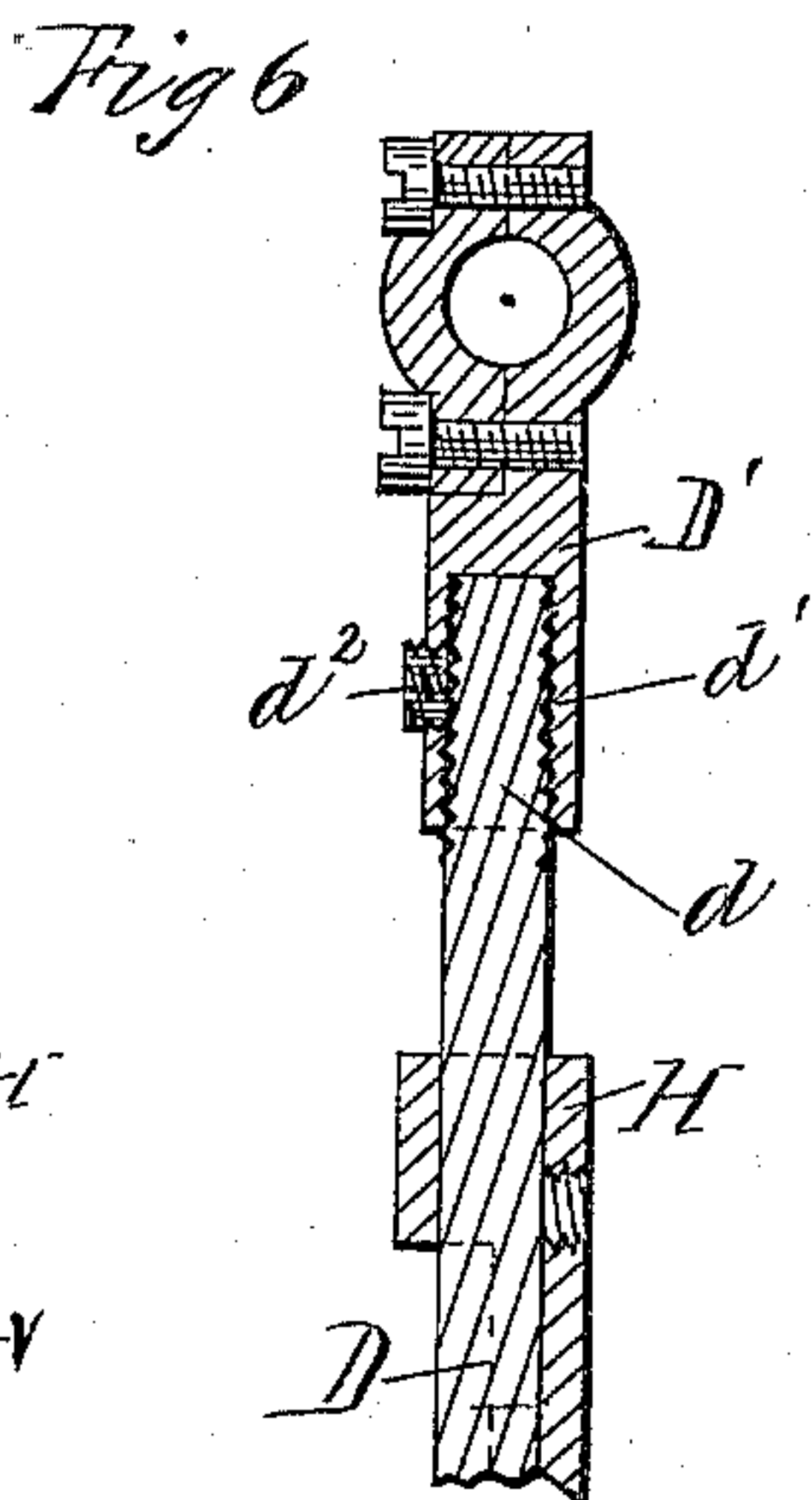
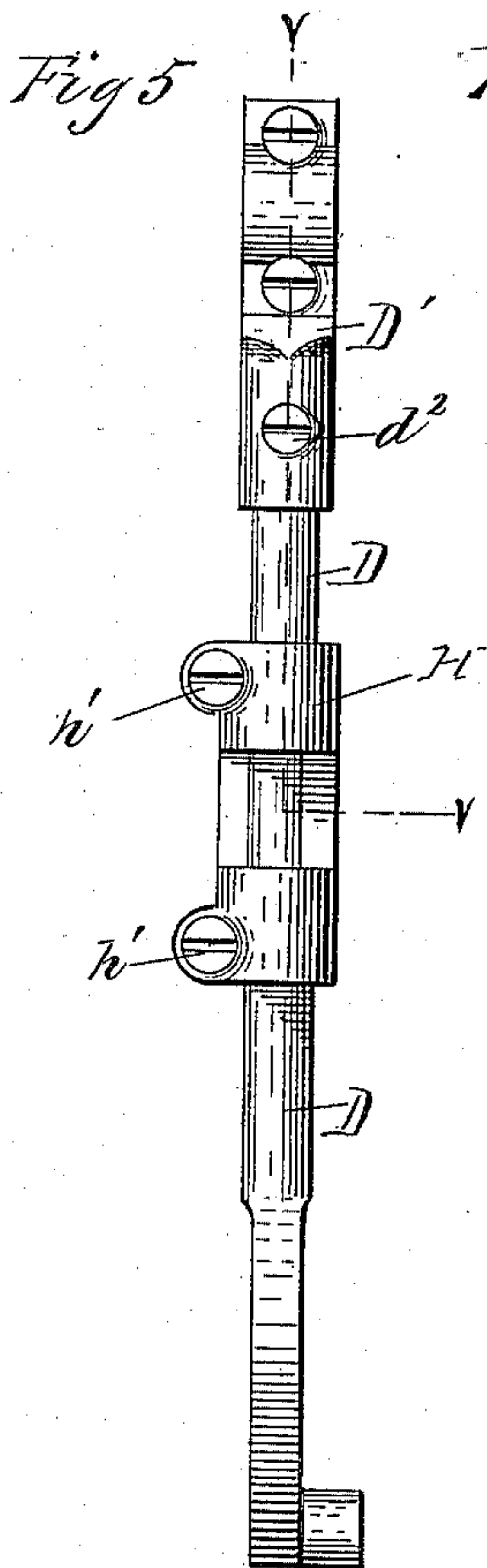
2 Sheets—Sheet 2.

W. J. STEWART.

SEWING MACHINE.

No. 330,272.

Patented Nov. 10, 1885.



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UNITED STATES PATENT OFFICE.

WILLIAM J. STEWART, OF BELLEVILLE, ILLINOIS.

SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 330,272, dated November 10, 1885.

Application filed July 14, 1884. Serial No. 137,712. (Model.)

To all whom it may concern:

Be it known that I, WILLIAM J. STEWART, a citizen of the United States, and residing at Belleville, in the county of St. Clair and State of Illinois, have invented a certain new and useful Improvement in Sewing-Machines, which is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a side elevation of a machine embodying my invention, a part of the standard being broken away; Fig. 2, a plan section of the same, taken on the line xx of Fig. 1; Fig. 3, a vertical section of the same, taken on the line yy , Fig. 1. Fig. 4 is a detail view showing the lever which operates the shuttle-lever. Fig. 5 is an elevation of the pitman-lever and its guide detached, and on an enlarged scale; Fig. 6, a sectional view of the upper portion of the same on the line vv of Fig. 5; Fig. 7, an elevation of the vibrating lever which operates the shuttle-lever detached, and Fig. 8 a sectional view on the line zz of Fig. 7.

My invention relates to the mechanism for operating the feed devices of a sewing-machine, and is in the nature of an improvement upon my previous application, No. 131,251, filed May 12, 1884.

I will proceed to describe in detail the construction and operation of a machine embodying my invention in one practical form, and will then specifically point out in the claims the features I believe to be new and wish to protect by Letters Patent.

As my present invention relates only to a part of the machine, I shall particularly describe only such portions of the entire machine as are necessary to a full understanding of the construction of my improvement.

In the drawings, A represents the bed-plate of the sewing-machine, and B the standard, in which the main shaft C is mounted in the usual way. On the main shaft is a crank, c , to which the upper end of the feed-shaft pitman D is connected. The feed-shaft E is mounted in any ordinary way on the under side of the plate, and the shuttle-lever F is also mounted on the same side of the bed-plate, being pivoted so as to vibrate as required. The lower end of the pitman D is connected to the crank c' on the end of the feed-shaft in the usual man-

ner. The shuttle-lever is operated by a vibrating lever, G, provided with trunnions g , having their bearings in suitable boxes in the standard B. The lower end of this lever is suitably connected to the shuttle-lever, in the construction shown, by a ball on its lower end embraced by the forked end of the shuttle-lever. The upper end of lever G is formed into a fork, G' , which embraces crank c , and may be provided with screws g' , or other suitable means for taking up wear. On the enlarged body portion of the lever G is attached, by screws h or other suitable means, a guide, H, through which the pitman D reciprocates, thus forming a support for said pitman intermediate between the cranks c and c' . This guide is preferably split and provided with clamp-screws h' , by which the parts can be brought closer together to take up wear. The guide H is preferably adjustably connected to the lever G, this adjustable connection being shown as effected, in the present instance, by means of slots g^2 , formed in the bed or seat G^2 upon which the guide is attached, the screws h passing through these slots and allowing the guide to be adjusted in such a position relatively to the trunnions g and main and feed shafts as to prevent any binding of the pitman D in the guide. By the use of this guide, attached as described, all lateral supports on the crank c are dispensed with, and the strain on the parts at a high rate of speed is more equally distributed. This construction is more especially adapted and intended for use in machines run by power at a high rate of speed—as in shops, &c.—in contradistinction to the ordinary foot-power, the construction described in my previous application not being well adapted to high speed in operation.

In practice it is found that even after the most careful finishing of the parts, upon assembling the same they are liable to be slightly out of true, and consequently the upper portions of the pitman D and lever G, where they are in contact with the main shaft C, do not have their bearing-surfaces in exact parallelism with the surface of the shaft with which they are in contact, thereby causing unequal wear of the parts. In order to overcome this objection, I form the upper sections or ends of both the pitman and the lever separate from the bodies and pivot them to the said bodies, so that they can move axially in

relation thereto. This result is effected in the case of the pitman D by screw-threading the upper end of the body thereof at d and forming the head D' , which carries the bearing embracing the crank c , with a screw-threaded recess, d' , adapted to receive the screw-threaded end of the body D. A set-screw, d^2 , in the head D serves to connect the two parts rigidly after adjustment. In the case of the vibrating lever G the upper end or head, G' , is formed with a stem or shank, g^3 , extending down into a corresponding socket, G^3 , formed in the upper end of the body of the lever, to receive the same, and a set-screw, g^4 , is employed to make rigid the connection between the two after adjustment. After the parts have been assembled the shaft C is rotated slowly before the screws h^2 , d^2 , and g^4 have been tightened up, whereupon the guide H and the heads D' and G' will assume their proper position relatively to the other parts, when the several set-screws may be tightened to clamp them in place.

The trunnions g are preferably constructed as shown, consisting of short cylindrical pieces, the outer ends of which are mounted in suitable bearings in the casing B, while the inner ends are adjustably secured in split bearings I, formed in the body portion of the lever G, the said bearings being provided with clamping-screws i , by means of which they may be tightened upon the cylindrical trunnions g . The outer ends of the cylindrical trunnions g are adjustably clamped in their bearings by means of set-screws b , as shown in Fig. 1 of the drawings.

I do not wish to be understood as limiting myself to the precise details of construction described above, and shown in the drawings, for obviously these may be changed without departing from the principle of my invention, and the improvement may be applied to different varieties of sewing-machines.

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

1. In a sewing-machine, the combination,

with the main shaft and feed-shaft and a pitman connecting the two, of a vibrating lever mounted on trunnions arranged below the main shaft, and parallel thereto, its upper end embracing the crank on the main shaft, its lower end connected with the shuttle-lever, and its body portion intermediately between the said ends being provided with a suitable guide in which the pitman reciprocates, substantially as and for the purposes specified.

2. In a sewing-machine, the combination, with the pitman which operates the feed-shaft, of an independently-operated vibrating lever, operating the shuttle-lever and having a guide through which the pitman reciprocates, the axis of vibration of the said lever being at right angles to the axis of the said guide, substantially as and for the purposes specified.

3. In a sewing-machine, the combination, with the shaft C, having crank c , feed-shaft E, having crank c' , and pitman D, connecting the two, of lever G, mounted on an axis parallel with and between the said shafts, its upper end embracing the crank c , and its lower end connected with and operating the shuttle-lever, and the guide H, secured thereon, to receive the pitman D, substantially as and for the purposes specified.

4. The combination, with the main shaft C, having crank c , of the pitman D and vibrating lever G, the latter mounted on an axis parallel with the said shaft and being provided with a guide through which the former reciprocates, and both said lever and pitman being provided with axially-adjustable upper ends embracing the said crank, substantially as and for the purposes specified.

5. The combination, with the pitman D, of the independently-actuated vibrating lever G, provided with a guide, H, adjustably mounted thereon, to receive the pitman, substantially as and for the purposes specified.

WM. J. STEWART.

Witnesses:

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