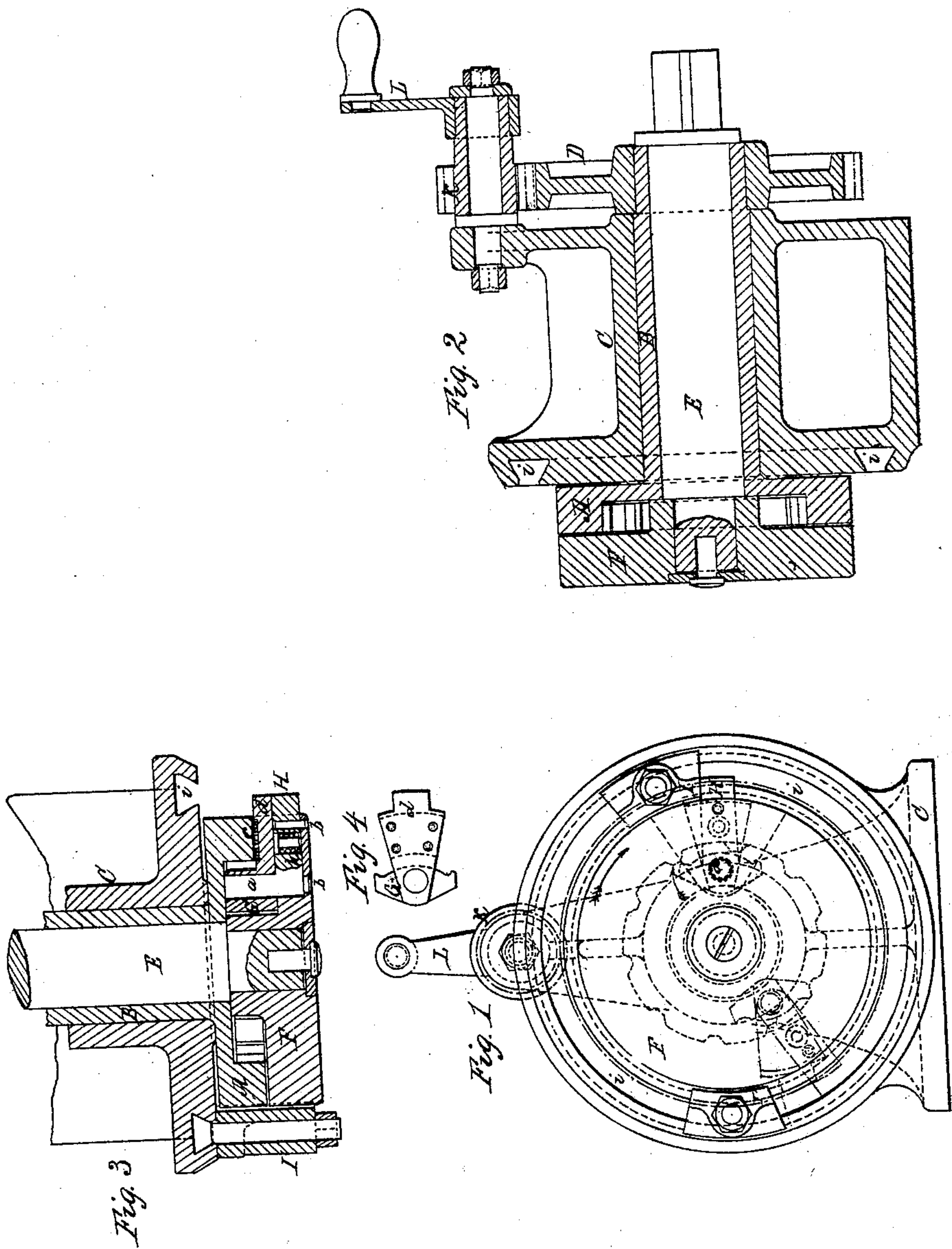


W. Sellers.

Mode of Transmitting and Arresting Motion.

N^o 34,217.

Patented Jan. 21. 1862.



Witnesses;

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UNITED STATES PATENT OFFICE.

WILLIAM SELLERS, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN MODE OF TRANSMITTING AND ARRESTING MOTION.

Specification forming part of Letters Patent No. **34,217**, dated January 21, 1862.

To all whom it may concern:

Be it known that I, WILLIAM SELLERS, of the city of Philadelphia and State of Pennsylvania, have invented a new and Improved Device for Transmitting and Arresting Motion; and I do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawing, and to the figures and letters of reference marked thereon.

The nature of my invention consists in a peculiar method of transmitting rotary motion from one shaft to another by means of a ratchet-wheel and pawl, the latter being attached to the driven shaft, and so arranged that, while retained in gear with the ratchet-wheel of the driver, the latter will, through this pawl, communicate its motion to the second shaft, which now continues to be driven until, by the interposition of a suitable stop, the pawl is thrown out of gear. The driven shaft, being thereby disconnected, now remains idle until upon the removal of the stop the pawl is again thrown into gear with the ratchet-wheel, which thus reimparts motion to the second shaft.

In cases where the driver has a continuous rotary motion in one direction the throwing into gear of the pawl may be accomplished either by a spring pressing the same against the teeth of the ratchet-wheel, or the same end may be effected by means of a friction-pad attached to the pawl, and so arranged in relation to the driver that the motion of the latter shall throw the pawl into gear. When, however, this improved device is applied to machinery revolving alternately in opposite directions, and where the second shaft requires to be alternately moved and disengaged in either direction, (as is the case in the application of the device represented in the accompanying drawing, and hereinafter fully described,) then a double pawl is employed, and so arranged as to be actuated in either direction by the motion of the driver through a friction-pad, as above mentioned, a spring acting only in one direction being in this case inapplicable.

Another important feature of my invention consists in the application of a system of adjustable stops in connection with this device in such cases where the second or driven shaft requires to move only during a variable portion of a revolution in either direction. The

amount of this movement being limited between two stops, it may be varied at pleasure by altering the relative position of the latter, for which purpose these stops are made adjustable around the axis of motion.

In order that my said invention may be fully understood, I will now proceed more particularly to describe the same.

On reference to the drawing forming a part of this specification, and in which the same letters of reference allude to similar parts throughout the several views—

Figure 1 is a front elevation of my approved device for transmitting and arresting motion as applied to feed-motions for planing-machines. Fig. 2 is a sectional side view of the same. Fig. 3 is a plan, and Fig. 4 a detached view of the pawl.

A is an internal ratchet-wheel, provided with a long sleeve-journal, B, which has its bearing in a stand, C, and to which is secured opposite to A a spur-wheel, D. To the end of a shaft, E, passing through the sleeve B is attached, in front of the ratchet-wheel A, a circular plate, F. This plate carries the double pawl G, which has its fulcrum on a pin, *a*, projecting from a block, H, the latter being fitted to a corresponding recess in the plate F, to which it is further secured by the rivets *b b*. The friction-pad *c* is attached to a flat arm, *d*, of pawl G, and consists in a piece of leather riveted or otherwise secured to the arm *d* on the side next to the face of the ratchet-wheel A, with which it is held in contact by the pressure of a spiral spring, *h*, confined in a pocket in the block H. At the end next to the ratchet-wheel A the stand C is formed into a circular plate containing an annular V-shaped groove, *i*, which serves to secure the adjustable stops I and I' in any required position around the periphery of the ratchet-wheel A and plate F.

In the annexed drawing the ratchet-wheel A is represented as receiving a rotary motion through the spur-wheel D from a pinion, K, and crank L. This motion is supposed to be alternately in one direction and then in the other, and transmitted to and arrested in the shaft E, the operation of the device being, to this end, as follows:

On reference to Fig. 1 it will be seen that the pawl is represented as resting with its arm *d* against the stop I, and in such a posi-

tion in regard to the internal ratchet-wheel A as to be out of gear with the teeth of the latter. Assuming now the ratchet-wheel to be rotated in the direction of the arrow, Fig. 1, it will be evident that the friction produced by this motion upon the pad *c* of the pawl G will change the position of the latter by drawing it around on its fulcrum in the direction indicated by a second arrow, Fig. 1, thus throwing the pawl into gear with the first approaching tooth of the ratchet-wheel, and thereby transmitting the motion of the latter to the shaft E and plate F, to which the pawl is attached.

In this manner the shaft E continues to be driven until the pawl G, approaching the stop I' in the manner shown in Fig. 1, is again shifted to its former position, and thrown out of gear by coming in contact with the said stop I', and immediately after the motion of shaft E is positively arrested by the block H coming in contact with the stop I', the ratchet-wheel A being free to continue its rotary motion. As soon, however, as the motion of the wheel A is reversed the friction of A upon the pad *c* throws the pawl G into gear, and the shaft E is moved in the opposite direction until arrested by the stop I, in the manner before described.

It will be seen that the extent of vibration of the shaft E can be varied to any desired portion of a revolution by adjusting the stops I and I' accordingly.

When it is required to transmit rotary motion by means of this device, it will be understood that the stop or stops for arresting that motion must be so arranged as to have a move-

ment at right angles to the axis of the shaft, so that a withdrawal of the same in an outward direction from the center of the shaft shall permit a continuous rotary motion of the driven shaft of any desired duration, while an inward movement of the stop shall bring it in position to throw the pawl out of gear and arrest the motion transmitted through the same, in the manner before described.

Having thus explained the nature of my invention and the manner in which the same may be used, I wish it to be understood that I do not desire to confine myself to any minute details of the parts constituting my improved device; but

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

1. The described device for transmitting and arresting rotary or vibrating motion, consisting of a ratchet-wheel and pawl, when the ratchet-wheel is the driver, combined with a stop or stops, the whole operating substantially in the manner set forth.

2. The employment of a friction-pad or its equivalent in connection with a ratchet-wheel, pawl, and stop or stops, operating substantially in the manner and for the purpose specified.

3. Combining with the described device for transmitting and arresting motion adjustable stops, for the purpose of varying the motion transmitted to any desired portion of a revolution, as herein set forth.

WM. SELLERS.

Witnesses:

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