(No Model.)

P. BALDENSPERGER.

MANUAL MOTOR.

No. 486,020. Patented Nov. 8, 1892.

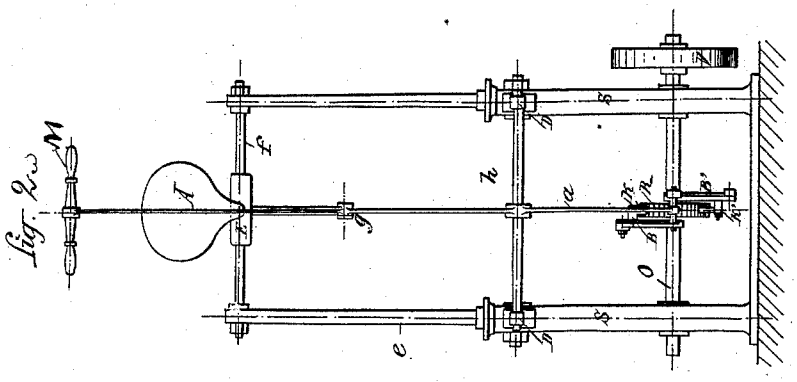

Fig. 2.

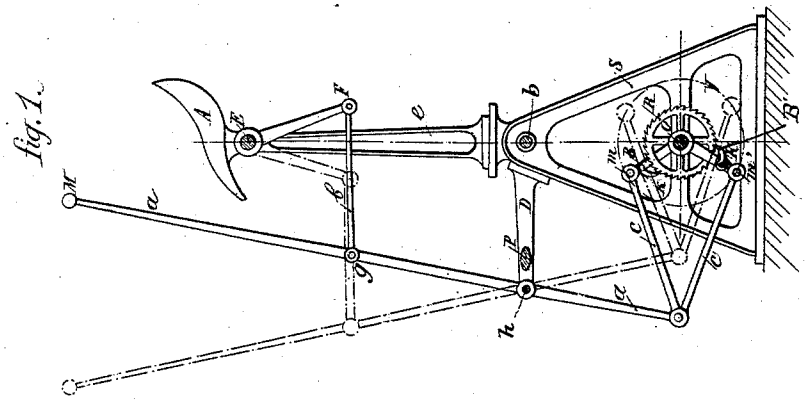

Fig. 1.

Witnesses:
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UNITED STATES PATENT OFFICE.

PHILIPPE BALDENSPERGER, OF ST. PIÉ, (VOSGES,) FRANCE.

MANUAL MOTOR.

SPECIFICATION forming part of Letters Patent No. 486,020, dated November 8, 1892.

Application filed March 24, 1892. Serial No. 426,281. (No model.) Patented in France April 30, 1891, No. 212,173; in Belgium July 27, 1891, No. 95,789; in Sweden July 29, 1891, No. 3,412; in Norway August 3, 1891, No. 2,473; in Italy August 8, 1891, XXV, 30,175, and November 6, 1891, XXV, 30,559; in Spain August 31, 1891, No. 12,392; in Turkey September 26, 1891, No. 240; in Switzerland October 2, 1891, No. 3,907; in Russia October 9, 1891; in Austria-Hungary October 11, 1891, No. 48,974 and No. 552; in England October 12, 1891, No. 17,352, and in Germany October 14, 1891, No. 66,479.

To all whom it may concern:

Be it known that I, PHILIPPE BALDENSPERGER, a citizen of the Republic of France, residing at St. Pié, (Vosges,) France, have invented an Improved Manual Motor, (for which I have obtained the following patents: in France April 30, 1891, No. 212,173; in Belgium July 27, 1891, No. 95,789; in Great Britain October 12, 1891, No. 17,352; in Austria-Hungary October 11, 1891, No. 48,974 and No. 552; in Germany October 14, 1891, No. 66,479; in Spain August 31, 1891, No. 12,392; in Italy August 8, 1891, XXV, 30,175, and (addition) November 6, 1891, XXV, 30,559; in Norway August 3, 1891, No. 2,473; in Sweden July 29, 1891, No. 3,412 and (patent) (addition) October 23, 1891, No. 3,412; in Russia October 9, 1891; in Turkey September 26, 1891, No. 240, and in Switzerland October 2, 1891, No. 3,907,) of which the following is a specification.

This invention has reference to motors designed to be actuated by manual effort; and it consists in the simple and efficient arrangement hereinafter described, whereby a comparatively-high degree of power is created with but minimum exertion.

In the accompanying drawings, forming part of this specification, Figure 1 is a central vertical section of a manual motor embodying my improvement, and Fig. 2 is a front view of the same.

The base of the motor-frame comprises two triangular castings S, forming bearings for the transverse shaft O, upon one of the projecting ends of which is keyed a band-pulley V, which may operate a belt to drive any desired machinery. The base-castings S are braced at their top by a transverse rod *b*, and the upper part of the framing is constituted by two vertical standards *e*, connected and braced at their top by a transverse bar *f*. Centrally keyed on the transverse shaft O is a ratchet-wheel R, the teeth of which are engaged by pawls B B′, pivotally carried by two arms K K, loosely mounted at one end on the shaft O, while the other ends are pivotally secured to links *c* and *c′*, in turn pivotally bolted to the lower end of the vertical lever *a*. The lever *a* is fulcrumed upon a rod *h*, bearing in a pair of arms D, rigidly projecting from the upper portion of the base-casting S. The saddle A has a sleeve E, loosely mounted on an upper rod *f*, and depending extension F of said sleeve being pivotally connected at *g*, to the lever *a* through the medium of a link connection C. The upper end of the lever *a* is provided with transverse handles M, and the arms D are provided with a transverse foot-piece P.

The operation of this device will be obvious. The operator, seated in the saddle A, rigidly braces his feet against the foot-piece P and can then vibrate the lever *a* with comparatively-little exertion, the movements of the lever *a* in either direction occasioning the rotation of the ratchet-wheel, and the consequent revolution of shaft O and band-pulley V, since the pawls B and B′ alternately engage said ratchet-wheel, and both serve to rotate it in a like direction. By having the saddle A pivoted and connected, as described, the exertion on the part of the operator is not only materially reduced, but much is taken off of body movements to secure the actuation of the device.

I claim—

1. In a manual-motor apparatus, the combination, with the supporting-frame, a driving-shaft journaled therein, and a ratchet-wheel carried thereby, of rod *h*, an actuating-lever pivoted thereto, a pair of arms pivoted to one end of said lever, pawls thereon adapted to engage with the teeth of said ratchet-wheel, and a saddle pivotally mounted on the main frame and having a link connection with the actuating-lever, substantially as set forth and described.

2. In a manual-motor apparatus, the combination, with the driving-shaft and pawl-and-ratchet devices located in the base of the

apparatus, of arms D D, having the foot-rest P, and rod *h*, and an actuating-lever *a*, pivoted on said rod and connected with the pawl devices, together with a pivotally-mounted saddle having a link connection with the said lever above its fulcrum, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

PHILIPPE BALDENSPERGER.

Witnesses:
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