

(No Model.)

H. P. GARLAND.  
BAG SEWING MACHINE.

No. 283,095.

Patented Aug. 14, 1883.

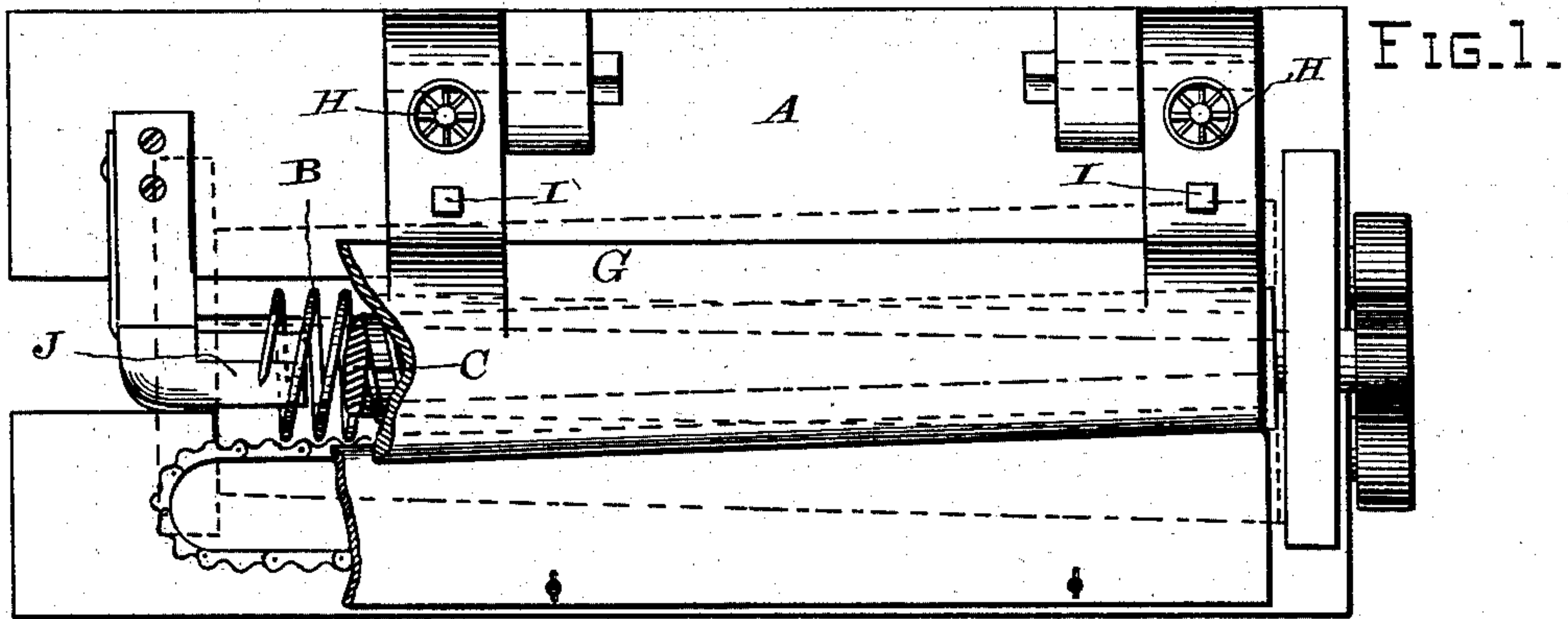


FIG. 2.

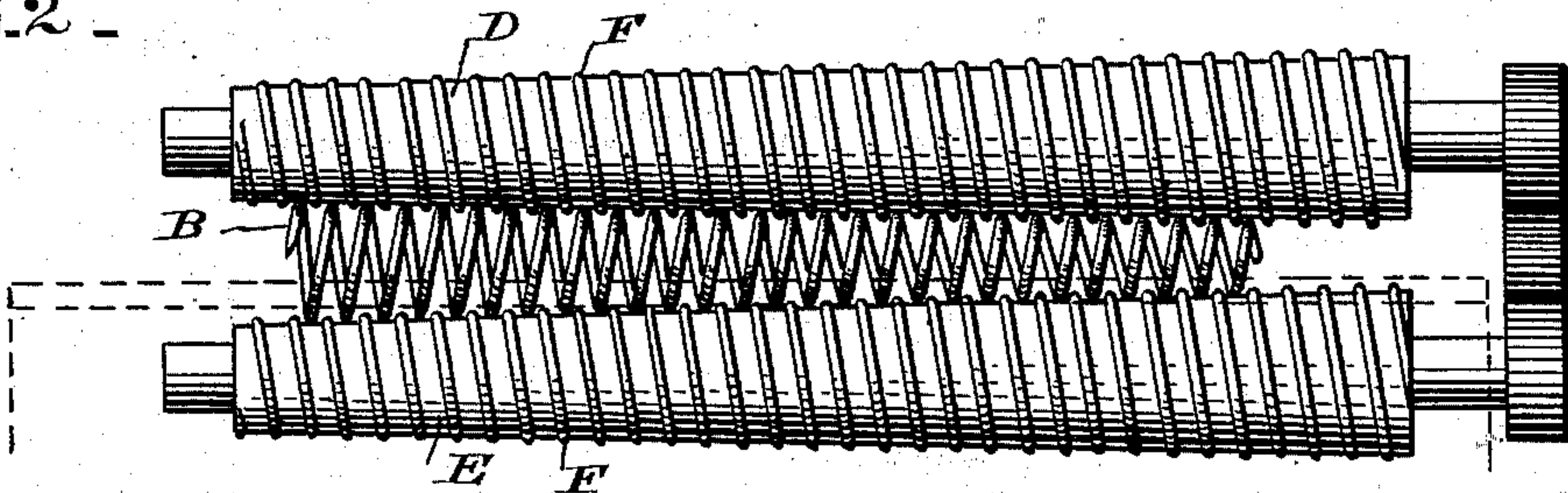


FIG. 3.

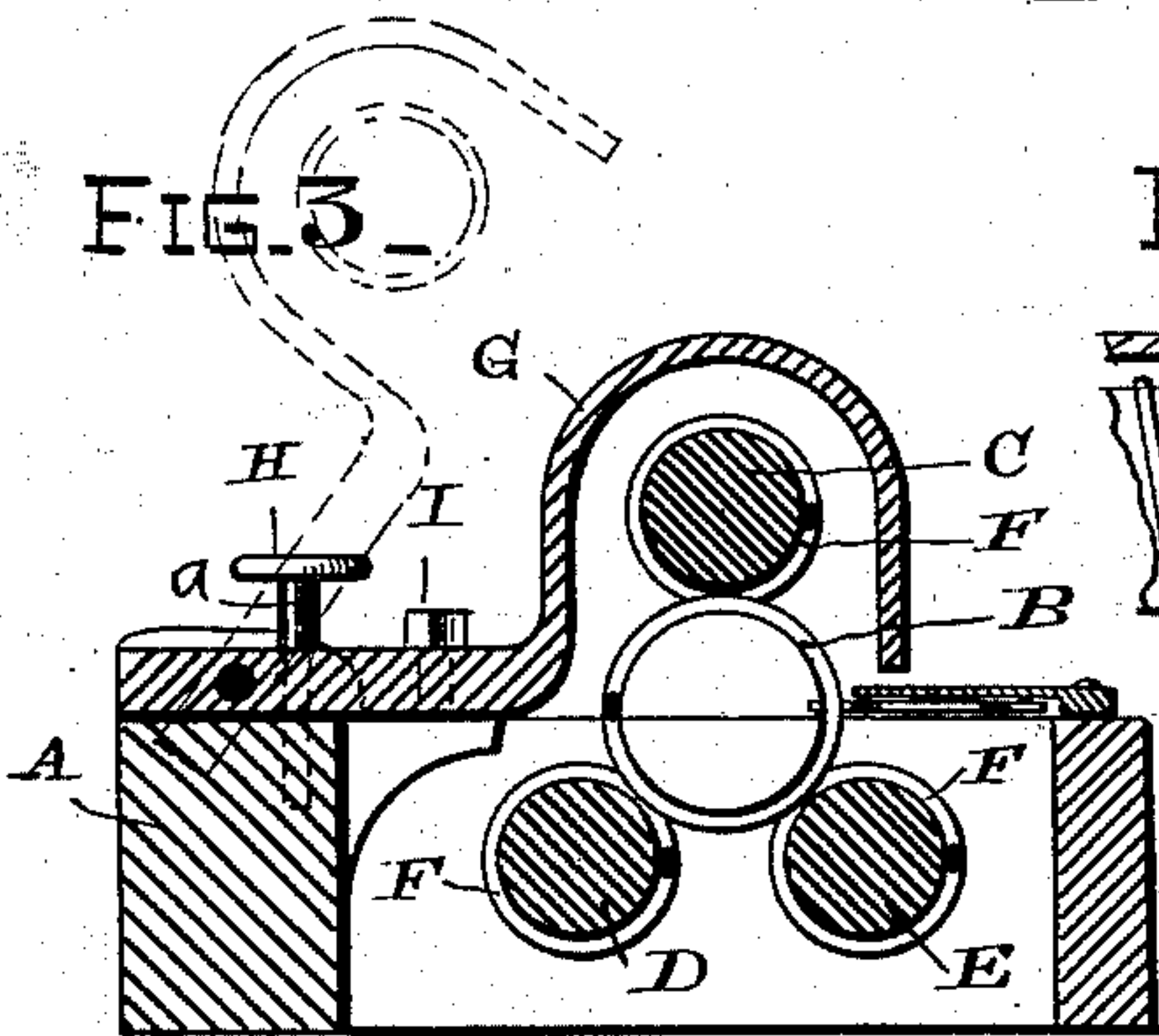


FIG. 5.

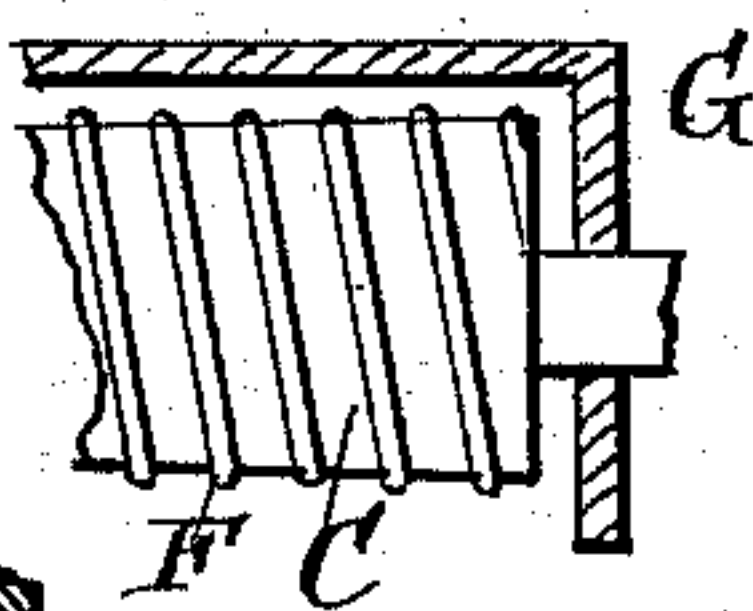


FIG. 4.

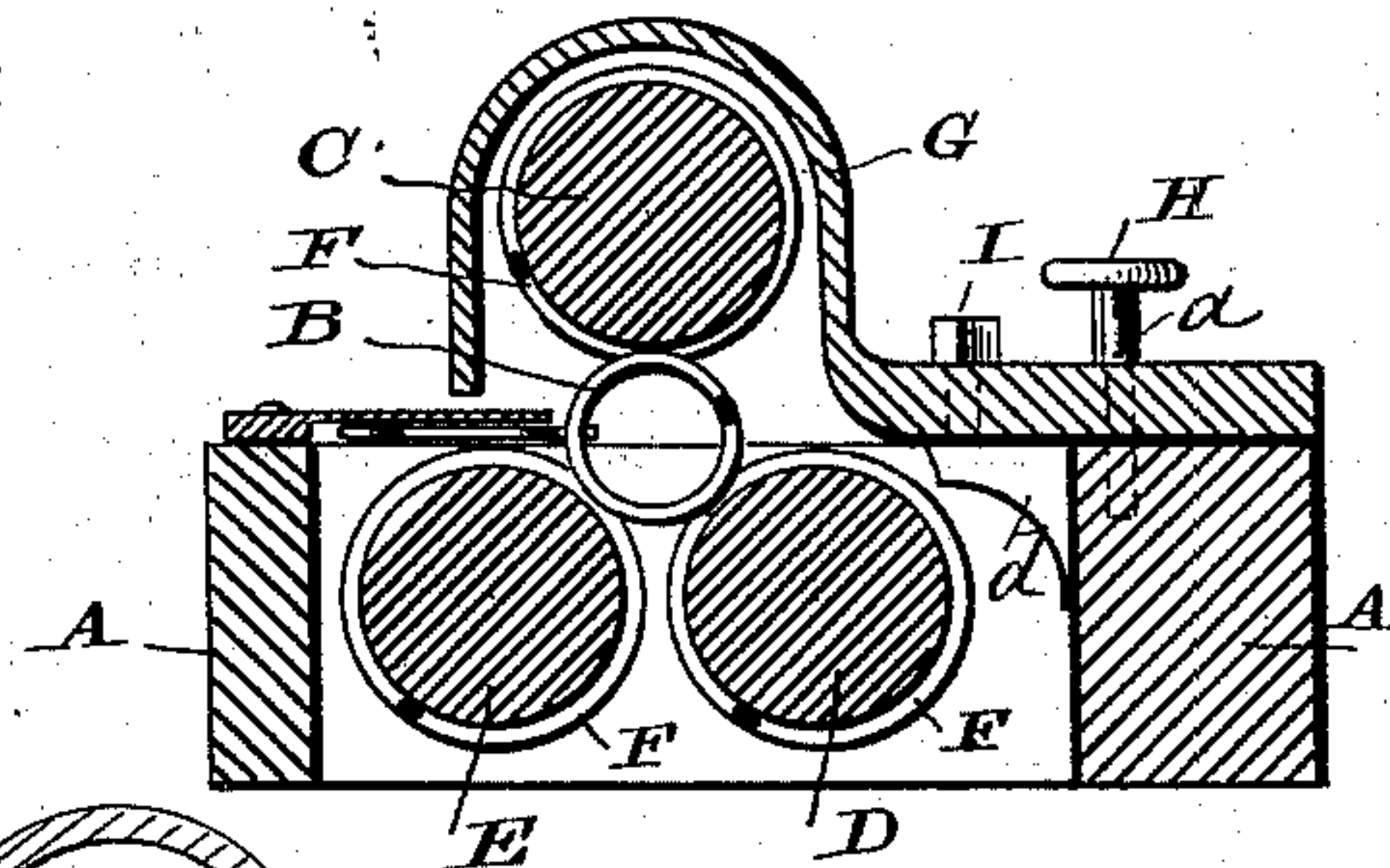
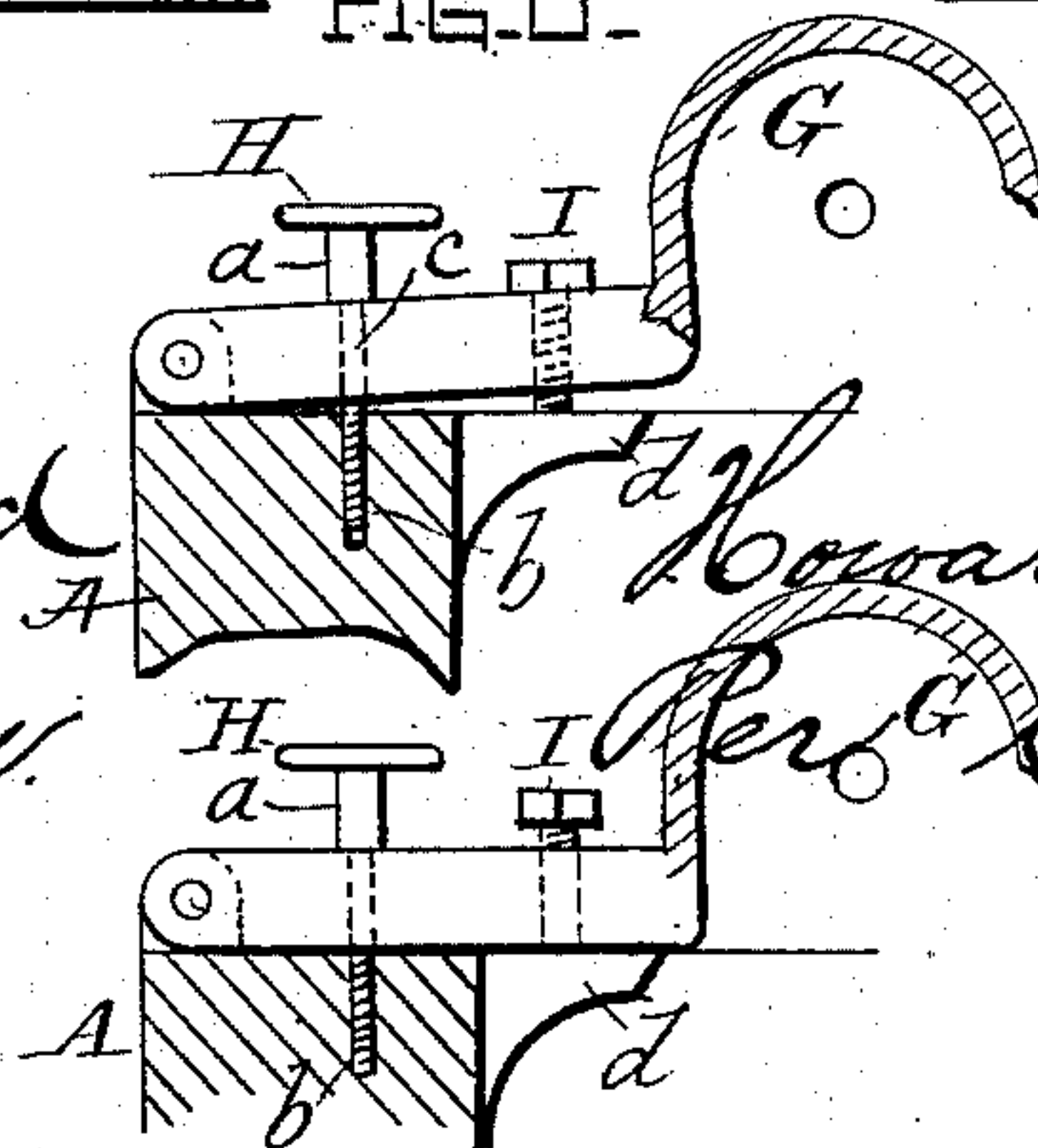


FIG. 6.



WITNESSES.

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# UNITED STATES PATENT OFFICE.

HOWARD P. GARLAND, OF SAN QUENTIN, CALIFORNIA.

## BAG-SEWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 283,095, dated August 14, 1883.

Application filed January 27, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, HOWARD PRATT GARLAND, a citizen of the United States, residing at San Quentin, in the county of Marin and State of California, have invented certain new and useful Improvements in Sewing-Machines for Sewing Bags, of which the following is a specification.

My invention relates to improvements in sewing-machines, chiefly designed for sewing thick or heavy materials with an overhand or winding-stitch; and it consists more particularly in certain improvements upon the sewing-machine for which I have obtained a patent in Great Britain No. 3,538, dated September 8, 1876.

Heretofore it has been found that, where operating a machine for sewing bags and other thick or heavy material employing a spiral needle and supported by a series of threaded cylindrical rollers, or cylinders between which the said needle rests, when the point of the needle meets with any obstruction and the rollers continue to revolve, the needle will be forced backward until it meets the heel or end plate, when its further progress will be stopped, and as the screw-threads of the rollers prevent the needle from being compressed upon itself, the increased resistance or pressure causes the needle to break, to the great damage of the machine and fabric being sewed; hence the object of my invention is to avoid this difficulty and to provide an improved means for operating the spiral needle, which object I accomplish by means of the device illustrated in the accompanying drawings, in which—

Figure 1 is a plan or top view, partly broken away, of a bag-sewing machine embodying my invention. Fig. 2 is a bottom view, showing the two supporting operating-rollers and the spiral needle. Fig. 3 is a cross-section taken through the small end of the rollers. Fig. 4 is a cross-section taken through the large end of the rollers. Fig. 5 is a detail. Fig. 6 shows detail views illustrating the manner of adjusting the casing.

Similar letters of reference are used to designate like parts throughout the several views.

The operating-rollers are supported by a

suitable bed-plate, A, which is to be firmly secured upon a table or other support. The helical or spiral needle B is made of steel, the coil gradually increasing from a small diameter at the heel to a large diameter at the point or eye.

The rollers C, D, and E, which support and drive the spiral needle, are of the form of a truncated cone, or, in other words, are circular in cross-section, and have a gradual taper from one end to the other. Upon these drive-rollers I cut a screw-thread, F, having rounded edges and of the same pitch as are the turns or spirals of the needle. The upper of the three rollers is fitted with a case, G, open at the bottom and hinged to the back part of the bed-plate in such a manner that the case, together with the roller which is journaled therein, as shown in Fig. 5, may be turned back or opened, so that access may be had to the spiral needle, and the latter may be taken out and replaced.

The rear portion of the case G is provided with two screw hand-wheels, H H, for the purpose of clamping the said casing and its roller down upon and over the spiral needle, and it is also provided with two set-bolts, I I, for regulating the pressure of the upper roller upon the needle. The stems of the hand-wheels are each made solid, with an enlarged portion, *a*, that rests upon the upper face of the casing, as shown in Figs. 3, 4, and 6. The lower end of the contracted portion of each of these stems is screw-threaded, as shown at *b*, so as to screw into the bed-plate, while the intermediate portion, *c*, that passes through the casing, is left plain. The set-bolts I I are threaded, and pass through the casing, and rest upon the upper surface of the bed-plate, or upon lugs *d d* projecting therefrom, as shown.

The upper drive-roller is journaled in the ends of the casing, as shown in Fig. 5, and when the casing is thrown over or down upon the needle the hand-wheel is turned down, so as to cause the upper drive-roll to press upon the needle, and the set-bolt I is also screwed down until its point touches the top of the lug *d* on the bed-plate. If it be found that the tension or pressure produced by the hand-wheel upon the needle is not sufficient, the set-



bolt is slackened and the outer end of the shell or casing allowed to descend lower. Should it be too great, the set-bolt is turned down, which will raise up the outer end of the casing. It is not absolutely necessary that the set-bolts be employed, as wedges or blocks would answer the same purpose.

The drive rollers or cylinders are placed in position within the machine, with their large ends at the right-hand side or at the heel of the needle, and the central line or axis of each roller is placed parallel with those of the other two. The spindles or gudgeons of each of these rollers are provided with a pinion geared with suitable driving gear-wheels mounted on a shaft provided with loose and fast pulleys, and these rollers are so placed with reference to each other that their centers form the three corners of an isosceles triangle, the center of the upper roller being the apex; and within the space left between the peripheries of the rollers I place the spiral needle B. The needle lies in a reversed position, with its small end or heel between the large ends of the rollers and its large end or point between the small ends of the rollers. The threaded portion of the drive-rollers is made somewhat longer than the length of the spiral needle, and this excess of length is left at the heel end of the needle, for a reason to be hereinafter explained.

The screw-thread on the rollers is formed in the opposite direction to, but with the same pitch as, the thread or spiral of the needle, so that the grooves in the rollers form seats for the needle and keep it always at a uniform distance from the end of the machine. The thread of the rollers working in the needle also maintains the uniformity of the pitch of the thread of the needle throughout its entire length, and the gearing of the said rollers with one central shaft insures the revolution of all of them in one direction and their driving the

needle in the reverse direction, or toward the operator. At the forward or eye end of the needle, and working in the same, I arrange a nose-piece or slotted guide, J, which acts as a guide to the fabric entering and being sewed by the machine.

It will be readily seen from the foregoing that the needle cannot work forward, because the pressure will be equal throughout the entire length of the needle; but when the eye or point of the needle strikes or meets with any obstructions such as are liable to be met with in sewing very heavy, coarse, or badly-woven fabrics, the needle will work backward toward the heel end of the rollers with a yielding but at the same time a resisting pressure until the pressure at the point of resistance has become sufficiently great to force the needle-point through the fabric, when the expansive power of the coiled needle will cause its eye end to move forward and resume its original position.

For sewing very light fabrics the spirals or threads upon the tapering rollers may be dispensed with and the rollers made perfectly plain, and the spiral needle may be either grooved or solid.

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

In a sewing-machine adapted for sewing an overhand stitch, the combination of the tapering spiral needle B and the tapering supporting and driving rollers C, D, and E, when combined, arranged, and operating substantially in the manner and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand and seal.

HOWARD PRATT GARLAND. [L. s.]

Witnesses:

WILMER BRADFORD,  
CHAS. E. KELLY.