(No Model.)

J. SCHOFIELD.

SPEED ACCELERATOR.

No. 282,228. Patented July 31, 1883.

Fig: 1.

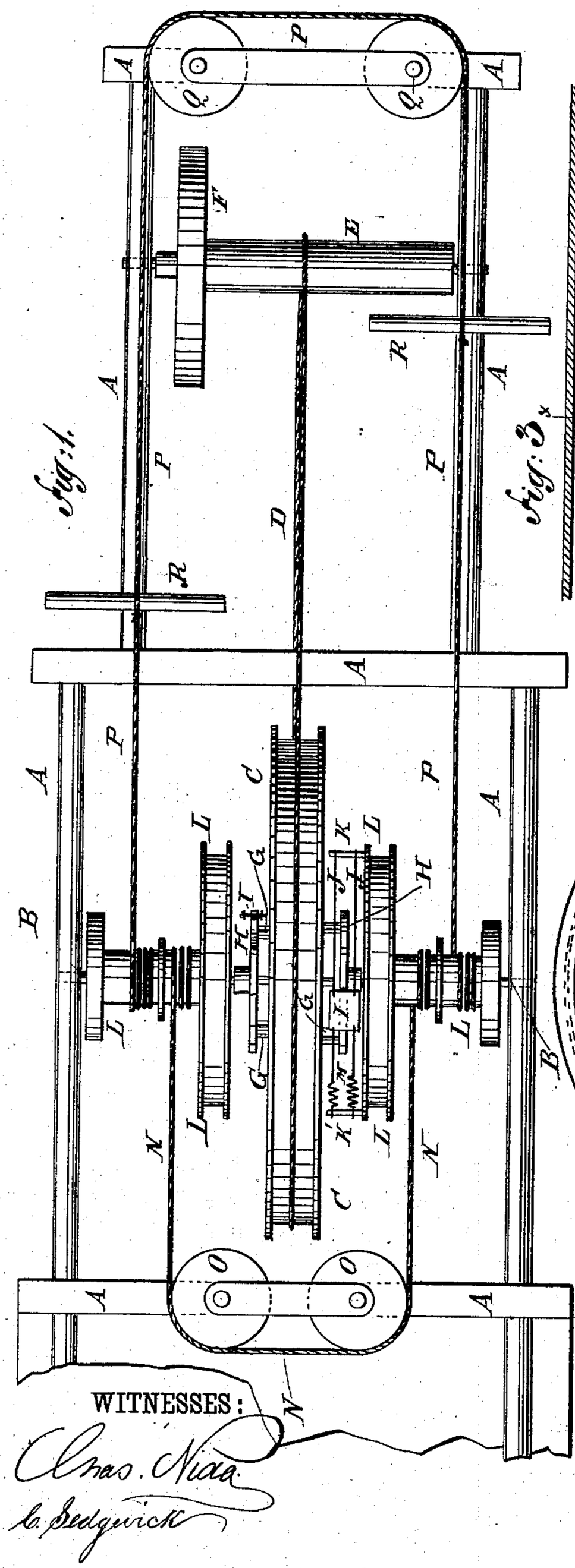

Fig: 3.

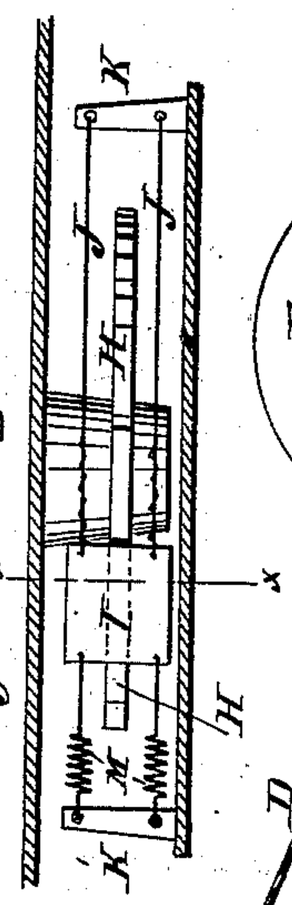

Fig: 2.

Fig: 5.

Fig: 4.

WITNESSES:

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SPEED-ACCELERATOR.

SPECIFICATION forming part of Letters Patent No. 282,228, dated July 31, 1883.

Application filed January 15, 1883. (No model.)

To all whom it may concern:

Be it known that I, JAMES SCHOFIELD, of the city, county, and State of New York, have invented a new and useful Improvement in Speed-Accelerators, of which the following is a full, clear, and exact description.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of my improvement. Fig. 2 is a sectional elevation of the same, part being broken away. Fig. 3 is a plan view of a pawl shown as applied to a ratchet-wheel, and showing a part of the drive-wheel and of a pulley in section. Fig. 4 is a sectional elevation of a part of the same, taken through the line *x x*, Fig. 3. Fig. 5 is a side elevation of a part of a ratchet-wheel.

The object of this invention is to improve the construction of the speed-accelerators for which Letters Patent No. 222,742 were issued to me December 16, 1879, in such a manner as to make them more durable and effective in operation, and cause them to operate with less noise than when made in accordance with the said patent.

The invention consists in the combination, with the drive-wheel and the driving-pulleys, of ratchet-wheels made with hooked teeth, and pawls formed of plates attached at their forward corners to rigid rods and at their rear corners to springs, whereby the pawls in their rearward movement will readily pass over the ratchet-teeth, and in their forward movement will take a firm hold upon the said ratchet-teeth, as will be hereinafter fully described.

A represents the frame of the machine, which can be made in any suitable manner, or as the purpose for which the improvement is to be used may require.

To the frame A is attached a shaft, B, upon the center of which is placed a large wheel, C, from which motion is taken by an endless belt, D, to the machinery to be driven. In the drawings the belt D is represented as passing around the shaft E of an emery-wheel, F, to give motion to the said wheel.

With the opposite sides of the drive-wheel C are connected, by posts G or other suitable means, two ratchet-wheels, H, the teeth of which are made in hook form, as shown in Fig. 5, to cause the pawl-plates I to take a firm hold upon them.

The pawl-plates I are preferably made of rawhide; but they may be made of metal or other suitable material. To the forward corners of each pawl-plate I are attached the rear ends of two rods, J, the forward ends of which are attached to a stud, K, formed upon or attached to the side of the pulley L. To the rear corners of the pawl-plate I are attached the forward ends of two spiral or other suitable springs, M, the rear ends of which are attached to a stud, K′, formed upon or attached to the side of the pulley L. With this construction the pawl-plates I will be drawn forward to give an impulse to the ratchet-wheels H by the rigid rods J, and the springs M will allow the said plates to pass over the ratchet-teeth easily when being drawn back to make another stroke.

To the pulleys L, or to pulleys or drums rigidly connected with and forming a part of the pulleys L, are attached the ends of a cord, N, which are wound in different directions, so that one of the said ends will be wound as the other end is unwound. The middle part of the cord N passes around one or more guide-pulleys, O, pivoted to the frame A, to keep the said cord taut and keep it out of contact with the drive-wheel C.

To the pulleys or drums L are attached the ends of the cord P, which are wound in opposite directions from each other and from the corresponding ends of the cord N. The middle part of the cord P passes around one or more guide-pulleys, Q, to keep the said cord taut, and to give it a proper direction as it passes to the pulleys L. R are handles attached to the cord P for use when the machine is to be driven by hand-power; or an engine or other suitable motor can be connected with the cord P to give motion to the machine; or cords may be attached to and wound upon the pulleys L and led over guide-pulleys to treadles, so that the machine can be driven by foot-power. With this construction, as each pawl is drawn forward to give an impulse to its ratchet-wheel and to the drive-wheel connected therewith, the other pawl will be drawn back, ready to make a forward movement in turn, so that a

continuous movement will be given to the drive-wheel by the reciprocating movements of the pawl.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. In a speed-accelerator, the combination, with the drive-wheel C and the pulleys L, of the ratchet-wheel H and the pawls I J M, substantially as herein shown and described, whereby a continuous movement will be given to the drive-wheel by the reciprocating movements of the pawls, as set forth.

2. In a speed-accelerator, the pawls made substantially as herein shown and described, and consisting of the plates I, the rigid rods J, and the springs M, whereby the said pawls in their rearward movements can pass easily over the ratchet-teeth, and in their forward movements will take a sure hold upon the said teeth, as set forth.

JAMES SCHOFIELD.

Witnesses:
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C. SEDGWICK.