To all whom it may concern:

Be it known that I, Hermann Karross, a citizen of the United States of America, and a resident of the city of Passaic, in the county of Passaic and State of New Jersey, have invented certain new and useful Improvements in Mechanism for Applying Power, of which the following is a specification.

My invention relates to improvements in a mechanism for applying the power developed by a falling weight.

The objects of my invention are to provide power in a very cheap and economical manner. By means of my improved device and mechanism the power developed by a falling weight is used to the greatest advantage and at a minimum of labor and expense. I attain these objects by the mechanism illustrated in the accompanying drawings, in which:

Figure 1 represents a side elevation of my improved machine. Fig. 2 represents a front view. Fig. 3 represents a cross-sectional view, on the line A B, of the wheel C and ratchet-wheel c. Fig. 4 is a side view of the same. Fig. 5 is a view of the weight.

Similar letters refer to similar parts throughout the several views.

Upon a suitable framework r p q and supporting arm q' are journaled a series of sprocket-wheels c a b. A slack chain e is passed over the upper wheel c, under the lower wheel a, and over the wheel b, its slack running under the wheel a to the wheel c.

Guards may be placed where desired to prevent the chain from leaving the wheels or swinging. These wheels c, a, and b are mounted upon their respective shafts n, s, and m, which are respectively journaled upon the frame, as shown.

The weight k, sufficiently heavy to operate the machine, as hereinafter described, is placed upon guides or runners o o, which are securely fastened to the frame at o' and o' by any suitable well-known means.

To the wheel c I attach the ratchet-wheel c', the former being provided with pawls c' c, fitting into teeth c in the wheel c' and so arranged in the usual manner that the shaft n will be caused to revolve when the chain is drawn by the falling weight, but will remain undisturbed, and the wheel c will revolve freely upon the shaft when the tension is in the opposite direction.

The wheel c is loose upon its shaft n, and the ratchet-wheel c' is securely fastened to the same shaft. Upon the shaft n I also securely fasten a large gear, which engages a small gear, and through a series of multiplying-gearing c x c' x y x z x z' in the usual well-known manner the power may be applied to the shaft n is transmitted to the small gear x z upon the shaft t and through it applied to a pulley upon the shaft or other means of transmission.

The machine is operated as follows: The weight k is raised in any desired manner by means of a motor s' or other power applied to the shaft s, upon which is keyed the wheel a, thus drawing the chain under the wheel a and over the wheel c, and thus easily raising the weight, which is attached to the chain at e', to the desired height, the ratchet-wheel c' permitting the revolution of the wheel c without revolving the shaft n or the multiplying-gearing. The weight k having been raised to the desired height, the motor s' or other power is detached and the weight k released. The tension of this weight k upon the chain e will cause the wheel c to revolve, and the pawls c', engaging the teeth c' in the wheel c', will cause the shaft n to revolve. The gear x being securely keyed upon this shaft n will revolve, and thus transmit the power to successive gears, which increase the speed, as required, at the shaft t, where the power is applied as desired, as above described. To the shafts t and n I attach brake-wheels i and d and band-brakes i' and d', the band v, partly surrounding the wheel i, being attached at one end to the upright q of the frame, as at v, in any suitable manner and the band d', partly surrounding the wheel d, being attached to the upright q of the frame at d'. The bands v and d' being joined at h to a speed-governor f, which is connected with the mechanism by its pulley g and a pulley u on the shaft t, and the pulleys being connected by the belt q', the speed is controlled in the usual well-known manner.
also provide a handle \( v \), attached to the brake-bands, or other suitable means for applying by hand the brake when desired.

While I have shown only one wheel \( c \), ratchet-wheel \( c' \), and weight \( k \), I do not intend to limit myself to a single set on each machine, as the machine works equally well with a plurality of such wheels and weights, and I find that by so arranging the weights in a series that one or more weights are at or near the top when another is at or near the bottom, I produce the desired result in a very satisfactory manner.

While I have described the machine as operated by a chain and sprocket-wheels, I do not intend to limit myself to this precise form, as the machine works equally well with a belt or cable and suitable wheels.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

In a device of the character described, a wheel \( c \), loose upon its shaft, a ratchet-wheel keyed upon the same shaft, and engaging the wheel \( c \) when revolved in one direction, a power-transmitting medium upon the wheel \( c \) passing under a lower wheel \( a \) upon whose shaft is provided means for revolving it in a direction opposite to tension of the transmitting medium, a third wheel mounted upon a shaft higher than the shaft of the wheel \( a \) and over which the transmitting medium is passed whereby it is held more closely to the periphery of the wheel \( a \), a weight attached to the transmitting medium below the outer edge of the wheel \( c \), substantially as shown and described.

Signed at Passaic, New Jersey, this 11th day of February, 1901.

HERMANN KARROSS.

Witnesses:

JOHN A. PHINNEY,
ANDREW FOULDS, JR.