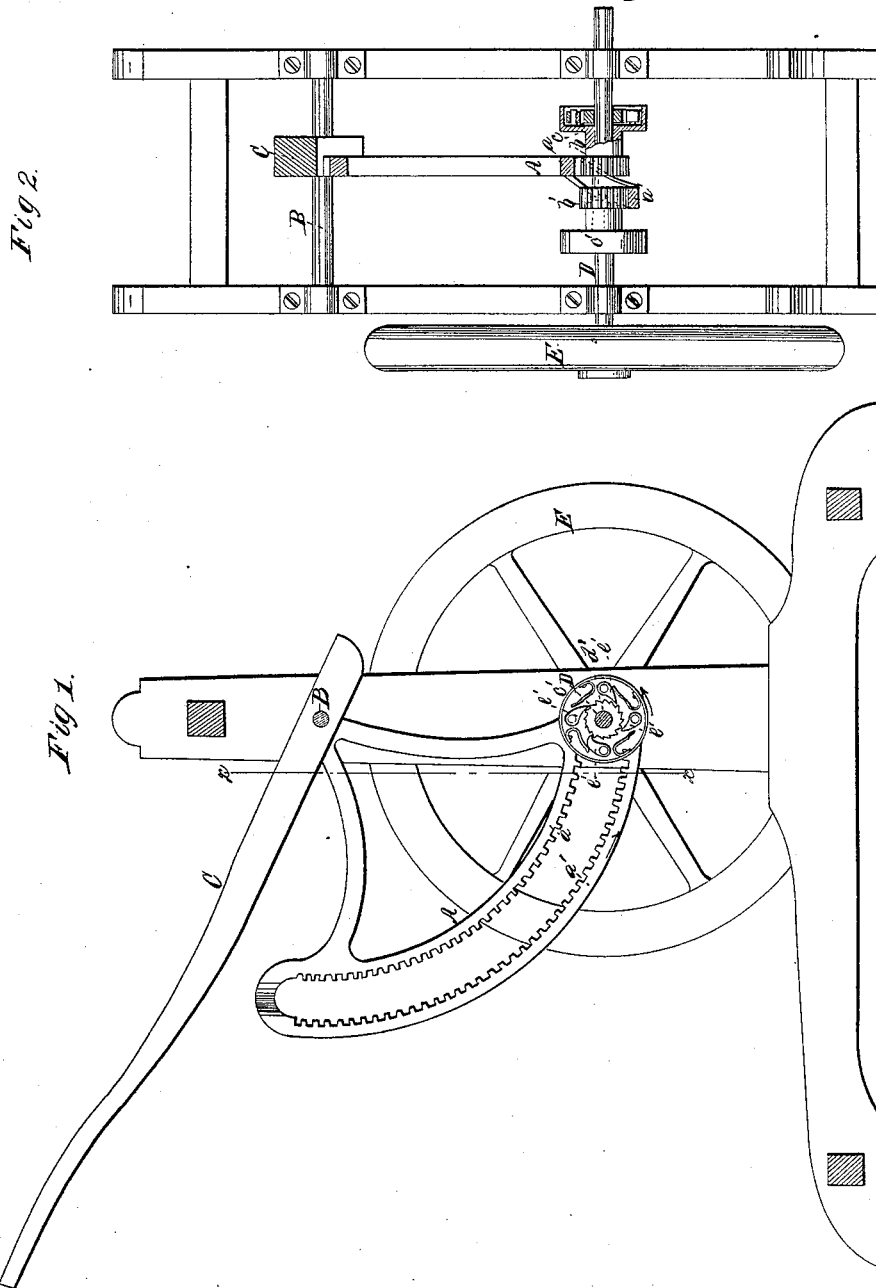


E. Wadhams,
Converting Motion.

N^o 48,780.

Patented July 11, 1865.



Witnesses.
Theo. Lusk
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UNITED STATES PATENT OFFICE.

EDWARD WADHAMS, OF HAMILTON, CANADA WEST, ASSIGNOR TO EDWD. ROBERTS KENT, OF SAME PLACE.

IMPROVEMENT IN TRANSMITTING MOTION.

Specification forming part of Letters Patent No. 48,780, dated July 11, 1865.

To all whom it may concern:

Be it known that I, EDWARD WADHAMS, a citizen of the United States, at present residing in Hamilton, Canada West, have invented a new and useful Improvement in Transmitting Motion; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a longitudinal vertical section of this invention. Fig. 2 is a transverse vertical section of the same, the line *xx*, Fig. 1, indicating the plane of section.

Similar letters of reference indicate like parts.

The object of this invention is to transmit motion from an oscillating rock-shaft to another revolving shaft, or, in other words, to convert the oscillating motion of one shaft in a continuous revolving motion of another shaft. This object is obtained by a double segmental rack, which is mounted on the rock-shaft and straddles the revolving shaft, in combination with two cog-wheels, each connected to said revolving shaft by a ratchet-wheel and pawl or pawls in such a manner that one cog-wheel is allowed to revolve independent of the shaft in one and the other in the opposite direction, and that by imparting to the segmental rack an oscillating motion a continuous revolving motion of the second shaft is produced.

A represents a double segmental rack with an internal gear, *a a'*, and mounted on a rock-shaft, B, to which motion is imparted by a hand-lever, C, or in any other suitable manner. The rack A straddles the shaft D, and internal gears, *a a'*, are not situated in the same plane, as shown in Fig. 2, so that one of the same can be made to mesh in a pinion, *b*, and the other in a pinion, *b'*. These pinions are

placed on the shaft D in such a manner that they turn loosely on the same in either direction, and each of them is provided with a hollow drum, *c* or *c'*, as shown in the drawings. These drums are open on one end and they surround the ratchet-wheels *d d'*, which are firmly keyed to the shaft D. The teeth of these ratchet-wheels point in one and the same direction, and each of the drums is armed with a series of spring-pawls, *e e'*, which catch into the teeth of said ratchet-wheels *d d'*. If the segmental rack A is moved in the direction of the arrow marked on it in Fig. 1, the pinion and drum *c'* turn in the direction of the arrow marked near it in said figure, and the pawls *e'* slide over the teeth of the ratchet-wheel *d'*. At the same time the pinion *b* and drum *c* turn in the opposite direction, and the pawls *e*, catching in the teeth of the ratchet-wheel *d*, transmit the motion to the shaft D. In reversing the motion of the segmental rack the pawls *e'* take effect and the pawls *e* glide over the teeth of their ratchet. By these means a continuous rotary motion is imparted to the shaft D, and by mounting on said shaft a fly-wheel, E, the motion is rendered steady and uniform.

This device is particularly applicable to sewing-machines or other similar machines in which it is desirable to produce motion always in one and the same direction.

I claim as new and desire to secure by Letters Patent—

The double segmental rack A on the rock-shaft C, in combination with pinions *b b'*, ratchet-wheels *d d'*, and pawls *e e'*, said ratchet-wheels being keyed to the shaft D, substantially as and for the purpose set forth.

EDWARD WADHAMS.

Witnesses:

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