

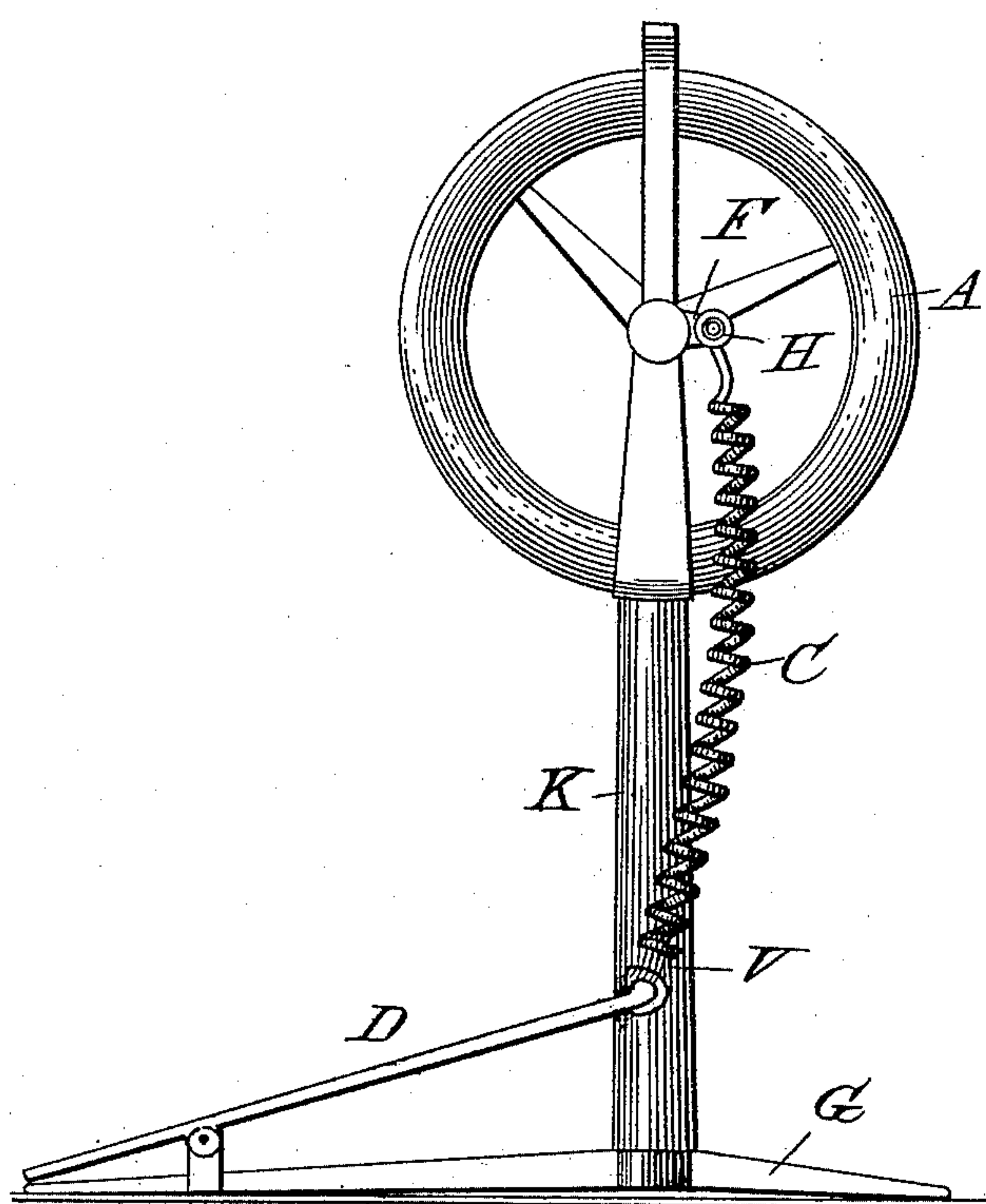
(No Model.)

D. D. WEISELL.  
FOOT POWER.

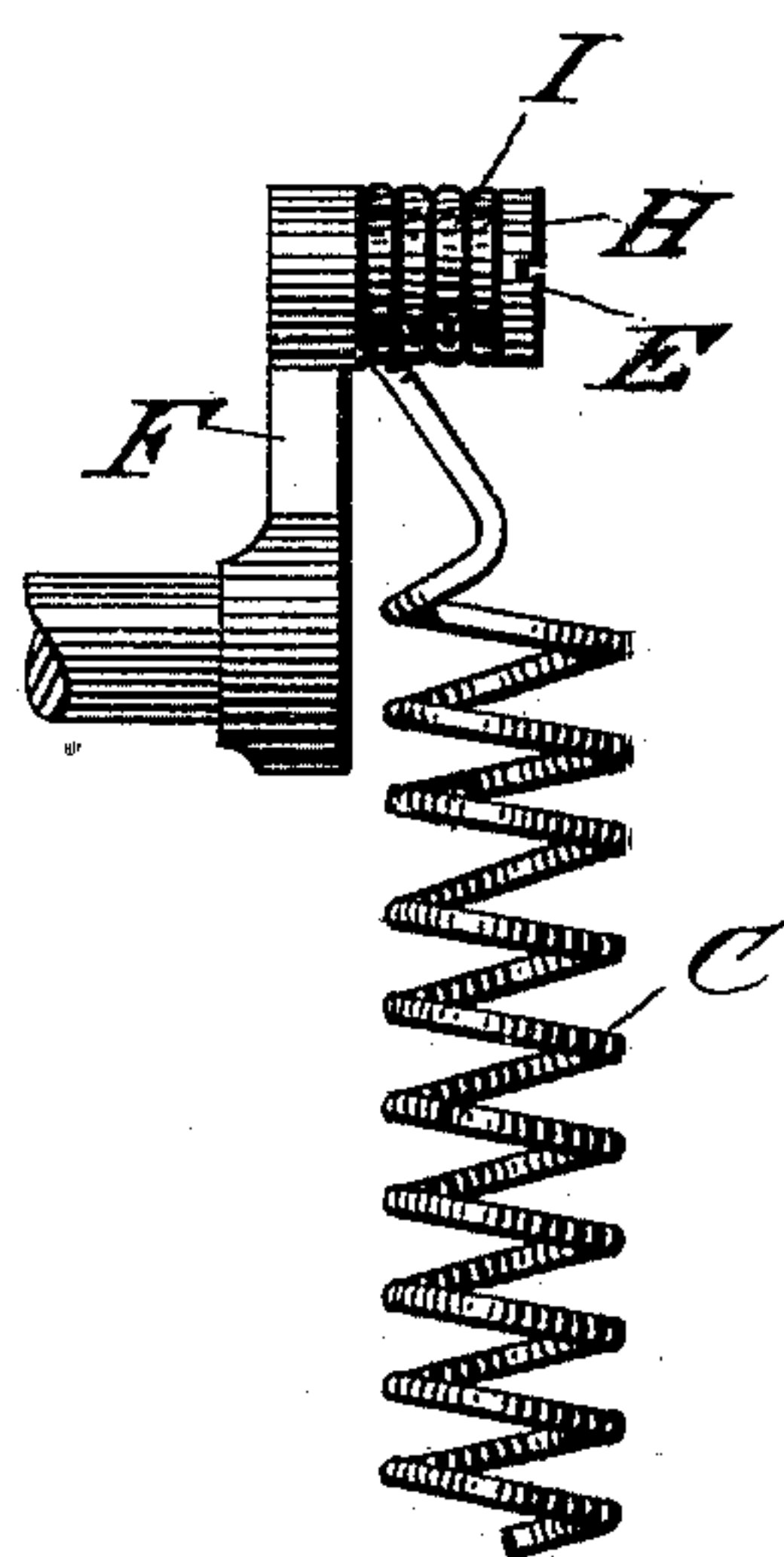
No. 424,389.

Patented Mar. 25, 1890.

*Fig. 1.*



*Fig. 2.*



Witnesses:  
*W. E. Weisell*  
*Edwin Jackson*

Inventor:  
*David D. Weisell*

# UNITED STATES PATENT OFFICE.

DAVID D. WEISELL, OF FORT WAYNE, INDIANA.

## FOOT-POWER.

SPECIFICATION forming part of Letters Patent No. 424,389, dated March 25, 1890.

Application filed May 24, 1889. Serial No. 312,012. (No model.)

*To all whom it may concern:*

Be it known that I, DAVID D. WEISELL, a citizen of the United States, residing at Fort Wayne, in the county of Allen and State of Indiana, have invented certain new and useful improvements in foot-powers for dental burring-engines, lathes, and other machines where the applied power is transmitted through a pitman to the crank and shaft of the driving wheel or pulley; and I do hereby declare that the following is a full, clear, and exact specification.

My invention relates to improvements in foot-powers and crank-movements; and it consists, essentially, in the use of a spiral-spring pitman, so attached and adjusted to the treadle or other mechanism operating the crank and to the crank of the driving-shaft as to lessen the jar on the foot of the operator when treadles are used, relieve strain on the crank, carry the latter over or past the dead-centers by the lateral tension of the spring, and produce a more uniform and steady motion, and when the applied power is removed stop the crank beyond its center by such lateral pressure and in proper position for starting in the desired direction. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is an elevation of my improvement applied to the foot-power of a dental burring-engine. Fig. 2 is a detail view of the upper part of the spiral-spring pitman, showing one mode of attachment to the wrist-pin.

The base G, Fig. 1, usually a tripod, has secured to it a rigid upright standard K, the upper part of which is bifurcated or forked for the reception of the driving wheel or pulley A. To one end of the pulley shaft or journal is attached a driving-crank F. To one arm of the base or tripod is secured by a hinge or pivot joint a treadle or foot board D, said pivot or hinge being preferably arranged to come directly under the ankle-joint of the operator. Upon the toe end of this treadle I form or secure a lug or projection V, preferably at an angle of sixty degrees, forward or backward of the vertical line, in accordance with the direction that the crank-shaft is intended to be turned. Upon this lug I secure the lower end of a spiral-spring pitman C.

The upper extended end I, Fig. 2, of the wire or ribbon that forms the pitman is coiled around a thimble H, and forms the eye for the reception of the wrist-pin E.

To secure the pitman C in its proper working position, I force a number of the lower coils over lug or projection V, and further secure it by bending the end of the lower spiral under the base of the projection or lug. The upper extended end of the pitman is then sprung toward the vertical line, producing a gentle curve, until the eye is brought to its proper position on the crank, and is secured thereto by the wrist-pin E.

Any suitable mode of attachment which will cause the spring-pitman to curve forward or backward with sufficient force to hold the crank off its center when at rest and in position to be started by the downward motion of the treadle may be employed for securing the spiral-spring pitman to the treadle and crank; but the above mode is preferred.

It will be observed, as has been shown, that the pitman is of itself a spiral spring, and is so attached as to bring in requisition both its longitudinal and lateral tension, and it is by this arrangement that the most important object of my invention is attained, as will be apparent by the following explanation. The downward pressure of the foot is relieved of any sudden jar by the flexibility of the pitman. The same flexibility allows the crank to pass the lower dead-center without checking the motion. When the front of the foot is raised, the heel-pressure acting on the flexible pitman throws the crank upward with a gentle elastic motion. The lateral tension of the spring-pitman throws the crank past the upper dead-center, and carries it in position to be acted on again by the downward pressure of the foot, and by this application and action of the spring-pitman a uniform and steady motion is imparted to the driving wheel or pulley. The only possible dead-center in this construction is when the crank lies in a line from the center of the journal to the hinge or pivot of the treadle, or when the crank assumes an angle of forty-five degrees from the vertical line.

I have shown and described the construction of my improvement and its application



to foot-powers of dental engines, but do not wish to confine its application to this class of machines alone, as it is equally applicable to dental and mechanical lathes, sewing-machines, and all other machines and devices driven by foot-power, or wherever a flexible or spring pitman is desirable to be used on a crank, whether the applied power be by treadle or otherwise.

10 Having described my invention and the manner of constructing and applying it to its intended use, what I claim as new, and wish to secure by Letters Patent of the United States, is—

15 1. In combination with a crank and a treadle having an inclined projection, a spiral-

spring pitman, the position of said projection necessitating the bending of the spring in placing it in position, whereby it is adapted to overcome the dead-centers, substantially 20 as described.

2. In combination with a crank and a treadle, a spiral-spring pitman attached to the treadle at such an angle that it necessitates the bending of the spring toward the 25 crank-pin in placing it in position, whereby it is adapted to overcome the dead-center, substantially as described.

DAVID D. WEISELL.

Witnesses:

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HENRY J. SIEBOLD.