J. J. GREENOUGH.

FLEXIBLE MOTORS FOR HORSE-BRUSHES.

No. 185,859. Patented Jan. 2, 1877.

FIG 1

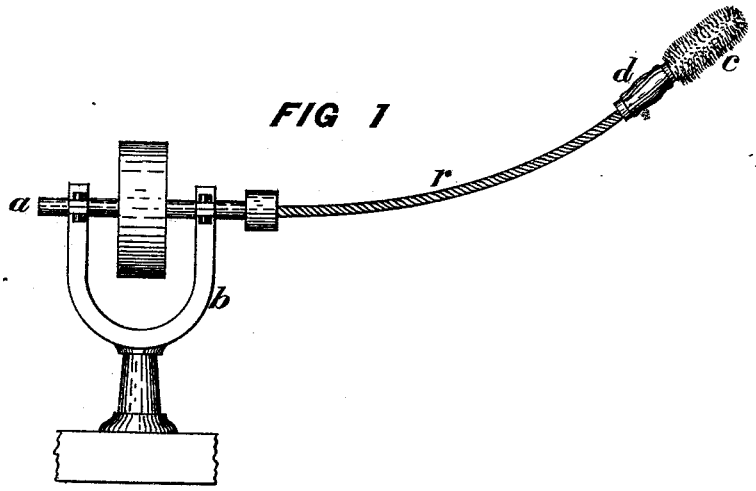
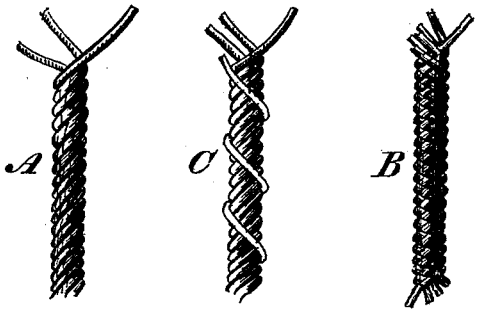


FIG 2



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UNITED STATES PATENT OFFICE.

JOHN JAMES GREENOUGH, OF SYRACUSE, NEW YORK.

IMPROVEMENT IN FLEXIBLE MOTORS FOR HORSE-BRUSHES.

Specification forming part of Letters Patent No. **185,859**, dated January 2, 1877; application filed July 24, 1873.

To all whom it may concern:

Be it known that I, JOHN JAMES GREENOUGH, of Syracuse, Onondaga county, New York, have invented a Flexible Motor for Driving Brushes, and other tools, for Horse-Cleaners, and other purposes, of which the following is a specification:

The object of my invention is to connect the driving-power with the revolving brush or other tool by interposing a metallic rope, formed as herein described, joined by one of its ends to the end of the driving-shaft, and by the other to the shaft or axis of rotation of the working-tool, the rotating-power being transmitted by the torsion of the said rope, so that the tool will be revolved by the revolution of the shaft.

The device is illustrated by the drawing, in which—

Figure 1 is a side elevation of the rotating shaft with a brush attached thereto. Fig. 2 shows various elements of construction as types of my flexible motor.

The construction is as follows: I employ an ordinary driving-shaft, *a*, supported by any proper hanger or bearings, *b*, which shaft is driven by pulley, or otherwise connected with the driving-power. To the end of the shaft *a* I securely affix one end of a properly-constructed rope, *r*, in line with said shaft. The other end of the rope *r* is connected in similar manner with a shaft or spindle, to which the tool *c* is affixed, and having a handle or bearing at *d* in which it revolves without turning the handle by which it is held and guided.

By thus connecting the brush or tool with the motor great freedom is given to the position and action of the tool in working, so as to allow the operator to apply a brush to any part of a horse in cleaning him.

In constructing the metallic wire-rope I prefer to make it by spirally coiling an inner layer of wires, that do not stretch, around the axis, and then overlaying them with a like wire or wires, coiled around in the opposite direction, (see Fig. 2, *c*,) which can be repeated, if necessary; or the strands of wire may be braided spirally around the axis of motion, as in Fig. 2, B; or they may be laid up by twist and countertwist, as at A, the object being to form a rope of strong wires, that, by torsion, will drive the shaft at the working-point without kinking against the resistance of the tools driven thereby.

Having thus fully described my improvement in flexible shafting, I claim—

Combining a brush or other tool with a driving-shaft, by means of the torsion of a metallic rope, the strands of which are coiled in opposite directions, substantially as and for the purposes described.

J. J. GREENOUGH.

Witnesses:

E. GREENOUGH,

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