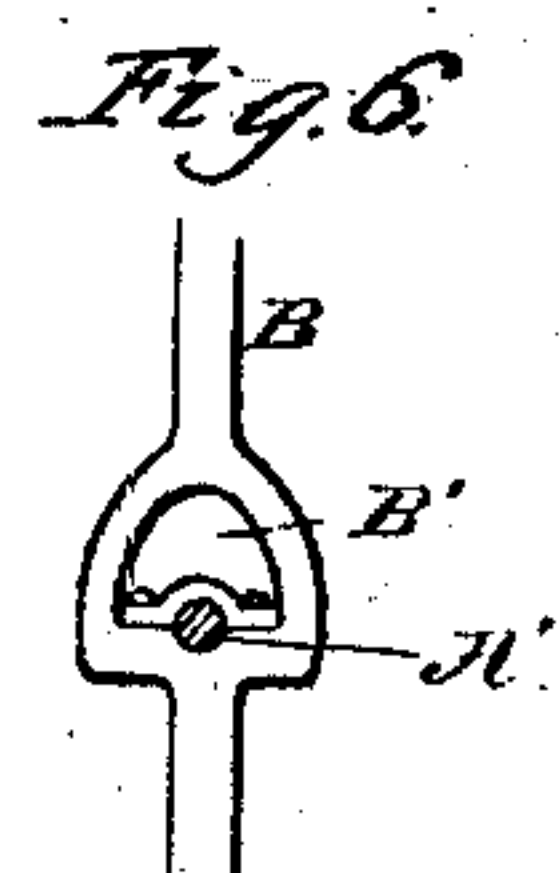
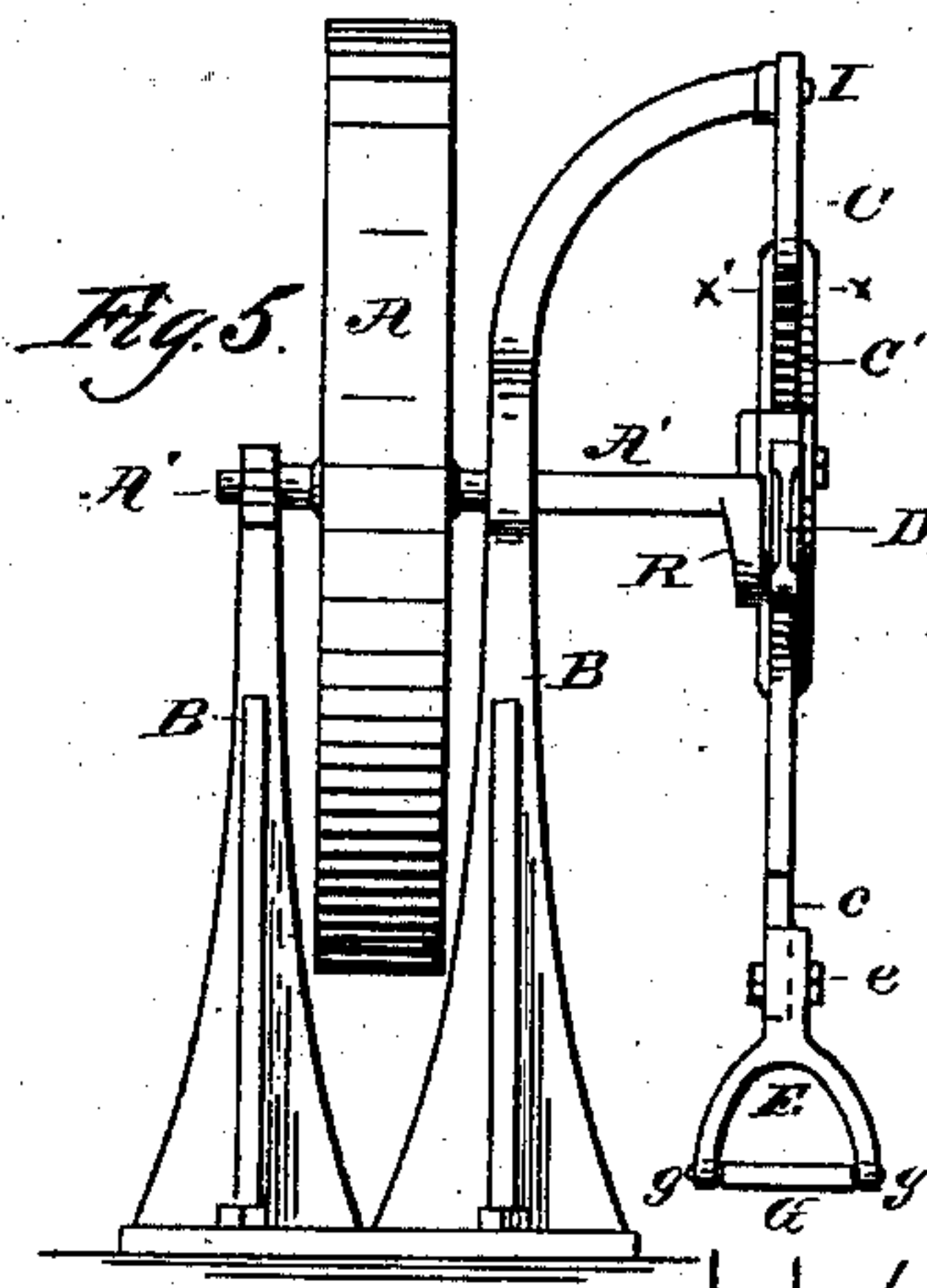
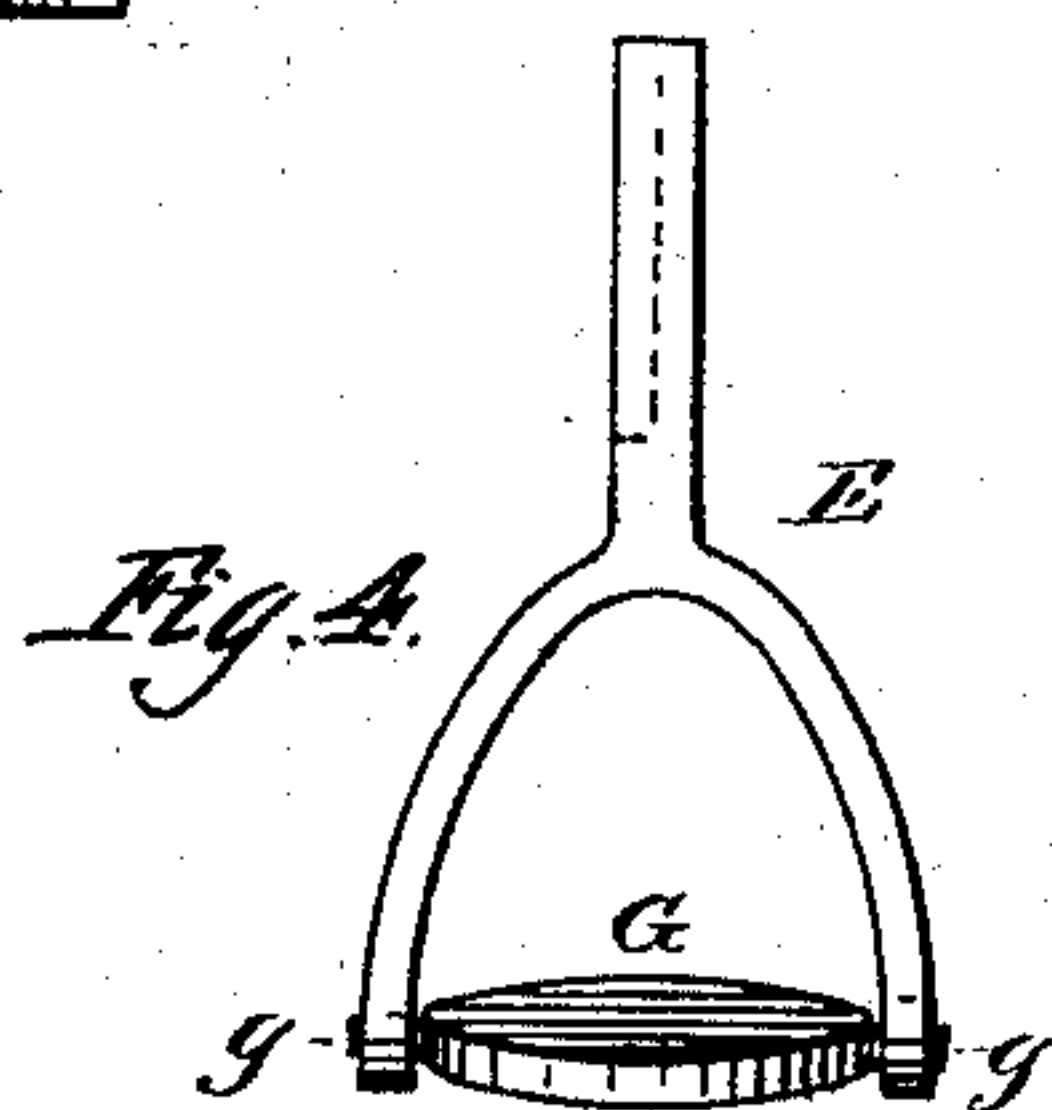
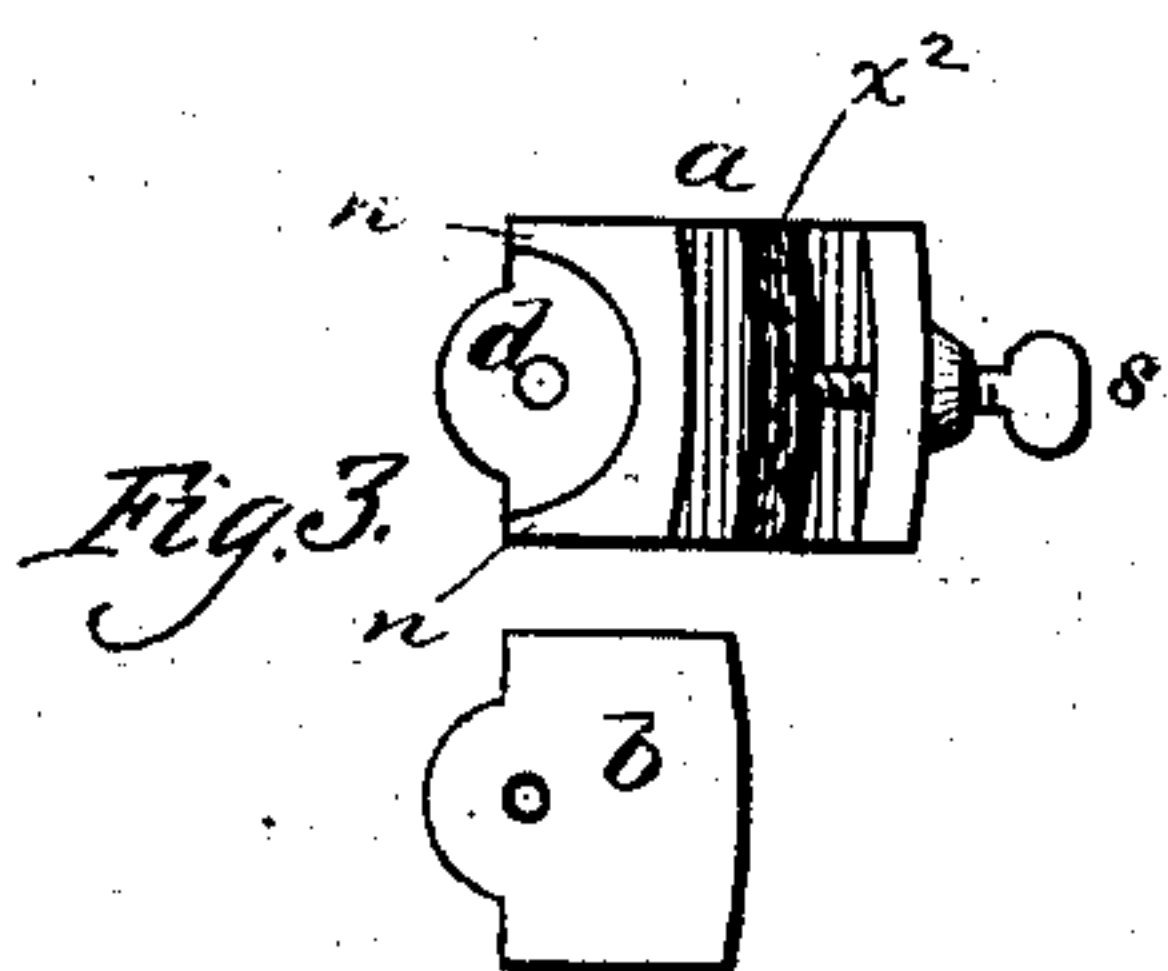
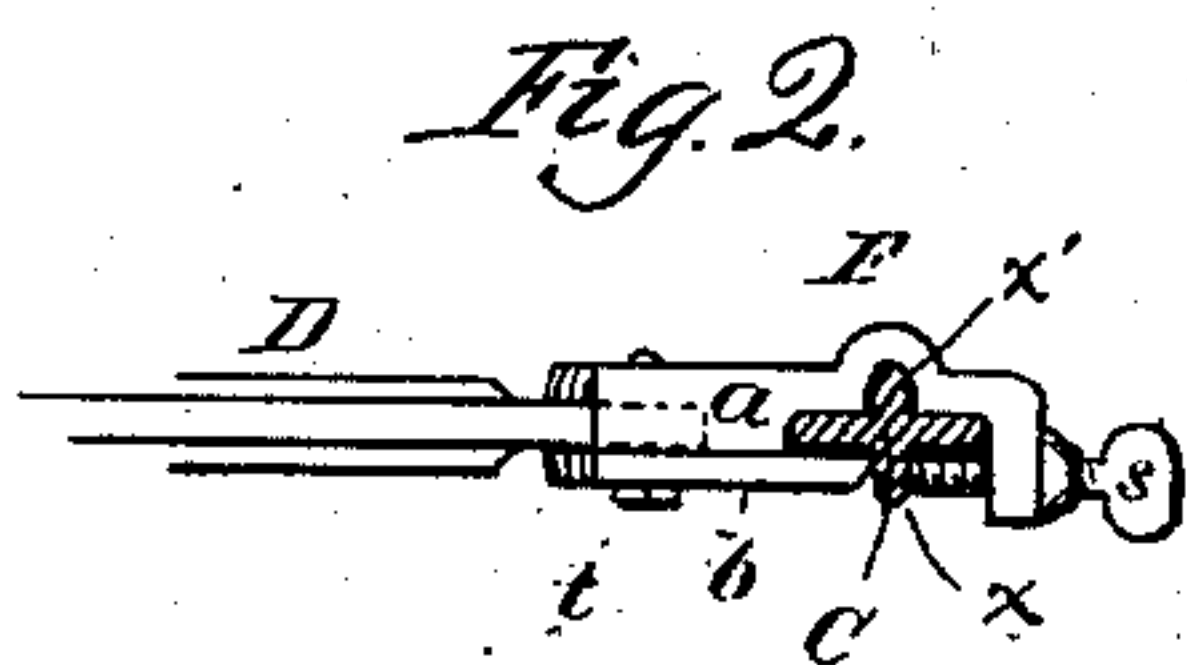
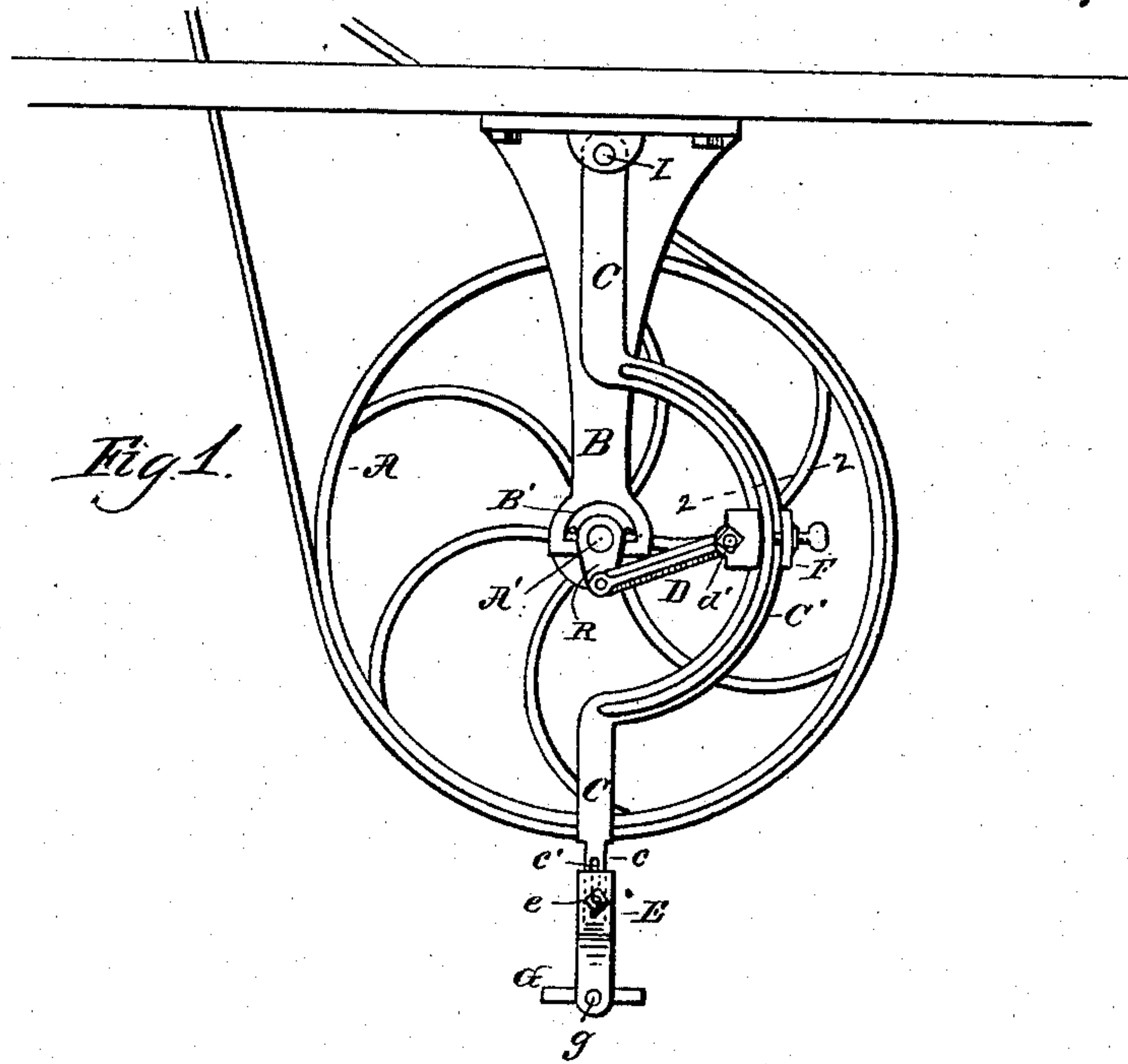


(No Model.)

T. KEARNEY & W. W. WILCOX.
Foot Power.

No. 241,544.

Patented May 17, 1881.



WITNESSES.
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FOOT-POWER.

SPECIFICATION forming part of Letters Patent No. 241,544, dated May 17, 1881.

Application filed January 22, 1881. (No model.)

To all whom it may concern:

Be it known that we, THEODORE KEARNEY and WESLEY W. WILCOX, both of Chicago, State of Illinois, have jointly invented certain new and useful Improvements in Foot-Powers; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

Our invention relates to foot or treadle powers operated by a horizontal or swinging movement of the foot; and it consists, first, in a vibrating driving-lever suspended from a point over and in the same vertical plane with the crank-shaft to be rotated, said lever being curved or deflected backward opposite the shaft for the attachment of the pitman; second, in a sliding or adjustable connecting-box for joining the pitman to the lever in the curved portion of the latter; third, in a foot-lever suspended as described, and adapted to be lengthened or shortened; and, finally, in certain specific features of construction hereinafter described more fully, and pointed out in the claims.

In the drawings, Figure 1 is a side elevation of a suspended driving-wheel operated by a lever constructed and applied in accordance with our invention. Fig. 2 is a section of the semicircular part of the lever through 2 2 of Fig. 1, showing the sliding connecting-box. Fig. 3 is a detail exhibit of said sliding box as a novel construction in itself. Fig. 4 is a front view of the stirrup. Fig. 5 is a front elevation of a standing wheel having our improvements applied thereto; and Fig. 6 is a side view of a portion of the standard of Figs. 1 and 5.

The same letter indicates the same part in all figures of the drawings.

A is the drive-wheel to be rotated, and A' is its cranked shaft. B B are the supports of the shaft A'. C is a vertical foot-lever pivoted at I, a point above and in the vertical plane of the wheel-shaft D, and in or nearly in the vertical transverse plane of the shaft crank R. Said lever is provided, at its lower end, with the stirrup or foot-rest E, and opposite the crank said lever is curved backward in a semi-

circle, C', of which semicircle the axis of the shaft A' is the center, as shown in Fig. 1. The pitman D has connection with the lever C in this curved portion thereof. Ordinarily the connection will be made at a point horizontally opposite the shaft A', but it is sometimes desirable that such connection be made at a higher or lower point on the lever, according as greater or less power is desired. For this purpose the retreated portion C' of the lever C is made partircular, as stated, and an adjustable connecting-box, F, is employed, to which the pitman is pivoted at d'. Said box, by means of a set-screw, s, or equivalent device, may be detached or loosened and reset at any desired point in the curve C' at will. As a special construction for such adjustable connecting-box, at once simple and cheap, we prefer that shown in Fig. 3. This box contemplates that the curved part C' of the foot-lever C be made with the central rib, x, or, better still, with two opposite ribs, x and x'. Said box is composed of two plates, a and b, adapted to be cast in form. The plate a is recessed to admit the body of the lever, to which it is applied in the manner shown in Fig. 2, and the set-screw s is arranged to bear on the outer rib, x. Said plate a is also recessed at d to receive the end of the pitman D. The plate b sets over the end of the pitman and also over the inner edge or flange of the lever, as seen clearly in Fig. 2, and is held in place by the pivot-bolt t of the pitman. Said pivot-bolt, being located inside the line of the extremities n n of the walls of recess d, holds the plate b firmly and flatly in place. The presence of the lateral flange x' is not necessary, but is desirable as calculated, if the parts are properly cast, to assist in holding the box squarely in line with the pitman.

The stirrup E is cast in a separate piece from the lever C. For the purpose of providing for lengthening or shortening the lever, as may be required for different persons or operations, the shank of the stirrup is cast with a groove or recess on its inner or back face, and the end c of the lever is cast to fit said recess. One of the parts (as the lever) is provided with a slot, c', and the other with a suitable hole to receive the bolt e.

The foot-rest G is pivoted to the arms of the

stirrup at *g g*, so as to conform to the natural positions of the foot in operating the power.

Of course it is not necessary that the entire deflection of the lever C shall be in a true arc 5 of a circle, but a central portion thereof, along which it may be desired to slide the box F, should preferably be in such an arc. When the pitman is connected directly to the lever C—*i. e.*, without the adjustable box F—the 10 curve or deflection need not, obviously, be in any part circular.

By means of the construction or form of the lever C shown—that is to say, having its piv- 15 otal point and the stirrup in a vertical line with the crank, and having the central deflection for the attachment of the pitman—the weight of the lever or downward pressure of the foot al- ways brings the crank in position off the dead center and the stirrup in the middle of the arc 20 of its motion, so that the wheel may be readily started in either direction. This arrangement of the wheel and lever is also found to bring the parts into natural and convenient position with relation to the sitting operator—as a 25 watchmaker—and his bench.

I claim as my invention—

1. In a foot-power for the production of ro- 30 tary motion, the combination, with the wheel A, having the shaft A', crank R, and pitman D, of the lever C, having its upper and lower portions, when vertical, practically in line with the shaft A', pivoted at its upper end over the shaft, and retreated rearwardly opposite the

crank for the attachment of the pitman D, sub- 35 stantially as described, and for the purposes stated.

2. In the arrangement of parts described, the retreated portion C' of the lever C, of curved form, and combined with an adjustable box, F, to which the pitman D is pivoted, substantially 40 as described, and for the purposes set forth.

3. In combination with the lever C, provided with the lateral flange *x*, or the lateral flanges *x* and *x'*, the box F, adapted to be pivotally 45 connected with the pitman D, said box being constructed of the recessed plate *a* and cap-plate *b*, and provided with the set-screw *s* and bolt *t*, arranged and applied substantially as and for the purposes set forth.

4. The suspended foot-lever C, provided with 50 the stirrup E, secured adjustably to the lever, for the purpose of varying the power of said lever or the arc of the foot-motion, substantially as described.

5. Combined with the suspended foot-lever 55 C, the stirrup E, having the foot-rest G, pivoted to the arms *g g*, substantially as and for the purposes set forth.

In testimony that we claim the foregoing as our joint invention we affix our signatures in 60 presence of two witnesses.

THEODORE KEARNEY.
WESLEY W. WILCOX.

Witnesses :

M. E. DAYTON,
JESSE COX, Jr.