(No Model.) 3 Sheets—Sheet 1.

W. Y. OBER.

SHOE SEWING MACHINE.

No. 464,383. Patented Dec. 1, 1891.

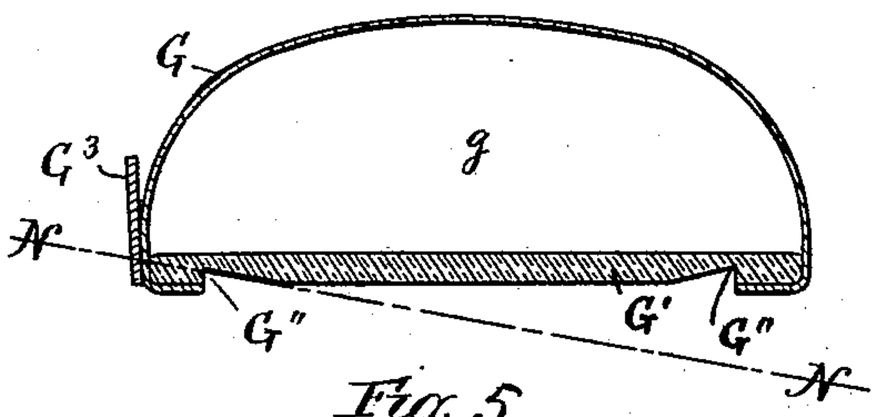

Fig. 5.

Fig. 1.

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Inventor.
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his atty.

(No Model.) 3 Sheets—Sheet 2.

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SHOE SEWING MACHINE.

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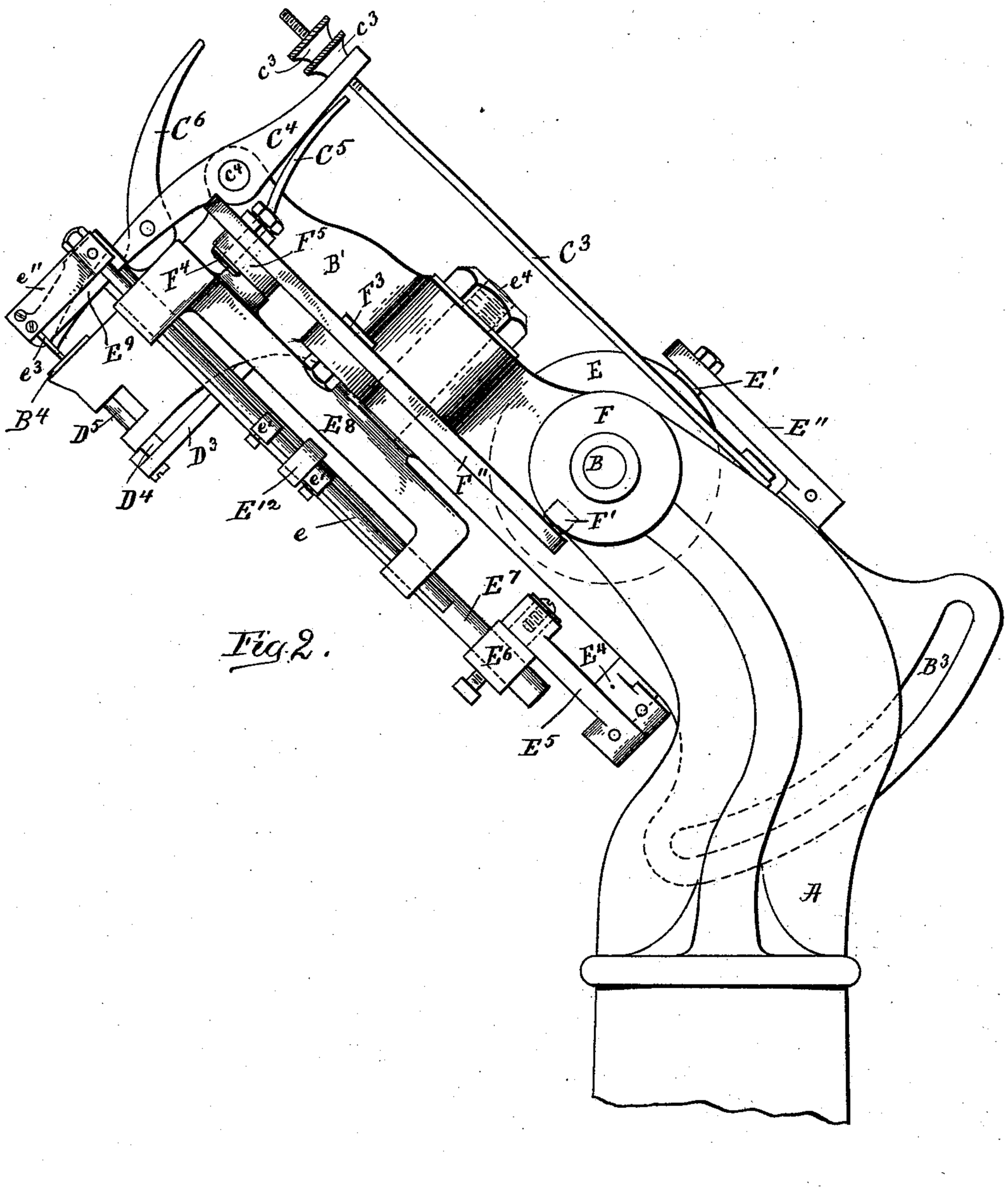

Fig. 2.

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(No Model.) 3 Sheets—Sheet 3.

W. Y. OBER.

SHOE SEWING MACHINE.

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Fig. 3.

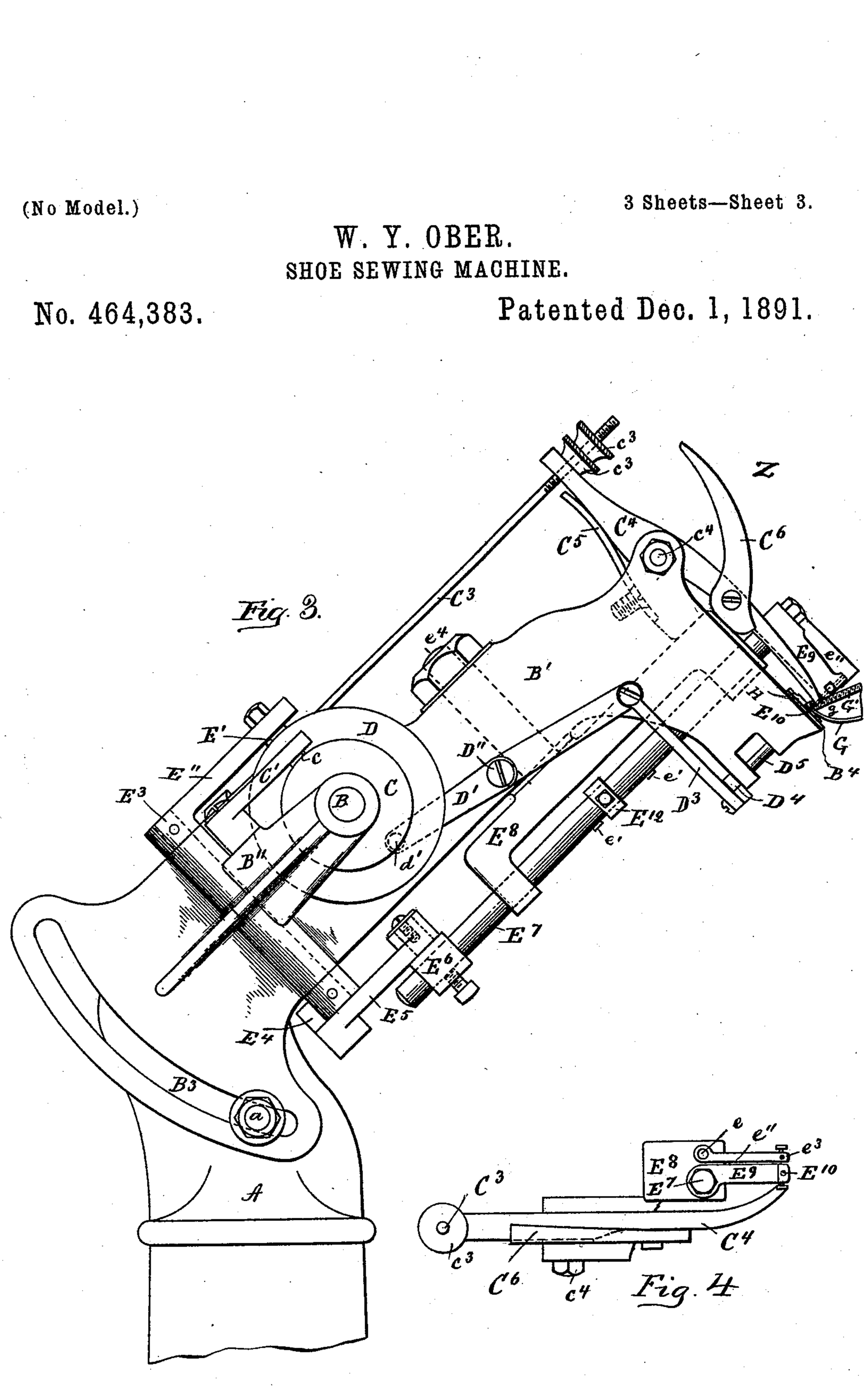

Fig. 4

Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM Y. OBER, OF LYNN, MASSACHUSETTS, ASSIGNOR TO THE BOSTON WELT MACHINE COMPANY, OF PORTLAND, MAINE.

SHOE-SEWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 464,383, dated December 1, 1891.

Application filed June 2, 1890. Serial No. 353,966. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM Y. OBER, a citizen of the United States, and a resident of Lynn, in the county of Essex and State of Massachusetts, have invented new and useful Improvements in Welt-Sewing Machines for Boots and Shoes, of which the following, taken in connection with the accompanying drawings, is a specification.

This invention has for its object to provide a novel boot and shoe sewing machine which can be adjusted to different positions for adapting it for different classes of work.

To such end my invention involves the features of construction, the combination or arrangement of devices, and the principles of operation hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 represents a front elevation of the improved sewing-machine. Fig. 2 represents a side elevation seen from X in Fig. 1. Fig. 3 represents a side elevation seen from Y in Fig. 1 with the belt-wheel removed. Fig. 4 represents a top view of the head as seen from Z in Fig. 3; and Fig. 5 represents a detail sectional view of a boot or shoe upper, channeled inner sole, and welt, the latter being shown in position for sewing it to the upper and inner sole.

Similar letters refer to similar parts wherever they occur on the different parts of the drawings.

In the drawings, A represents a suitable base frame or standard, to which is pivoted at B (which in this case is the driving-shaft) the head B′, having a bracket B″, in which one end of the shaft B is journaled, as shown in Figs. 1 and 3. The head B′, being thus pivoted to the frame or standard A, may be swung on its fulcrum relative to the stardard and secured to the latter in any desired position, preferably by means of a screw-bolt *a* or equivalent fastening device going through a curved slot B^3 in a downward extension or tail-piece of the head B′ and screwed into the frame or standard A. This adjustment of the head B′ is very advantageous, as it enables the operator to place the head B′ in such an inclined position relative to the frame or standard A as may be most suitable and convenient for manipulating the boot or shoe relative to the needle during the operation of sewing the welt to the upper and inner sole. To the shaft B is secured a driving-pulley *b*, to which a rotary motion is imparted by means of belt power, as usual. To the shaft B is secured a grooved cam C for operating the presser-foot; also, a face-cam D for operating the thread-guide; also, a grooved cam E for operating the needle and cast-off, and a grooved cam F for operating the feeding mechanism. In connection with such cams I use intermediate connecting mechanism, as follows:

The presser-foot-operating mechanism is constructed as follows: The grooved cam C imparts a rocking motion to the bell-crank lever C′, pivoted at C″ to the head B′ and having a pin or pin and roll *c* in one of its ends projecting into the cam-groove on the cam C. To the other end of said lever C′ is pivoted or otherwise connected a rod C^3, the upper screw-threaded end of which is adjustably connected by means of nuts c^3 c^3 to the rear end of the presser-foot lever C^4, which is pivoted at c^4 to the head B′, and has its forward end normally pressing the work against the top of the work-supporting needle-plate or throat-plate B^4 by means of a spring C^5, having one of its ends secured to the head B′ and its free end pressing against the under side of the lever C^4, as shown in Figs. 2 and 3. By this arrangement the presser-foot is automatically raised for the purpose of allowing the material to be fed and lowered so as to hold the shoe and welt firmly in place while the needle passes through the inner sole, upper, and welt. To the presser-foot lever C^4 is pivoted the hand lifter-lever C^6, as usual.

The thread guide or carrier operating mechanism is constructed as follows: On the face of the cam D is a groove *d*, in which works a pin or pin and roll *d′* on the end of a lever D′, that is pivoted at D″ to the head B′. To the upper end of the lever D′ is pivoted a link D^3, connected at its forward end to a crank D^4, secured to a shaft or pin D^5, journaled in the head B′. To the upper end of the shaft D^5 is secured the thread guide or looper D^6, having a perforation, as usual, through which the thread passes and by which means the thread is laid or thrown into the hook of the

needle after the latter has passed through the work, and by this arrangement the thread-guide is oscillated relative to the needle.

The mechanism for operating the needle-bar and cast-off bar is constructed as follows: In the grooved cam E works a pin or pin and roll E′ on the end of a lever E″, secured to a rock-shaft E^3, journaled in the head B′, and to said shaft is secured a lever E^4, connected by means of a link E^5 to an adjustable pivot-block E^6, secured in an adjustable manner to the needle-bar E^7, which is guided in bearings in a rocker-frame E^8, pivoted at e^4 to the head B′, as shown in Figs. 1, 2, and 3. To the upper end of the needle-bar E^7 is attached a needle-carrying arm E^9, to which is secured in a suitable manner the downwardly-projecting hooked needle E^{10}. *e* is the cast-off bar adapted to slide in bearings on the rocker-frame E^8, and it is actuated by a collar E^{12}, attached to the needle-bar E^7 and located between collars or projections *e′ e′* on the cast-off bar *e*, as shown in Fig. 1. To the upper end of the cast-off bar *e* is attached an arm *e″*, to which is secured in a suitable manner the cast-off e^3, which is operated in conjunction with the hooked needle, as is usual in wax-thread sewing-machines.

The mechanism for operating the needle-feed is constructed as follows: In the grooved cam F works a pin or pin and roll F′, arranged on a lever F″, pivoted at F^3 to the head B′. The upper end of the lever F″ is preferably provided with a curved slot *f″*, in which is adjustably secured a pin or stud F^4, connected to a link F^5, the other end of which is pivoted to the upper end of the rocker-frame E^8, as shown in Figs. 1 and 2, and by this arrangement an adjustable intermittent and automatic feed motion is imparted to the needle from the driving-shaft.

In Fig. 5, G represents the boot or shoe upper, the lower portions of which are temporarily tacked to the under side of the inner sole G′ and last *g*, as usual. The inner sole is provided near its outer edge with a channel G″, as shown in said Fig. 5. G^3 is the welt which is sewed to the outside of the upper and the insole by my improved machine. In connection with the machine any suitable welt-guide H may be used for the purpose of guiding the welt properly in relation to the boot or shoe to which such welt is to be sewed. Previous to sewing the welt to the boot or shoe upper and its inner sole the inner sole is tacked to the last and the upper drawn over and temporarily tacked or otherwise secured to the inner sole. The upper and inner sole are now ready for sewing to them the welt by means of my improved machine. In using the machine for the purpose mentioned the welt G^3 is placed on the work-supporting plate or throat-plate with one of its edges guided against the welt-guide H, and the shoe is held by the operator in the position shown in Fig. 3 and guided in such position relative to the needle until the whole of the welt is sewed on. By this arrangement a chain-stitch is formed, the chains of which are drawn into the inner-sole channel G″ and afterward concealed by the outer sole when the latter is attached to the welt or inner sole, or both.

In Fig. 5 the line N N represents the path of the needle as it enters the inner sole at the bottom of its channel and passes through said inner sole, upper, and welt in forming the stitches for uniting said parts together.

Having thus fully described the nature, construction, and operation of my invention, I wish to secure by Letters Patent and claim—

In a welt-sewing machine, the combination, with a standard having a main drive-shaft at its upper end, of a head journaled by the drive-shaft on the standard or frame, adjustable to various angular positions relatively to the standards and carrying a work-support, a welt-guide, a presser-foot, a thread-guide, and a needle-bar, a series of cams on the driving-shaft, and connections for imparting motion from the cams to the presser-foot, thread-guide, and the needle-bar, substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 31st day of May, A. D. 1890.

WILLIAM Y. OBER.

Witnesses:
ALBAN ANDRÉN,
ALICE A. PERKINS.