

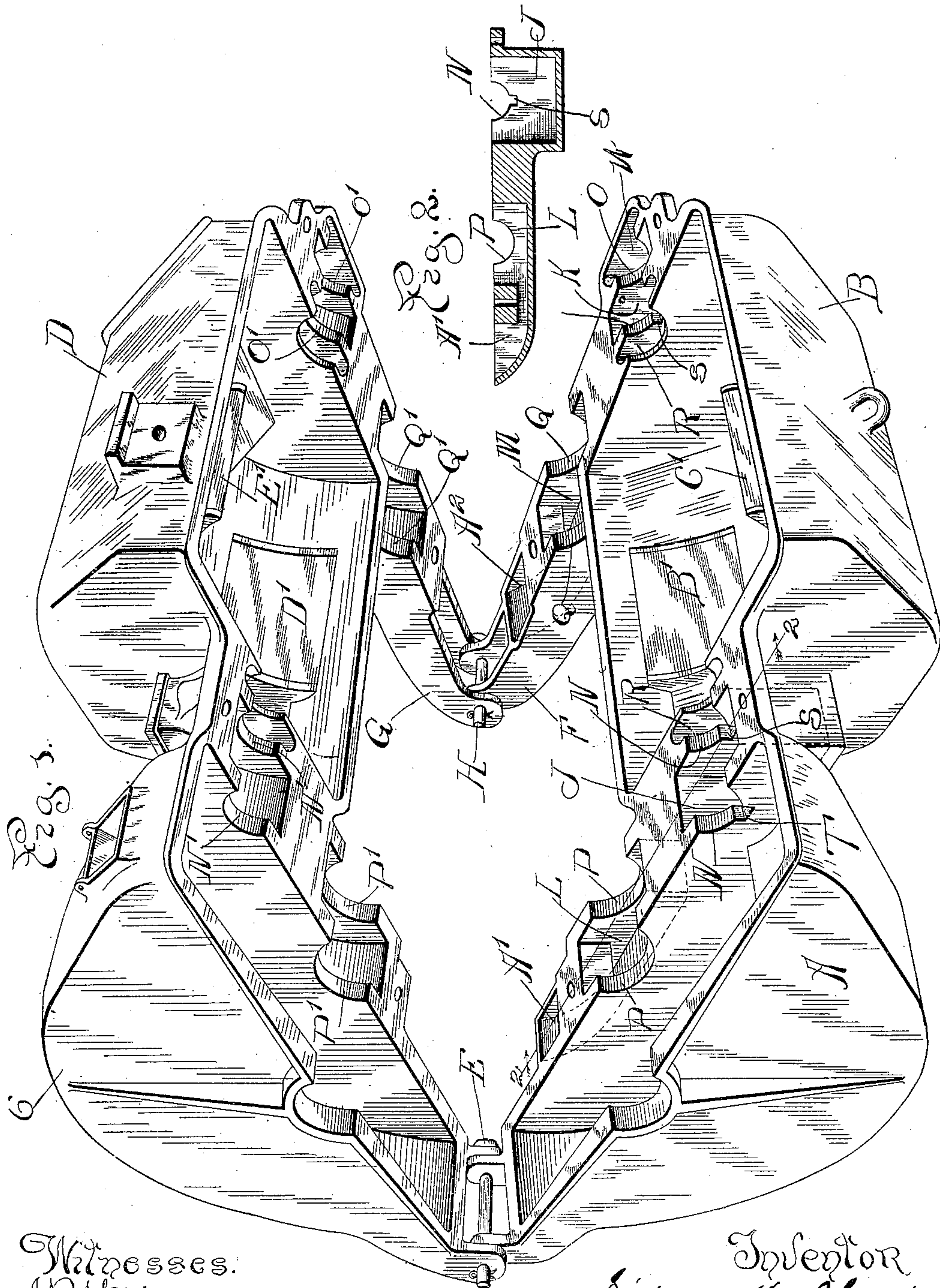
No. 646,467.

Patented Apr. 3, 1900.

S. H. SHORT.  
MOTOR FRAME.

(Application filed Oct. 15, 1898.)

(No Model.)



Witnesses:  
W. H. Weir  
E. C. Sample

Inventor  
Sidney H. Short  
By *Maxwell & Hardy*  
Attorneys



# UNITED STATES PATENT OFFICE.

SIDNEY H. SHORT, OF CLEVELAND, OHIO, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE WESTINGHOUSE ELECTRIC AND MANUFACTURING COMPANY, OF PITTSBURG, PENNSYLVANIA.

## MOTOR-FRAME.

SPECIFICATION forming part of Letters Patent No. 646,467, dated April 3, 1900.

Application filed October 15, 1898. Serial No. 693,612. (No model.)

*To all whom it may concern:*

Be it known that I, SIDNEY H. SHORT, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new and useful Motor-Frame, of which the following is a specification.

This invention relates to motor-frames.

The object of the invention is to simplify the construction and arrangement of motor-frames for street-car motors, to reduce the cost of manufacture thereof, and to provide means for efficiently lubricating the motor-shaft and axle-bearings.

The invention consists, substantially, in the construction, combination, location, and relative arrangement of parts, all as will be more fully hereinafter set forth, as shown in the accompanying drawings, and finally specifically pointed out in the appended claims.

Referring to the accompanying drawings and to the views and reference-signs appearing thereon, Figure 1 is a view in perspective of a motor-frame embodying the principles thereof, the upper half of such frame being raised or opened. Fig. 2 is a detail sectional view on the line 2 2, Fig. 1, looking in the direction of the arrows.

Heretofore in the construction of motor-frames for street-car motors it has generally been the custom to cast the gear-casing separately from the motor-field-magnet frame and then securely bolt these parts together. This practice has necessitated machine-work upon the parts to properly fit them together and to provide the bolt-holes for securing said parts firmly together, thus increasing the cost of manufacturing such frames. In carrying out my invention I propose to cast the gear-casing integrally with the field-magnet frame, thus dispensing with the necessity of machine-work and fitting of the parts. In practice it is usual to cast the field-magnet frame and also the gear-casing in two halves or parts, and in embodying my invention I cast the lower half A of the gear-casing integral with the lower half B of the field-magnet frame, and similarly I cast the upper half C of the gear-casing integrally with the upper half D

of the motor-field-magnet frame. By this arrangement no machine-work or fitting is required and the use of securing-bolts for connecting the gear-casing to the field-magnet frame is dispensed with, and yet these parts are held in constant relation with each other. In order that the upper half or integral casting of the frame may be conveniently raised from the lower half to permit of ready access to the motor-armature for inspection, replacement, or repair, the ends of the two halves A C of the gear-casing are hinged together at E. Arranged to extend from the two portions B D, respectively, of the motor-casing are the integral arms F G, and these arms are suitably hinged together, as at H, the axes E and H being in alinement with each other and at equal distances from the car-axle bearings.

I will now describe the construction for efficiently lubricating the motor-shaft and axle.

The casting, which includes the lower half B of the motor-casing and the portion or lower half A of the gear-casing integral therewith, is suitably cored out, as at J K L M, to form oil-chambers, the chambers J K being arranged under the bearings N O of the motor-shaft and the chambers L M being arranged under the bearings P Q of the axle. At the inner sides of these bearings N O suitable cavities R are cored out to form receptacles for oil-drippings forced out of the bearings, and suitable notches or openings S are provided between the cavities R and the oil-chambers J K to permit the oil collected in the cavities R to drain back into the oil-chambers. A similar notch or opening T is provided in the bearing N on the side toward the integral gear-case to permit an overflow of the oil in the oil-chamber J into the interior of the gear-case. At the outer side of bearing O a cavity W is cored out to receive the overflow of oil from chamber K.

The casting or frame is suitably cored out, as at A' A<sup>2</sup>, to form passages delivering into the axle-bearing oil chambers or wells L M to enable the oil and waste to be introduced to the axle-bearings.

Of course the upper half of the casting or integral frame is provided with the bearing-



seats N' O' P' Q' for the motor-shaft and axle, similar to the bearing-seats N O P Q in the lower half.

Reference-signs B 'C' D' E' designate the  
5 ordinary pole-pieces of the motor-field magnet, the motor-armature not being illustrated, in order to secure clearness in the drawings.

Having now set forth the object and nature of my invention and a construction and  
10 arrangement embodying the principles thereof, what I claim as new and useful and of my own invention, and desire to secure by Letters Patent, is—

1. In a motor-frame, castings, each comprising a section of motor-casing and an integral section of gear-case, and having an arm integral with said motor-casing section, said castings being hinged together at the

gear-casing sections and at the extremities of said arms, as and for the purpose set forth. 20

2. In a motor-frame, a casting comprising a section of motor-casing and a section of gear-casing formed integrally therewith, said casting provided with bearing-seats for the motor-shaft and with oil-chambers adjacent 25 to such bearing-seats, said oil-chamber adjacent to the gear-case section communicating therewith to overflow therein, as and for the purpose set forth.

In witness whereof I have hereunto set my  
hand, this 12th day of October, 1898, in the presence of the subscribing witnesses. 30

SIDNEY H. SHORT.

Witnesses:

JOHN J. BEVER,

M. A. KENSINGER.