(No Model.)

W. C. CARPENTER.

MOTOR.

No. 452,832. Patented May 26, 1891.

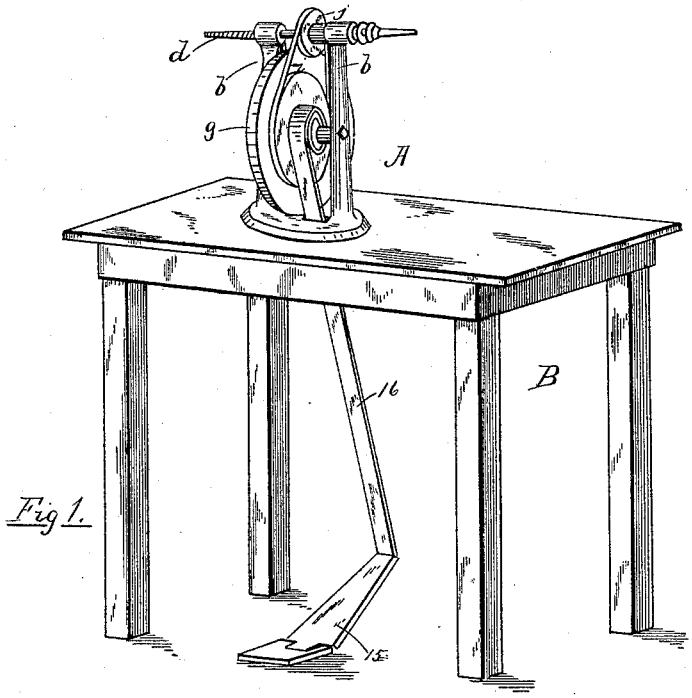

Fig. 1.

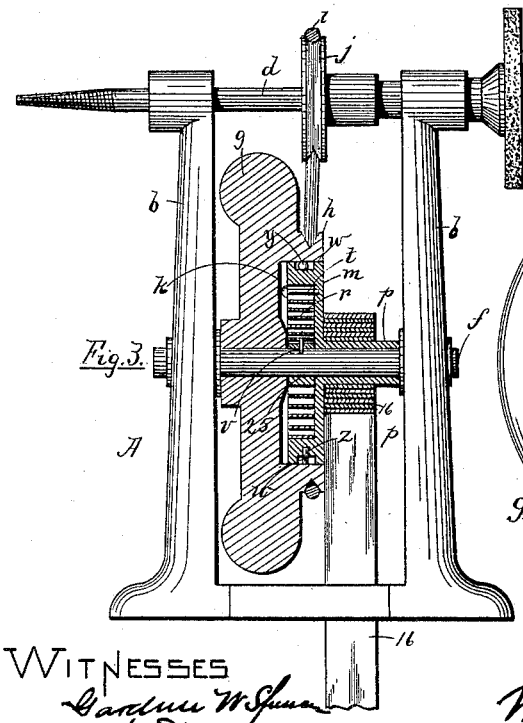

Fig. 3.

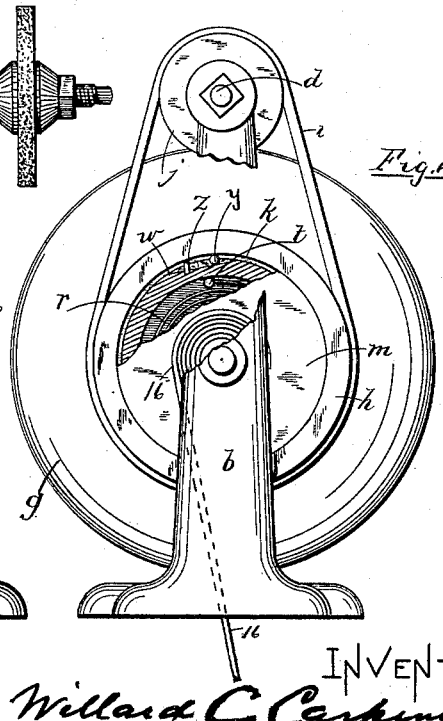

Fig. 2.

WITNESSES

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MOTOR.

SPECIFICATION forming part of Letters Patent No. 452,832, dated May 26, 1891.

Application filed February 3, 1891. Serial No. 380,012. (No model.)

To all whom it may concern:

Be it known that I, WILLARD C. CARPENTER, of St. Johnsbury, in the county of Caledonia, State of Vermont, have invented certain new and useful Improvements in Motors, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a perspective view showing my improved motor in position for use; Fig. 2, a side elevation of the motor, a portion being broken away to show the clutch; and Fig. 3, a front elevation of the same, the wheel being shown in vertical section.

Like letters and figures of reference indicate corresponding parts in the different figures of the drawings.

My invention relates to motors which are especially adapted for use in running jewelers' or dental polishing lathes; and it consists in certain novel features, hereinafter fully set forth and claimed, the object being to produce a simpler, cheaper, and more effective device of this character than is now in ordinary use.

The nature and operation of the improvement will be readily understood by all conversant with such matters from the following explanation.

In the drawings, A represents the frame, which consists of two standards *b*, in which the lathe-shaft *d* is journaled. Said shaft may bear polishing-wheels or tool-chucks in the ordinary manner.

A horizontal shaft *f* is mounted in the standards, and a fly-wheel *g* is loose on said shaft. Said wheel has a pulley-hub *h*, connected by a round belt *i* with a pulley *j* on the lathe-shaft. Said hub is chambered at *k*, and a wheel *m*, loose on the shaft *f*, is disposed therein. The hub *p* of said wheel is elongated to engage the shaft-bearing.

The wheel *m* is chambered interiorly, and a coiled spring *r*, disposed within the chamber, is wound around a collar 25 on the shaft. One end of the spring is secured at *t* to the chamber-wall and the opposite end pinned at *v* to the shaft.

The periphery of the wheel *m* is provided with a series of eccentric grooves *w*, in each of which a ball *y* is disposed, forming a ball-clutch between the wheels *g m* when the wheel *m* is rotated in one direction. A stop-pin *z* is disposed in the deepest part of said grooves to prevent the ball binding when said wheel *m* is rotating in the opposite direction.

The frame A, bearing the motor, is mounted on a table B, below which a foot-treadle 15 is disposed.

A belt 16 has one end secured to and is wound on the hub *p* of the wheel *m*, its opposite end being attached to the treadle.

In the use of my improvement, the treadle 15 being depressed, the wheel *m* is rotated from right to left, as viewed in Fig. 2. The ball-clutches binding cause the wheel *g* to rotate in like direction and actuate the lathe-shaft. The spring *r* at the same time is tightly wound within said wheel *m*. The treadle being released, said spring acts torsionally to reciprocate the wheel *m*, impetus carrying the loose wheel *g*, the clutches acting and fresh impetus given to said drive-wheel.

By this construction the wheels always start in the required direction and the objection of "catching in the center" is obviated. Moreover, the drive-wheel *g* by my improved device can be made to attain a far higher rate of speed than is practical in treadle mechanism of ordinary construction.

Having thus explained my invention, what I claim is—

In a device of the character described, the combination, with the frame bearing a rotary grinder-shaft provided with a pulley, of the shaft *f*, mounted in said frame, the fly-wheel mounted loose thereon and provided with the chambered pulley-hub belted to the grinder-pulley, the chambered clutch-wheel loose on said shaft and disposed in said hub-chamber, the spring within said clutch-wheel, balls working in peripheral cam-grooves in the clutch-wheel and engaging the hub-chamber walls, a treadle, and a belt wound on the clutch-wheel hub and connected with said treadle.

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