J. F. SNEDIKER.

Mechanical Movement.

No. 211,600. Patented Jan. 21, 1879.

FIG. 1.

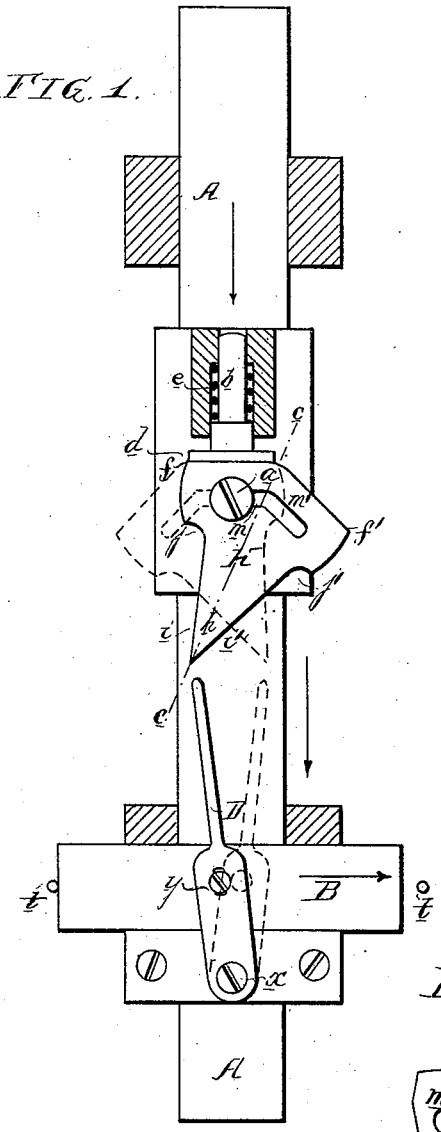


FIG. 2.

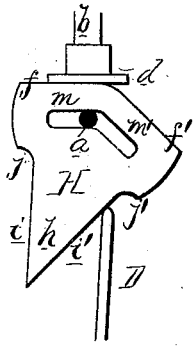


FIG. 3.

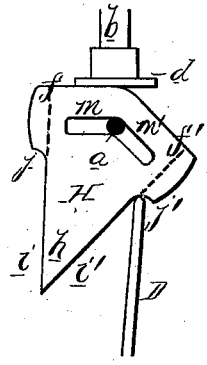


FIG. 4

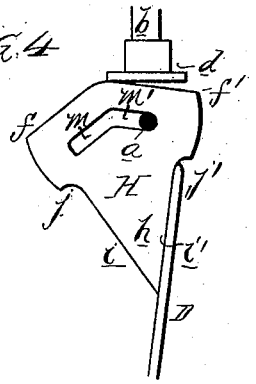
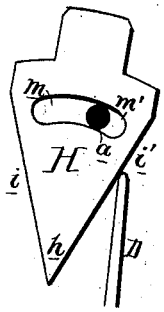


FIG. 5



WITNESSES

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UNITED STATES PATENT OFFICE.

JAMES F. SNEDIKER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE NATIONAL SEWING MACHINE COMPANY, (LIMITED,) OF SAME PLACE.

IMPROVEMENT IN MECHANICAL MOVEMENTS.

Specification forming part of Letters Patent No. **211,600**, dated January 21, 1879; application filed October 25, 1878.

To all whom it may concern:

Be it known that I, JAMES F. SNEDIKER, of Philadelphia, Pennsylvania, have invented a new Mechanical Movement, of which the following is a specification:

The object of my invention is to make a mechanical movement by which an intermittent vibrating movement, without shock or jar, may be imparted to a lever from a reciprocating object, which makes two movements for one movement of the lever, and this I attain by combining a dog having a slot or communicating slots, a pointed projection, and inclined sides with a retaining-pin and a lever, the retaining-pin and dog being reciprocated while the pivot of the lever is fixed, or the latter being reciprocated while the retaining-pin of the dog is fixed, all as described hereinafter.

In the accompanying drawings, Figure 1 is a front view of the movement, and Figs. 2, 3, and 4 diagrams illustrating the different positions which the moving parts of the device assume during its operation.

A is the guided rod or bar, to which a determinate reciprocating motion is imparted, and D is a lever, which is pivoted to a fixed pin, *x*, and to which an intermittent vibrating motion has to be imparted from the bar A, the lever being, in the present instance, connected to a slide, B, which, however, does not constitute an essential part of the movement.

To the rod A is screwed, or otherwise secured, a pin or stud, *a*, and above the latter is a presser consisting in the present instance of a pin, *b*, having a flat head, *d*, and moving in a suitable guide, a spring, *e*, tending to force the pin downward.

A dog, H, of the peculiar shape shown in the drawings, has a pointed projection, *h*, bounded by two converging edges, *i i'*, the former terminating in an abrupt shoulder, *j*, and the latter in an abrupt shoulder, *j'*; but these shoulders are not absolutely essential to the proper operation of the device, and may be dispensed with, as indicated by dotted lines in Fig. 3, and shown in the modification, Fig. 5.

The dog has at the top two edges, *f f'*, inclined in respect to each other and meeting at a central line, *c c*, the dog having two inclined slots, *m m'*, parallel with the edges *f f'*, and also meeting at the central line, *c c*, the pin *a* being adapted to these slots.

We will suppose the parts to be in the position shown in Fig. 1, the end of the slot *m* being against the pin *a*, and the pointed projection being toward the left of the figure, in which position it is retained by the flat head *d* of the pressure-pin *b* bearing on the edge *f* of the dog.

On moving the bar A downward in the direction of its arrow, the inclined edge *i'* of the pointed projection of the dog will bear against the rounded end of the lever D, and the first effect of this will be to move the lever over toward the position shown by dotted lines, the upper end of the lever meantime sliding on the inclined face *i'* of the dog.

As the downward movement of the bar A continues the dog H will be shifted laterally, as shown in Figs. 2 and 3, owing to the slots *m m'*, so that by the time the end of the lever D comes into contact with the shoulder *j'* the pin *a* will be at the junction of the two slots, as shown in Fig. 3.

On the further downward movement of the bar A its dog will be tilted to the position Fig. 4, the end of the slot *m'* bearing against the pin *a*, and one side of the lever coinciding with the inclined side *i'* of the pointed projection of the dog, and this is the condition of the parts when the bar has reached the limit of its downward movement.

It will be noticed, on referring to Fig. 4, that the edge *f'* at the top of the dog does not coincide with the flat head *d* of the presser-pin *b*, the lever preventing this coincidence; but when the bar A is moved upward, and is released from the presence of the lever, this flat head, by its own downward pressure, will move the dog until its edge *f'* will coincide with the head *d*, and this movement brings the pointed projection of the dog to the position shown by dotted lines in Fig. 1, so that when the bar or rod A again descends the inclined side *i* of the pointed projection of the dog will take effect on the lever and move it back to its original position, Fig. 1.

It will thus be seen that during one down-

ward movement of the bar A the edge *i'* of the dog performs the duty of moving the lever D in one direction, and during the next downward movement the edge *i* of the dog performs the duty of moving the lever in a contrary direction, and so on, one movement of the lever being effected during a complete reciprocating movement of the rod, and the reverse movement of the lever during another complete reciprocating movement of the rod, and so on.

The lever, or the object to which it may be connected, should have such friction, or should be under such retarding influences, that an effort is required in order to move the lever, and there may be positive stops to restrict its movement, the stops in the present instance consisting of pins *t t* for the slide B to strike against.

The movement may be applied to many purposes. For instance, the lever D may be connected to the valve of a steam-engine, and another lever, operated by similar mechanism from the same rod A, may be connected to another valve of the same engine.

It will be noticed that, as far as the operation of the movement is concerned, it is immaterial whether the dog reciprocates with the bar and the lever is pivoted to a fixed pin, *x*, or the latter and the lever reciprocates with the bar and the pin *a* is fixed.

The use of the spring-presser *b d* is not essential in all cases, for if the dog H is made of sufficient size and weight the overhanging portion of the dog, when the latter is moved by the lever to the position shown in Fig. 4, may be relied upon to cause the swinging of the point of the dog to the position shown by dotted lines in Fig. 1.

In the modified form of dog shown in Fig. 5 the shoulders *j j* are dispensed with, as is also the spring-presser above referred to, and the communicating slots *m m'* are made more in the form of a single curved slot. In this case each lateral movement of the dog is completed by the action of the end of the lever D on the inclined side of the dog.

I do not desire to claim in this application the combination of a pivoted lever with a dog having a pointed projection and shoulders, and hung to a pivot, as such a device is shown and claimed in an application for patent for sewing-machine attachment filed by me on the 29th day of August, A. D. 1878.

The essential features of my present invention are the slots *m m'*, formed in the dog H, for it is these slots which permit the lateral shifting of the dog as it is acted upon by the lever D, and thus prevent the injurious shocks which result when a dog pivoted directly to a pin is employed.

I therefore claim as my invention—

The within-described mechanical movement, consisting of the combination of the following elements, namely: a dog having communicating slots *m m'*, pointed projection *h*, inclined sides *i i'*, a retaining-pin, *a*, and a lever, D, the retaining-pin *a* and dog being reciprocated while the pivot of the lever is fixed, or the latter being reciprocated while the pin *a* is fixed, all substantially as set forth.

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

JAMES F. SNEDIKER.

Witnesses:

ALEX. PATTERSON,

HARRY SMITH.

1,500 words