

N. STOW.

Mechanical Movements for Operating Treadles.

No. 153,861

Patented Aug. 4, 1874.

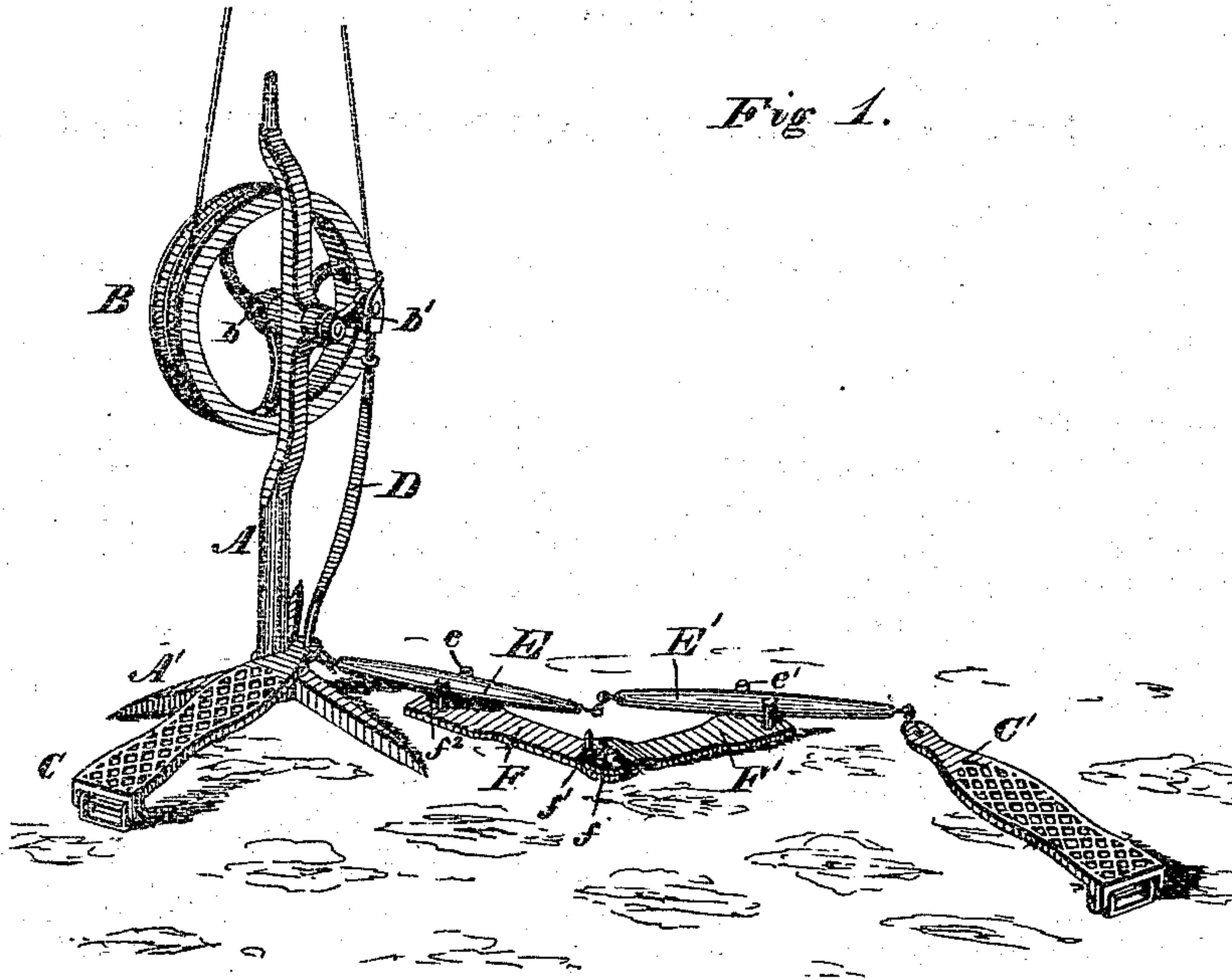
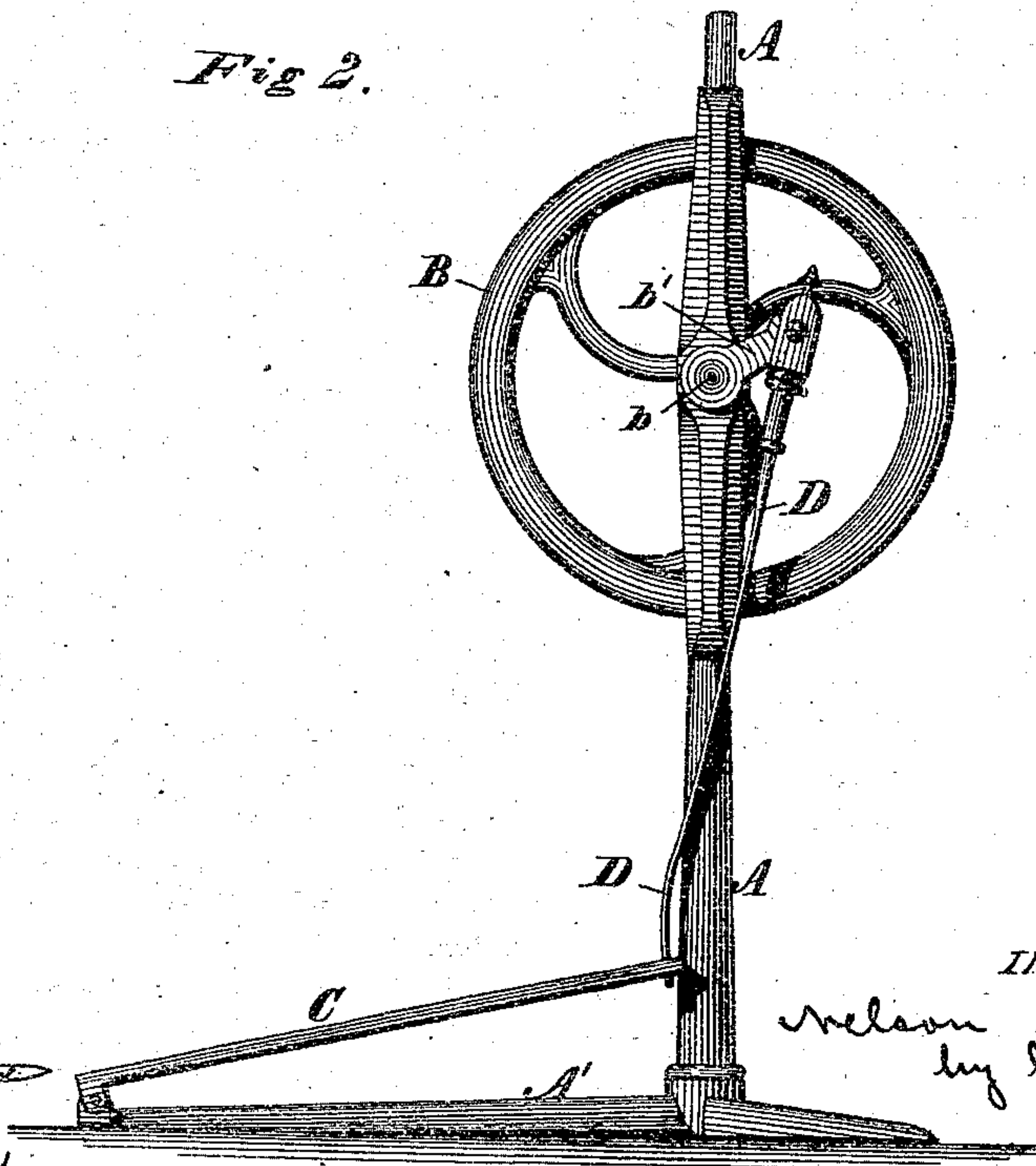


Fig 2.



WITNESSES.

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INVENTOR.

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NELSON STOW, OF BINGHAMTON, NEW YORK, ASSIGNOR TO SAMUEL S. WHITE, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN MECHANICAL MOVEMENTS FOR OPERATING TREADLES.

Specification forming part of Letters Patent No. **153,861**, dated August 4, 1874; application filed July 1, 1874.

To all whom it may concern:

Be it known that I, NELSON STOW, of Binghamton, in the county of Broome and State of New York, have invented certain new and useful Improvements in Mechanical Movements, of which the following is a specification:

The accompanying drawings show all my improvements as embodied in the best way now known to me; obviously, however, some of these improvements may be used without the others.

Figure 1 represents a view in perspective, showing my double treadle; and Fig. 2, a side elevation, showing the spring-pitman and a single treadle.

My invention, although applicable to many other purposes, is more especially adapted for use with dental engines. The first branch of my invention relates to the treadle-power. Its object is to enable the dentist to operate with equal efficiency from either side of his chair; to which end my improvements consist, first, in combining with a treadle-power vibrating levers, pivoted together, and operated by separate treadles from either end of the levers; second, in mounting the vibrating levers on a bed-plate movable around the base of the treadle-power; third, in combining the vibrating levers with a bed-plate composed of sections adjustable at an angle relatively to each other, to accommodate chairs having a central support or screw. The next branch of my invention relates to the pitman-connection between the treadle and the crank of the driving-wheel. Its objects are to prevent the crank from resting on the dead-center, to insure its always starting in the right direction, and to give it a "live motion" in passing its dead-centers; to which ends my improvement consists, fourth, in a straight-plate spring-pitman rigidly secured to a vibrating treadle, and pivoted on the crank-pin, as hereinafter set forth.

An upright arm, post, or frame, A, is firmly secured upon a suitable base, stand, or tripod, A'. A driving-wheel, B, turns with a shaft, b, mounted in suitable bearings in the frame, and is rotated by a crank and pitman. A foot-treadle, C, pivoted at one end on one foot of the tripod, has a spring-pitman, D, firmly secured to its other end. This pitman slips on

a crank-pin on the crank b' of the driving-wheel axle, and is held there by the resilience of the spring only, so that, in case of any obstruction getting between the pitman and frame, the pitman would be thrown off the crank-pin, by which means serious accidents to the operator and others may sometimes be prevented.

By using a spring-pitman, several advantages are attained over the pitman ordinarily used in foot-powers; among such advantages may be mentioned those of the crank being always stopped off the dead-center, of its being always compelled to start in the right direction, and of the crank being thrown past the dead-center on the upper part of its traverse by the spring with a live motion, as I call it, the slight retarding action of the spring in passing the lower dead-center being more than compensated by the capacity of the operator to exert his full force on the down-stroke of the treadle.

In order to enable the dentist to operate the driving-wheel from either side of the chair in which the patient sits, two rocking levers, E E', are mounted on fulcrum-pins e e', so as to vibrate freely in a vertical plane; these levers are arranged end to end, the outer end of the lever E being linked to the treadle C, while its inner end is linked to the adjacent end of the other lever, E', which in turn is pivoted at its outer end loosely to a treadle, C', on the opposite side of the chair. This treadle, it will be noted, can be swung round into any desired position relatively to the rocking levers, and still operate them with equal efficiency. The two levers, it will be observed, are necessary, in order that both treadles may work together—that is, that both may always be started on the down-stroke, thus not only insuring the starting of the crank in the right direction, but enabling the power of two operators to be applied, if deemed requisite. This, however, will rarely be required in dental operations, but will be found very useful in heavier work. In order to render these levers and the loose treadle movable round the base or stand A', I mount them on a bed-plate, F, which is pivoted to the floor near the base—say at f², Fig. 1—so that the outer end of the bed-plate

may be moved around this pivot to any position most convenient to the operator.

In order to allow the levers to work without interference from the central support, or the adjusting-screw common in dentists' chairs, I mount said levers in a bed-plate made in sections F F', adjustable round a pivot, *f*. These sections may be locked in any desired relation to each other by means of a pin, *f'*, passing into holes in the overlapping parts of the two sections; or other equivalent detents may be used.

I do not, broadly, claim a spring-pitman; neither do I claim a bow-shaped spring-pitman pivoted to a treadle.

I claim as of my own invention—

1. The combination, in a treadle-power, of two independent treadles connected by interposed vibrating levers placed end to end, and co-operating substantially as set forth, whereby both treadles simultaneously move in the same direction.

2. The combination, substantially as hereinbefore set forth, in a treadle-power, of a base or stand, two treadles, and pivoted connecting-levers interposed between the treadles, and mounted on a bed-plate adjustable around the base or stand.

3. The combination, substantially as hereinbefore set forth, in a treadle-power, of the treadles, their pivoted connecting-levers, and a bed-plate composed of hinged sections, for the purpose specified.

4. The straight-plate spring-pitman secured rigidly to the treadle at one end, and pivoted on the crank at the other, as and for the purposes specified.

In testimony whereof I have hereunto subscribed my name.

NELSON STOW.

Witnesses:

WM. L. GRISWOLD,
GEO. F. LYON.