(No Model.) 2 Sheets—Sheet 1.

J. W. RAMSDEN.

BOOT AND SHOE SEWING MACHINE.

No. 259,918. Patented June 20, 1882.

Fig. 1a.

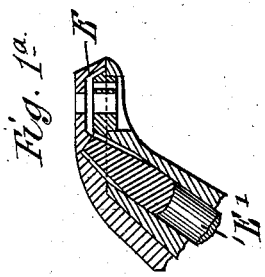
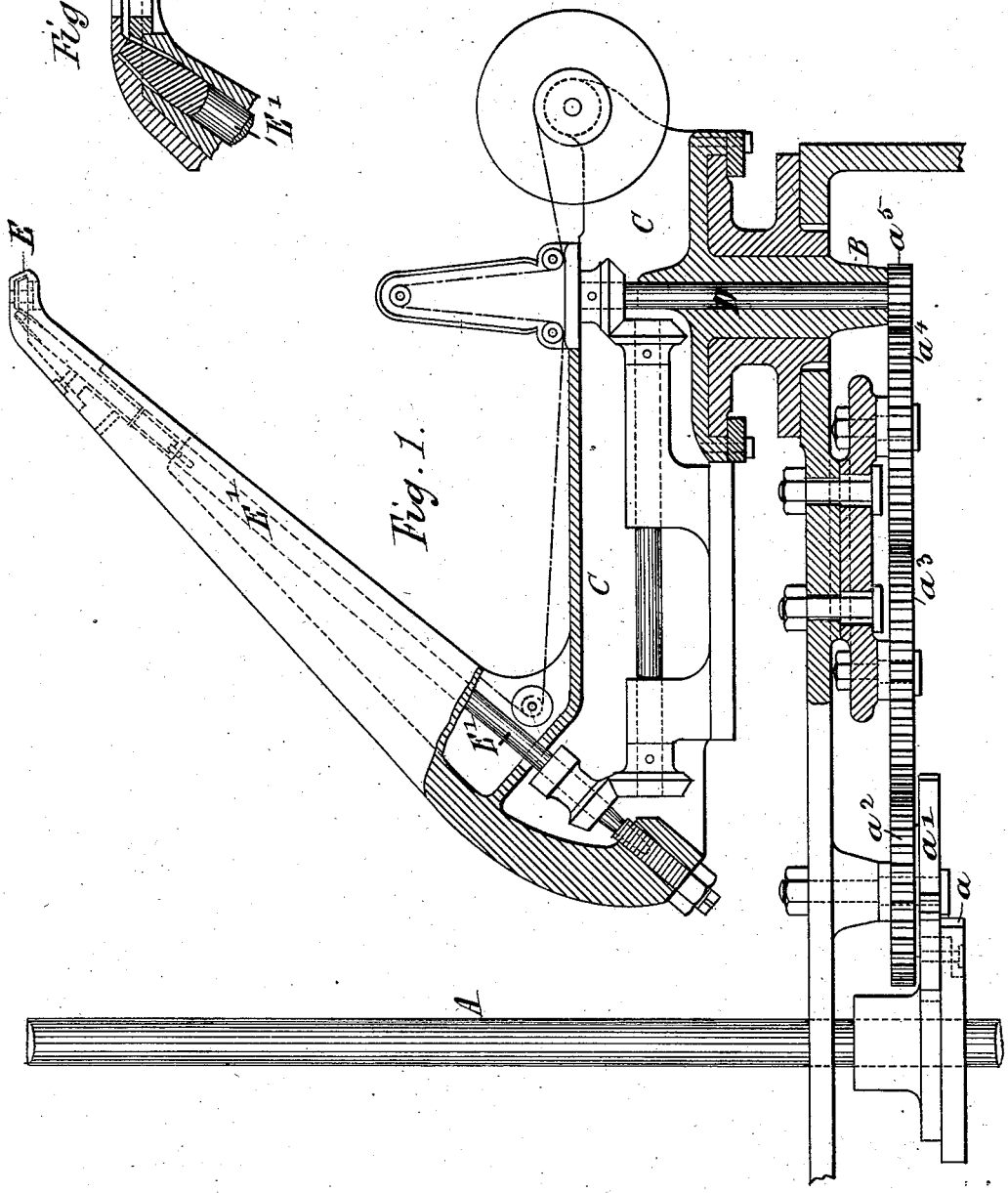


Fig. 1.



WITNESSES

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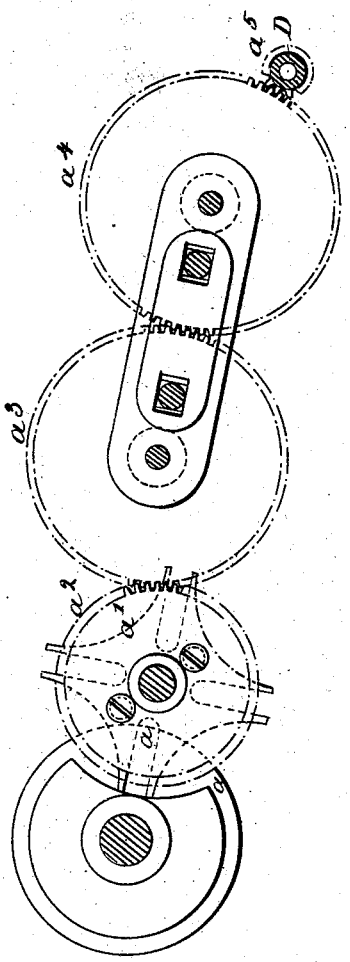
(No Model.) 2 Sheets—Sheet 2.

J. W. RAMSDEN.

BOOT AND SHOE SEWING MACHINE.

No. 259,918. Patented June 20, 1882.

Fig. 2.



WITNESSES.
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UNITED STATES PATENT OFFICE.

JOHN W. RAMSDEN, OF LEEDS, COUNTY OF YORK, ENGLAND.

BOOT AND SHOE SEWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 259,918, dated June 20, 1882.

Application filed September 6, 1881. (No model.) Patented in England April 8, 1881, No. 1,548, and in France June 4, 1881, No. 143,224.

To all whom it may concern:

Be it known that I, JOHN WILLIAM RAMSDEN, of Leeds, in the county of York, England, have invented a new and useful Improvement in Sewing-Machines, (for which I have obtained British Letters Patent No. 1,548, dated April 8, 1881, and a French Brevet d'Invention No. 143,224, dated June 4, 1881,) of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to what are known as "horn" sewing-machines for sewing the soles of boots and shoes, and is applicable either to that class of machines in which a single thread is used by a needle alone or to that class in which two threads are used by a needle working in conjunction with a shuttle above the material to be sewed.

The invention consists in improved means of imparting motion to the "whirl" in the nose of the horn of the machine, whereby I am enabled to run the machine at a greater speed than heretofore and with less fraying of the thread, owing to the whirl remaining quiescent while the thread is being drawn through the eye of the whirl. The whirl is mounted in the horn and driven by gearing, as usual; but instead of imparting motion to this gearing by means of a cam on the driving-shaft and a toothed sector, as heretofore, or equivalent means, I arrange a train of gearing from the main driving-shaft of the machine to the vertical shaft, in the center of the horn-socket, of such nature that it will impart intermittent rotations to the whirl always in the same direction, one for every rotation of the main driving-shaft.

In Sheet I of the accompanying drawings, Fig. 1 shows in sectional elevation so much of a horn sewing-machine as will serve to illustrate my invention. Fig. 1^a shows a vertical section of the upper part of the horn and whirl on a larger scale than Fig. 1; and Fig. 2, Sheet II, is a plan view of the novel arrangement of gearing for working the whirl on a scale corresponding with Fig. 1.

A is the main driving-shaft, and B is the hollow socket around which the horn C which carries the work is free to move.

Keyed to the main driving-shaft A is a one-toothed pinion, *a*, gearing into a "star-wheel," *a'*, which is mounted loosely on a stud-axle pendent from the under side of the table of the machine. This star-wheel is furnished with a given number of radial slots, into which the one-toothed pinion takes, and it receives therefrom an intermittent axial motion, making a certain portion of a rotation for each rotation of the main shaft.

a^2 is a spur-wheel made fast to the star-wheel *a'*, and it drives through intermediate spur-wheels, a^3 a^4, the pinion a^5 on the end of the vertical shaft D in the center of the horn-socket B. The wheel a^2 must bear the same proportion to the pinion a^5 that the star-wheel *a'* does to the one-toothed pinion *a*—that is, supposing the star-wheel *a'* to have four slots, as shown in the drawings, the spur-wheel a^2 which it carries will have four times the number of teeth of the pinion a^5 on the vertical shaft D. By this means the pinion a^5 will make an equal number of rotations with the main driving-shaft; but it will complete its rotation while the main driving-shaft is making only a certain portion of a rotation, and consequently will remain stationary during the other portion of the rotation of the main shaft. The movement thus imparted to the shaft D is transmitted to the whirl E (seen best at Fig. 1^a) through bevel-gearing and an inclined shaft, E', in the ordinary manner. It will thus be understood that the whirl in the horn can be made to rotate during the time that the hooked needle is in the nose of the horn to receive its thread, and will then remain stationary until the hook has completed its upward stroke and the stitch has been drawn in tight.

What I claim as my invention is—

The mechanism for driving the whirl, consisting of the combination of the driving-shaft A, the shaft D in the center of the horn-socket, the one-toothed wheel *a* on the driving-shaft, the star-wheel *a'*, gearing with said wheel *a*, the pinion a^2, carried by said star-wheel, the pinion a^5 on said shaft D, and intermediate gearing between the said pinions a^2 and a^5, all substantially as herein described, for the purpose set forth.

JOHN WILLIAM RAMSDEN.

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