

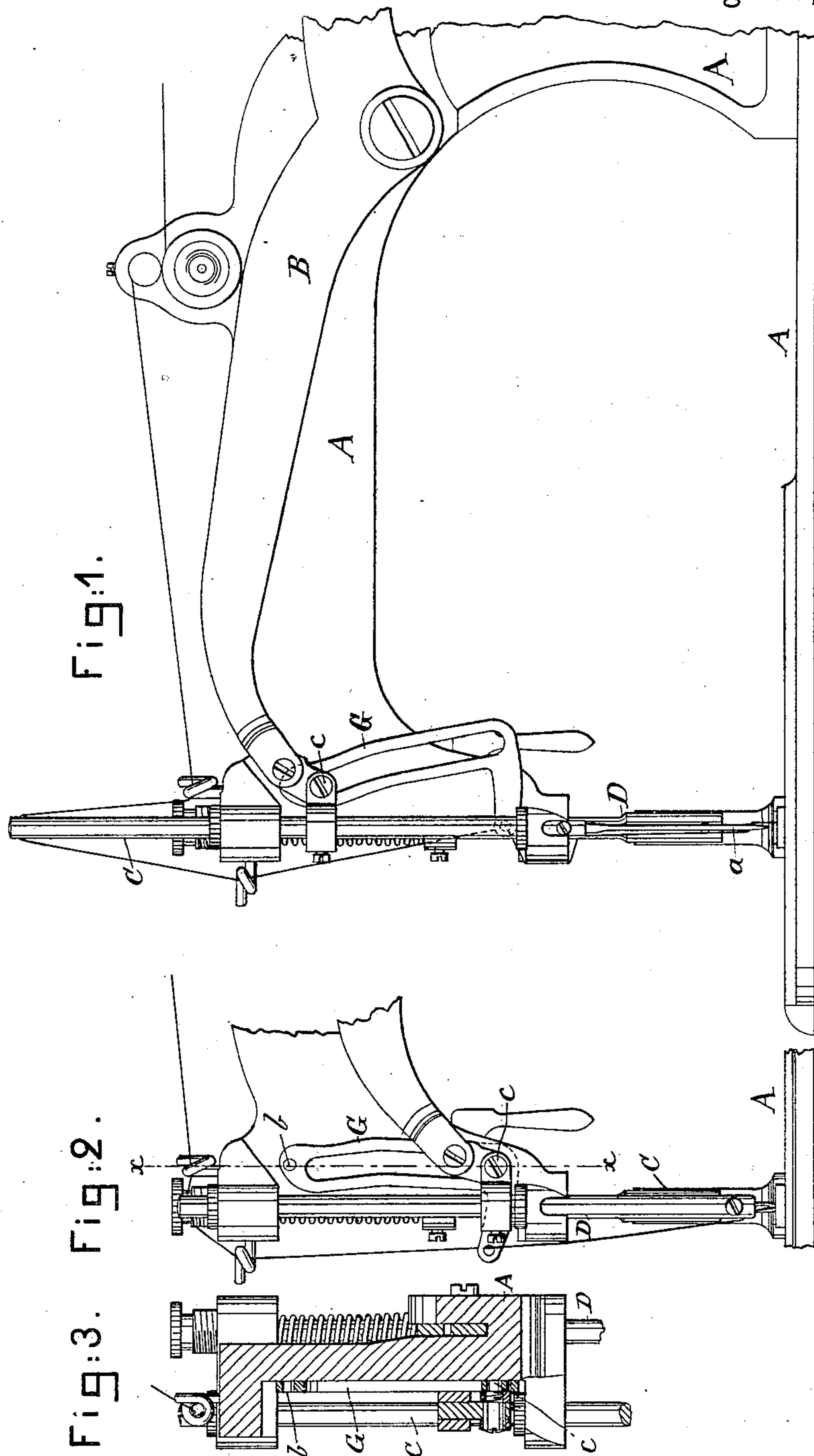
(No Model.)

2 Sheets—Sheet 1.

A. L. PARCELLE.
SEWING MACHINE.

No. 246,336.

Patented Aug. 30, 1881.



Witnesses.

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Bernice J. Hayes

Inventor.
Albert L. Parcelle
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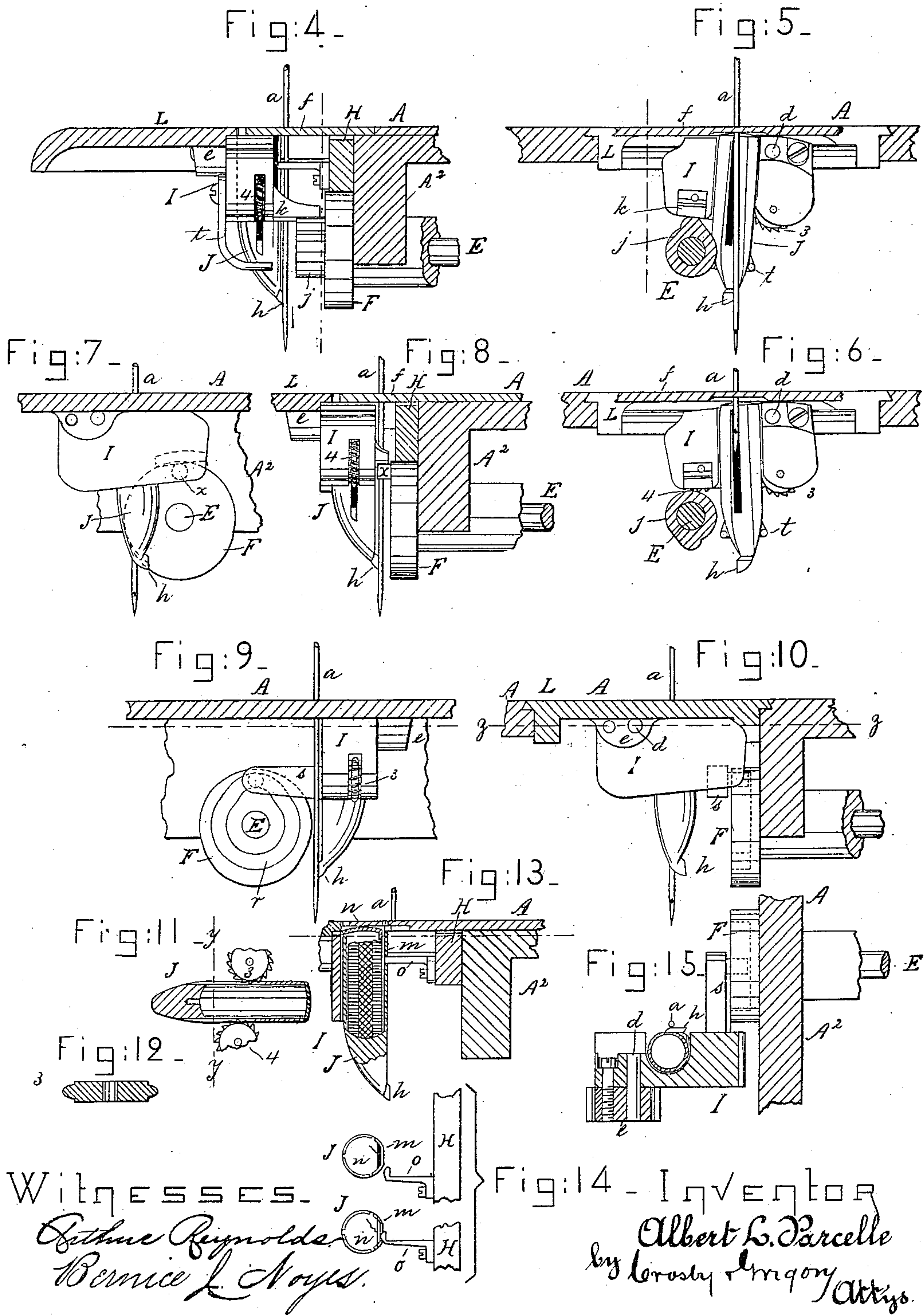
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UNITED STATES PATENT OFFICE.

ALBERT L. PARCELLE, OF BOSTON, MASSACHUSETTS.

SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 246,336, dated August 30, 1881.

Application filed December 17, 1880. (No model.)

To all whom it may concern:

Be it known that I, ALBERT L. PARCELLE, of Boston, Suffolk county, State of Massachusetts, have invented Improvements in Sewing-Machines, of which the following description, in connection with the accompanying drawings, is a specification.

This invention relates to improvements in that class of sewing-machines wherein the shuttle is held with its point down and the loop of needle-thread is caught over the point of and drawn upward over the shuttle.

In this my invention the shuttle-holder, which receives the shuttle loosely, with its point down substantially in line with the path of movement of the eye-pointed needle, is rocked for a slight distance after the needle has risen from its lowest position and thrown out its loop of thread, to thus enable the point of the shuttle projected from one side thereof toward the needle to be readily entered within the loop of needle-thread, the latter in its upward movement with the needle being forced laterally by the inclined point of the shuttle and spread and drawn up about and cast off the heel of the shuttle, which latter rests close up against the cloth-plate. The shuttle is partially sustained on its holder by means of toothed wheels on horizontal axes, the edges of the wheels being extended into slots in the shuttle-shell. The loop of needle-thread, in its movement upward about the shuttle, is passed between the shuttle and these toothed wheels, which latter revolve freely by the action of the needle-thread against them, thus obviating unnecessary friction between the shuttle and the points of support. The teeth of these wheels are inclined, similar to the teeth of worm-toothed gears and in opposite directions, to enable the loop of needle-thread when rising at each side of the shuttle to pass between the wheels and shuttle without being cut or deflected out of line. Tension may be produced upon the shuttle-thread, as herein described, by means of a finger joined with the feed-bar, said finger operating against a spring-piece connected with the shuttle, and between which and a fixed part of the shuttle the shuttle-thread passes to the cloth. By this plan I am enabled to use a cop of thread in the shuttle and unwind it from its center to obviate twist.

Figure 1 represents, in side elevation, part of a sewing-machine containing my invention; Fig. 2, a front-side view of the head of the machine represented in Fig. 1; Fig. 3, a section of Fig. 2 on the dotted line *xx*; Fig. 4, a front-side elevation of the parts of the machine below the bed-plate, the latter, the front bearing for the main shaft, and the feed-bar being in section, the needle being in its lowest position; Fig. 5, an elevation of that part of the machine at the left of the vertical dotted line, Fig. 4, the point of the shuttle being supposed to have been moved into the loop of needle-thread; Fig. 6, a like view, the needle having been partially elevated and the point of the shuttle moved by the holder back into its position farthest from the needle. Figs. 7 and 8 are front and side views of a modified form of shuttle-holder-moving mechanism; Figs. 9 and 10, front and side elevations of yet another modified form of shuttle-holder-moving mechanism; Fig. 11, a longitudinal section taken through the shuttle, showing the toothed wheels therein; Fig. 12, an enlarged section of one of the said toothed wheels; Fig. 13, a vertical section of the shuttle and holder, showing the cop of thread in the shuttle, the feed-bar in section, having connected with it the finger for producing tension on the shuttle-thread; Fig. 14, details of the feed-bar and connected finger and shuttle in different positions; and Fig. 15 is a section of Fig. 10 on the dotted lines *zz*.

The frame-work A of the machine, the vibrating needle-carrying arm B, needle-bar C, presser-bar D, and its foot, and the under rotating shaft E, held on the bearing A², are, as herein shown, all as in the well-known Wheeler & Wilson No. 8 machine.

The eye-pointed needle *a* is carried by the needle-bar. The take-up lever G, slotted as shown, and pivoted at *b*, receives in its slot the end of the screw or pin *c*, which latter moves the said take-up lever at the proper times to furnish slack for the formation of a loop, and to take up the slack thread formed by the discharge of the loop of needle-thread from the shuttle.

The rotating shaft E, in front of the bearing A², has upon it a feed-moving cam, F, which acts in the usual manner upon a suitable leg

or depending part of the usual feed-bar, H, the latter being shown only in Figs. 4, 8, 13, and 14, as the feed-bar and its operative parts are supposed to be all as in the said Wheeler & Wilson machine; but I desire it to be understood that I may employ any usual devices to impart to the feed-bar H the usual four motions.

The shuttle-holder I, made as a block, provided with a recess to receive the shuttle J, is pivoted at *d* on a lug, *e*, forming part of a plate, L, fitted to slide in the bed of the machine horizontally toward and from the needle-hole plate *f*. This holder is pivoted as closely as possible to the upper side of the plate L, so that a very slight movement of the holder about its pivot *d* will project the point *h* of the shuttle J, held in the said holder, into the loop of needle-thread just as the needle is raised sufficiently to form a loop in its thread.

In Fig. 6 the shuttle is in its most backward position; but when the needle is down and its loop is thrown out the shuttle has its point tipped and thrown forward into the position Fig. 5, when it enters the loop of needle-thread, and the loop of needle-thread as it rises with the needle is, by the projecting point of the shuttle, shaped as shown, spread and directed about the shuttle, and the needle as it rises draws its loop of thread upward about the shuttle and its thread, the loop of needle-thread passing between the shuttle at each side and the toothed wheels 3 4, having centers or pivots in the holder, the toothed edges of the said wheels entering longitudinal slots in the shuttle-shell, as shown fully in Fig. 11. This holder, pivoted as described, and having a finger or projection, *k*, (see Fig. 4,) is in Figs. 4 to 6 vibrated or rocked for a very slight distance by means of a cam, *j*, (see Fig. 5,) on which the said projection *k* rests, the said cam acting at the proper time to turn the holder, as in Fig. 6, on its pivot *d*, and place the point of the shuttle in the loop of needle-thread.

The teeth of the wheels 3 4 are cut in opposite directions and diagonally across the wheels, similar to the teeth of worm-pinions, to enable the needle-thread to enter the notches between the teeth as the needle-thread loop is passed between the shuttle and the said wheels, the teeth, shaped as described, preventing such deflection or bending of the thread as would strain it or the needle out of proper path.

To produce tension on the shuttle-thread and enable me to employ a cop, I have slotted the shuttle, to make of one part of it a spring, *m*. The heel of the shuttle has a head, *n*, provided with a vertical flange or lip. (See section, Fig. 13.) The shuttle-thread is passed out from the shuttle-shell between this lip and

spring *m*, and as the feed-bar reaches its most forward position, the stitch then being drawn taut by the take-up and needle-bar in the usual way, a tension-finger, *o*, on the feed-bar (see Figs. 13 and 14) strikes the spring *m* and presses it against, and so as to hold, the shuttle-thread.

Instead of using the small cam *j* to rock the shuttle-holder, I may use a pin, *x*, (see Figs. 7 and 8,) projected from the feed-moving cam F, the said pin, when brought in contact with the holder, lifting it.

In some cases I may desire to vibrate the holder I about a pivot at right angles to the length of the machine, and in such case I shall provide the front of the feed-cam F with a groove, *r*, to receive a roller or other stud on an arm, *s*, projected from the said holder into the said cam, as in Figs. 9, 10, and 15.

The shuttle is supported near its lower end by the fork *t*, (shown in Figs. 4 to 6.)

I claim—

1. An eye-pointed needle, needle-bar, and means to move it, and the recessed shuttle-holder I, pivoted at one end close to the bed-plate, and at its other end supported by a cam combined with the said holder-moving cam, its shaft E, and the shuttle supported in the holder, as described, with its laterally-projecting point *h* placed and held down close to the path of movement of the needle, whereby a very slight movement of the holder by the cam will place the point of the shuttle in the loop of needle-thread, substantially as described.

2. The vertically-placed shuttle J and its holder, combined with the toothed wheels entered within slots in the shuttle to turn as the loop of needle-thread passes between the shuttle and wheels, substantially as described.

3. The pivoted holder and its toothed wheels, and means to move the holder, and the shuttle provided with a laterally-projecting point, *h*, and placed with its point down near the path of movement of the needle, and the eye-pointed needle, and needle-bar, and means to move it, combined with the take-up, and means to move it, substantially as described.

4. The shuttle, provided with the spring *m* and with a head having a lip to receive the shuttle-thread against one side of it, combined with the finger and feed-bar, and means to move the feed-bar, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALBERT L. PARCELLE.

Witnesses:

G. W. GREGORY,
W. H. SIGSTON.