

A. PROVANCHA.

Treadles.

No. 146,780.

Patented Jan. 27, 1874.

Fig. 1.

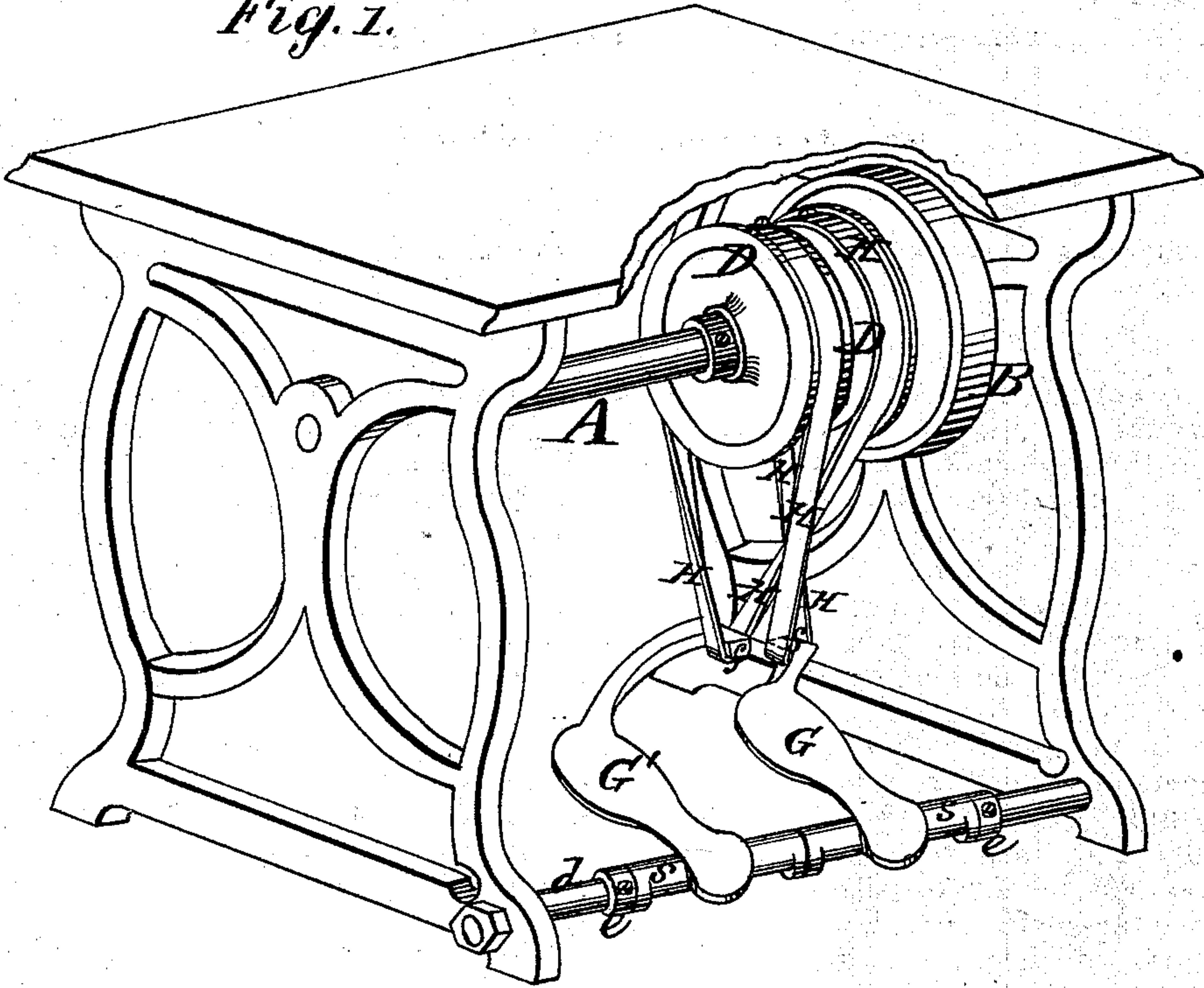


Fig. 2.

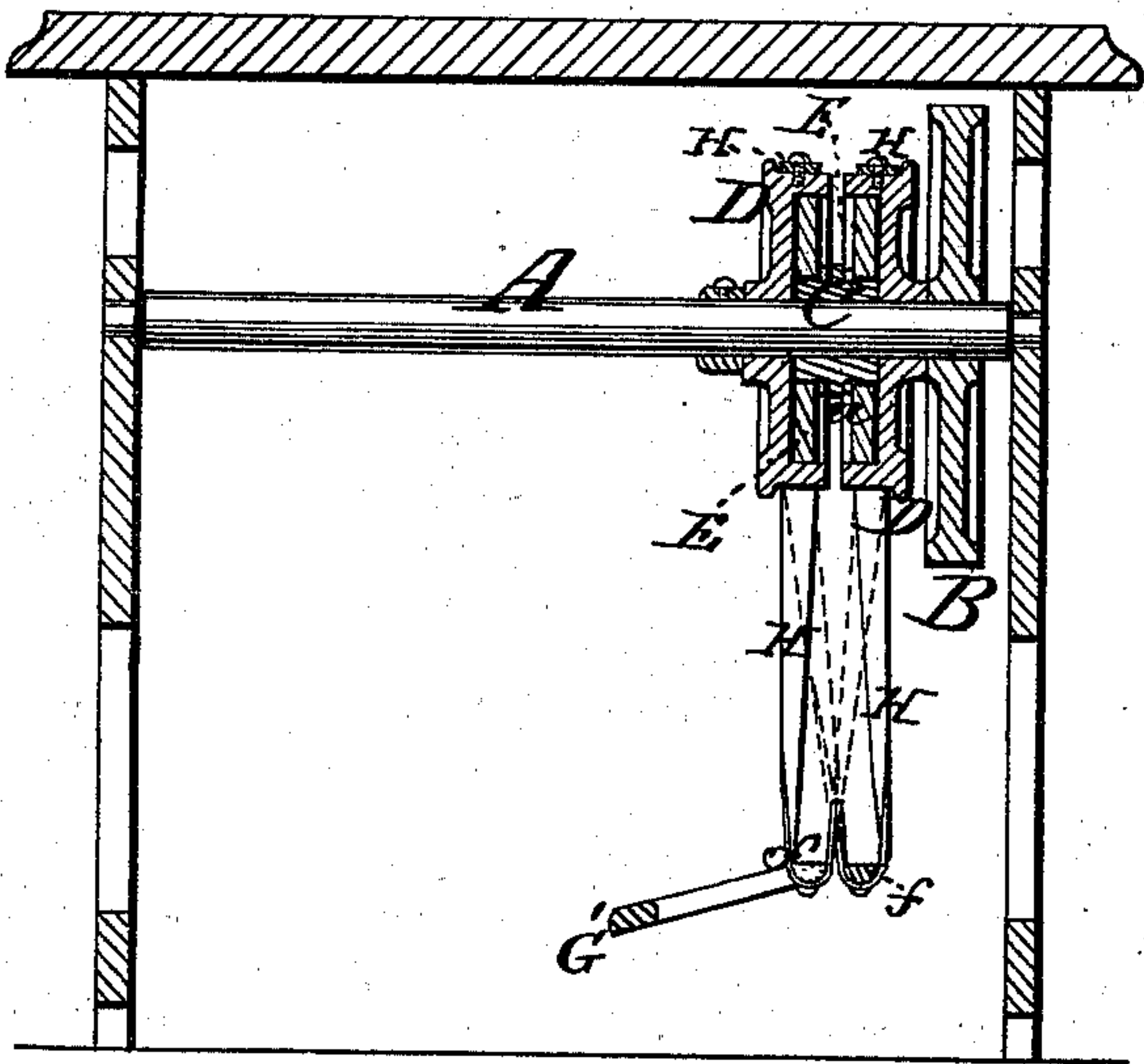


Fig. 3.

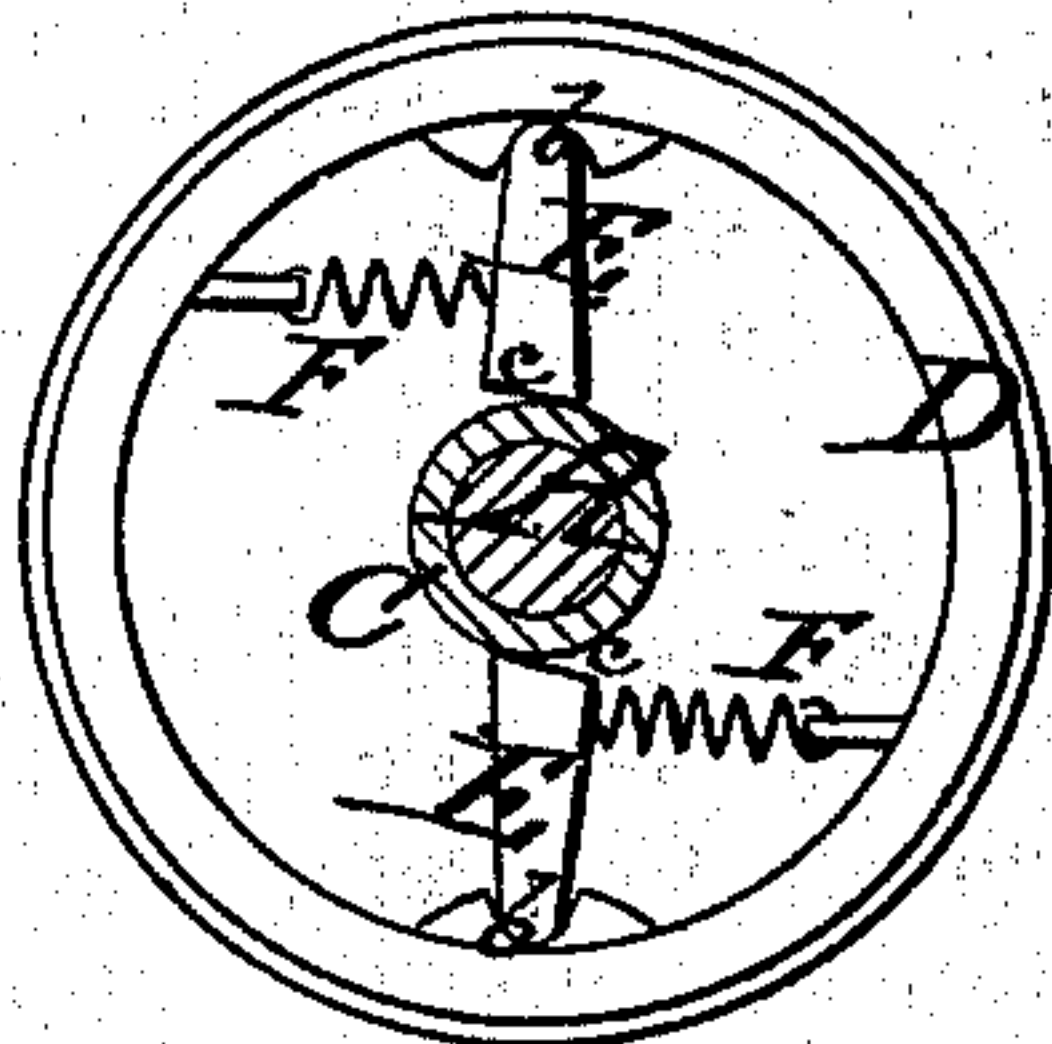
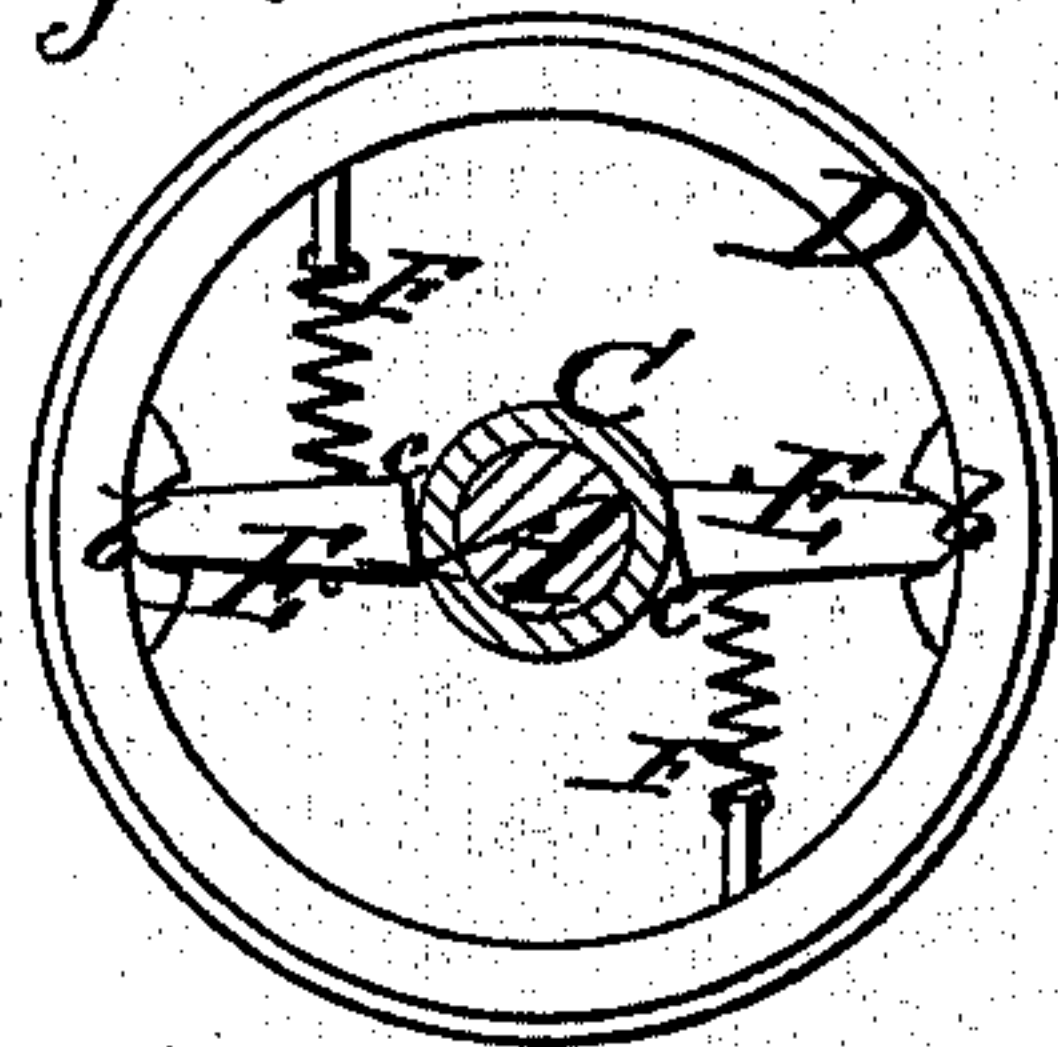


Fig. 4.



Witnesses

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# UNITED STATES PATENT OFFICE.

ABRAHAM PROVANCHA, OF CHICAGO, ILLINOIS, ASSIGNOR TO HIMSELF  
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## IMPROVEMENT IN TREADLES.

Specification forming part of Letters Patent No. 146,780, dated January 27, 1874; application filed  
September 20, 1873.

*To all whom it may concern:*

Be it known that I, ABRAHAM PROVANCHA, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Treadle Movements for Sewing-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings making part of this specification, in which—

Figure 1 is a perspective view of my improved movement applied to a frame or sewing-machine table. This view shows the form of the treadles and the arrangement of the one or endless belt for working the two pulleys on the driving-shaft. Fig. 2 is a vertical section through the center of the pulleys. Figs. 3 and 4 show sections of the two pulleys and the spring-dogs, the dogs of one pulley being shown at right angles to the dogs of the other pulley.

The object of my invention is to render practicable the use of shorter treadles or levers in a treadle movement for sewing-machines than have heretofore been used in similar movements, and at the same time avoid the dead-center, the riding of the different parts of the belt upon one another, and dispense with the use of a purchase for the belt above the pulley. The nature of my invention consists in two treadles, with their pedal portions arranged to one side of a sectional clutching-pulley, which is on the power-shaft, and extended backward on curved lines, the converse of one another, and with termini which bring them under said pulley, in combination with the two sections of the said clutching-pulley, which produce motion in only one direction, and with a cross-belt, which has its purchase upon the pulley-sections, and its ends fastened to the termini of the extended parts of the pedals.

By means of this combination several benefits are secured: First, the use of a crank is avoided, and therefore the machine will not be liable to get on the dead-center, and to be started in the wrong direction. Second, the different parts of the belt will be kept free from one another by reason of the converse

curvature in the treadles while they are moving. Third, the length of the treadles beyond their fulcrum is greatly reduced by giving their extended portions reverse curved sweeps, and the curved sweeps will throw the extended portions to one side out of the way of the legs of the operator; and as this is the fact, the extended ends may be much shorter than when they are in front of the operator, for the reason that if they are raised close to the operator's knees they cannot interfere with him, inasmuch as they are to one side of his body.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawings.

A is the driving or power shaft of a sewing-machine; B, the transmitting-belt pulley, fast on said shaft. C is a hub with a central ridge, *a*. This is also made fast on said shaft. D D are two hollow pulleys slipped loosely on the shaft; E E, clutching-dogs, fitted, by means of their rounded ends *b b*, to sockets of corresponding form within the inner periphery of the pulleys D D, as shown. The inner ends of these dogs are beveled, as at *c*, and these beveled ends come in contact with the hub C, as shown. F are spiral springs for keeping the dogs in proper position with respect to the hub and their sockets. The construction and set of these dogs is such that those of one pulley occupy a place on one side of the ridge *a*, and those of the other pulley on the opposite side thereof. Further, the vertical axis of these dogs is midway between the beginning and the ending of the bevel on their ends, and this axis would intersect the axis of the shaft A; hence the longest part of these dogs can never pass to a position which would form right angles with said axis without carrying the hub, pulley, and axle around with them. In moving in a reverse direction, however, the shortest part of these dogs can do so without moving the pulley or axle. G G' are two treadles, hung, by means of tubular sleeves *s s*, to the front round *d* of the sewing-machine frame, and confined side by side one another by collars *e e*. These treadles are shaped similarly to the bottom of the human foot on their



front portion, and then are extended nearly in form of a quadrant or segment of a circle, that  $G'$  having a greater radius than that  $G$ , and the curve of one being opposite to that of the other. The termini  $ff$  of these portions are almost diametrically opposite one another, and stand a short distance apart. They are in form of short half-round bars. One of these ends comes nearly under one pulley, and the other under the adjoining pulley. To these ends an endless belt,  $H$ , is fastened by passing the belt under the end of the right-hand treadle, fastening it; then backward and upward over the right-hand pulley, fastening it at top; then downward and backward under the end of the left-hand treadle, fastening it; then upward and over the left-hand pulley, fastening at top; then downward to the end, where it commenced, and fastening it; or vice versa, as illustrated in the drawing.

My invention has been practically tested,

and it works well, and is almost noiseless, and with it there is no possibility of the machine working backward. The arrangement is simple, and can be readily applied to machines in use.

What I claim as my invention, and desire to secure by Letters Patent, is—

In a sewing-machine-treadle movement, two treadles,  $G G'$ , constructed with the converse curvatures and termini  $ff$ , facing one another, combined with the two sections  $DD$  of the clutching-pulley, and with the crossed belt  $H$ , fastened to the pulleys and the treadles, as and for the purpose described.

ABRAHAM <sup>his</sup> × PROVANCHA.  
mark.

Witnesses:

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J. C. HILL.