

No. 659,443.

Patented Oct. 9, 1900.

E. R. GILL.

COMMUTATOR AND METHOD OF MAKING SAME.

(Application filed Mar. 1, 1900.)

(No Model.)

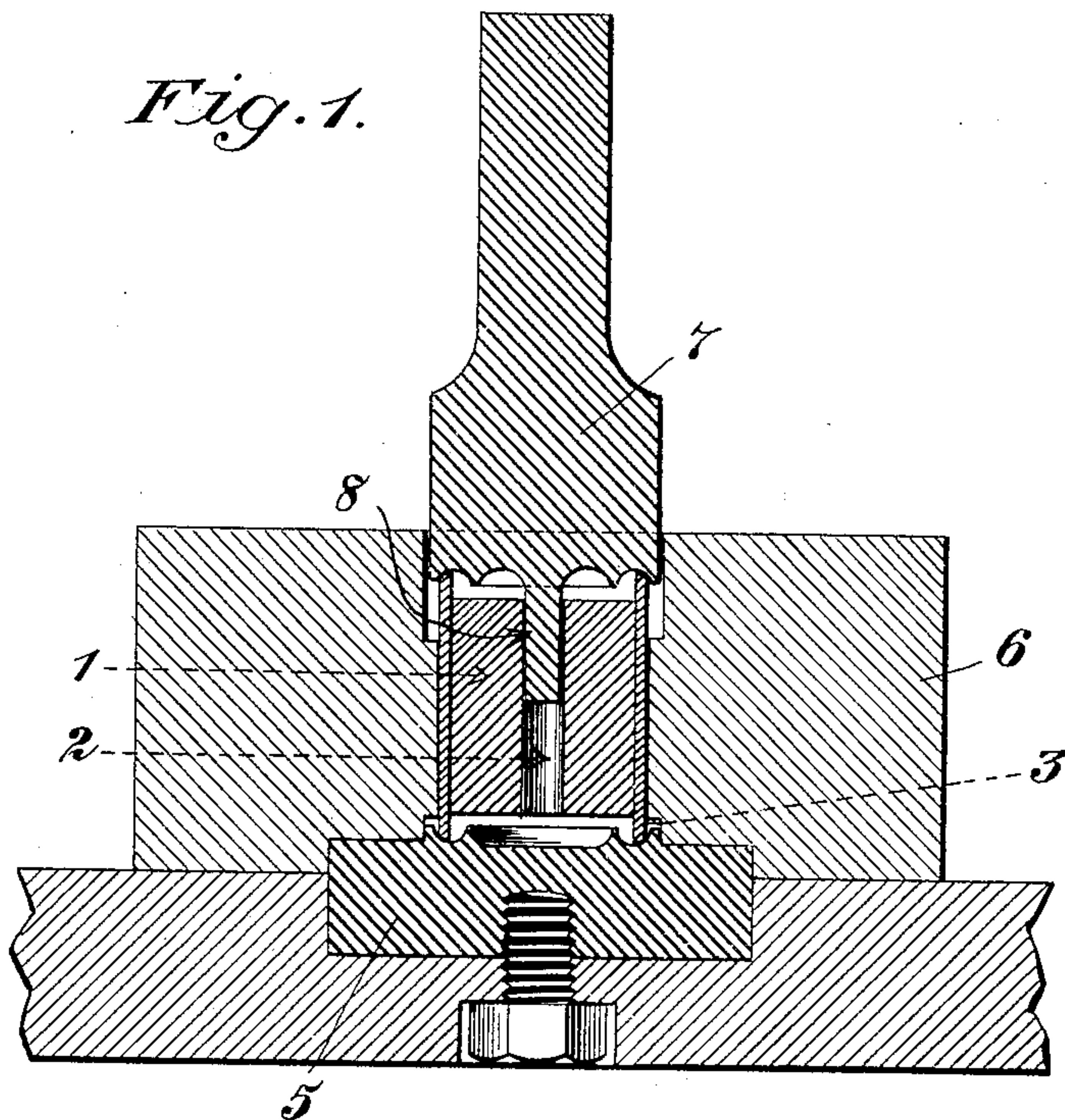


Fig. 2.

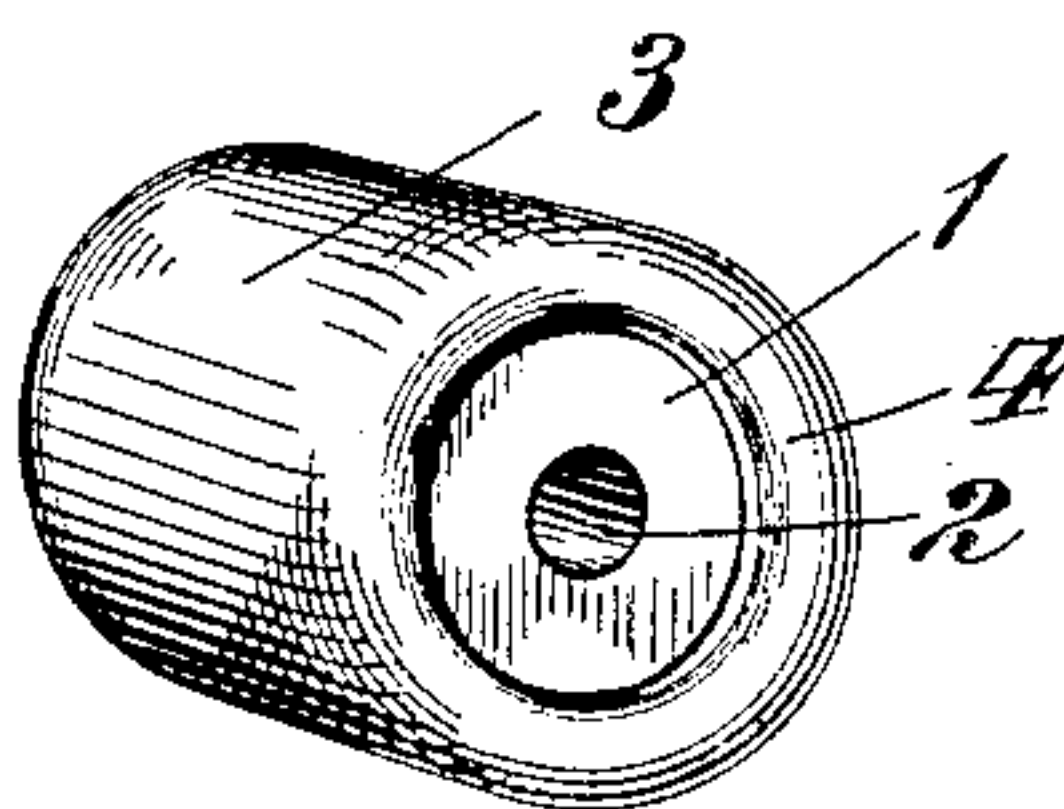


Fig. 3.

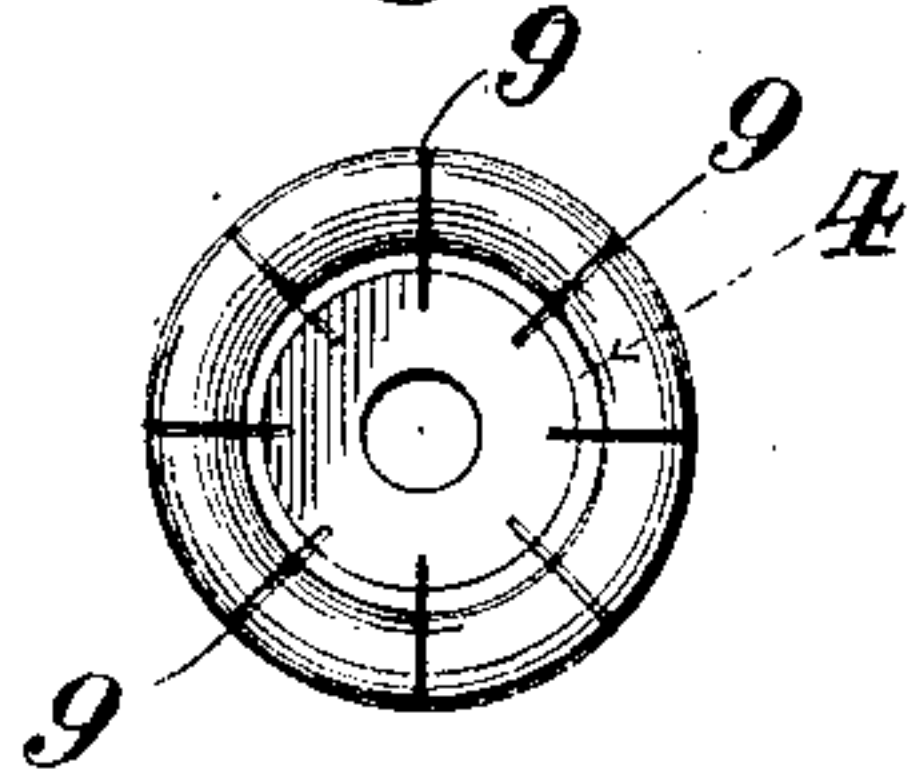
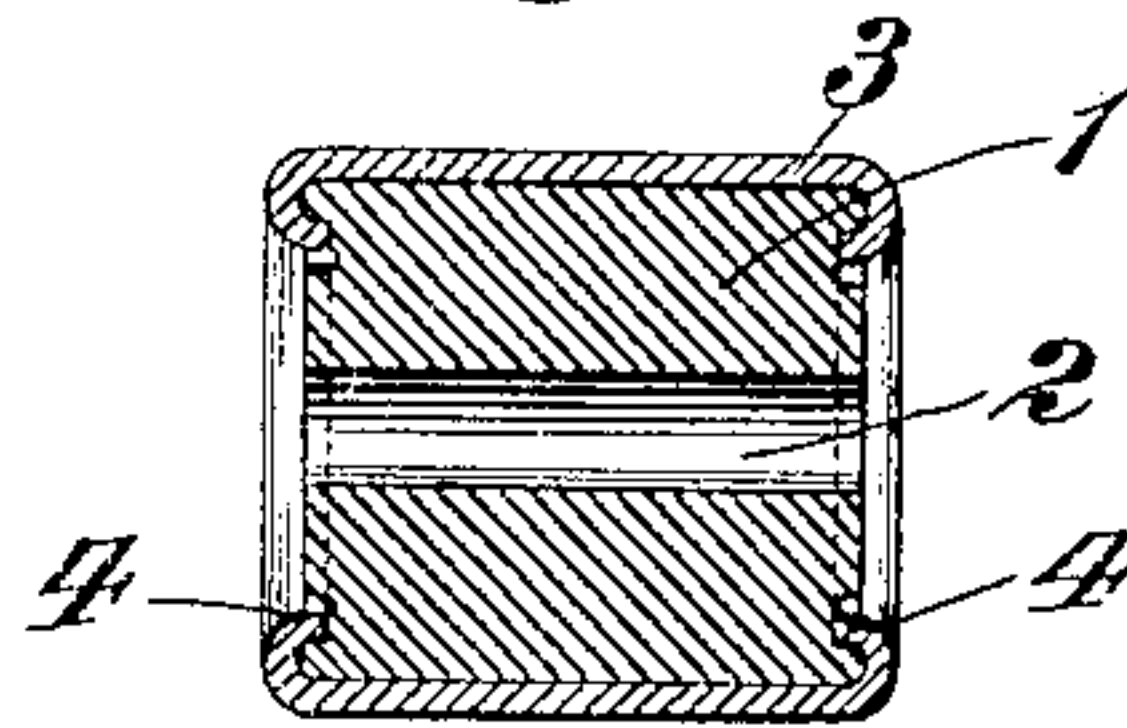


Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

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COMMUTATOR AND METHOD OF MAKING SAME.

SPECIFICATION forming part of Letters Patent No. 659,443, dated October 9, 1900.

Application filed March 1, 1900. Serial No. 6,931. (No model.)

To all whom it may concern:

Be it known that I, EDWIN R. GILL, a citizen of the United States, residing in the city, county, and State of New York, have invented
5 a certain new and useful Improvement in Commutators and Methods of Making the Same, of which the following is a specification.

My present invention has relation to a cheap and simple form of commutator, principally
10 useful with small electric motors, such as are used for fans and the like.

My invention is illustrated in the accompanying drawings, wherein—

Figure 1 shows in vertical median section
15 one form of machine or tool for making my improved commutator. Fig. 2 shows a partly-finished commutator in perspective. Fig. 3 is an end view of a finished commutator, and Fig. 4 is a median section of the device shown
20 in Fig. 2.

In making my improved commutator I first form a cylindrical core 1, of insulating material, such as hard rubber or fiber, and pierce the same centrally, as at 2, to accommodate
25 the shaft of the motor-armature. To the outer surface of the insulating-cylinder 1 I apply a tube of copper 3 of proper thickness and somewhat longer than the cylinder 1. This is plainly shown in Fig. 1. The over-
30 hanging circular edges of the copper tube are then forced inward, as shown at 4. This may be accomplished by diverse means, and in Fig. 1 is shown a device for accomplishing this step in the process of manufacture simply and rapidly in one operation. The fiber
35 cylinder and surrounding tube are supported upon the lower die 5 within the close-fitting holder 6. The plunger-die 7 is then brought down upon the cylinder and tube so as to

bend the edges over, as shown in Fig. 4, the
40 plunger being centered and guided by the central rod 8. The edges of the copper are thus forced into the insulating-core, and a firmly-combined fiber and copper is produced in the form shown in Figs. 2 and 3.

The commutator is finished by simply cutting the tube into the required number of divisions, the cuts 9 being extended down
45 into the fiber, as shown in Fig. 3, beyond the level of the turned-over copper edges. By
50 this means the fiber cylinder is made to carry the desired number of commutator-sections insulated from one another and firmly fixed in place.

My invention is not limited to the use of
55 any particular material for the cylinder 1 nor to any particular method or means for bending the ends of the copper tube down upon said cylinder. My invention also covers the making of commutators wherein only one end
60 of the tube 3 is turned in.

What I claim is—

1. The method of making commutators which consists in forming an insulating cylindrical core, fitting thereon a conducting-
65 tube long enough to overhang said core, turning in the circular edge of said tube so as to make it grip the core and cutting the tube and core into peripheral sections.

2. A commutator consisting of a cylindrical
70 insulating-core and separate conducting-sections on the periphery of said core, said sections being turned down into the material of the core at the end.

EDWIN R. GILL.

Witnesses:

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