2 Sheets—Sheet 1.

A. E. MOLTZ.

Sewing-Machine.

No. 218,682. Patented Aug. 19, 1879.

Fig. III.

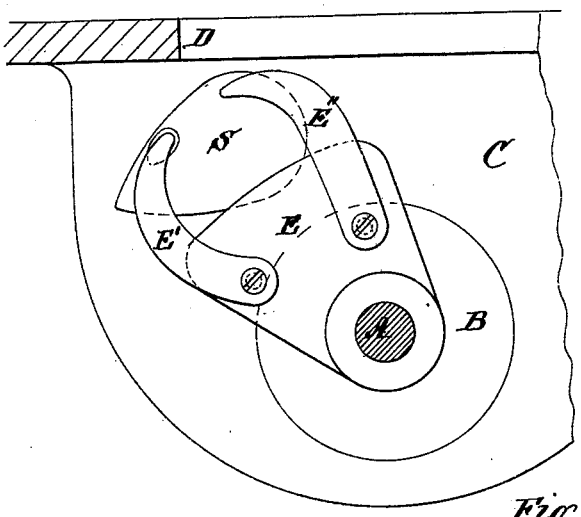


Fig. I.

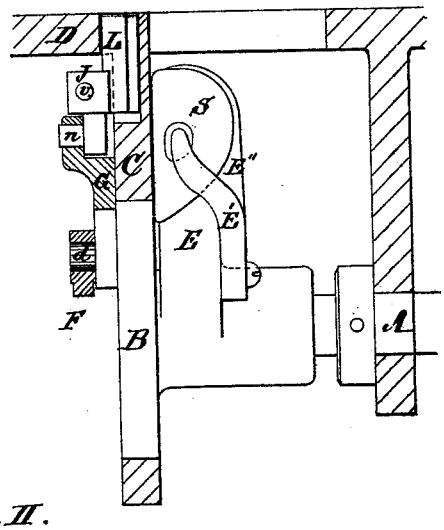
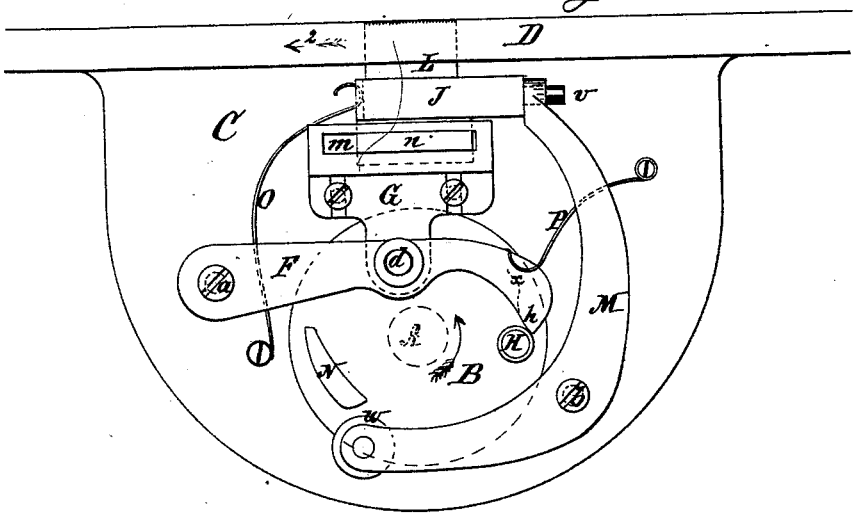


Fig. II.



Witnesses.

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Sewing-Machine.

No. 218,682. Patented Aug. 19, 1879.

Fig. IV.

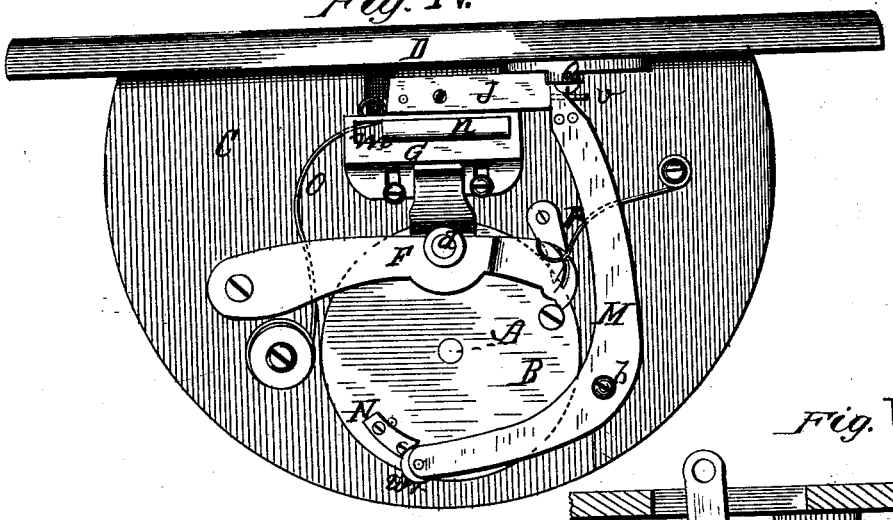


Fig. VI.

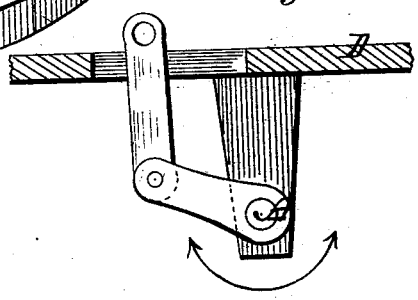
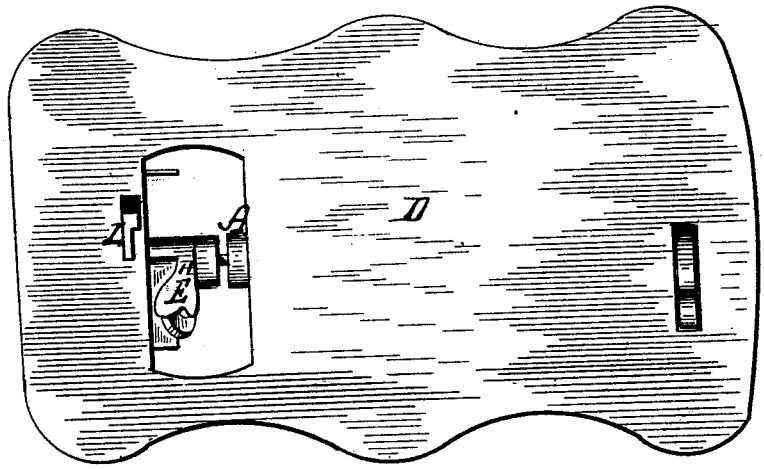


Fig. V.



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UNITED STATES PATENT OFFICE.

ALFRED E. MOLTZ, OF NEW YORK, N. Y.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **218,682**, dated August 19, 1879; application filed April 14, 1879.

To all whom it may concern:

Be it known that I, ALFRED E. MOLTZ, of New York, in the State of New York, have invented a new and useful Improvement in Sewing-Machines, of which the following is a specification.

Figure I represents a side view of part of a sewing-machine embodying my invention, shown partly in section. Fig. II is a front view of the same, and Fig. III is an end or back view. Fig. IV is a view corresponding with Fig. II, but showing the operative parts in a somewhat different position. Fig. V is a top view of the table or bed-plate and parts shown beneath. Fig. VI is a section showing a part in detail.

Similar letters represent similar parts.

On an oscillating shaft, A, a disk, B, is arranged in an aperture in a front plate, C, of the frame, and is of the same, or nearly the same, thickness as the said front plate, so that the operative mechanism connected with the said disk on one side shall be on one side of the front plate, and the mechanism on the other side of the disk shall work on the other side of the said front plate. This shaft A is situated under the bed-plate D of the machine, and is connected to the mechanism working the needle-arm, so as to oscillate about one-quarter of a circle, (more or less,) by any of the usual means of operating such rock-shafts in sewing-machines. On the back of this disk B and of the front plate, C, the shuttle-carrier E is arranged, said carrier being provided with two arms, E′ and E″, between which the shuttle S is supported and carried. One of these arms is made loose, capable of being turned aside for the purpose of allowing the shuttle to be removed whenever desired. In the front plate, C, and through the bed-plate D the required recess and opening are made to receive the feed-dog L.

On the front surface of the disk B a wheel or roller, H, and a projection or cam, N, are arranged.

F is a lever turning on a center, *a*, fast to the front plate, C, the forward end of which lever F is acted upon by the roller H, as will be hereinafter described.

G is a frame attached to the lever F through its projecting pin *d*, and is provided with a horizontal slot, *m*, in which the projection *n* at the lower part of the feed-dog L can slide, thus forming the connection between this frame G and the feed-dog L.

The feed-dog L is arranged with a projecting part, J, formed therewith, or rigidly secured thereto, on one end of which a pin, *v*, is attached, its opposite end being acted upon by a suitable spring, O.

M is a lever turning on a center, *b*, attached to the front plate, C. The upper end of this lever M passes over the pin *v* and bears against the projecting part J of the feed-dog L. The lower end of said lever M is provided with a roller, *w*, and is operated by the projection or cam N, attached to the face of the disk B.

P is a spring attached to the face-plate C, and acting against the forward end of the lever F.

When the shaft A, and consequently the disk B, moves in the direction indicated by the arrow in Fig. II, the roller H comes in contact with the forward end, *h*, of the lever F, moving the same upward, and in consequence of the connection of the frame G with said lever F, and the connection of the feed-dog L through its projection *n* with this frame G, the feed-dog L will receive the required upward movement.

The under side of the forward end, *h*, of the lever F is made beveling or chamfered off, as indicated by the dotted line *x*, Fig. II, so that when the required amount of motion has been given to this lever F and to the feed-dog L this roller H will pass under the lever F while the disk B completes its motion. When the roller H has partly lifted the lever F and feed-dog L, the projection or cam N will come in contact with the roller *w* at the lower end of the lever M, moving said lever so that its upper end will press or move the feed-dog L sidewise in the direction as indicated by the arrow 2, Fig. II.

When the disk B turns in the opposite direction, the spring O, acting against the other end of the projecting part J of the feed-dog L, will move said feed-dog back again to its original position as soon as the cam N has moved clear of the roller *w* in the lower end of the lever M and the roller H has passed the end of the lever F, said lever F being pressed inward through the action of the spring P to be acted upon by the roller H, when the disk

B is again turned in the direction indicated by its arrow.

The amount of oscillation to be given to the shaft A, and consequently to the disk B, depends upon the length of motion necessary for the shuttle S, which, as above described, is attached to the back of said disk B.

The amount of side motion for the feed-dog L can be regulated, in the usual manner, by arranging a small adjustable lever or stop against the side of the feed-dog opposite to the side against which the spring O acts, as shown at Q, Fig. IV.

It will be perceived that by the above-described arrangement the mechanism for operating the feed-dog L is all on the outer side or front of the disk B and front plate, C, leaving the inner side of this front plate, C, free for the shuttle S, so that the same may be made of any desired practicable dimension, and capable of carrying a spool or bobbin containing from one hundred and fifty to two hundred yards or more of cotton thread.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In combination with an oscillating disk, B, provided with a roller, H, attached to its face, the lever F, connecting-frame G, feed-dog L, and spring P, arranged to operate substantially in the manner and for the purpose described.

2. In combination with an oscillating disk, B, provided with a projection or cam, N, attached to its face, the lever M, feed-dog L, and spring O, arranged to operate substantially in the manner and for the purpose described.

3. The oscillating disk B, located in the front plate, C, and provided with a roller, H, and cam N, secured to one side thereof, in combination with the levers F and M, arranged at one side of the said disk, and the shuttle-carrier E, and arms E′ E″, located on the other side of the same and oscillating therewith, substantially as and for the purpose herein specified.

ALFRED E. MOLTZ.

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