

J. D. SMITH.
Treadles.

No.155,766.

Patented Oct. 6, 1874.

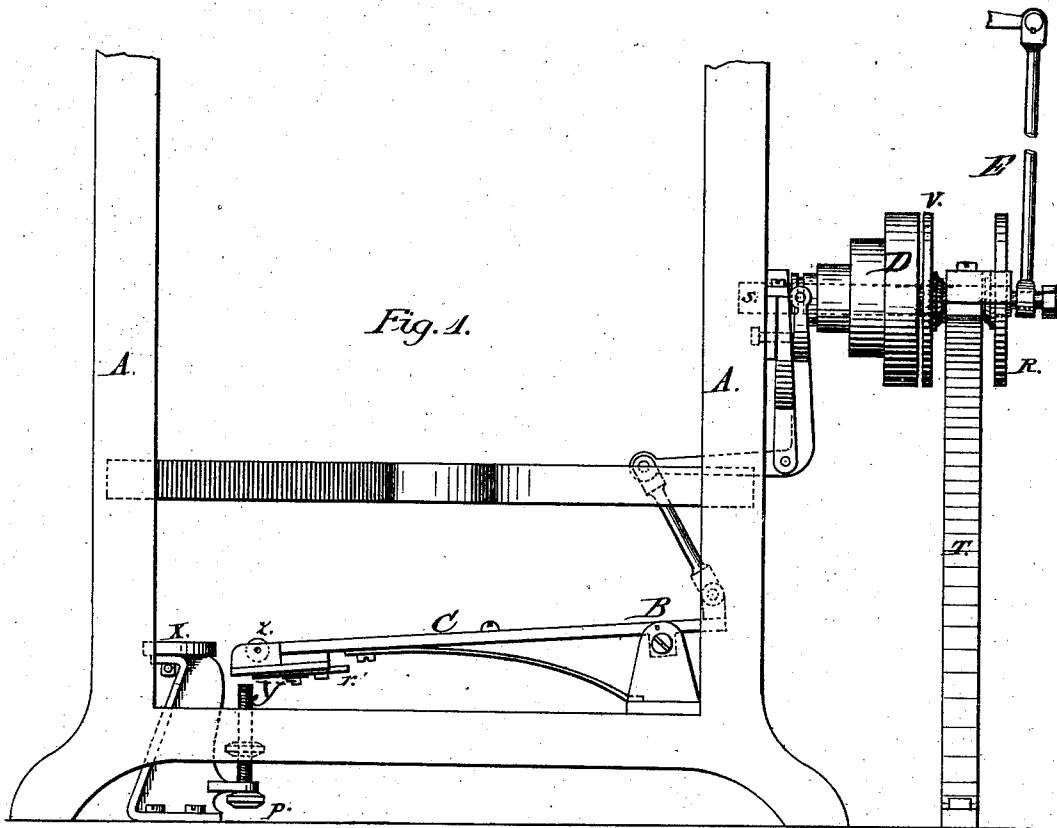


Fig. 2.

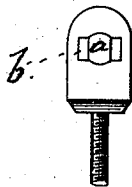


Fig. 3.

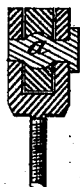
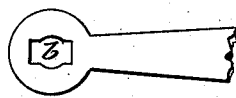


Fig. 4.



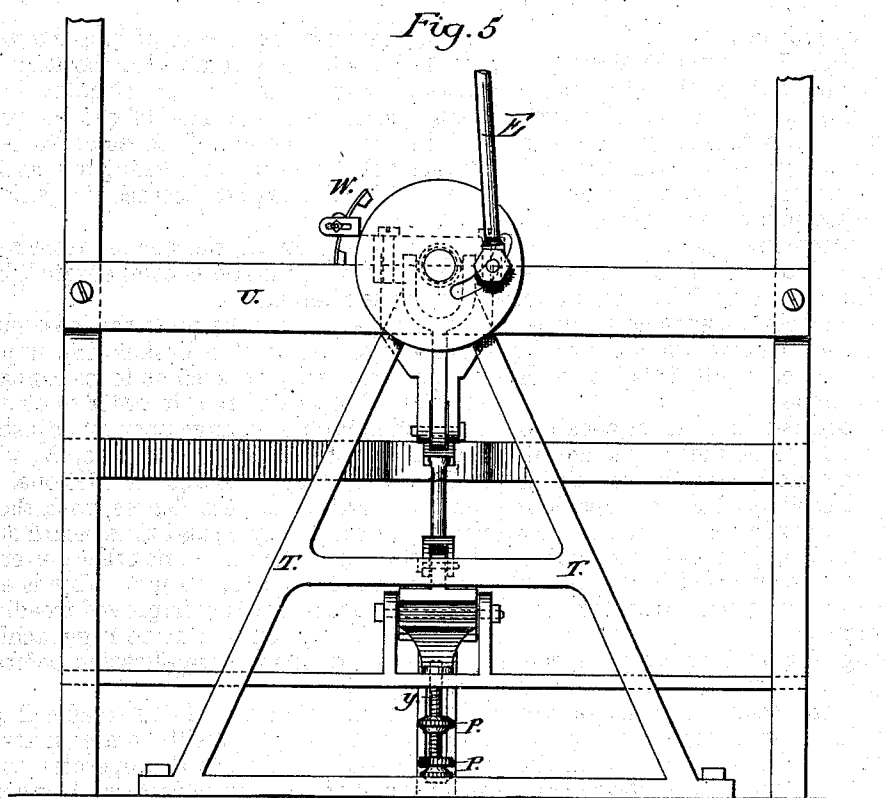
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Inventor:
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UNITED STATES PATENT OFFICE.

JAMES D. SMITH, OF WASHINGTON, DISTRICT OF COLUMBIA.

IMPROVEMENT IN TREADLES.

Specification forming part of Letters Patent No. **155,766**, dated October 6. 1874; application filed September 2, 1874.

To all whom it may concern:

Be it known that I, JAMES D. SMITH, of Washington, in the county of Washington and District of Columbia, have invented certain new and useful Improvements in Treadles; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings making a part of this application.

My invention relates to certain improvements in treadles, more especially adapted for use in numbering-machines, such as described in an application for Letters Patent filed by me on the 13th day of April, 1874, to which reference is here made.

My invention consists in a novel construction of the forward end of the treadle and its combination with a heel-rest, for sustaining the foot of the operative when the treadle is not in motion; and my invention further consists of a semi universal joint between the upper end of the pitman, attached to the rear of the treadle device, and a vibrating lever, to be operated thereby.

In the drawing, Figure 1 represents a side view of my improved treadle; Figs. 2, 3, and 4, detail views of the semi-universal joint of the connecting-pitman and lever; and Fig. 5, a back view of the treadle and its attachments.

Similar letters denote the same parts in the several figures.

A represents the frame of any machine, to which is pivoted, at B, the treadle C. To the rear end of the treadle is attached a toggle-joint, which slides the cone-pulley D into frictional contact with the fixed pulley V, which is secured to a horizontal shaft, having one bearing, s, in the frame A, and the other in a step, T. Outside of the bearing in the step T, and upon this horizontal shaft, is secured a crank-plate, R, having an adjustable wrist-pin, to which is secured the lower end of the pitman E. The rear end of the lever to be operated by the pitman is attached thereto by a bolt, as clearly shown in Figs. 2, 3, and 4. This bolt *a* is enlarged in the center, so as to present a partial sphere, which is passed into the greatest diameter of a slot, *b*, in the end of the lever, when a quarter-turn is given to the bolt, which turns the curved surface of the bolt's center within a coinciding surface in the

lever, thus forming a sort of ball-and-socket joint, the bolt being retained in position by a feather passing in through a notch in the head thereof into one side of the bifurcated portion of the pitman. The enlarged center of the bolt prevents its working out horizontally, while the feather secures it against rotation.

By this connection, the change from rotary to reciprocating motion is compensated for in an obvious manner.

When the junction between the loose pulley D and fixed pulley V is broken, the impetus of the latter may be such as to continue the rotation of its shaft; and, in order to counteract such motion, I arrange upon an adjustable arm on the step T a curved brake, W, which is capable of being secured in frictional contact, to a greater or less degree, with the periphery of the pulley V, and thus retard or entirely stop its motion when no other power but its momentum is in operation. This is especially desirable where my improved treadle attachment is applied to numbering-machines, such as described in my application before alluded to.

Within the front end of the treadle C I arrange a roller, *z*, which will rotate under the toe or ball of the foot of the operator as the forward end of the lever is depressed, and thus counteract the tendency of forcing the foot back. X is a heel-rest, secured to the floor, and in such relation to the forward end of the treadle that the heel of the operative may rest thereon when the treadle is being operated, or during the time when it may be temporarily stopped. Secured to this heel-rest is a screw-rod, Y, adapted to be run up or down, and retained in any given position by jam-nuts *p p*. The top end of this rod lies under the forward end of the treadle C, and its height regulates the vertical movement of the treadle, in an obvious manner. Arranged on the under side of the forward end of the treadle is a sliding bolt, *r*, of such thickness as to practically fill the space between the under side of the treadle and the top of the rod Y when the bolt is "shot" forward, so that the treadle may be secured against accidental movement when the operator, for any reason, is absent.

This feature of my invention is specially ap-

plicable, also, to the numbering-machine forming the subject-matter of my application before referred to, as any accidental movement of the treadle would produce frictional contact between the pulleys D V, and, of necessity, the movement of the other parts of the numbering-machine and the change of the type.

What I claim in this application, and desire to secure by Letters Patent, is—

1. In combination with the foot-lever C, the stationary heel-rest X, for supporting the heel of the operative, substantially as and for the purpose set forth.

2. The foot-lever C, provided with the roller z, substantially as and for the purpose set forth.

3. The heel-rest X, provided with the adjust-

able rod Y, whereby the vertical movement of the treadle is governed, as and for the purpose set forth.

4. In combination with the rod Y and foot-lever C, the sliding bolt r, for locking the treadle, as and for the purpose specified.

5. The semi-universal joint between the upper end of the pitman and its connection, constructed substantially as specified, for the purpose set forth.

Witness my hand and seal this 2d day of September, 1874.

JAS. D. SMITH. [L. S.]

Witnesses:

JOHN TYLER,

HARRY C. BIRCH.