

(No Model.)

W. D. PACKARD.
ARMATURE ATTACHMENT.

No. 496,791.

Patented May 2, 1893.

Fig. 1.

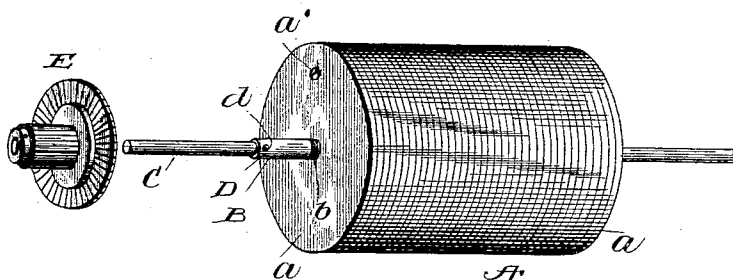


Fig. 2.

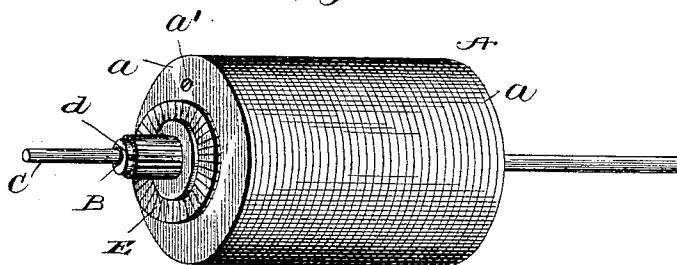


Fig. 3.

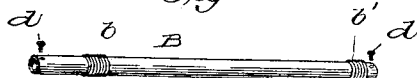
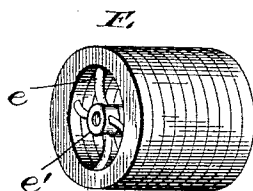


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM D. PACKARD, OF WARREN, OHIO.

ARMATURE ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 496,791, dated May 2, 1893.

Application filed March 25, 1892. Serial No. 426,382. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM D. PACKARD, of Warren, in the county of Trumbull and State of Ohio, have invented certain new and useful Improvements in Armature Attachments; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to new and improved means for attaching the armature and commutator of a dynamo to the rotary shaft thereof, and has for its object the production of a common bearing for such armature and commutator independent of the rotary shaft to which such bearing is removably secured, whereby said armature and commutator can be readily removed without interfering with said shaft.

The invention consists in providing an independent bearing common to the armature and commutator upon which they are secured, said independent bearing being keyed or otherwise rigidly attached to the rotary shaft of a dynamo, substantially as hereinafter fully set forth and particularly pointed out in the claims.

In the accompanying drawings:—Figure 1 is a view in perspective showing an armature provided with my improved independent bearing, with the commutator removed. Fig. 2 is a similar view showing the commutator in position. Fig. 3 is a view of the shaft or sleeve detached. Fig. 4 is a view in perspective showing a "ring armature" secured in accordance with my invention.

Referring to the drawings, A designates a drum armature of ordinary construction upon which the wire (not shown) is wound. The end-plates *a* of this armature are provided with central threaded holes or openings, and said plates are held together by any suitable means, such as a binding screw *a'*.

B is a cylindrical shaft or sleeve provided with peripheral screw threads *b*, *b'*, corresponding to the threaded openings in the end-plates of the drum-armature. By means of these screw threads the armature and shaft or sleeve are rigidly connected together. The shaft or sleeve is slightly larger than the rotary shaft C of a dynamo (not shown) and it

is upon this rotary shaft that the shaft or sleeve B and the armature are designed to be placed, said sleeve being rigidly keyed to shaft C by any suitable means, such as set-screws *d*.

In the drawings I have shown the cylindrical shaft or sleeve B provided with an end extension D beyond screw thread *b*, the object thereof being to provide a bearing for a commutator E, which is held on said shaft or sleeve B adjacent to the armature. Hence it will be seen that the armature and commutator can be readily and easily removed from the rotary shaft of a dynamo without disturbing said shaft, and a new armature or commutator can be quickly substituted. If desired, the end extension D of the cylindrical shaft or sleeve may be omitted and the commutator secured direct to the rotary shaft.

In Fig. 4 I have shown a "ring armature" provided with a separate removable bearing in accordance with my invention. E is what is termed a "ring armature" and *e* a spider having a series of arms radiating from a central hub *e'*, the central opening of which is screw-threaded for engagement with the screw threaded portions of shaft or sleeve B. Heretofore it has been customary to form the arms of the spiders integral with the rotary shaft of the dynamo and hence when the armature needed replacement the shaft had to be removed with the armature, whereas by providing an independent bearing for the ring armature, or rather for the spiders thereof, the armature can be replaced without interfering with the shaft.

The advantages of my invention are apparent to those skilled in the art to which it appertains, and it will be specially observed that by means thereof an armature and commutator can be readily and easily attached to, or removed from, the rotary shaft of a dynamo without interfering with said shaft, and the waste of time now experienced in replacing an armature is entirely avoided. It will also be seen that a great saving in expense is effected, and that the parts are free from all complication and not liable to get out of order.

While I have shown and described the connection between the armature plates and the bearing thereof as being that of screw threads, I do not restrict myself thereto, since in some

instances, notably, in large dynamos, the plates may, if desired, be keyed or fastened by other suitable means.

I claim as my invention—

- 5 1. The herein-described improvement in dynamos consisting of a sleeve removably secured to the rotary shaft of the dynamo and forming a bearing common to both the armature and commutator, as set forth.
- 10 2. The herein-described improvement in dynamos, consisting of a sleeve forming a bearing for the armature and removably secured to the rotary shaft of the dynamo and having an extended end forming a bearing for the
15 commutator, as set forth.
3. The herein described improvement in dynamos, consisting of the armature having a central threaded portion, and a cylindrical sleeve having outer screw-threads engaging
20 said central threaded portion and designed to be removably secured to the rotary shaft of the dynamo, as set forth.

4. As an improvement in dynamos, an armature having a central threaded portion, and a cylindrical shaft or sleeve having screw
25 threads engaging said central threaded portion and provided with an end extension, outside of said armature and the commutator secured on said end-extension, as set forth.

5. As an improvement in dynamos, a drum
30 armature having end-plates provided with central threaded openings, the cylindrical shaft or sleeve having peripheral screw-threads engaging said screw threaded openings, and the set screws for binding said shaft
35 or sleeve on the rotary shaft of the dynamo, as set forth.

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

WM. D. PACKARD.

Witnesses:

WINSLOW ALLDERDICE,
GEO. W. UPTON.