

No. 712,847.

Patented Nov. 4, 1902.

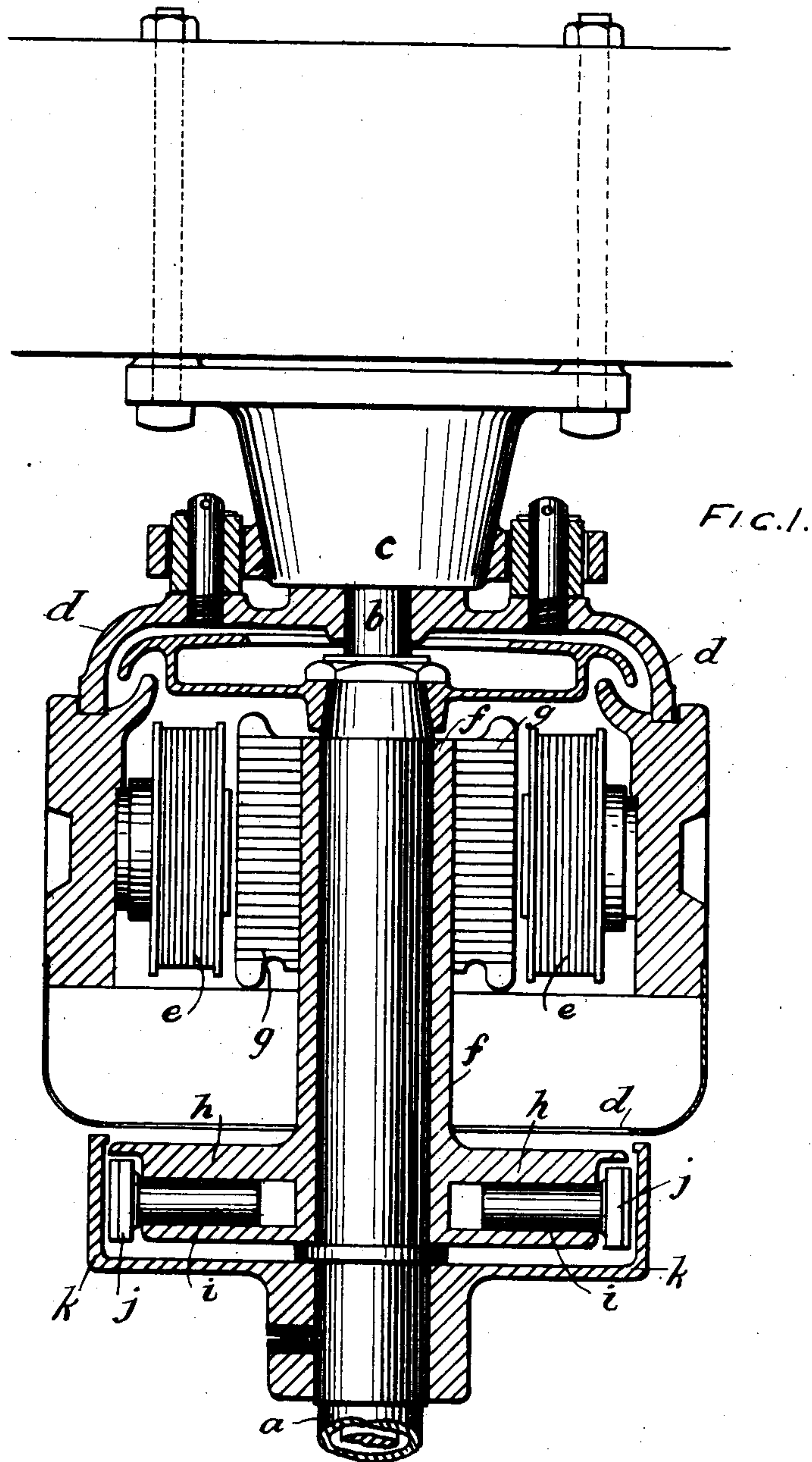
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DRIVING CENTRIFUGAL OR OTHER MACHINES BY MEANS OF ELECTRIC MOTORS.

(Application filed Jan. 15, 1902.)

(No Model.)

2 Sheets—Sheet 1.



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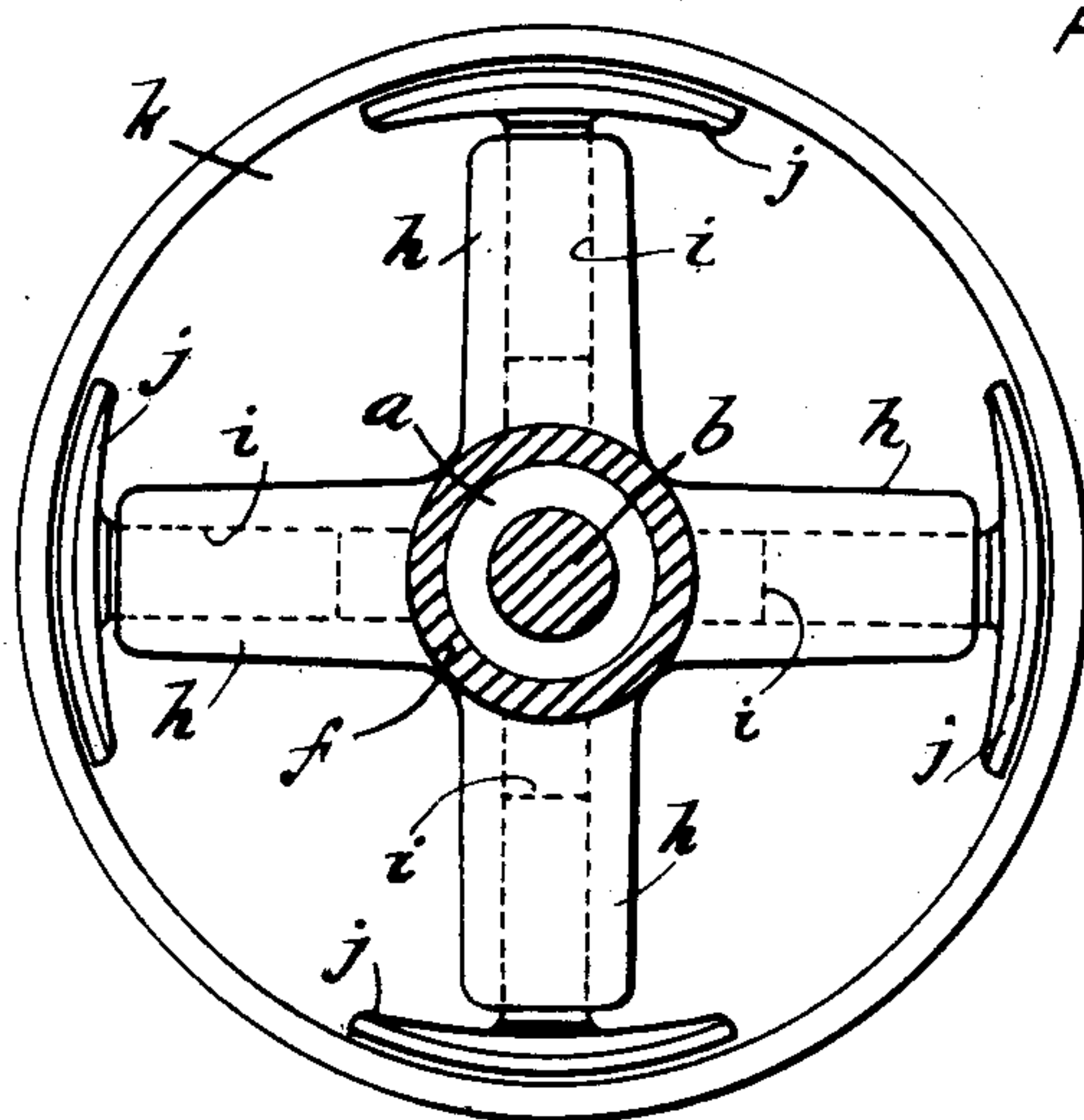
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UNITED STATES PATENT OFFICE.

GIDEON POTT AND ROBERT WILLIAMSON, OF MOTHERWELL, SCOTLAND.

DRIVING CENTRIFUGAL OR OTHER MACHINES BY MEANS OF ELECTRIC MOTORS.

SPECIFICATION forming part of Letters Patent No. 712,847, dated November 4, 1902.

Application filed January 15, 1902. Serial No. 89,913. (No model.)

To all whom it may concern:

Be it known that we, GIDEON POTT and ROBERT WILLIAMSON, citizens of the United Kingdom of Great Britain and Ireland, residing at Motherwell, in the county of Lanark, Scotland, have invented certain new and useful Improvements in or Relating to the Driving of Centrifugal or other Machines by Means of Electric Motors, (for which application for patent has been made in Great Britain, No. 12,739, dated June 22, 1901,) of which the following is a specification.

This invention relates to electrically-driven centrifugal and similar machines; and it consists in combining with or adapting thereto a device by means of which in starting the machine sudden shock or jar due to excess of current is minimized and whereby damage to the motor or switches is prevented. In applying the invention to a centrifugal machine of the "Weston" type, for example, instead of as heretofore directly securing the armature of the electric motor to the rotating shaft or spindle of the machine it is attached to a sleeve which is loose on said shaft, the field-magnets or stationary parts of the motor being secured to a stationary part of the casing of the machine. Attached to the revolving part of the electric motor is a disk or arms carrying sliding friction-blocks, of wood or other material, which when the machine is in operation are by centrifugal action thrown outward into frictional contact with a flanged disk secured to the rotating shaft of the machine.

In the accompanying drawings, which illustrate the invention as applied to a centrifugal machine, Figure 1 is a sectional elevation showing the electric motor and driving-shaft of a centrifugal machine of the Weston or suspended self-balancing type, and Fig. 2 is a plan view of the flanged disk on the rotating shaft and of the sleeve and disk or arms carrying the sliding friction-blocks.

As shown by the drawings, the centrifugal machine, which may be of the ordinary construction, is driven by a hollow shaft *a*, suspended in the usual way from a stationary

central shaft *b*, which is hung from a top block *c*, so as to be free to oscillate, and the stationary casing *d*, which carries the field-magnets *e* of the electromotor, is attached to said shaft *b*, so as to oscillate with it in a well-known manner.

On the hollow shaft *a* is loosely fitted a sleeve *f*, on which is secured the armature *g* of the electromotor, and formed on or attached to the lower end of the sleeve *f* is a disk or arms *h*, in which are fitted radially the stems *i* of a number of sliding friction-blocks *j*, whose outer surfaces are of convex form to fit against the inner periphery of a flange on a disk *k*, fixed on the hollow shaft *a*. In the normal position of rest the blocks *j* are practically out of contact with the flanged disk *k*; but when electric current is passed through the field-magnets *e* and armature *g* to impart rotation to the latter the sleeve *f* is rotated and the sliding blocks *j* are forced outward by centrifugal action, so that their convex faces press against the flanged disk *k*, and the latter is thereby rotated and drives the hollow shaft *a* of the machine.

The arrangement described is applicable to the driving shafts or spindles of machines generally.

Having now described the invention, what we claim, and desire to secure by Letters Patent, is—

In an electrically-driven centrifugal machine, the combination with the stationary spindle, of a sleeve loose thereon, to which the armature of the motor is fixed, a clutch carried by said sleeve, and a flanged disk secured to the driving-shaft with which the said clutch gradually engages by centrifugal action on starting the motor; as and for the purposes set forth.

In witness whereof we have hereunto set our hands in presence of two witnesses.

GIDEON POTT.
ROBERT WILLIAMSON.

Witnesses:

WALLACE FAIRWEATHER,
JNO. ARMSTRONG, Jr.