

No. 611,928.

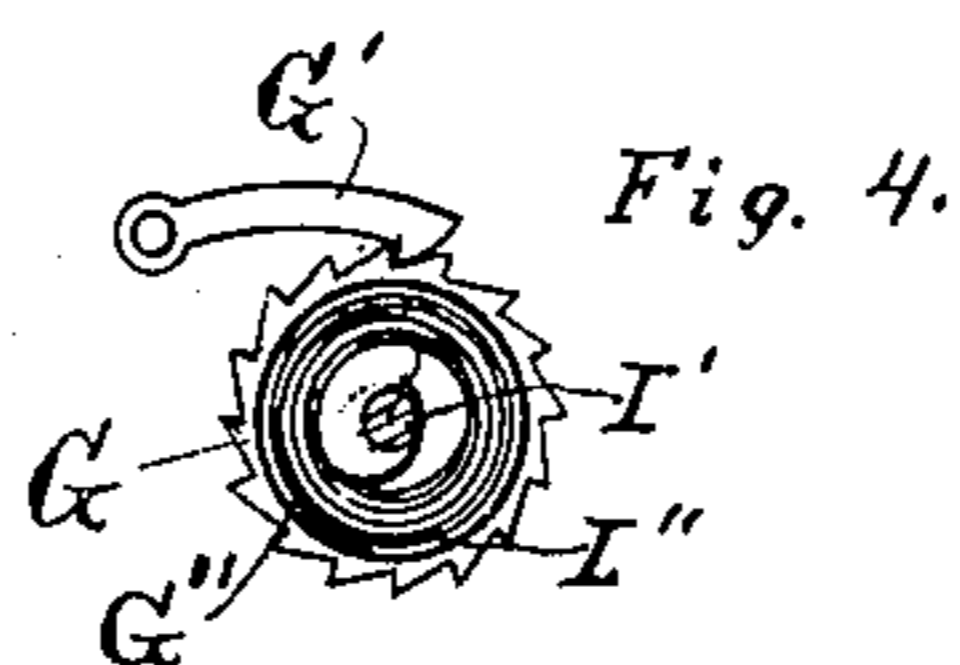
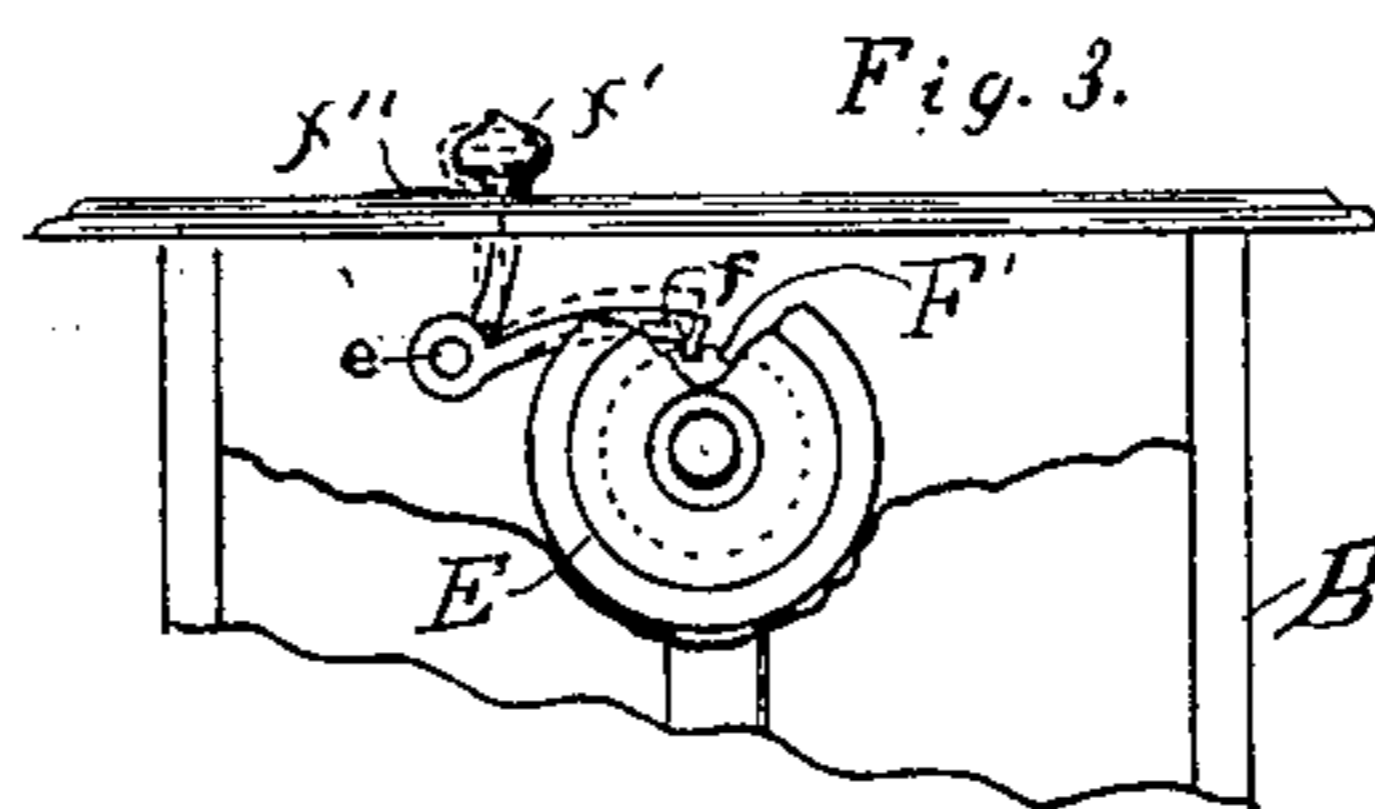
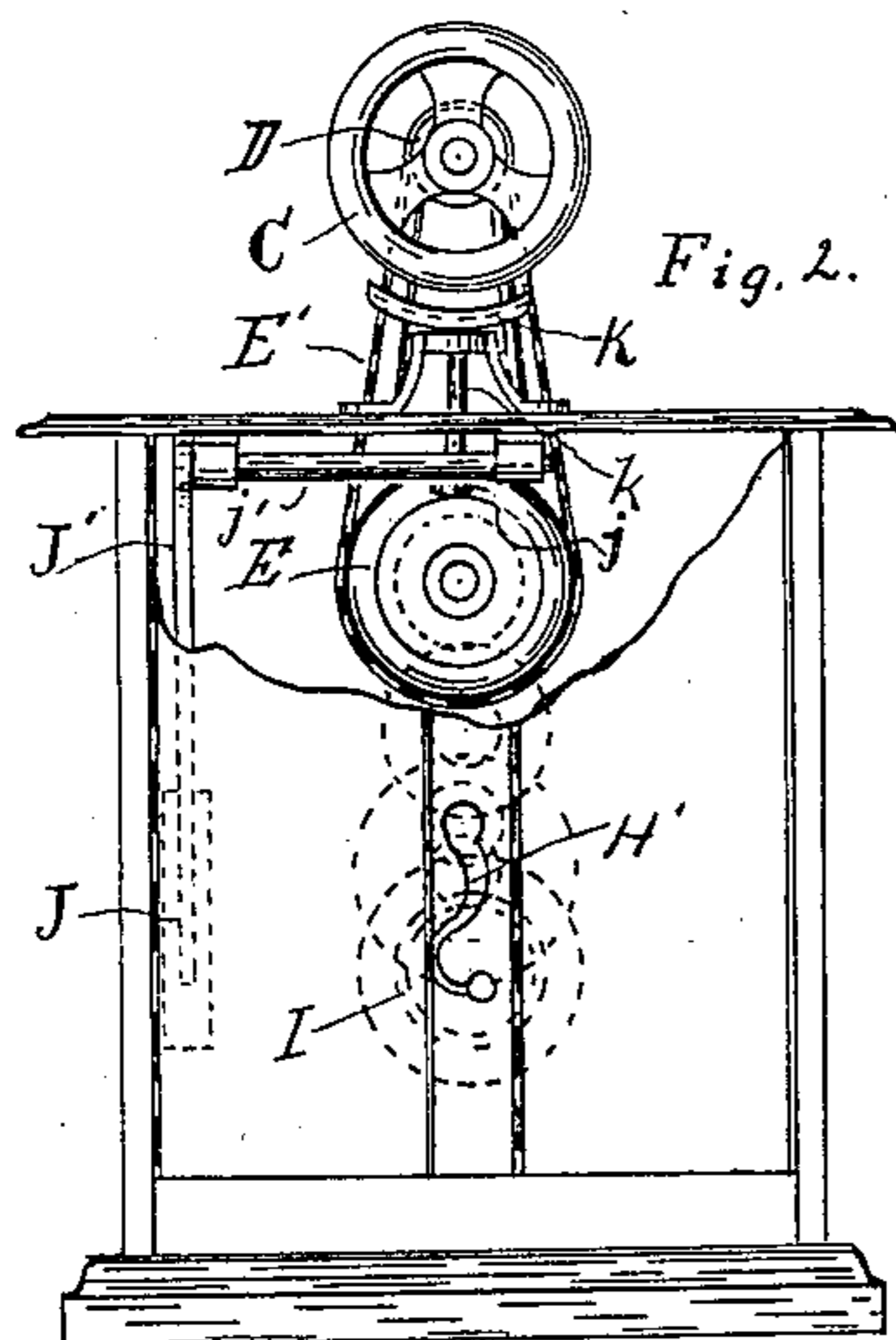
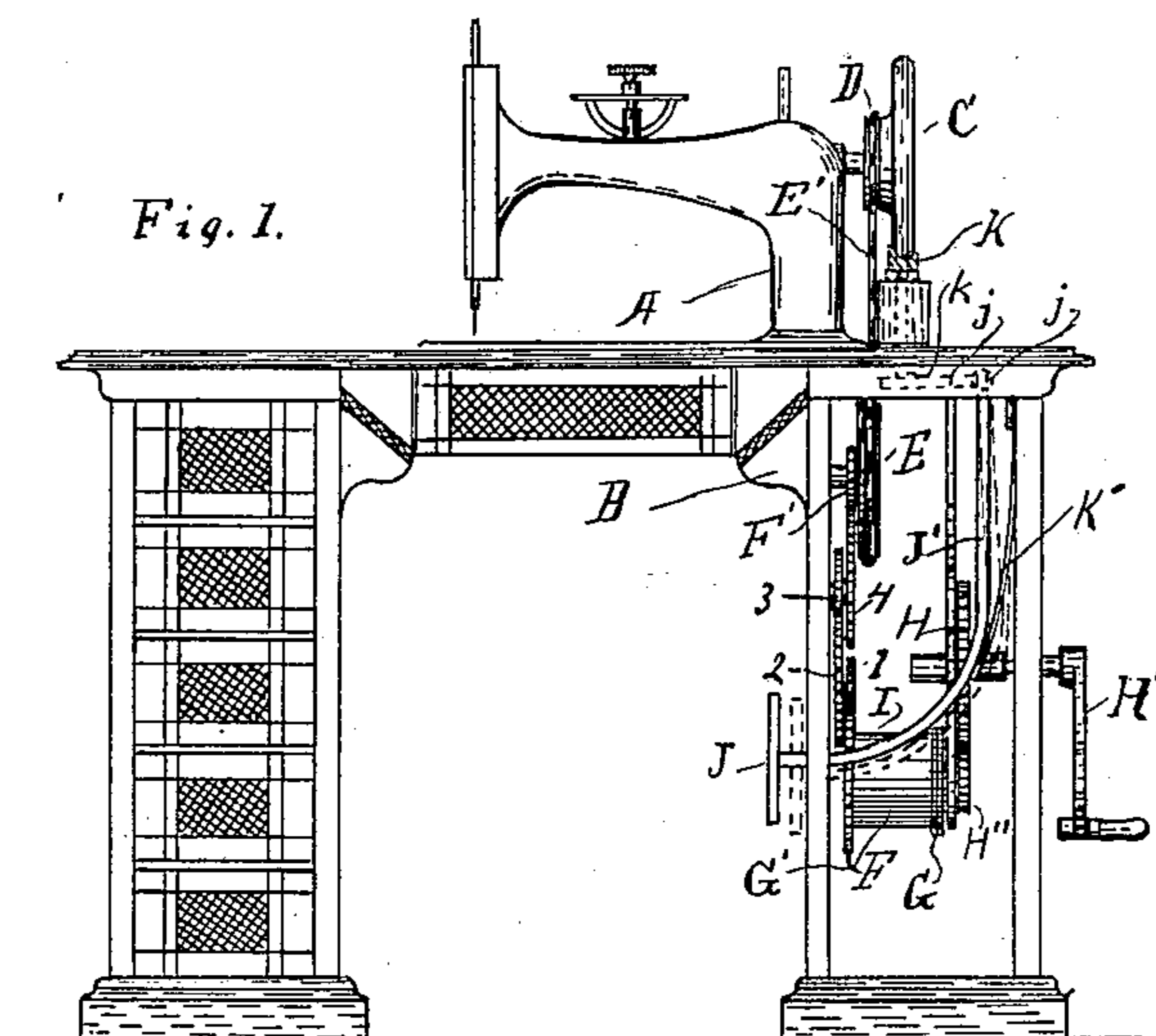
Patented Oct. 4, 1898.

W. NAAB & R. E. GRANT.

SEWING MACHINE MOTOR.

(Application filed Nov. 27, 1897.)

(No Model.)



Witnesses.

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# UNITED STATES PATENT OFFICE.

WILLIAM NAAB AND ROBERT E. GRANT, OF GRAND RAPIDS, MICHIGAN,  
ASSIGNORS OF ONE-THIRD TO JAMES OPPENNEER, OF SAME PLACE.

## SEWING-MACHINE MOTOR.

SPECIFICATION forming part of Letters Patent No. 611,928, dated October 4, 1898.

Application filed November 27, 1897. Serial No. 659,981. (No model.)

*To all whom it may concern:*

Be it known that we, WILLIAM NAAB and ROBERT E. GRANT, citizens of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Motors for Use upon Sewing-Machines, of which the following is a specification.

10 The objects of our invention are, first, to facilitate the application of power to sewing-machines and other small machinery, and, second, to provide for locking the power, so that it cannot expend itself when the machinery is detached from the power. We attain these objects by the mechanism illustrated in the accompanying drawings, in which—

20 Figure 1 is an elevation of a sewing-machine with the case containing a spring-power open to show the relative position of the power and the brake. Fig. 2 is an end elevation of the same with a portion of the panel cut away for a like purpose. Fig. 3 is a sectional end view of the case, showing the position and relative action of the lock; and Fig. 4 shows the manner of locking the spring-cylinder in a spring-motor for sewing-machines.

30 Similar letters and numerals refer to similar parts throughout the several views.

A is the sewing-machine head.

35 B is the frame, C is the balance-wheel, and D is the belt-wheel, of an ordinary sewing-machine. The motor in this case consists of the train of gear F to F', actuated by a spring or springs in the drum I. The gear-wheel F is secured to the end of the drum, which is mounted on the shaft I' to revolve freely when the shaft is idle and is actuated by the spring I'', secured at one end to the shaft I' and at the other end to the inner surface of the drum I in the usual manner of attaching this class of springs to transmit power.

45 The shaft I' is held to place when inducing tension upon the spring by the pawl and ratchet G' G in the usual manner, and the power is transmitted from the train of gear to the pulley D by a belt E' from the driving pulley or wheel E.

Our brake mechanism consists of a kneepad J, mounted on an adjustable arm J', which in turn is supported on the revoluble pivot j' just below the top of the frame B, so that the arm j, projecting from the pivot j', will stand directly under the center of the balance-wheel C and in position to actuate the brake K, which acts directly on the lower portion of the balance-wheel and has a stem k, which projects down through the top of the machine-frame and rests on the end of the arm j, so that the throwing down of this arm, which is accomplished by pressing the kneepad J back with the knee, as indicated by the dotted lines in Fig. 1, will allow the brake to drop away from the balance-wheel and the tension of the spring I' to cause the machine to run. It will be readily seen that the normal position of the brake is in close contact with the balance-wheel, in which position it is held by the spring K'.

The lock for preventing the motor from expending its power when the connections with the machine are broken consists of a pawl f, pivoted to the frame, as at e, and having an arm projecting up through the table, as at f', in easy reach of the operator, and an incline, as f'', to hold it out of contact when not desired to lock the motor. The locking of the motor is accomplished by throwing the pawl f in contact with the gear-wheel F', as indicated in Fig. 3, and the unlocking of the same is accomplished by raising it out of such contact, as indicated by the dotted lines.

85 Our motor consists of a spring I'', confined in a drum G'', one end of said spring being attached to said drum and the other end attached to the driving-shaft I'. To one end of the shaft I' we attach a ratchet-wheel G, which is engaged by the pawl G' to hold the tension of the spring against the exertion of the drum necessary to drive the machine.

We provide for winding the spring I'' by the use of the key H' through the medium of the gear-wheels H and H'', the latter of which is securely attached to the shaft I' in the usual manner of attaching the actuating power to this class of motors.

To one end of the drum G'' we attach a gear-wheel F, which in turn meshes with the gear-wheel 1, attached to the gear-wheel 2,

which meshes with and drives gear 3, which in turn is attached to gear 4 to drive the wheel F' and with it the drive-pulley E, which latter we connect with the pulley D by a belt  
5 E' to transmit the motion of the motor to the needle-shaft of the machine.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent of the United States, is—

10 In combination, a motor having a tension-shaft, a pawl and ratchet for anchoring said shaft, an actuating-spring and transmitting-drum, a driving-gear on said drum, a train of multiplying-gear connecting said drum  
15 with a driving-pulley, a belt connecting said driving-pulley with the driven pulley of the machine to transmit power and motion thereto; with a brake mechanism consisting of a  
20 machine, an arm projecting down from said

shaft and the lower end carried laterally to position to be conveniently engaged by the knee of the operator, a spring to hold said arm to normal position, a second arm extending horizontally from said shaft to position 25 to actuate a brake directly under the balance-wheel of the machine, a standard passing through the table and resting on the horizontal arm, and a friction-brake attached to the upper end of said standard in position to be 30 held, normally, in contact with the balance-wheel, substantially as and for the purpose set forth.

Signed at Grand Rapids, Michigan, November 20, 1897.

WILLIAM NAAB.  
ROBERT E. GRANT.

In presence of—

JAMES OPPENNEER,  
ITHIEL J. CILLEY.