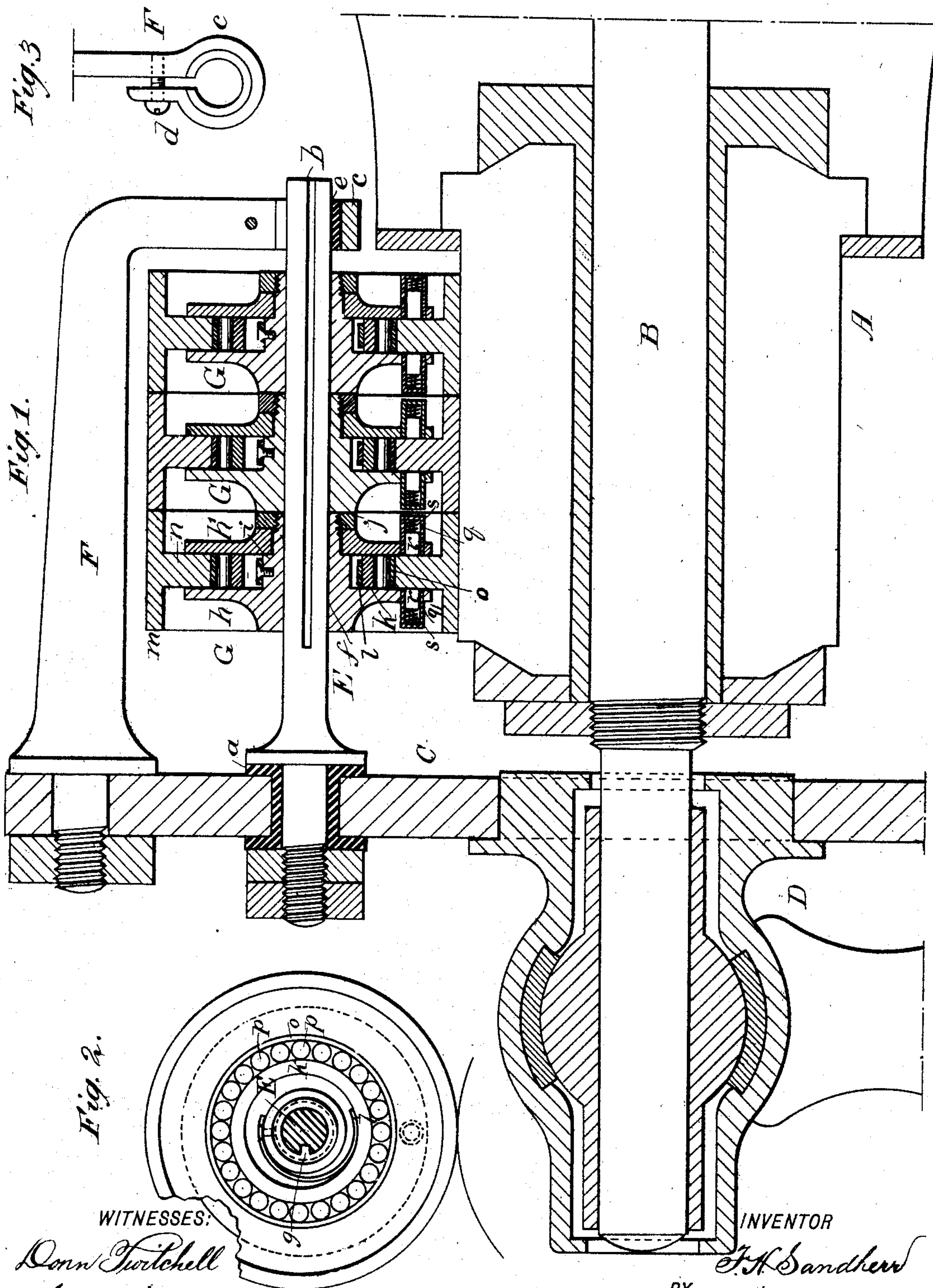


(No Model.)

F. H. SANDHERR.  
BRUSH FOR DYNAMOS OR ELECTRIC MOTORS.

No. 504,177.

Patented Aug. 29, 1893.



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

FREDERICK H. SANDHERR, OF ST. LOUIS, MISSOURI.

## BRUSH FOR DYNAMOS OR ELECTRIC MOTORS.

SPECIFICATION forming part of Letters Patent No. 504,177, dated August 29, 1893.

Application filed January 7, 1893. Serial No. 457,594. (No model.)

*To all whom it may concern:*

Be it known that I, FREDERICK HENRY SANDHERR, of St. Louis, Missouri, have invented new and useful Improvements in  
5 Brushes for Dynamos or Electric Motors, of which the following is a specification, reference being had to the annexed drawings, forming a part thereof, in which—

Figure 1 is a vertical longitudinal section  
10 of a portion of a dynamo to which my improvement has been applied. Fig. 2 is a side elevation of one of the collectors, from which one of the collars has been removed to show the internal parts; and Fig. 3 is a side elevation of the end of the brush supporting arm.  
15

Similar letters of reference indicate corresponding parts in all the views.

The object of my invention is to construct a brush for dynamos and motors, in which the  
20 contact of the brush with the commutator cylinder will be a rolling instead of a sliding contact.

My invention consists in a brush or collector formed of one or more rollers pressed  
25 into contact with the commutator cylinder by means of a spring, the said rollers being provided with roller bearings for reducing the friction, and also furnished with spring-pressed contact pieces by which the current  
30 is taken from the rollers, all as will be hereinafter described.

The commutator cylinder A, carried by the armature shaft B, may be of any approved construction, and the brush arm C, is pivoted  
35 on the journal box D of the armature shaft in the usual way. In the brush arm is inserted a stud E, which is separated electrically from the brush arm by the insulation *a*. The stud E is provided with a longitudinal  
40 groove *b*, and the outer end of the said stud is supported by the arm F, projecting from the brush arm C. The outer end of the said arm is provided with a split eye *c*, which embraces the stud E, the said eye being pro-  
45 vided with a screw *d*, for contracting it and causing it to bind upon the stud. A split insulating thimble *e* is inserted between the stud and the eye *c*.

Upon the stud E, are placed in the present  
50 case, three collecting wheels G, but I do not confine myself to this or any particular number of such wheels. The wheels G being

alike, the description of one will answer for all. The boss *f*, which is fitted to the stud E, is provided with a feather *g* which fits in the  
55 groove *b* of the stud E. The collar *h* is formed integrally with the boss *f*, and the said boss *f* is reduced in diameter to form a shoulder *i*, which acts as a support for the loose collar *h'*, held in place on the boss *f* by the nut *j*. Be-  
60 tween the collars *h*, *h'*, is placed a ring *k*, to one end of which is attached a spring *l*, the other end being secured to the boss *f*, and the ring is made enough larger in diameter beyond the boss *f*, to allow it to move so that  
65 the collecting wheel running on the ring will accommodate itself to the inequalities of the commutator cylinder. The outer portion of the wheel G consists of the tread *m* and the web *n*. The web *n* is bored out to an internal  
70 diameter larger than the external diameter of the ring *k*, and is preferably provided with a steel lining *o*. Between the steel lining *o* and the ring *k* are placed rollers *p*, which are preferably of hardened steel. In the collars *h*, *h'*  
75 are inserted the capsules *q*, each containing a contact piece *r*, which is pressed forward by a spiral spring *s*. The boss *f* and collars attached thereto being stationary, and the movable portions of the collector being in good  
80 electrical contact with the contact pieces *r*, it follows that the current collected by the movable part of the brush will be conveyed through the contact pieces to the collars, and  
85 will be taken from the stud E in the same manner as it is taken from the brush-holding studs of sliding brushes. The ring *k* upon which the rollers *p* roll, being pressed into contact with the rollers by the spring *l*, the pressure being transmitted to the web *n*, a  
90 good electrical contact between the tread *m* and the commutator cylinder A is always insured.

Having thus described my invention, I claim as new and desire to secure by Letters  
95 Patent—

1. In a rolling contact, the combination of a stationary stud, a pair of collars attached to the stud, a spring-pressed ring surrounding the stud, a wheel rim provided with a web re-  
100 ceived between the collars, and a series of rollers inserted between the web and the ring, substantially as specified.

2. In a rolling contact, the combination of

a stationary stud, a pair of collars attached to the stud, a spring-pressed ring surrounding the stud, a wheel rim provided with a web received between the collars, a series of rollers  
5 inserted between the web and the ring, and spring-pressed contact pieces carried by the collars, substantially as specified.

3. In a commutator brush, a contact wheel

of conductive material provided with a hardened steel lining, bearing rollers rolling in contact with the lining, and a support for the wheel and rollers, substantially as specified. 10

FREDERICK H. SANDHERR.

Witnesses:

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