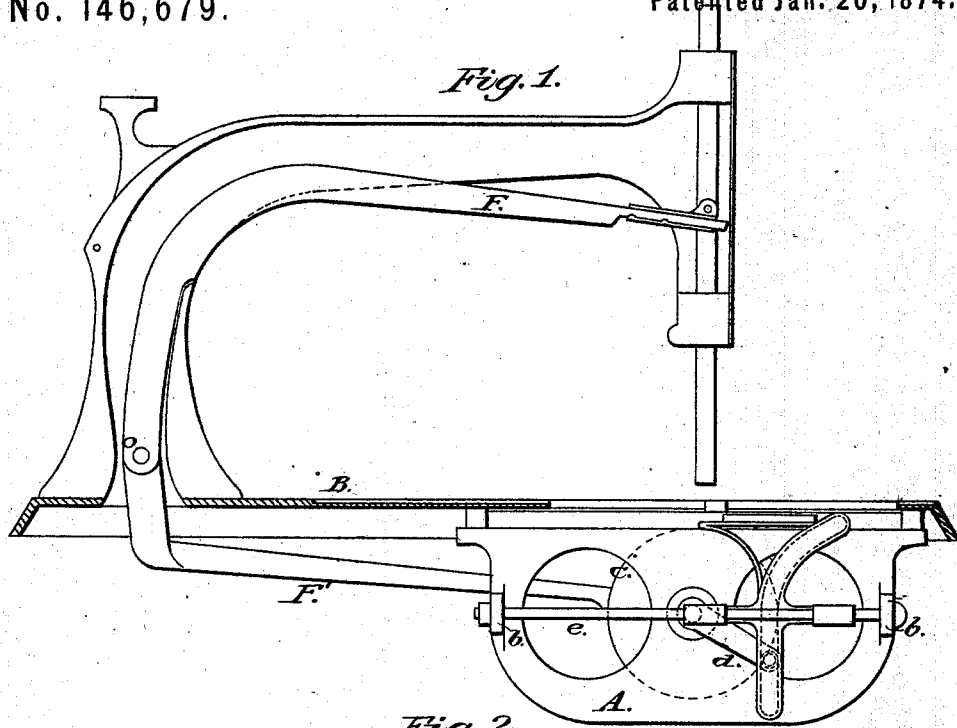


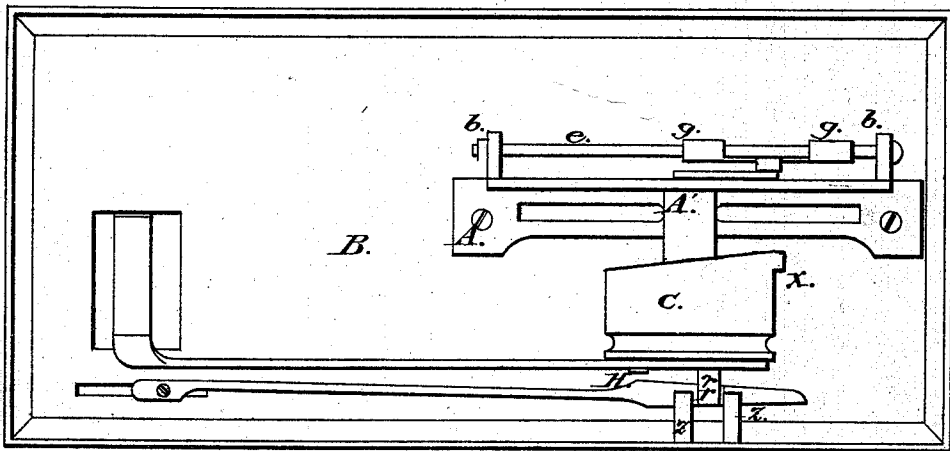
G. W. HUNTER.  
Sewing-Machines.

No. 146,679.

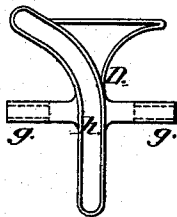
Patented Jan. 20, 1874.



*Fig. 2.*



*Fig. 3.*



Witnesses.

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Fig. 4.

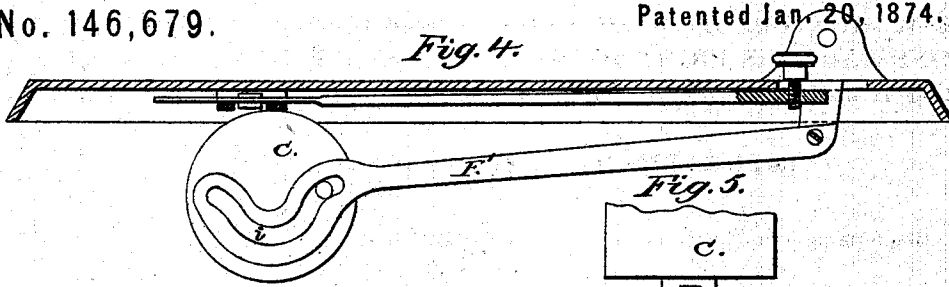


Fig. 5.

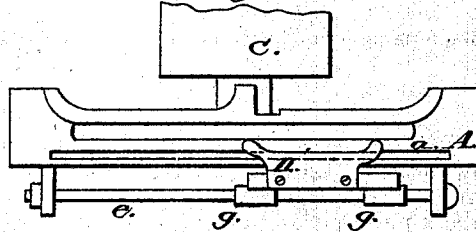


Fig. 6.

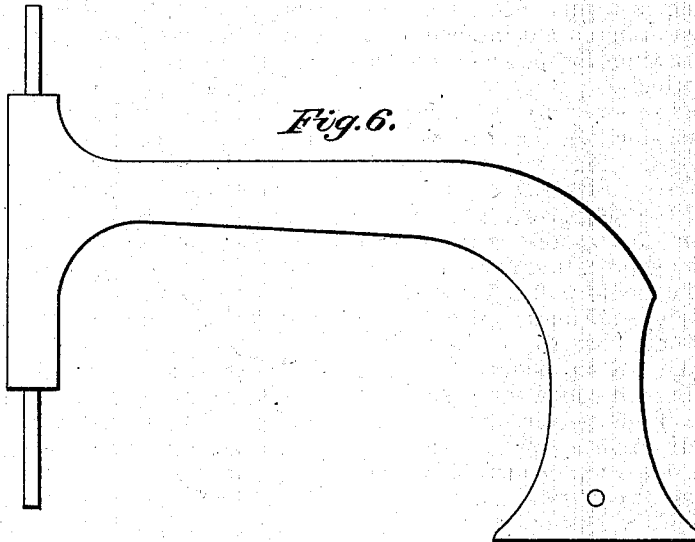
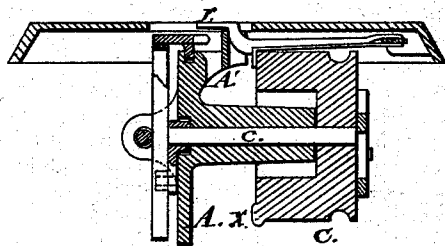


Fig. 7.



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# UNITED STATES PATENT OFFICE.

GEORGE W. HUNTER, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR  
OF ONE-HALF HIS RIGHT TO WILLIAM F. STONE, HENRY M. BAKER, AND  
JAMES H. VERMILYA, OF SAME PLACE.

## IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **146,679**, dated January 20, 1874; application filed  
December 12, 1873.

*To all whom it may concern:*

Be it known that I, GEORGE W. HUNTER, of Washington, in the District of Columbia, have invented a new and useful Improvement in Sewing-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings forming a part of this specification, in which—

Figure 1 is a side view of my invention with the plate or a part of the beam removed to show the needle-arm. Fig. 2 is an inverted plan or bottom view. Fig. 3 is a side elevation of a part of the shuttle-carrier, showing the cam groove or slot, whereby a differential and intermittent reciprocating motion is produced through the medium of a crank. Fig. 4 is a side elevation, showing the driving-pulley and one extremity or arm of the needle-arm or lever, and the cam slot or groove, through the medium of which the desired differential motion of the needle-carrying lever is obtained directly from a crank on the driving-pulley. Fig. 5 is a top or plan view of the shuttle-race and shuttle-carrier detached. Fig. 6 is an elevation of the beam-plate and presser-foot bar; and Fig. 7 is a section through the axis of the driving-pulley, showing also the feed device.

The object of my invention is to produce a sewing-machine which may be run with great rapidity, as well as ease; and it consists generally in the novel construction and combination of parts, more particularly hereinafter described, whereby but few parts are required.

In the drawings, A represents a plate or metal frame attached to and depending from the under side of the bed-plate B. This frame A is provided with a suitable ledge or means for fastening it to the bed-plate, and is also provided with ears or lugs *b b*, for supporting the rod upon which the shuttle-carrier traverses and is guided. A groove, *a*, is made in the top of this frame, which forms a guide for the carrier. The top also forms the shuttle-race. Projecting laterally from this frame is a strong stud or lug, *A'*, which forms the support for, and upon which the driving-pulley C bears. C is the driving-pulley, made with

an opening or recess therein, as shown in Fig. 7. This pulley is also provided with a cam-face upon the inner end, shown in Fig. 2, and with a cam-lip, *x*, arranged upon the outside of the cylinder, these cams being for the purpose of operating the feed, and upon the outer end a crank-pin is placed for operating the needle-arm.

The object of making the pulley hollow, or with a recess, as shown, is to obtain as long a bearing or support as practicable to the pulley-shaft *c* while bringing the face of the pulley close to the plate or frame A.

The pulley-shaft *c* is rigidly fixed to the pulley C, and has a crank, *d*, upon its extremity, which drives the shuttle-carrier.

It is intended to make the driving-pulley of sufficient weight, so that it will act as the fly-wheel of the machine, as well as for driving it.

D represents the shuttle-carrier, having the usual fingers for clasping the shuttle attached thereto. This carrier is provided with ears *g g*, about equidistant from the extremities of a cam slot or groove, *h*. These ears are mounted on the rod *e*. A projection from the carrier works in the groove *a*, and thus the carrier is guided and kept in its proper relative position with the other working parts. The cam groove or slot *h* has the effect, in connection with the crank *d*, to give the shuttle-carrier an intermittent, differential, and reciprocating motion. By this curved or cam slot the shuttle is carried rapidly past the needle while it is at rest, and then comes slowly to a stop. F represents the needle arm or lever, having its pivot or center of motion at *o*. The under arm of the lever is marked *F'*, and is provided with a cam-slot, *i*, in which works the crank-pin on the end of the pulley. This cam is curved, so as to give the desired differential motion to the vibrating arm *F F'*, and through it to the needle, so that the shuttle may pass while the needle is at, or nearly at, rest. *r* represents the feed-lever, which is moved forward by the cam-surface on the end of the pulley, and raised by the cam *x*. The feed-lever is provided with a mortise or slot through its inner extremity, into which one end of a regulating-slide, H, enters. This slide H is inclined, or

wedge-shaped, and by moving it forward or back the length of the stitch is regulated by changing the position of the starting point or fulcrum of the feed-lever. The bed-plate is cast with lugs or projections Z Z, under which the slide H works, and which, in connection with the mortise in the end of the feed-lever, holds the slide in place without other connections. The needle-bar and needle, the beam and driving mechanism, are so well known that particular description thereof is deemed unnecessary.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The hollow pulley C, provided with the

feed-actuating cams, a crank-pin for operating the needle-arm, and a shaft, c, and crank for actuating the shuttle-carrier, when combined with the long bearing A projecting within the pulley, all as and for the purposes set forth.

2. The combination of the feed-lever, having the slotted end and the slotted lugs z z, with the tapering stitch-regulator H fitted to such slots, and acting as a stay or guide for the feed-lever, as well as a feed-regulator, all substantially as and for the purposes set forth.

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Witnesses:

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