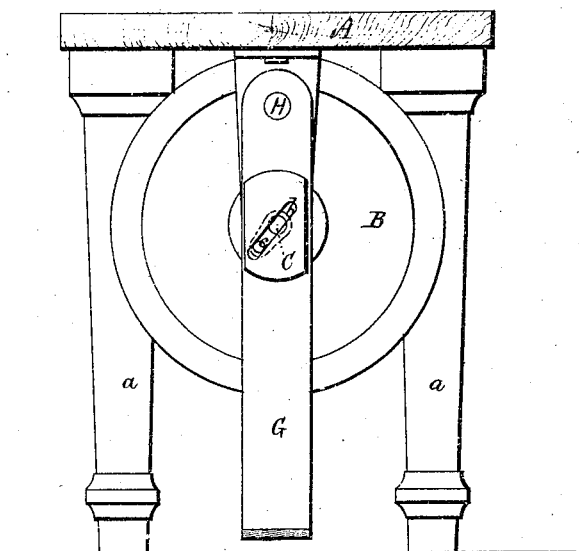


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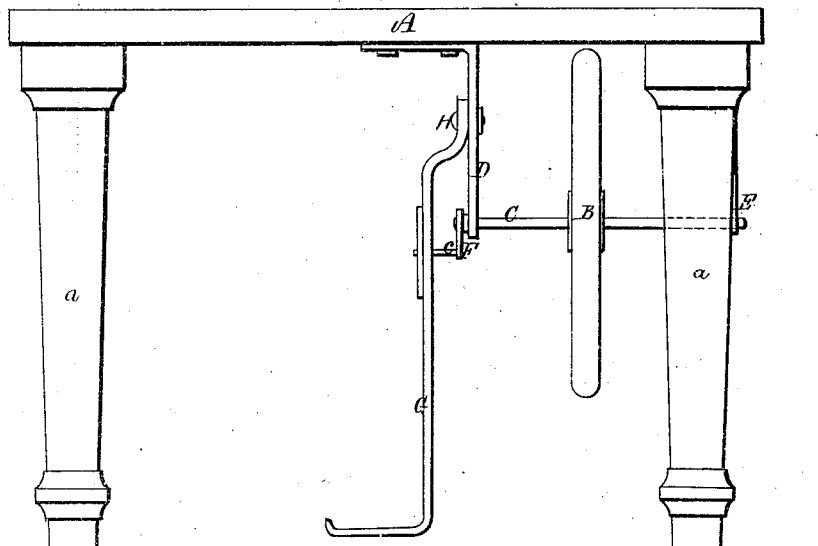
PATENTED MAR 14 1871

*Eben W. Keyes.*  
*Improved Treadle Motion.*

*Fig. 2.*



*Fig. 1.*



Witnesses.

*John C. Lamon.*

*W. Bailey*

Eben W. Keyes.

by his Attorney.

*Frederick Curtis.*

# UNITED STATES PATENT OFFICE.

EBEN W. KEYES, OF CHARLESTOWN, MASSACHUSETTS.

## IMPROVEMENT IN TREADLE-MOTIONS.

Specification forming part of Letters Patent No. **112,720**, dated March 14, 1871.

*To all to whom these presents shall come:*

Be it known that I, EBEN W. KEYES, of Charlestown, in the county of Middlesex and State of Massachusetts, have made an invention of a new and useful Treadle-Motion for Sewing-Machines; and do hereby declare the following to be a full, clear, and exact description thereof, due reference being had to the accompanying drawing, making part of this specification, and in which—

Figure 1 is a side elevation, and Fig. 2 a transverse and vertical section, of a table containing my invention.

The purpose of this invention is to obtain a motion for sewing-machines, &c., which shall relieve the feet of the operator from much of the labor now devolving upon them by permitting the machine to be driven by a swinging motion of the feet and lower legs in place of an oscillating movement at the ankles, as now practiced, the device which I employ to carry out this purpose also enabling a greatly-increased power to be applied to the machine by a less expenditure of strength than at present.

This invention consists in driving the crank of the driving-shaft of a sewing-machine, or other analogous machine, by means of a swinging or vibratory lever suspended from a pivot disposed above the crank, and with its lower free end extending to or nearly to the floor in front of the operator, such lever being provided with a slot, into which the wrist-pin of the crank extends, and by means of such crank is put in motion, the whole being as hereinafter explained.

The drawing accompanying this specification represents a table which may be supposed to belong to a sewing-machine, the top of such table being shown at A, and its four legs at a a a a.

The balance-wheel and driving-shaft usually employed in sewing-machines are represented

respectively at B and C as mounted in a suitable manner in hangers D E, the crank of such shaft being shown at F. G represents an upright bar or lever disposed alongside the outer face of the crank F, and pivoted at its upper end to a stud or pin, H, extending from the hanger D.

A slot, *b*, is formed in the lever G, and into this slot the wrist-pin *c* of the crank F enters, the length of such slot being slightly in excess of the diameter of the circle described by the revolution of the crank-pin.

It will be apparent that reciprocating vibratory motions of the lever G or treadle, as it may be termed, will impart rotary motion to the driving-shaft.

It has been found in practice that the swinging motions of the feet and lower portion of the legs which are requisite to vibrate the lever G are attendant with much less fatigue than by the treadle-motion now universally in use, and this ease of movement is enhanced by the long leverage of the treadle G.

In order to avoid as much as possible the liability of the crank to stop on a dead-center at the terminus of each vibration of the lever, I dispose the slot *b* at an oblique angle to the longest axis of such lever, by which means a starting-power is exerted upon the pin at such time.

### *Claim.*

In combination with the stand or frame and crank-shaft, a vibratory treadle-lever pivoted at its upper end vertically above the shaft, and provided with a diagonal or oblique slot, in which the crank or wrist-pin moves during the vibrations of the treadle, substantially as shown and described.

EBEN W. KEYES.

Witnesses:

FRED. CURTIS,  
EDWARD GRIFFITH.