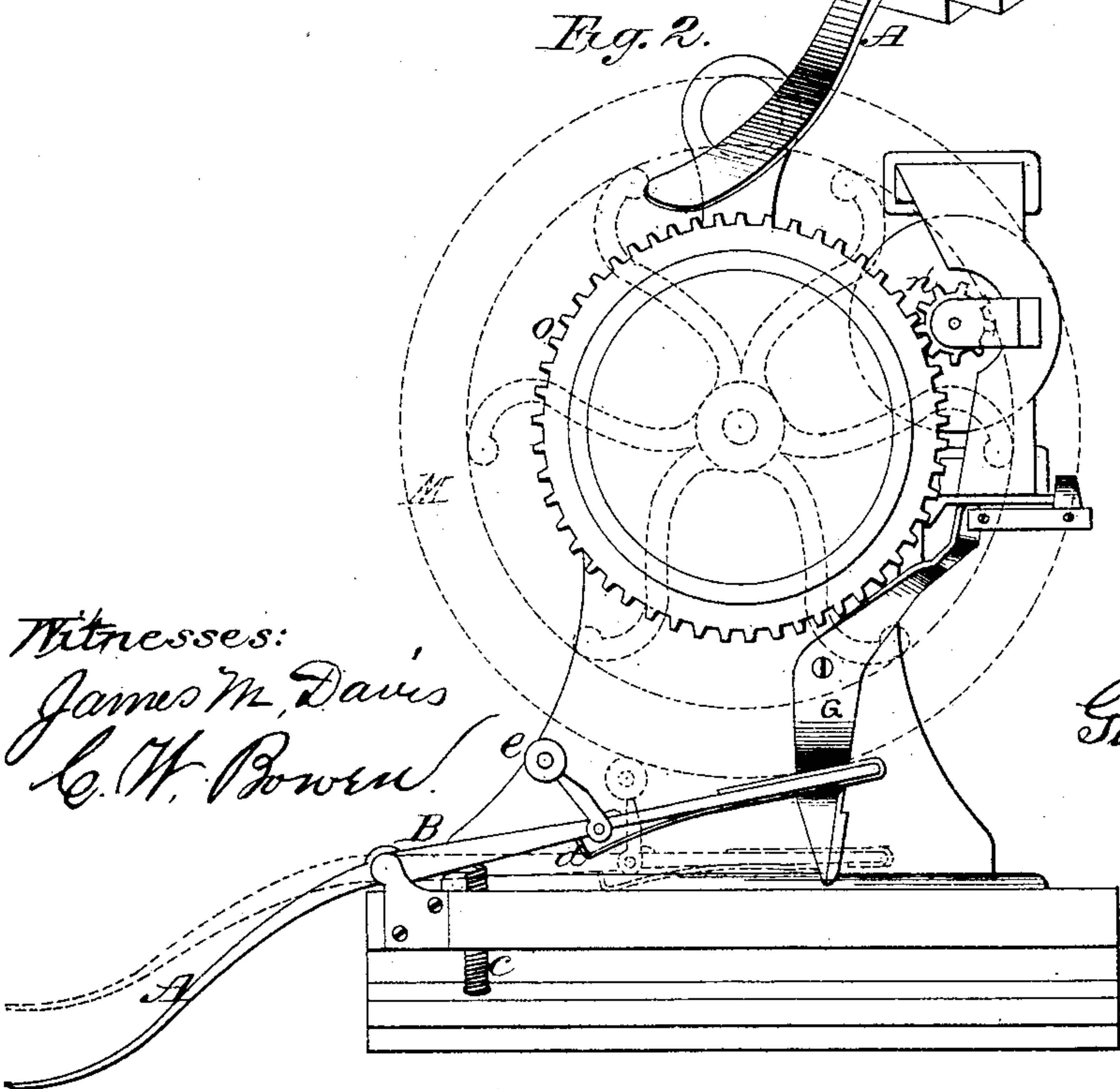
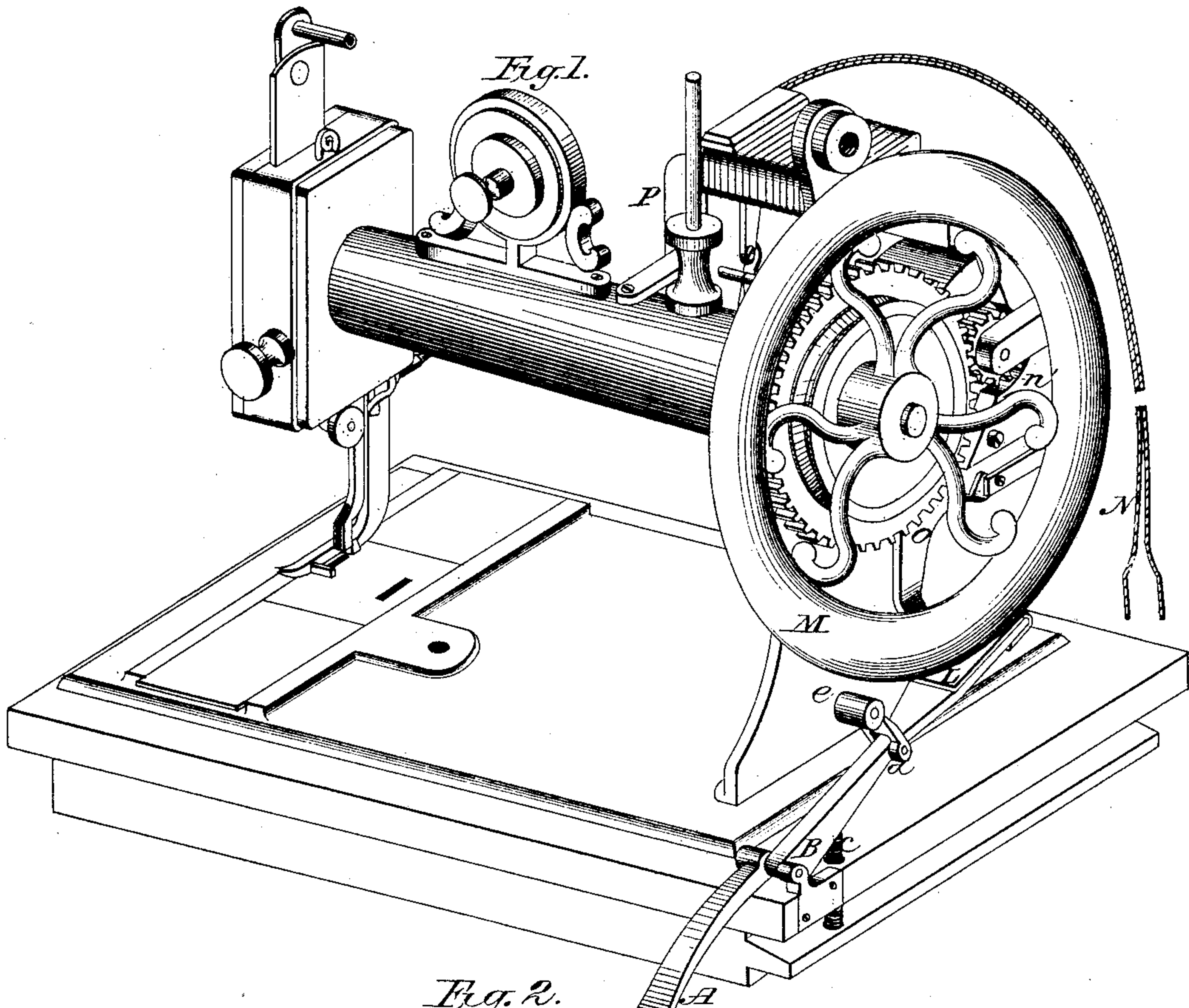


G. F. GREEN.
Electro-Magnetic Sewing Machine Motor.
No. 238,678. Patented March 8, 1881.



Witnesses:
James M. Davis
C. W. Bowen

Inventor:
George F. Green,

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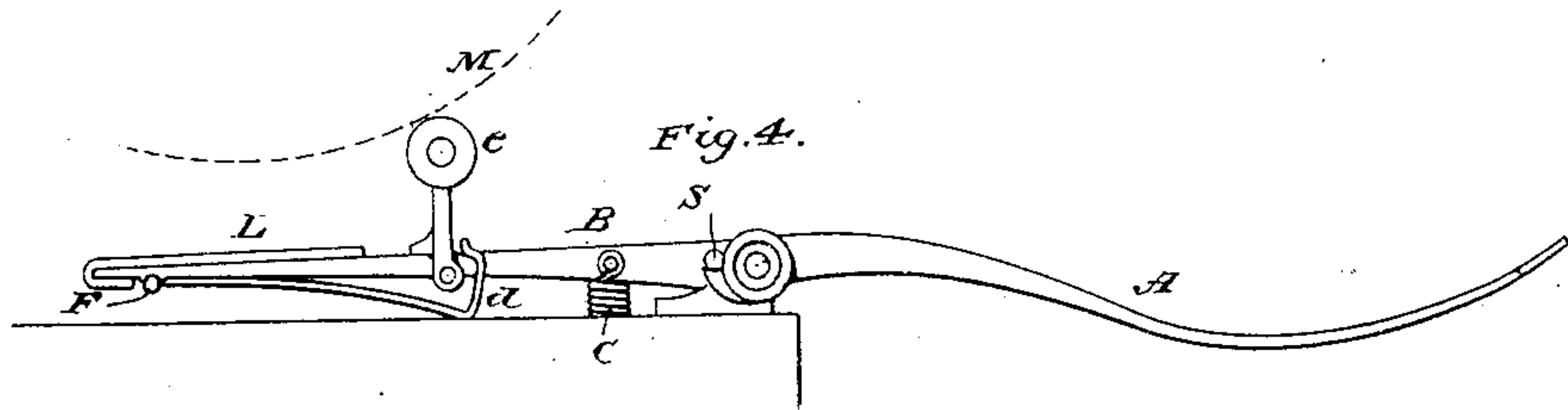
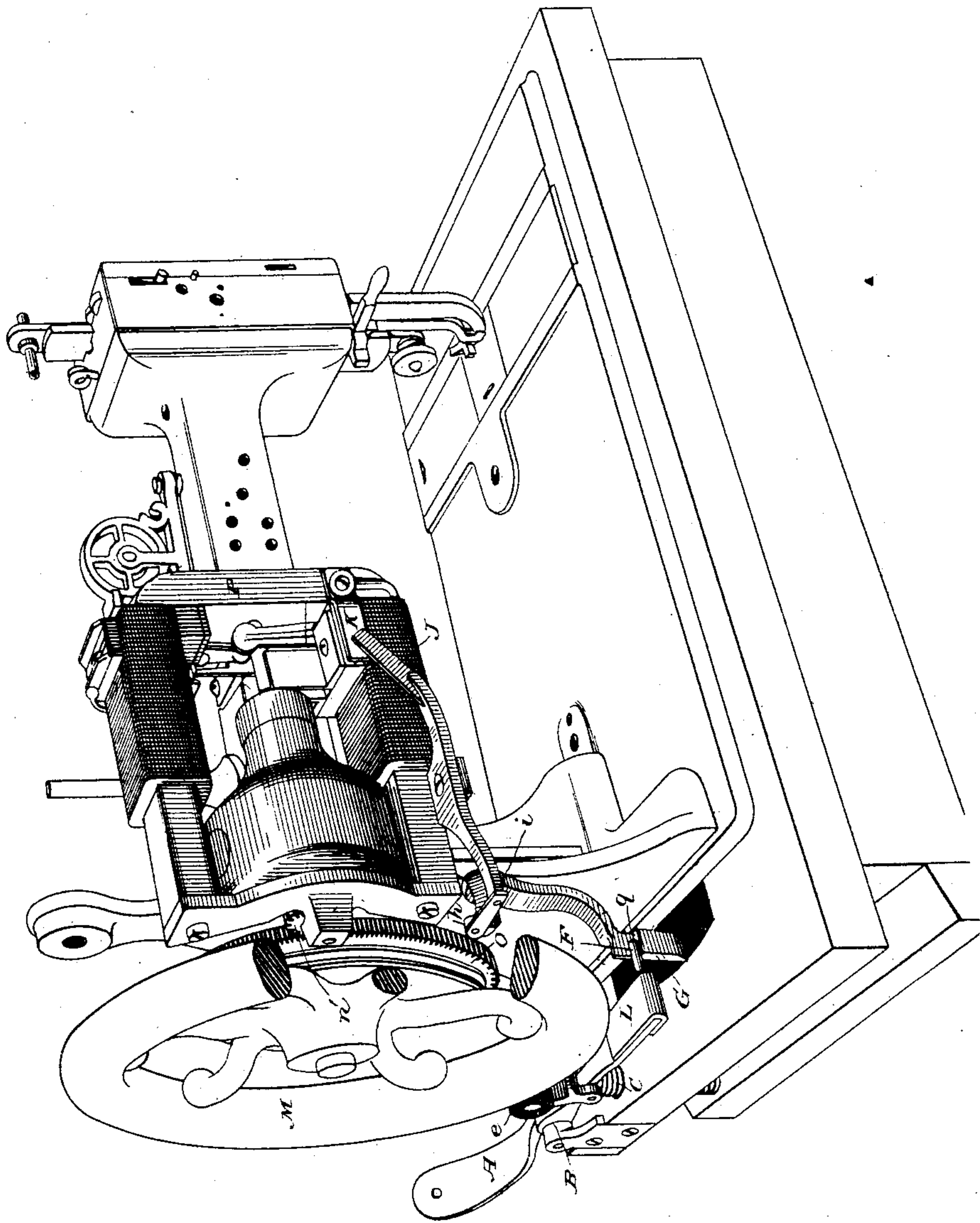


Fig. 3.



Attest:
R. H. Barney
A. P. Smith

Inventor:
Geo. F. Green
By his atty
R. W. Smith

UNITED STATES PATENT OFFICE.

GEORGE F. GREEN, OF KALAMAZOO, MICHIGAN.

ELECTRO-MAGNETIC SEWING-MACHINE MOTOR.

SPECIFICATION forming part of Letters Patent No. 238,678, dated March 8, 1881.

Application filed January 30, 1879.

To all whom it may concern:

Be it known that I, GEORGE F. GREEN, of Kalamazoo, in the county of Kalamazoo and State of Michigan, have invented a new and useful Electro-Motor Sewing-Machine; and I do hereby declare that the following is a full and accurate description of the same.

My invention consists in a rotating electro-motor mounted in a frame adapted to be attached to the head or frame of a sewing-machine, and provided with a pinion on the motor-shaft adapted to mesh with a suitable wheel on the main shaft of the sewing-machine, and in the several devices whereby the control of the machine and motor is effected.

That others may fully understand my invention I will particularly describe the same, having reference to the accompanying drawings, wherein—

Figure 1 is a perspective view of my machine with the motor attached and in operative condition. Fig. 2 is a rear elevation of the same, the driving-wheel being removed. Fig. 3 is a perspective of the motor side of a sewing-machine in operative condition. Fig. 4 is a side elevation of the controlling-lever.

My motor is mounted in a frame having arms adapted and extending to the machine frame or head, or, if preferred, the arms or lugs to secure the motor may be parts of the machine, the design being to make the motor a part of the sewing-machine head or frame. The graduating or starting lever A, with its attachments, may also be made parts of the sewing-machine head, and the sewing-machine will then be portable and will not require any special stand or table of its own while being operated. A long flexible conducting-cord, N, will make the necessary connection in any part of the house where the battery-wires have been placed.

My motor belongs to the class of revolving armatures, and is fully described in my Patent No. 184,469, November 21, 1876. It is mounted upon a sewing-machine head or frame, preferably in the position shown, so that the pinion *n'* on the armature-shaft may mesh with a toothed wheel, O, on the needle-bar shaft, behind the balance-wheel M. At a proper point a pad or circuit-breaker, K, is located and the machine is started or stopped by

pressing this pad or releasing it, and this is conveniently effected by the levers J and G, which are severally pivoted to the frame of the machine, and the ends *h i* linked together, as shown, so that when the lower end of lever G is pressed forward the end of lever J will press upon the pad K and close the circuit, and when said lever G is released the circuit will open and the machine will stop. To render this operation conveniently under control of the operator, I arrange a lever, A, so that it may be pressed upon by the operator's arm and pivot it to a lug which may be attached to the base of the machine. For convenience I prefer to make this lever in two parts, pivoted to the same fulcrum, and united by a stop-pin, s, so that when part A is depressed part B will be raised; but part A may be independently raised and follow. A spring, C, is attached to the part B to keep it down and counterbalance the weight of the arm. At the extremity of the part B a pad or brake, L, is placed, so that when the part A is sufficiently depressed said brake may act upon the wheel M and stop the machine. In the side of the part B there is a projecting pin, F, which rests below the end of the lever G, and engages therewith when part B is raised up. The lever G is thereby caused to close the circuit on the pad K. A notch, *q*, in the side of the lever G receives the pin F and holds the two levers in proper engagement while the machine is to be in motion so as to release the arm from lever

When the machine is to be stopped the lever A is depressed still farther, when the pin F passes above the engaging portion of the lever G, and the latter is liberated and the circuit is broken at K. The same motion of lever A will, if continued, carry the brake L up against the wheel M. When the lever B returns to its initial position the pin F pushes the lever G out of its way.

To start the machine a bumper, *e*, is mounted upon a swinging arm attached to the lever B, so that when said lever rises up the bumper encounters the wheel M and causes it to move far enough to move the armature off the dead-point, if it chances to be so placed, and the motor will commence to move immediately. Unless the armature chances to have stopped on its dead-

point this service of the bumper will not be required. A spring, *d*, retains the bumper always in effective position.

I claim—

5 1. A sewing-machine head or frame provided with a toothed wheel, *O*, combined with a revolving-armature electric motor permanently attached to said head or frame, and a pinion, *n'*, on the shaft of said armature in mesh with
10 said toothed wheel, substantially as set forth.

2. The pin *F*, in combination with guide *G*, the pin *F* working or passing on either side of guide *G*, in the manner and for the purposes described.

15 3. The combination of levers *A* and *B* with spring *e* and pad *L*, all operated in the manner and for the purposes described.

4. The lever *B*, provided with the laterally-projecting pin *F*, combined with the lever *G*,
20 provided with a lateral offset and a notch, *q*, whereby the motion of said lever *B* in one direction will cause said pin to engage said lever *G* to push it into action, and by engaging with said notch hold it in action, and by a continued
25 motion of *B* said pin will be passed over and disengaged from said lever *G* and return to its initial position by the other side.

5. The wheel *M* on the sewing-machine shaft, combined with the lever *B*, provided at its end with a pad or brake, *L*, capable of striking said
30 wheel on one side of a line vertical as to its center, and the buffer *e*, capable of striking said wheel on the other side of said vertical line, whereby a movement of said lever in the same direction may either stop or start said wheel,
35 as set forth.

6. The levers *A* *B*, pivoted with same axial line and coupled together by offsets or lugs *S*, in engagement when said lever *A* is moved in one direction, but disengaged when said lever
40 is moved in the other direction, combined with the bumper *e* and pad *L* on the lever *B*, whereby the machine may be stopped or started by a movement in the same direction, or the lever
45 folded to be out of the way during storage or transportation.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

GEORGE F. GREEN.

Witnesses:

JAMES M. DAVIS,
C. W. BOWEN.