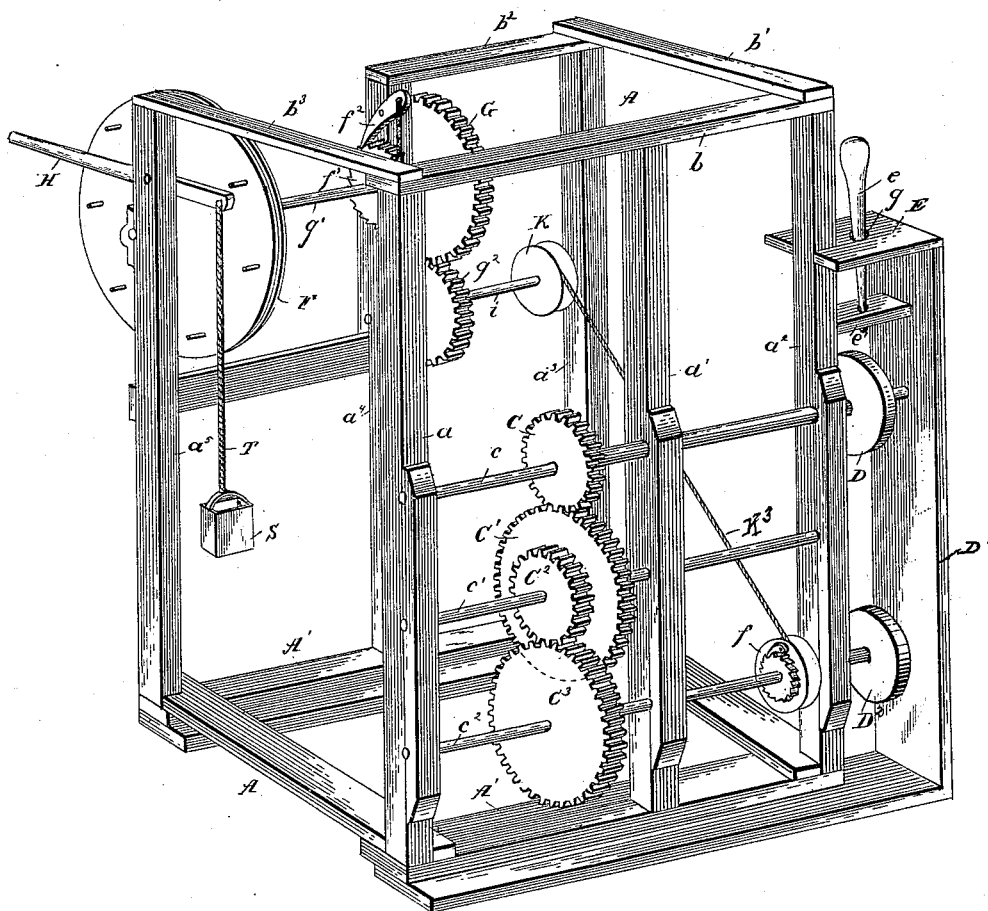


(No Model.)

R. G. PING.  
MOTOR.

No. 420,888.

Patented Feb. 4, 1890.



Witnesses  
Columb L. Bradford  
Edw. H. Wiley

Inventor  
Robert G. Ping  
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# UNITED STATES PATENT OFFICE.

ROBERT G. PING, OF AUDUBON, IOWA.

## MOTOR.

SPECIFICATION forming part of Letters Patent No. 420,888, dated February 4, 1890.

Application filed December 19, 1887. Serial No. 258,366. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT G. PING, a citizen of the United States, residing at Audubon, in the county of Audubon and State of Iowa, have invented certain new and useful Improvements in Motors, of which the following is so full, clear, and exact a description as will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawing.

This invention has relation to weighted motors; and it consists in the construction and arrangement of parts, as will be hereinafter described, and particularly pointed out in the claim at the end of the specification.

In the accompanying drawing the figure thereof shows a perspective view of the invention.

Referring to the drawing, the letter A represents the frame of my device or apparatus. This frame-work may be made in rectangular or other forms of construction. The frame is composed of a suitable platform A', having erected thereon standards  $a$ ,  $a'$ ,  $a^2$ ,  $a^3$ ,  $a^4$ , and  $a^5$ , which are properly secured at their lower ends to the platform A' in any suitable manner. The top portions of the standards are braced and held in position by means of bars  $b$ ,  $b'$ ,  $b^2$ , and  $b^3$ . The standards  $a$ ,  $a'$ , and  $a^2$  have loosely secured to them in suitable bearings shafts  $c$ ,  $c'$ , and  $c^2$ , which are arranged one above the other, as shown, the one  $c$  being provided with a pinion C, located between the standards  $a$   $a'$ , and having on its outer end a brake-wheel D, which is located on the outside of the standard  $a^2$ , for a purpose to be presently explained. The shaft  $c'$  is provided with a gear-wheel C', which meshes with the pinion C on shaft  $c$ . Connected to the gear-wheel C' is a pinion C<sup>2</sup>, which meshes with a gear-wheel C<sup>3</sup>, mounted on the shaft  $c^2$ . On the platform A' is an upright D', having a bearing, in which the outer end of the shaft  $c$ , which carries the brake-wheel D, is connected. This upright D' has connected to it and keyed to the standard  $a^2$  a cap E, having an opening, in which works a rod  $e$ , having on its lower end a rubber block  $e'$ , for the purpose of controlling said brake-wheel D. The shaft  $c^2$  is provided with a drum  $f$ , which is controlled by a pawl and ratchet.

Near the top of the standards  $a^4$   $a^5$ , and journaled in suitable bearings, is a shaft  $g'$ , having mounted thereon a wheel F, having pins at one side, as shown. Pivoted to the standard  $a^5$  is a lever H, having at its inner end a weight, by means of which motion is imparted to the wheel F, in connection with the pins therein, by means of the cord, as shown, being pulled downward. The lever to effect this movement is set over one of the pins, so as to carry the wheel a portion of its rotation, and when the wheel has been thus partially rotated the lever is elevated and set over the next succeeding pin, so as to again give motion to the mechanism.

The letter D<sup>2</sup> indicates a band-pulley secured to one end of the shaft  $c^2$ , by means of which motion may be transmitted by a belt to any machinery to be driven. The shaft  $g'$  is also provided with a ratchet-wheel  $f'$ , which is controlled by a pawl  $f^2$ , and by means of a cord connected to said pawl, which is operated to throw the pawl into or out of engagement with the ratchet-wheel  $f'$ . Between the standards  $a^3$   $a^4$ , and mounted on the outer end of the shaft  $g'$ , is a gear-wheel G, which meshes with a pinion  $g^2$  on a shaft  $i$ , which has its bearings in the standards  $a^3$   $a^4$ . This shaft  $i$  is also provided with a drum K, which connects with the drum  $f$  by means of a cord or chain K<sup>3</sup> to operate the device, the said pawl and ratchet of said drum controlling and limiting the unwinding of the cord therefrom when the device is in operation.

A weight-box S, which is suspended by a cord T, is shown in the left-hand portion of the figure as being opened at its top to facilitate the removal of a portion of weight or to add more weight to the weight-box at will when it is desired to increase or decrease the amount of tension. It will be readily understood that this adapts the box as a regulating device to be used in connection with the motor.

It often occurs that greater weight is required to acquire greater speed in the motor, or less weight is required to produce a less speed in the motor, and it may be regulated at will by the use of these elements.

It is quite apparent that many of the details of construction may be slightly varied without departing from the general spirit of

my invention, and I do not wish to be understood as limiting myself to the exact construction shown and described; but I wish to reserve the right to change these various elements and replace them with other mechanical equivalents, as may be done without departing from the general spirit and without in any way interfering with the usefulness of my invention.

10 Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

15 A motor consisting of a frame having journaled therein shafts  $c$ ,  $c'$ , and  $c^2$ , provided with pinions  $C$   $C^2$  and gear-wheels  $C'$  and  $c^3$ , respectively, the shaft  $c$  also provided with a brake-wheel  $D$ , and the shaft  $c^2$  having a

drum  $f$ , with pawl and ratchet, the opposite sides of said frame provided with shafts  $g$   $i$ , the former having a wheel  $F$ , ratchet  $f'$ , and 20 gear-wheel  $G$ , the ratchet provided with a pawl and operating-cord, the shaft  $i$  having pinion  $g^2$  and a drum  $K$ , the said drums  $f$  and  $K$  connected by a cord, and the said wheel  $F$  having pins, and a weighted lever  $H$ , oper- 25 ating said wheel, as shown and described.

In testimony that I claim the above as my invention I hereunto set my hand in the presence of two subscribing witnesses.

ROBERT G. PING.

Witnesses:

W. M. BURNS,

T. B. MENDENHALL.