

No. 618,992.

Patented Feb. 7, 1899.

J. T. MORROW.
CLEANER FOR COMMUTATORS.

(Application filed Sept. 29, 1898.)

(No Model.)

2 Sheets—Sheet 1.

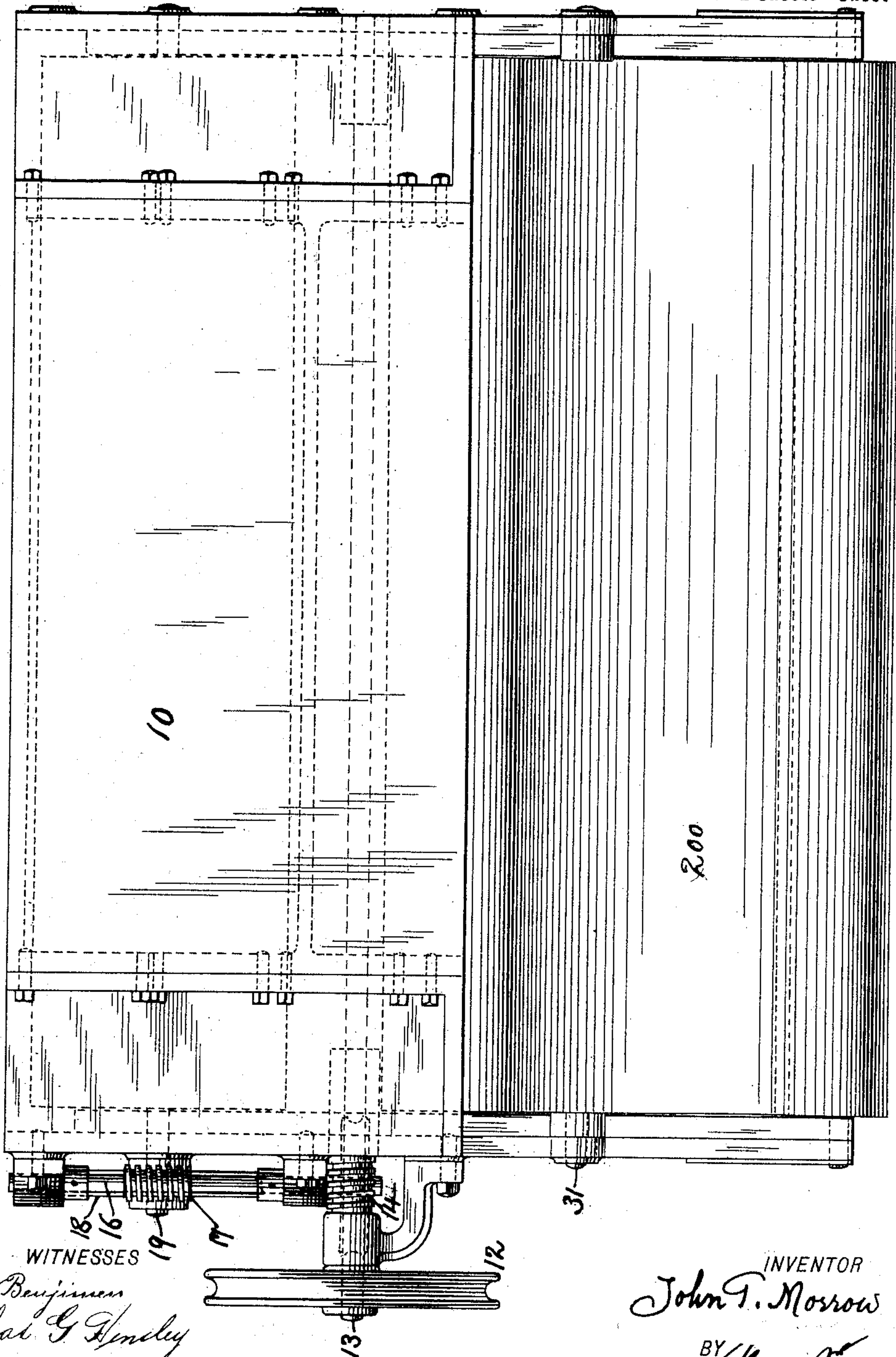


Fig. 1.

WITNESSES

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Fig. 3

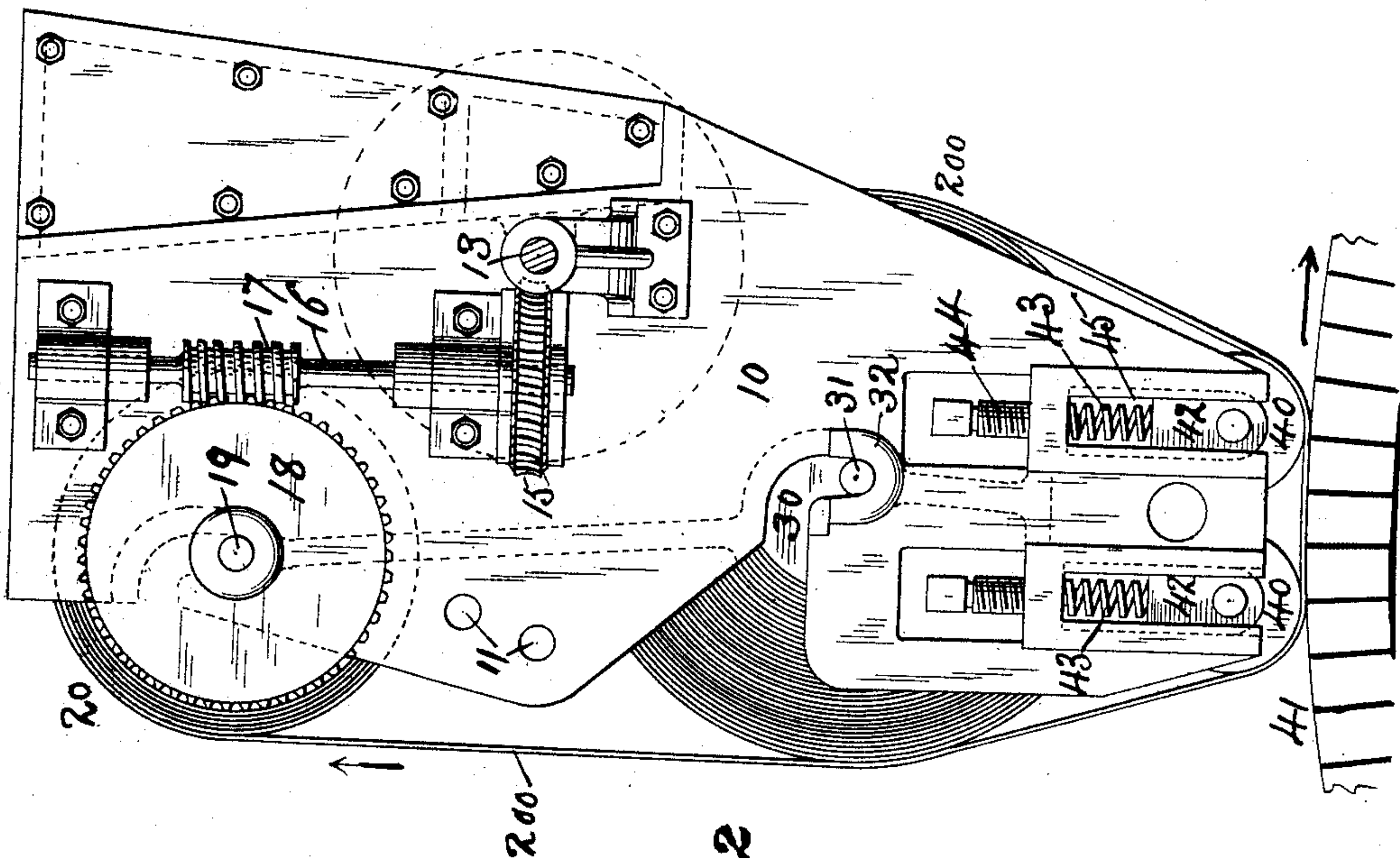
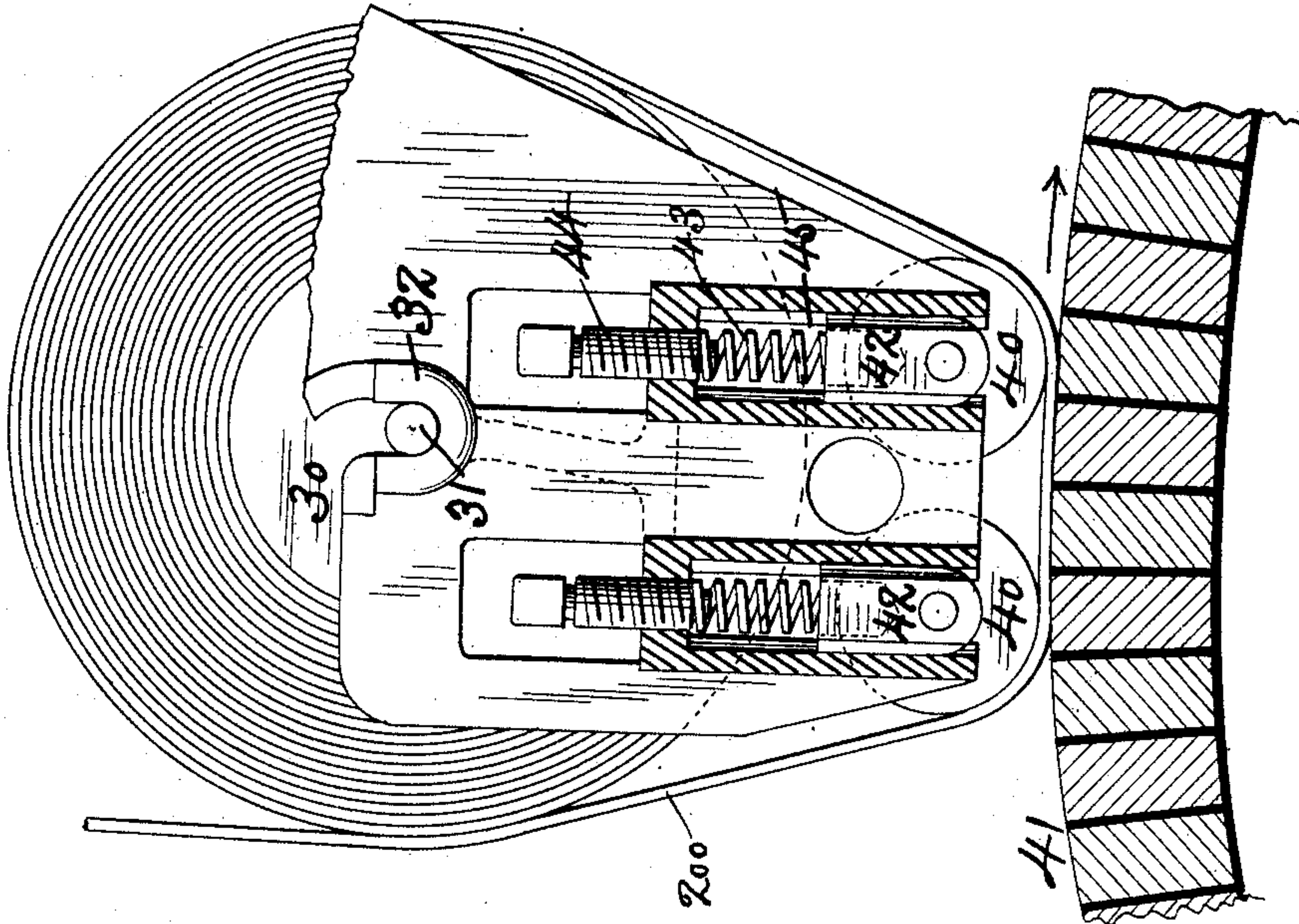


Fig. 2

WITNESSES

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UNITED STATES PATENT OFFICE.

JOHN T. MORROW, OF GREAT FALLS, MONTANA.

CLEANER FOR COMMUTATORS.

SPECIFICATION forming part of Letters Patent No. 618,992, dated February 7, 1899.

Application filed September 29, 1898. Serial No. 692,215. (No model.)

To all whom it may concern:

Be it known that I, JOHN T. MORROW, electrical and mechanical engineer, residing at Great Falls, in the State of Montana, have
5 invented new and useful Improvements in Cleaners for Commutators, of which the following is a description, referring to the accompanying drawings, which form a part of this specification.

10 The invention is principally intended for large generators wherein carbon brushes are employed, although of course it is applicable to other uses. When a motor or generator is running, the carbon brushes disinte-
15 grate and cause an accumulation on the commutator, which eventually results in sparking. My invention provides a mechanism that will automatically wipe the commutator and remove the dust and dirt which would
20 otherwise accumulate on the commutator. The invention obviates, at least to a large extent, the need of using sandpaper or other device for cleaning the commutator from time to time.

25 In the invention a continually-moving piece of cotton fabric or, indeed, any suitable cleaning material is presented to the surface of the commutator. Preferably the fabric or
30 cloth is wound upon one roller at the outset and gradually unwinds, traveling over presser-rolls, which hold it against the surface of the commutator, and is wound upon an automatically-driven roller until all the fabric or
35 cloth has been unwound and drawn over the surface of the commutator. Preferably the device is actuated by a belt or other driving connection from the shaft of the motor or generator to which it is applied.

40 The drawings show one preferred form of the invention, omitting, however, the driving connection and the bracket for supporting the device in place, as this will be supplied in accordance with the need of each style of motor and as the details form no essential
45 part of the invention.

Figure 1 is a side elevation of the device, seen transversely to the shaft of the generator. Fig. 2 is an end view diagrammatically indicating the commutator-segments; and
50 Fig. 3 is a detail view, partly in section, of certain portions of the apparatus.

Throughout the drawings the same numerals indicate similar parts.

The commutator-segments are supposed to be revolving toward the right, as seen in Figs. 55 2 and 3. The frame 10 of the device is suitably supported in relation to the commutator, as indicated in Figs. 2 and 3, screw or bolt holes 11 being indicated as provision for securing and supporting the frame. The
60 belt-wheel 12, driven by any suitable source of power, such as the shaft of the generator or motor, transmits power to the worm-shaft 13. The worm 14 transmits power to the worm-wheel 15, which appears in dotted lines
65 in Fig. 1 and in full in Fig. 2. The worm-wheel 15 turns the vertical worm-shaft 16 and worm 17, which in turn actuates the worm-wheel 18, carried on and turning the shaft 19 of the winding-on drum or reel, which is in-
70 dicated by the convolutions 20 of the fabric 200, which has already been wound upon it. The great reduction in speed caused by the worm-gearing gives a very slow winding-up movement to this drum or reel. 75

The cloth is originally wound upon the drum or reel 30, which is supported free to turn by its shaft 31 in bearings 32 in the frame 10. From the drum or reel 30 the fabric passes over the presser-rolls 40, between
80 them and the surface of the commutator 41, and thence onto the winding-on drum or reel, as already described.

The frame 10 being supported in a fixed position, yielding pressure against the commu- 85 tator-surface is produced as follows: The presser-rolls 40, supported in bearing-blocks 42, are pressed toward the commutator by springs 43. Springs 43 react against the screws
90 44, so that by adjusting screws 44 the pressure of the rolls 40 against the commutator can be regulated at will. The lower ends of the springs 43 rest in sockets in the blocks 42, as indicated in dotted lines in Fig. 3. The blocks 42 are fitted into and movable
95 within the slotted recesses 45 in the frame 10, as very fully shown in Figs. 2 and 3. As the commutator 41 travels in an opposite direction to the movement of the cloth or fabric and as the cloth or fabric has a slow but posi- 100 tive travel against the tension due to friction upon the commutator, it follows that a con-

tinuous cleaning action and a removal of the accumulating dust and dirt in a direction opposite to the movement of the commutator is effected by my device.

- 5 Having now fully and in sufficient detail illustrated and described my improvement in the form which I at present believe to be best, I claim as the novel characteristics of my invention the following features:
- 10 1. A cleaning device for commutators provided with means for drawing cleaning fabric or material over the surface of the commutator and means for pressing the material yieldingly against the commutator, substantially as set forth.
 - 15 2. A cleaning device for commutators combining a winding-on drum or reel for the cleaning fabric or material and power-driven connections for turning such drum or reel, substantially as set forth.
 - 20 3. A cleaning device for commutators combining a winding-on drum or reel for the cleaning fabric or material and one or more presser devices, over which the material passes, pressing it against the surface of the commutator, substantially as set forth.
 - 25 4. A cleaning device for commutators combining a winding-on drum or reel for the cleaning fabric or material, a winding-off or supply drum or reel, and means for pressing the material at some point against the surface of the commutator, substantially as set forth.
 - 30 5. A cleaning device for commutators combining a winding-on drum or reel for the

cleaning fabric or material, one or more presser-rolls over which the material passes, a winding-off drum or reel, and means delivering the material gradually from the winding-off to the winding-on drum or reel, substantially as set forth.

6. A cleaning device comprising means for holding cleaning fabric or material in contact with the surface of a moving commutator and means for giving a slow and gradual travel to the fabric or material against the motion of the commutator-surface, substantially as set forth.

7. A cleaning device combining a frame, a winding-on drum or reel, one or more worm-and-wheel reduction-gearing, for actuating such drum or reel, and connections for actuating such gearing, substantially as set forth.

8. A cleaning device combining, a frame, means for movably supporting thereon cleaning fabric or material, one or more presser-rolls over which the said material passes, one or more bearing-blocks movably mounted in the frame and carrying the said roll or rolls, and means for yieldingly pressing the said block or blocks toward the surface to be cleaned, substantially as set forth.

Signed this 19th day of August, 1898, at Great Falls, Montana.

JOHN T. MORROW.

Witnesses:

WENDELL F. BECKER,
HAROLD BINNEY.