

(No Model.)

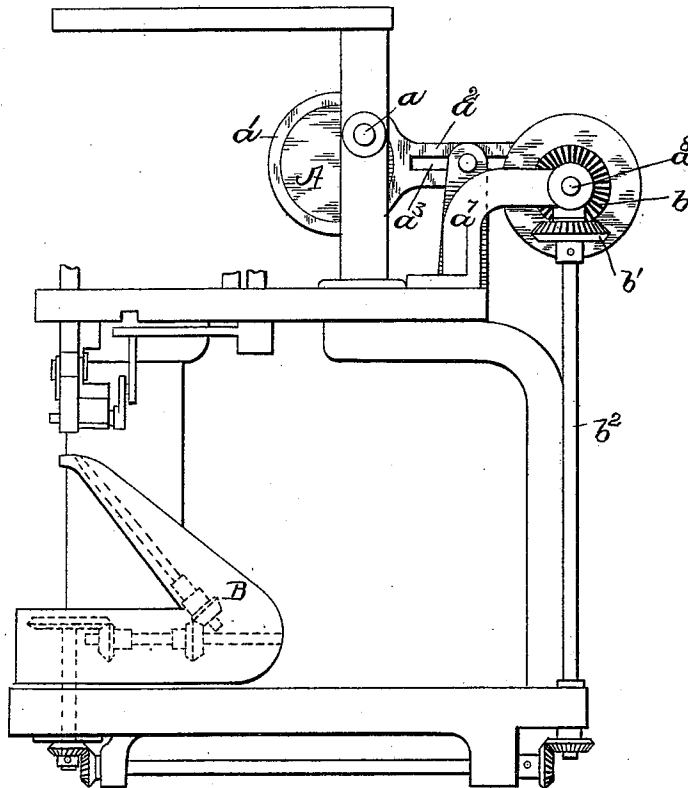
2 Sheets—Sheet 1.

W. A. RAYMOND.
BOOT OR SHOE SOLE SEWING MACHINE.

No. 459,937.

Patented Sept. 22, 1891.

Fig. 1.



WITNESSES.

J. M. Dolan.
H. H. Whitney.

INVENTOR.

William A. Raymond
by his Attys
Charles H. Raymond

(No Model.)

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Fig. 2.

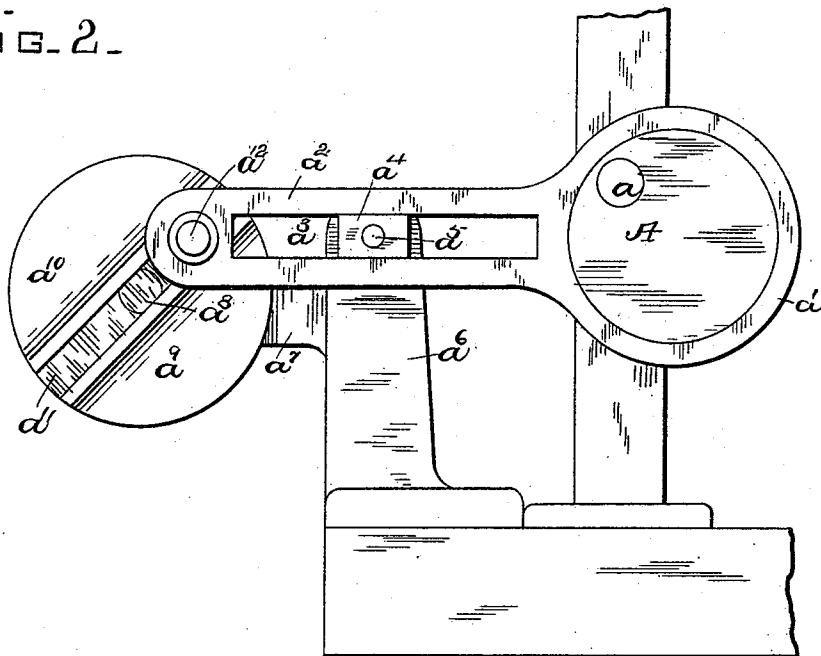
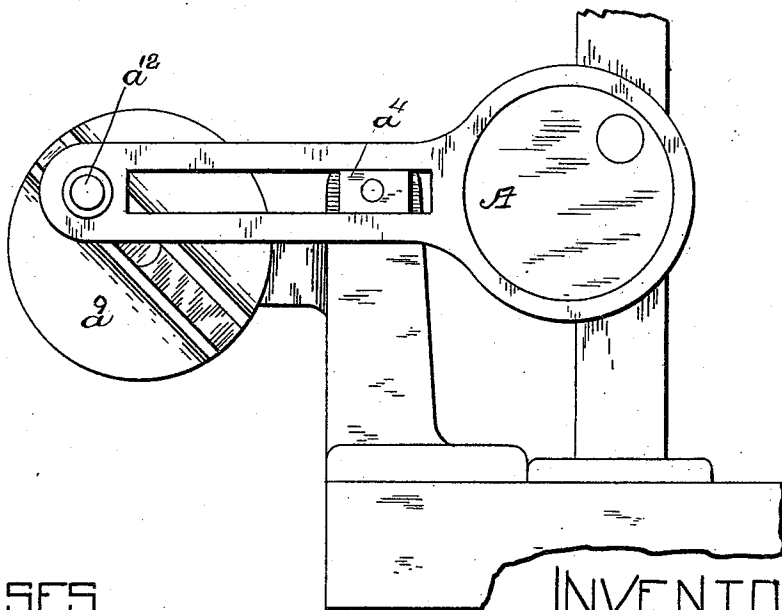


Fig. 3.



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UNITED STATES PATENT OFFICE.

WALTON A. RAYMOND, OF BRIDGEWATER, MASSACHUSETTS.

BOOT OR SHOE SOLE SEWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 459,937, dated September 22, 1891.

Application filed April 9, 1891. Serial No. 388,213. (No model.)

To all whom it may concern:

Be it known that I, WALTON A. RAYMOND, a citizen of the United States, residing at Bridgewater, in the county of Plymouth and State of Massachusetts, have invented a new and useful Improvement in Boot or Shoe Sole Sewing Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of the specification, in explaining its nature.

The invention is an improvement upon that described in the Patent No. 201,987, dated April 2, 1878, granted to L. R. Blake. The said patent describes a device or mechanism for providing the whirl of the form of machine known as the "McKay sewing-machine" with a peculiar movement, whereby it is caused to revolve continuously in one direction at a varying speed. The mechanism by which this movement is provided the whirl, while it answers to give the whirl the varying speed required, has its limitation—that is, the movement is not accomplished by means which give the whirl an easy change or variation in its speed, but on the contrary rather of an abrupt manner, and this is a disadvantage in a number of ways. It increases the wear of parts, and it prevents the machine from being speeded to the extent desirable, and even if it were possible to run the whirl as fast as is now desired, the motion being provided by two eccentric-gears, it would hardly be possible to successfully run them at the rate of speed required—that is, for any length of time—the movements of the gears in relation to each other being harsh and unbalanced and not adapted for great speed. To provide an easier mechanism and one that shall give the whirl an easier change from one speed to another, I have employed in the said machine, in lieu of the eccentric-gears, a mechanism which comprises an eccentric mounted upon an operative shaft and a combined eccentric strap and lever connected with a wheel by means of a roll and slide, the wheel being upon a shaft which communicates by bevel-gear the motion to the whirl. This eccentric-lever, its operating eccentric, the fulcrum on the lever, and the wheel are

so arranged in relation to each other that the speed or extent of movement of the operative end of the lever is constantly varying with an easy movement, and this variation is in turn communicated to the whirl in such a manner as to increase its efficiency.

Referring to the drawings, Figure 1 is a view in elevation of enough of a McKay sewing-machine to illustrate the application of my invention to it. Fig. 2 is a view in rear elevation enlarged, and Fig. 3 is also a view in rear elevation enlarged, of the parts to which this invention especially relates, the parts in Fig. 3 being in a different position from that represented in Fig. 2.

a is the main shaft of the machine. A is an eccentric thereon.

a' is an eccentric-strap about the eccentric, and from which extends the lever a^2 , having the long slot a^3 . This slot receives a fulcrum-block a^4 , pivoted by the pin or pivot a^5 to the bracket a^6 . A bracket A^7 supports a short shaft a^8 , to one end of which is secured the wheel or disk a^9 . This wheel or disk has extending across its face the cross recess or way a^{10} , which receives a roll carried by the pin a^{12} upon the end of the eccentric-lever a^2 . The motion of the eccentric, while it oscillates the lever upon its fulcrum, also draws or moves the lever relatively to the fulcrum, so that the end of the lever carrying the roll is shortened and lengthened, and of course moves at varying speeds, according as its position in relation to the fulcrum-point varies. This irregular movement of the lever is communicated to the wheel or disk a^9 by means of the roll connecting the lever end with it, and this roll is caused to traverse the slideway a^{11} while the wheel is rotating, so that the relation between the center of the wheel and the roll is constantly varying, and there is thus communicated to the wheel a variable speed which is easy, regular, well-balanced, and one that can be used at a high rate of speed. The motion of this wheel to the whirl carried at the upper end of the horn B is transmitted by means of the bevel-gear b on a shaft a^8 , the bevel-gear b' on the vertical shaft b^2 , and the intermediate connections common to this style of machine.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

The combination, in a boot or shoe sole sewing machine of the character specified, of the horn, the whirl carried thereby and rotated continuously in one direction at varying speed by mechanism combined therewith and comprising the shaft *a*, the eccentric thereon, the reciprocating and oscillating le-

ver *a*², operated by the eccentric and having at its other end a pin or roll, a wheel *b* upon a shaft connected with the whirl and having a crossway in which the lever roll or pin extends and slides, as and for the purposes described.

WALTON A. RAYMOND.

Witnesses:

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J. M. DOLAN.