

(No Model.)

A. D. MEUNIER.

MOTOR.

No. 305,462.

Patented Sept. 23, 1884.

FIG. 1.

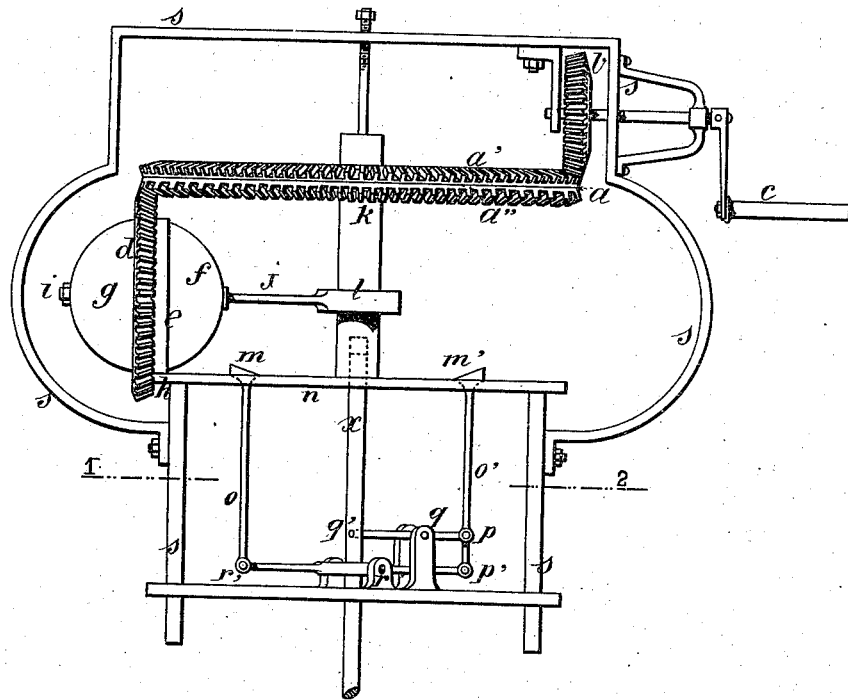
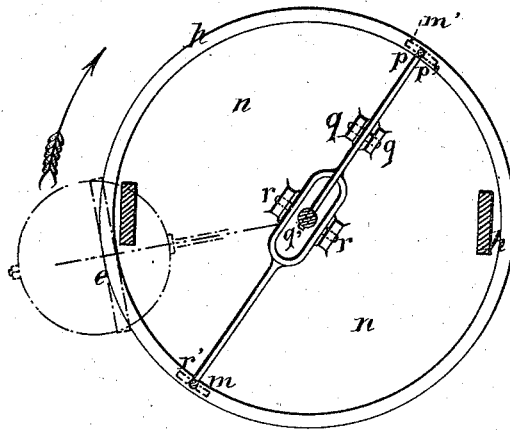


FIG. 2.



Witnesses:

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# UNITED STATES PATENT OFFICE.

ALBERT D. MEUNIER, OF TAUXIGNY, FRANCE.

## MOTOR.

SPECIFICATION forming part of Letters Patent No. 305,462, dated September 23, 1884.

Application filed August 13, 1884. (No model.) Patented in France June 28, 1884.

### *To all whom it may concern:*

Be it known that I, ALBERT DESIRÉ MEUNIER, a citizen of the Republic of France, residing at Tauxigny, in the Department of Indre-et-Loire, France, have invented a new motor or new means to employ gravity as a motive power, (for which I have obtained Letters Patent in France, dated June 28, 1884, not yet numbered, for fifteen years;) and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to a new motor—that is to say, to new means to employ gravity as a motive power.

In order to make the same more clearly understood, I show them in the accompanying drawings in a group, which, however, illustrates only one form in which my invention may be clothed.

Figure I is an elevation of the apparatus. Fig. 2 is a horizontal section on the line 1 2, Fig. 1.

The same letters in the several figures refer to the same parts.

*a* is a double conical cog-wheel. It may be made of one piece or be composed of two wheels put together. *a' a''* are the toothed parts of the said wheel.

*b* is a pinion moved by a crank, *c*, and in gear with the part *a'* of the wheel *a*. Motion may be imparted by actuating directly the wheel *a* by means of a coupling-rod or otherwise. This system is preferable when the resistance to be overcome is small or if rapidity is an object.

*d* is a conical pinion in gear with the part *a''* of the wheel *a*.

*e* is a hoop or cylindrical ring, made of steel, in one piece with the pinion *d* and the semi-spherical cap *f*. This hoop rests on a ring, *h*.

*g* is a semi-spherical cap, applied against the wheel *d*, and kept in place by the nut *i*, screwed on the rod *j*. The two caps *g* and *f* form a sphere or any other figure, and contain the weight by which the motion is to be produced.

*k* is the shaft of the wheel *a*, the axis of which is in the center of the ring *h*.

*l* is a collar placed loosely around the shaft *k*. If preferred, the end of the rod *j* can be swiveled in the collar *l*.

*m m'* are two inclined lugs, whose stems *o o'* pass loosely through the ring *h*, and whose inclined upper faces are in the path of the hoop *e* when the same travels on the ring *h*. There may be any number of such lugs, provided such number is even, and they are connected in pairs. The rod *o'* is pivoted to a lever, *p*, having its fulcrum at *q*, and having its other end, *q'*, jointed to a shaft, *x*. The rod *o'* is also pivoted to a lever, *p'*, which has its fulcrum at *r*, its other end being pivoted to the lower end of the rod *o*. The lever *p'* may be loop-shaped in the middle to embrace the shaft *x*.

*s* is a frame of any form by which the whole apparatus is supported.

Having thus described the apparatus, I will now explain its working. The wheel *a* being actuated either by the crank of the pinion *b* or by a coupling-bar or otherwise, the motion will be transmitted to the pinion *d*. This causes the hoop *e* and the weighted sphere *f g* to rotate around the shaft *k*. The hoop *e*, made by preference of a very hard metal—such as hardened steel—runs on the ring *h*, made of the same metal, and which is quite even and horizontal. During the running the hoop strikes successively the lugs or stops *m m'* and causes them to go down alternately. As the lug *m'* goes down it lowers the ends of the levers *p p'*, which are connected with the rod *o'*. The lever *p* in thus going down causes the shaft *x* to be raised. In the same manner the lever *p'* causes the rod *o* and lug *m* to rise. As the hoop *e* strikes the lug *m* the latter goes down and the inverse motion is produced in the levers *p p'*—that is to say, that the lug *m'* rises and the shaft *x* goes down. Thus the shaft *x* has imparted to it a vertical rectilinear reciprocating motion, which may be employed to move any machine. If the shaft *x* were the rod of a pump, and if it were desired to increase in a given space of time the number of strokes, it would be sufficient to arrange four or six lugs *m m'*, joined in pairs, as described.

According to the foregoing explanation it will be understood that the weight contained in the system-sphere *f g*, running on a per-

fectly even and horizontal way, can be actuated by a very little force.

The reciprocating motion of the shaft *x* may be transformed into a circular motion, using  
5 some known means as a medium.

Having thus described my invention and one of the manners by which it can be put into practice, I claim as new and as my private property—

10 1. The combination of the weighted hoop *e*, and means, substantially as described, for revolving it, with the horizontal track *h*, and with yielding projections in said track, as specified.

2. The combination of the weighted hoop *e*, 15 and means, substantially as described, for revolving it, with the track *h*, lugs *m m'*, rods *o o'*, levers *p p'*, and shaft *x*, substantially as herein shown and described.

3. The combination of the wheel *a*, shaft *k*, 20 wheel *d e*, carrying weight and rod *j*, with the track *h*, lugs *m m'*, rods *o o'*, levers *p p'*, and shaft *x*, all arranged substantially as herein shown and described.

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Witnesses:

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