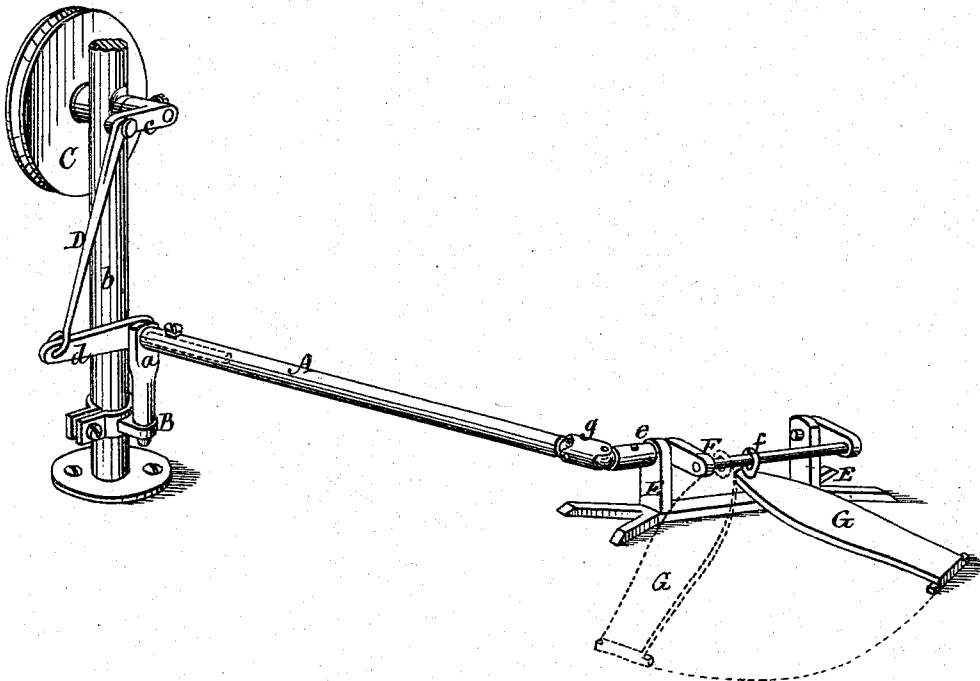


TREADLE-POWER.

No. 172,197.

Patented Jan. 11, 1876.



Witnesses:

Ewell A. Sick,
 Jos. C. Wickham

Inventor:

Alonso H. Stevens
by atty Pollock Bailey.

UNITED STATES PATENT OFFICE.

ALONZO H. STEVENS, OF CLINTON, CONNECTICUT, ASSIGNOR OF ONE-HALF HIS RIGHT TO MELVILLE M. JOHNSTON, OF NEW YORK CITY.

IMPROVEMENT IN TREADLE-POWERS.

Specification forming part of Letters Patent No. **172,197**, dated January 11, 1876; application filed September 16, 1875.

To all whom it may concern:

Be it known that I, ALONZO H. STEVENS, of Clinton, in the county of Middlesex and State of Connecticut, have invented certain new and useful Improvements in Treadle-Power; 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 which it pertains to make and use the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon, which form a part of this specification.

This invention has been designed with special reference to dental engines, although it is doubtless susceptible of more general application.

The particular object I have had in view is to allow the dental engine to be placed in any position desired relatively to the operator and the patient—as, for instance, on the side of the chair opposite to that on which the operator stands—and yet be fully under the control of the operator; or, in case of a suspension-engine, to allow that to be so placed as to keep the cords by which it is operated out of the way of the operator and the patient as well.

The main element of the mechanism I employ is a shaft having a crank at each end, one connected with the pitman of the driving-wheel of the engine, the other with the treadle by which the shaft is rocked. One end of the shaft is supported in a bearing attached to the engine; and this bearing I prefer to swivel, so that it may turn upon a vertical axis. The other end of the shaft has its bearing in a movable stand or base. I prefer to give flexibility to the shaft, and for this purpose, as a preferred mode, I make it in sections—usually two—united by a universal joint.

The accompanying drawing represents an apparatus embodying my invention.

The figure is a perspective view of said apparatus.

A is the rock-shaft hereinbefore referred to. It is supported at one end in a bearing, *a*, that is swiveled to turn on a vertical axis in a bracket, B, clamped or otherwise attached to the standard or frame *b* of the engine. I have represented only so much of the engine as is needed to illustrate my invention in its application thereto. C is the fly or driving wheel of the

engine, provided with a crank-pin, *c*, to which is connected one end of the pitman D, which is connected at the other end to a crank-arm, *d*, on the end of shaft A. The shaft at its other end takes a bearing, *e*, in a stand, E, that also supports the crank F, to which the treadle G is connected. The stand or treadle-support E is movable, occupying no fixed position with relation to the engine, but capable of being moved from point to point, as the necessities of the case may demand. The shaft is divided into two sections, united by a gimbal-joint, *g*, or an equivalent joint, which will permit the one section to be at an angle with the other, while both rock or rotate in unison.

Under this arrangement it will be perceived that the whole apparatus may be moved on the bearing *a* as a pivot, while, at the same time, the treadle portion can be set at an angle to that portion of the shaft attached directly to the engine. This arrangement permits of all freedom of movement necessary for the purposes of my invention.

I also unite the foot-piece or treadle-proper G with the crank F by means of a swiveled eye or connection, *f*, which permits the treadle to be turned to one side or other of the crank, as desired, and to be placed at any desired angle thereto, as indicated by dotted lines in the drawing.

The shaft may be of any desired length. It will, perhaps, be found desirable to form in it, at one point, a telescopic joint, or to otherwise unite its sections, so that the one may slide on the other, in order to increase or decrease at pleasure the working length of the shaft. The joint for this purpose will, of course, be formed at some other point than that occupied by the universal joint *g*.

I would remark that, in practice, the crank *d* is longer than the crank *c*—that is to say, is set further from its center of motion—so that a mere rocking motion of the shaft will effect the rotation of the fly-wheel. Any of the usual arrangements may be employed for the purpose of throwing the fly-wheel past the dead-center.

Having described my invention, what I claim, and desire to secure by Letters Patent, is as follows:

1. In a treadle mechanism, a rock-shaft supported at one end in a swiveled bearing attached to the engine or other machine operated by the treadle, and at the other end in a movable stand or support, and provided with cranks, to which the treadle proper or foot-piece and the pitman are respectively connected, substantially as set forth.

2. The cranked and flexible or jointed rock-shaft, in combination with the movable stand or treadle-support and the treadle, substantially as shown and described.

3. The cranked and flexible or jointed rock-shaft and its swiveled bearing, in combination with the movable stand or treadle-support and the treadle, as set forth.

4. The combination, with the rock-shaft and the movable stand or treadle-support, of the treadle or foot-piece, united with the outer crank on said shaft by a swiveled connecting-piece, substantially as and for the purposes set forth.

In testimony that I claim the foregoing as my own invention, I affix my signature in presence of two witnesses.

ALONZO H. STEVENS.

Witnesses:

ALFRED HULL,

JOHN A. STANTON.