

No. 747,765.

PATENTED DEC. 22, 1903.

E. D. PRIEST.
RAILWAY MOTOR.

APPLICATION FILED SEPT. 16, 1902.

NO MODEL.

Fig. 1.

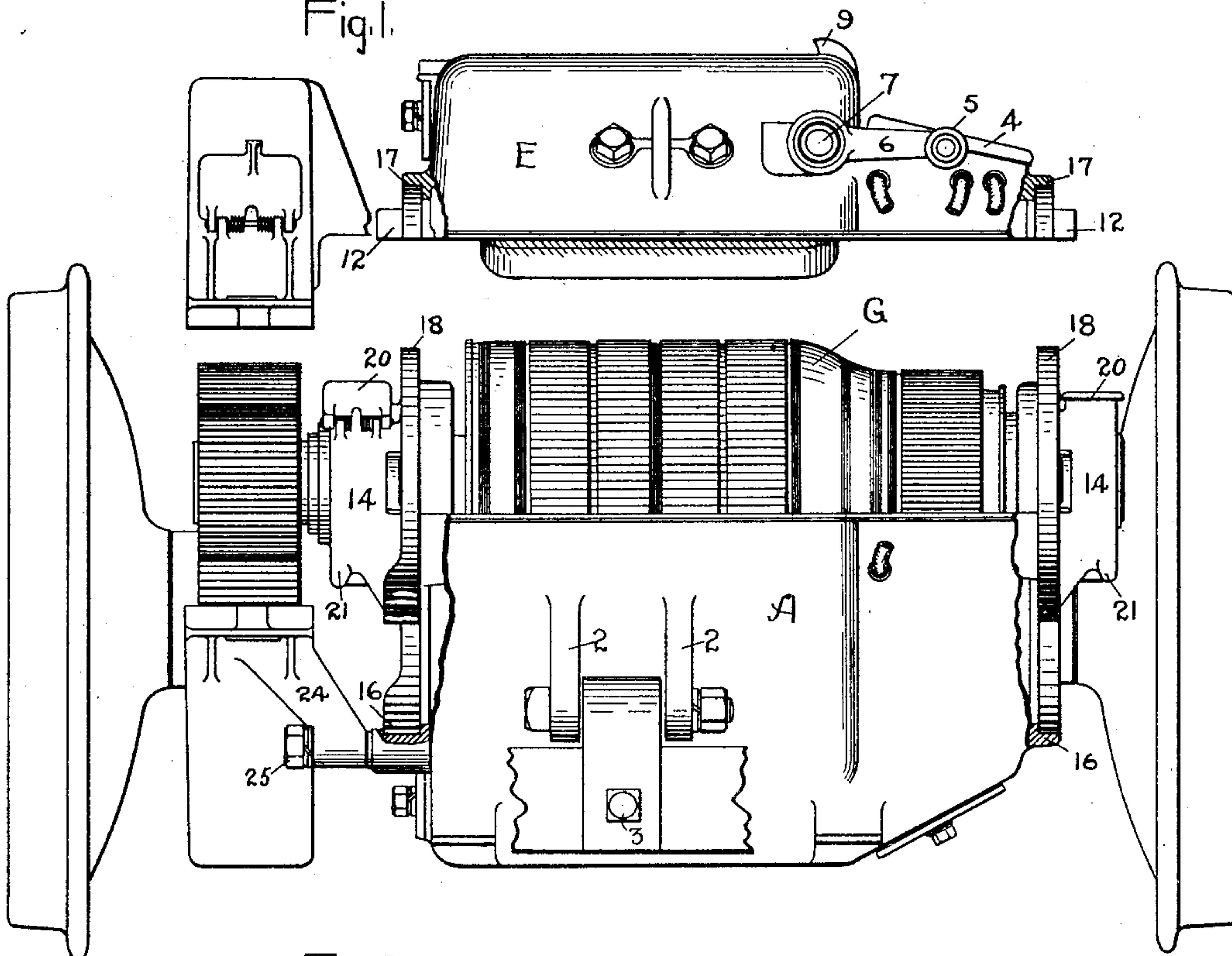
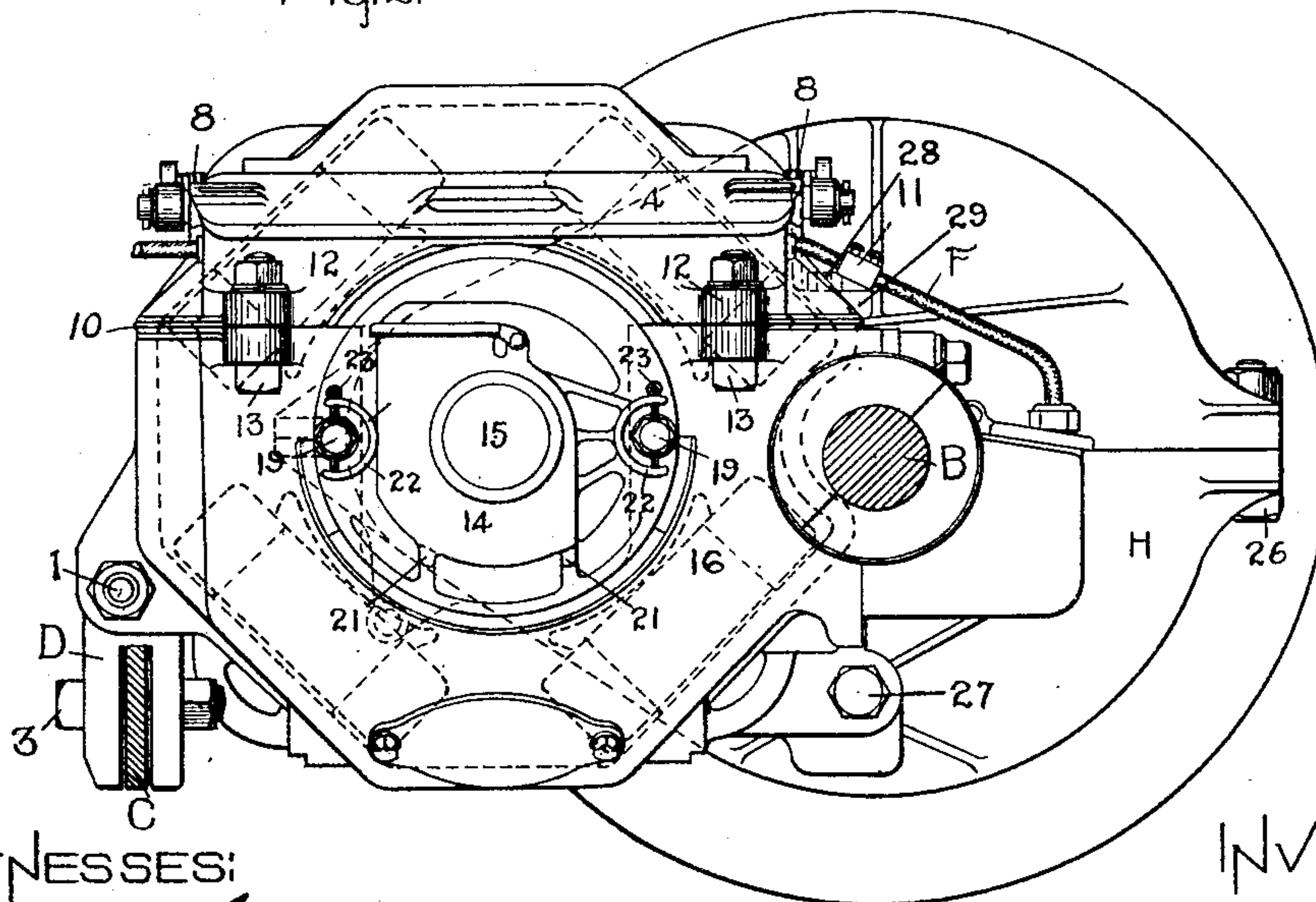


Fig. 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

EDWARD D. PRIEST, OF SCHENECTADY, NEW YORK, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

RAILWAY-MOTOR.

SPECIFICATION forming part of Letters Patent No. 747,765, dated December 22, 1903.

Application filed September 16, 1902. Serial No. 123,635. (No model.)

To all whom it may concern:

Be it known that I, EDWARD D. PRIEST, a citizen of the United States, residing at Schenectady, county of Schenectady, State of New York, have invented certain new and useful Improvements in Railway-Motors, of which the following is a specification.

My invention relates to frames for dynamo-electric machines, and especially for inclosed railway-motors.

As railway-motor frames have been constructed heretofore they have been either of the one-part box type, with the armature removable endwise therefrom, or of the split type, divided substantially in the plane of the axis of the armature and the truck-shaft, with the lower part adapted to be let down in order to permit of inspection and repair of the armature and associated parts. The box type, while possessing many advantages, such as rigidity and few parts, is nevertheless objectionable on account of the difficulty with which the operative parts may be inspected and repaired. The split types as made heretofore, while permitting of more ready access to the operating parts than the box type, are, however, more objectionable on account of the tendency of the parts to work loose, and the consequent disalignment of the bearings.

The object of my invention is to provide a motor-frame which may be readily opened to permit of inspection and removal of operating parts and at the same time possess all the advantages of the box-frame.

My invention will be more readily understood by reference to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation of a motor embodying my invention with the upper part of the frame and the armature raised from the lower part and with certain parts shown broken away, and Fig. 2 is an end elevation of the motor with the supporting cross-bar and axle of the truck shown in section.

As shown in the drawings, the motor-frame A is of the well-known form with four field-poles, one projecting inwardly from each of the inclined sides. The frame is supported at one side on the truck-axle B by means of

bearings connected thereto and at the other on the cross-bar C of the truck by means of the clip D, which engages at its upper end with a bolt 1, carried by lugs 2, integral with the frame A, and at its lower end with the cross-bar C and held thereon by the bolt 3.

In order that the commutator end of the frame A may be opened to permit easy access to the brushes and connections, a pivoted trap 4 is provided at the upper side of that end of the frame. The trap 4 is pivoted at its middle to the ends 5 of the links 6, carried on stub-shafts 7 upon opposite sides of the frame A, and about which are coiled springs 8, which act to hold the trap 4 securely pressed upon its seat. At the top of the frame A a lug 9 is provided to engage the edge of the trap 4 and hold it out of the way when raised.

In order that the armature may be readily inspected, the frame A is split or divided on a plane 10 considerably above the plane of the axis of the armature and the truck-axle B and below the lower points of attachment of the upper two field-poles with the frame, so that the upper portion E may be removed without interference with any of the bearings or connections other than the circuit-wires F, and these wires F may be readily disconnected at the splice-blocks 11. The upper part E of the frame may be secured to the lower part by lugs 12 and bolts 13, located at or near each of its four corners.

In order that the armature G may be removed from the frame A, the bearings 14 for its shaft 15 are detachably connected to the frame and are adapted to be raised therefrom with the armature by slinging about the outer ends thereof. The lower part of frame A has recesses in its ends, as indicated in dotted lines, extending vertically on opposite sides of the armature-shaft in Fig. 2 and semicircular ribs 16, projecting from the planes thereof. The upper part E of the frame has corresponding ribs 17, but considerably less than a half-circle in extent. The bearings 14 are extended into large disks 18, which are adapted to rest upon the ends of the frame A and engage at their peripheries with the ribs 16 and 17, and be thereby securely held against radial movement when the upper part E of the frame is

in place. Bolts 19 extend through the opposite sides of the disks 18 and the portions of the walls of the lower part of the frame overlapped by the disks and serve to securely clamp the bearings upon their seats. The bearing-pieces 14 have the usual oil-boxes 20, and on the lower edges are fingers 21, adapted to prevent the sling-rope from slipping over the ends of the boxes. Around the bolts are semicircular webs 22, which serve to protect the nuts and also to provide supports for the nut-locking means 23.

The gear-case H is split in a plane passing through the axes of the armature and truck-axle, and the respective halves are adapted to be held together by bolts 26, passing through lugs at the ends thereof. Three points of suspension are provided between the gear-case H and the lower half of the motor-frame A, consisting of the bracket 24 and horizontal bolt 25 at the pinion end, the horizontal bolt 27, located vertically beneath the truck-axle B, and the vertical bolt 28, extending through a lug 29, projecting horizontally from the gear-case above the truck-axle and overlying a corner of the upper surface of the lower part of the split frame and tapped into the said frame. It is to be noted that this arrangement provides the same rigid support for the gear-case as in the box type of motor, and at the same time the upper half is left entirely free therefrom.

The motor-frame is provided with the usual accessories for cleaning and wiring; but as these in no way constitute any part of my invention no description thereof will be made here.

By the above arrangement the disadvantages and objections of the downwardly-opening split frames are entirely overcome and the necessity of disconnecting the motor from the truck, as where the box type of frame is used, is entirely avoided.

My invention is applicable to substantially all forms of inclosed motors, and I therefore do not restrict myself to the form shown and described. Moreover, many changes of proportions and details may be made without departing from the spirit of my invention.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. A split frame for dynamo-electric machines, having a flanged or disk-shaped bearing for the armature adapted to seat against the end of one part of said frame, and means for clamping said bearing to its seat.

2. A split frame for dynamo-electric machines, having ribs on the ends of the frame, bearings for the armature-shaft adapted to seat against the ends of the frame and engage

said ribs, and means for securing said bearings to one part of the split frame.

3. A frame for multipolar dynamo-electric machines divided into unequal parts, and having flanged or disk-shaped bearings for the armature-shaft secured to the larger part of the split frame by transverse bolts, and means carried by both parts of said frame for peripherally holding said flanged bearings.

4. A frame for railway-motors having thereon bearings for the truck-axle, and flanged or disk-shaped bearings for the armature-axle detachably secured to said frame by transverse bolts, said frame being divided above the plane of said bearings and each part thereof provided with means for peripherally engaging said flanged bearings.

5. A frame for multipolar railway-motors having thereon bearings for the armature-shaft and the truck-axle, said frame being divided out of the plane of said bearings with an equal number of poles upon each part thereof and the larger part of said frame being provided with recesses for detachably receiving the armature-bearings.

6. A motor-frame having an opening in the upper part thereof, a trap for said opening having centrally-located pivots upon its ends, and spring-pressed arms or links pivoted to said frame and engaging the pivots upon said trap.

7. The combination of a split frame for car-motors, and a gear-case connected to one part of said split frame at points on opposite sides of the car-axle.

8. The combination of a split frame for car-motors, and a split gear-case connected to one part of said frame at three points triangularly located.

9. The combination of a frame for car-motors unequally split in a plane above the axles of the car-truck and the armature, and a gear-case connected to the lower part of said frame at two points above and below the truck-axle and one near the pinion end thereof.

10. The combination of a frame for car-motors unequally split in a plane above the axles of the car-truck and the armature, a gear-case having lugs or brackets extending toward the lower part of the frame above and below the plane of division thereof, and bolts passing through said lugs or brackets and engaging said frame.

In witness whereof I have hereunto set my hand this 15th day of September, 1902.

EDWARD D. PRIEST.

Witnesses:

EDWARD WILLIAMS, Jr.,
HELEN ORFORD.