

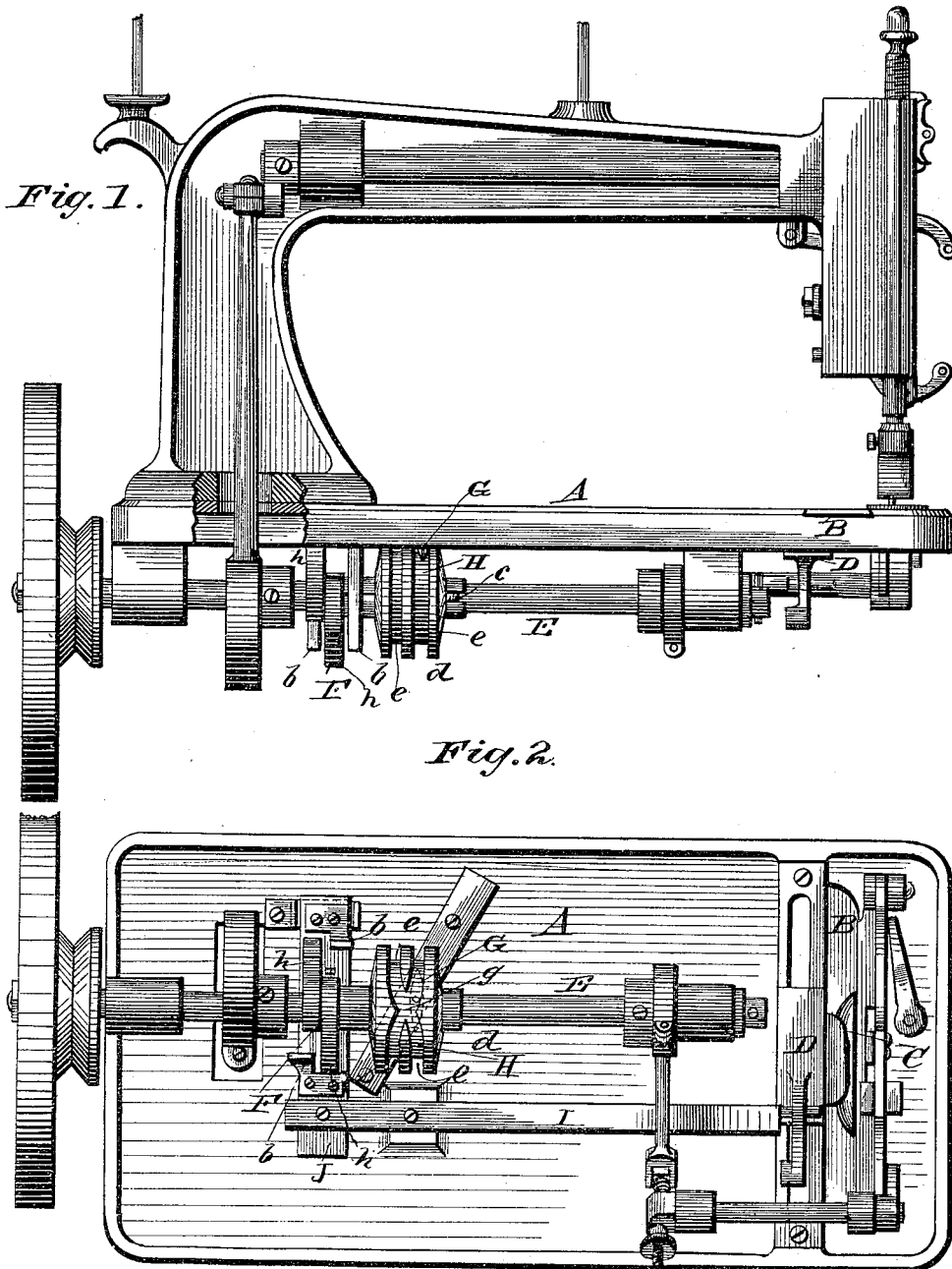
(No Model.)

2 Sheets—Sheet 1.

L. S. BORTREE.
SEWING MACHINE.

No. 344,240.

Patented June 22, 1886.



WITNESSES

Phil. C. Masi.
Benj. Tugitt.

INVENTOR

L. S. Bortree.
by Anderson & Smith
his Attorneys

(No Model.)

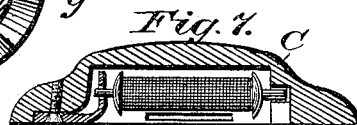
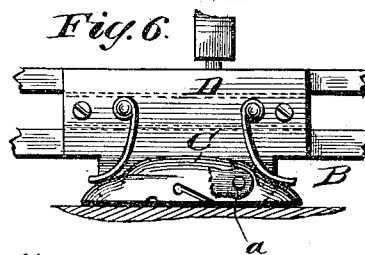
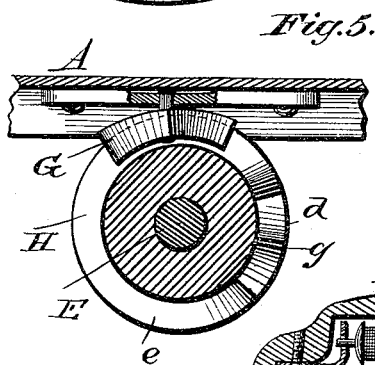
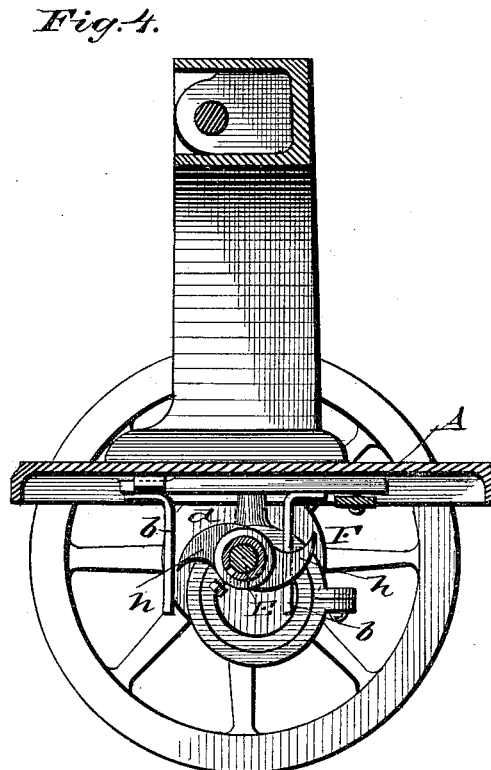
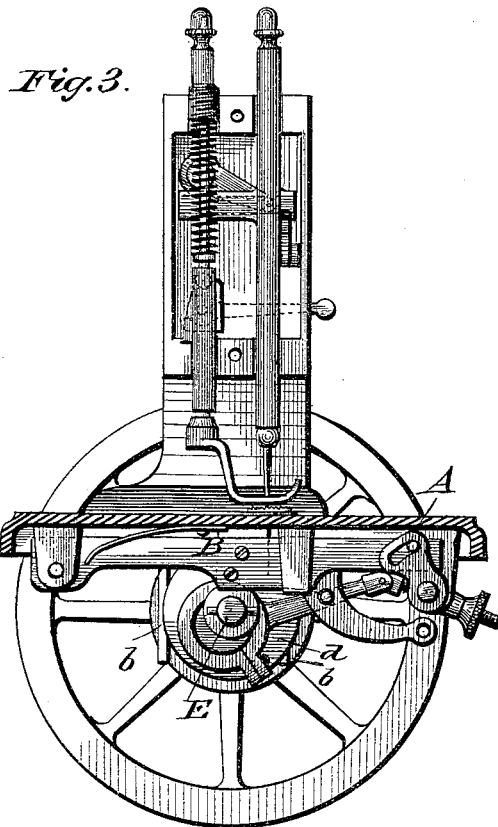
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UNITED STATES PATENT OFFICE.

LEWIS S. BORTREE, OF TOLEDO, OHIO.

SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 344,240, dated June 22, 1886.

Application filed December 28, 1885. Serial No. 186,906. (No model.)

To all whom it may concern:

Be it known that I, LEWIS S. BORTREE, a citizen of the United States, residing at Toledo, in the county of Lucas and State of Ohio, have
5 invented certain new and useful Improvements in Sewing-Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to
10 make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a representation of a side view of my improved sewing-machine. Fig. 2 is a bottom view. Fig. 3 is a vertical section. Fig. 4 is a vertical section. Figs. 5, 6, and 7 are detail views. Fig. 8 is a side view of the shuttle removed from
20 the carrier.

This invention has relation to sewing-machines; and it consists in the construction and novel arrangement of devices, as hereinafter set forth, and pointed out in the appended
25 claims.

In the accompanying drawings, the letter A designates the base of the machine, having the shuttle-way B, in which plays the double-acting shuttle C, the carrier D serving to move
30 the shuttle to and fro in accordance with the motions of the needle.

E is the driving-shaft, and F the slide-cam thereon, which governs the movements of the shuttle-carrier.

35 The shuttle C is double-acting, being pointed at both ends, and is designed to take the loops of the upper thread in the descent and rise of the needle successively in opposite directions. As the shuttle moves along its way
40 in one direction, it passes through the loop of the upper thread, and at the end of the way stops long enough for the needle to rise and descend again to form another loop, when the shuttle moves backward, passing through this
45 loop, and again stops at the starting end of the way. In this manner very much of the wear of the shuttle and its way is avoided. The shuttle is provided with a tension spring or springs, as at a, whereby tension is put
50 upon the thread in either direction.

The shuttle-carrier illustrated has its lever I pivoted to a sliding yoke, J, provided with

arms b, which extend downward on each side of the cam F. This cam is arranged on the driving-shaft E, and is designed to slide there-
5 on endwise, while at the same time it has a rotary motion with said shaft, the spline c serving to govern its rotary movement, while allowing it to slide. This cam is provided with a circular grooved portion, d, which is
60 made in the form of a cylinder having its axis coincident with the axis of the driving-shaft. This cylinder is provided with grooves e e, which are peripheral and parallel, except at
65 g, when they cross each other.

G is a switch, which is pivoted to the base, and is designed to engage the grooves of the cylinder, and serves in connection therewith to give the intermittent sliding movement to the cam. This cam is also provided with the
70 wings h h, one of which is in advance of the other, as indicated. As the cam rotates with the shaft, the engagement of the switch with one of the grooves of the cylinder holds the
75 latter from moving longitudinally until the crossing g comes into engagement with the switch, which then causes the cam to slide on the shaft, and then becoming engaged with the
80 other groove of the cylinder the cam, although revolving, remains in one place until the crossing again comes into engagement with the switch and causes the cam to slide back to its former position.

The position of the arms b of the yoke, to which the lever of the shuttle-carrier is piv-
85 oted, is such that when the cam F is at one end of its sliding movement one of its wings h will engage one of said arms b, and when it is at the opposite end of its movement the other wing will engage the other or opposite arm
90 of said yoke. The engagement of either wing of the cam with the arm b is sufficient to give motion to the latter to throw the carrier, and this engagement occurs when the crossing g of the cylinder reaches the switch; but inter-
95 mediately, while the parallel portions of the groove H of the cylinder are in engagement with the switch, the motion of the carrier ceases. As this is not the only manner in which intermittently-operating governing
100 mechanism can be combined with a shuttle-carrier and a double-acting shuttle, I do not desire to be confined to the precise construction shown in the drawings.

Having described this invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination, in a sewing-machine, of
5 a shuttle pointed at opposite ends and provided with the tension-spring, as described, the shuttle-carrier arm, the yoke pivoted thereto and provided with the depending arms, and the drive-shaft and cam, substantially as specified.
10
2. The combination, in a sewing-machine, of a sliding yoke provided with arms, as set forth, and connected with the shuttle-carrier, and the drive-shaft carrying the cam provided
15 with the wings to engage the arms of the yoke, substantially as specified.
3. In a sewing-machine, the combination,

with the drive-shaft, of a sliding rotative cam thereon, and a sliding yoke adapted to be moved by the said cam, and connected with a double-
20 acting shuttle, substantially as specified.

4. The combination, in a sewing-machine, of the drive-shaft, a grooved cylinder thereon a switch engaging the groove of the cylinder, a sliding rotative cam, and a sliding yoke
25 having connection with a double-acting shuttle-carrier, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

LEWIS S. BORTREE.

Witnesses:

THEO. MUNGEN,
PHIL. C. MASI.