A. D. HORR.

Sewing-Machines.

No. 149,862. Patented April 21, 1874.

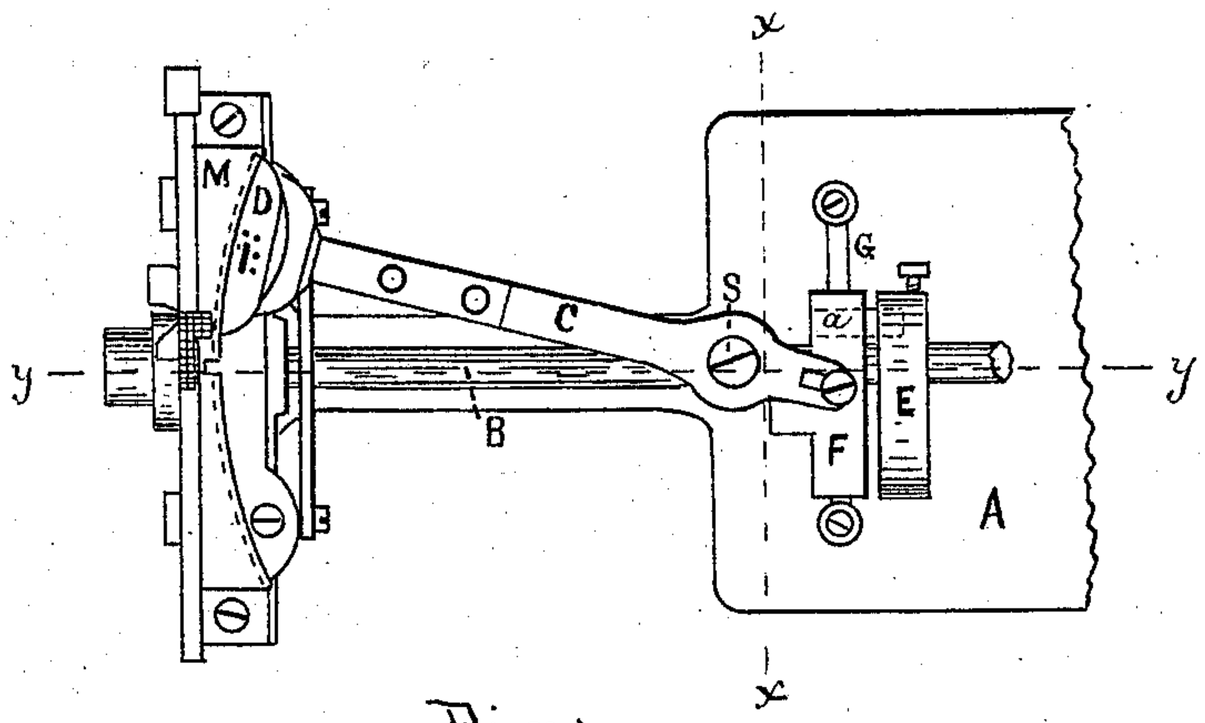

Fig. 1.

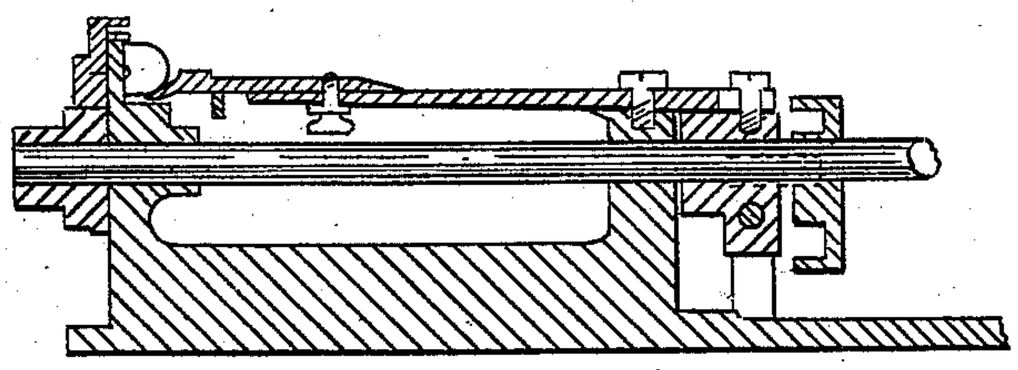

Fig. 2

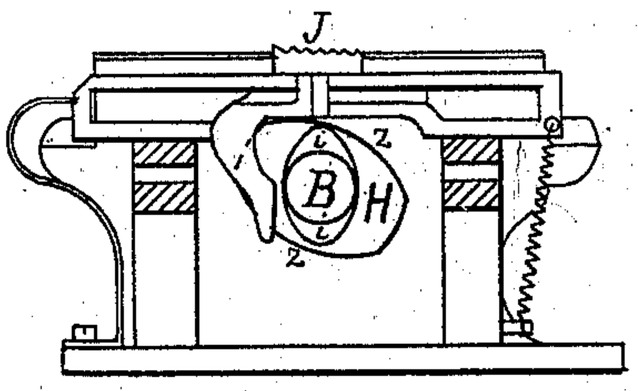

Fig. 3

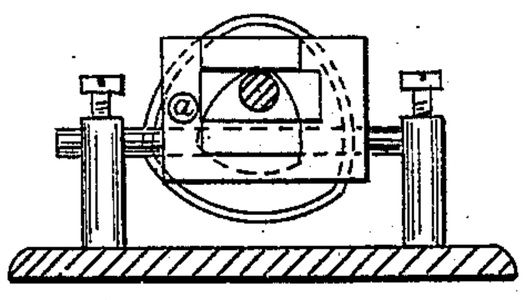

Fig. 4

Witnesses
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UNITED STATES PATENT OFFICE.

ADDISON D. HORR, OF ORANGE, MASSACHUSETTS.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **149,862**, dated April 21, 1874; application filed February 2, 1874.

To all whom it may concern:

Be it known that I, ADDISON D. HORR, of Orange, in the county of Franklin, State of Massachusetts, have invented a certain new and useful Improvement in Sewing-Machines, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which my invention appertains to make and use the same, reference being had to the accompanying drawing forming a part of this specification, in which—

Figure 1 is a plan of my improvement in sewing-machine. Fig. 2 is a vertical longitudinal section of the same, taken on the line *y y*, Fig. 1. Fig. 3 is a front elevation of the feeding mechanism. Fig. 4 is a cross-section taken on the line *x x*, Fig. 1.

Like letters refer to like parts in the different figures of the drawing.

My invention relates to that class of sewing-machines in which the shuttle is mounted in or actuated by a laterally-vibrating lever; and consists in a novel construction and arrangement of the parts, as hereinafter more fully described, the object being to simplify and render more effective machines of this character.

In Fig. 1, A is the body of the machine; B, the lower shaft; C, the shuttle-lever pivoted at S; D, the shuttle; E, a cam-wheel provided with a heart-shaped groove on the side nearest the shuttle; F, a sliding block provided with the stud *a* projecting into the groove of the cam-wheel and mounted on the carrier-rod G, said block being also provided with a slot through which the shaft B passes. (See Fig. 4.) The shuttle D is double-pointed, being so formed and driven with respect to the needle as to pass through the loop of the needle-thread every time it traverses the shuttle-race in either direction.

It is well known to all practical operators of sewing-machines that the shuttle, being drawn upward by the needle-thread against the under side of the shuttle-plate, frequently causes breakage of the shuttle-thread. The thread is also liable to become oily and dirty by coming into contact with said plate, thus damaging the work. To obviate these difficulties, I employ the auxiliary plate M, which is arranged below the usual shuttle-plate of the machine, and projects slightly over the edge of the shuttle, but not sufficiently to interfere with the shuttle-thread.

My invention is especially applicable to the machines popularly known as the "home shuttle," in which the lever C is provided, at the extremity of its short arm, with a vertically-arranged fork having very wide tines, between which a surface cam disposed on the shaft B revolves, thus causing the lever to vibrate. One objection to this construction and arrangement of the parts is that the inner surfaces of the tines of the lever soon wear by the action of the cam, causing the shuttle to move irregularly in its race, and the machine to drop or miss stitches and become noisy. Another objection is the difficulty of obtaining sufficient speed, and another the expense of repairing such lever, when the tines become worn, as described. These objections are entirely overcome, or nearly so, by my invention, the cam-groove in the wheel E being so formed as to produce a double throw of the shuttle to each revolution of the wheel, and all of the parts being so constructed as to be easily and cheaply repaired when worn.

The feed-cam H, mounted on the shaft B, Fig. 3, is provided with two surfaces, *z z*, for raising the feed-lever J, and also with two surfaces, *i i*, for moving said lever laterally, the same being so arranged that the movements of the feed may correspond with the double movements of the shuttle.

I am aware that a double-pointed shuttle is old and well known in sewing-machines, and therefore do not claim the same when in and of itself considered. Neither do I claim the lever C, cam-wheel E, slide F, carrier G, shaft B, cam H, or feed-lever J, when in and of themselves considered. I am also aware that one Porter obtained Letters Patent of the United States dated November 25, 1873, in which a sewing-machine is described having parts designated as follows: A shaft, B, eccentric C, strap or lug E, rocking shaft G, and bracket D, provided with a bar, F. The upper arm of the bracket is longer than the lower, and has a socket at its end for receiving the stem of the shuttle-carrier. It is also formed with a crook to permit the eccentric to revolve. The bracket D is adjustable on the rocker-shaft, for

which an adjustable step has also to be provided. In actual practice it has been found that the close cam or eccentric C, working in the strap E, which has not only a vertical, but a lateral, movement on the bar F, becomes gummed up with oil, especially in cold weather, causing the machine to run hard and work imperfectly, whereas in my machine the open cam admits of easy access for cleaning and repairs, and all the parts are so constructed and arranged as to simplify and render the machine more effective. The parts in said patented machine are more numerous and costly to construct than in mine, and their arrangement is objectionable in the above respects. I therefore do not herein claim anything shown or described in said patent of November 25, 1873, when in and of itself considered; but

What I do claim is—

In a sewing-machine, the shaft B, grooved cam E, slide F, pin *a*, and slotted lever C, connected with said slide, and all constructed and operating as set forth.

ADDISON D. HORR.

Witnesses:
CHS. FIELD,
WARREN H. ATWOOD.