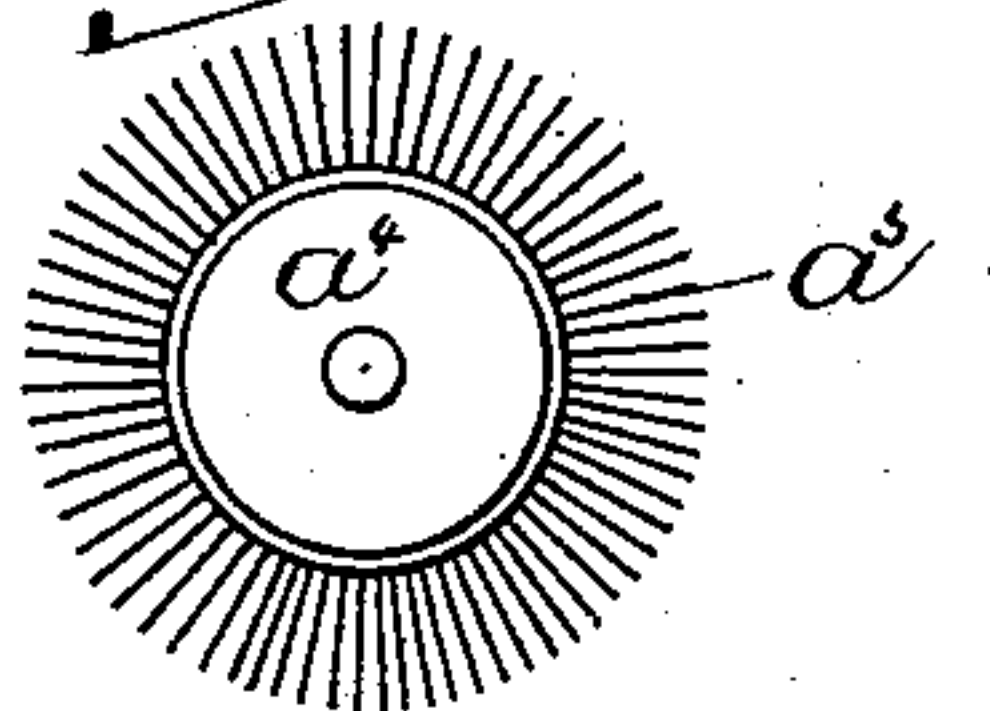
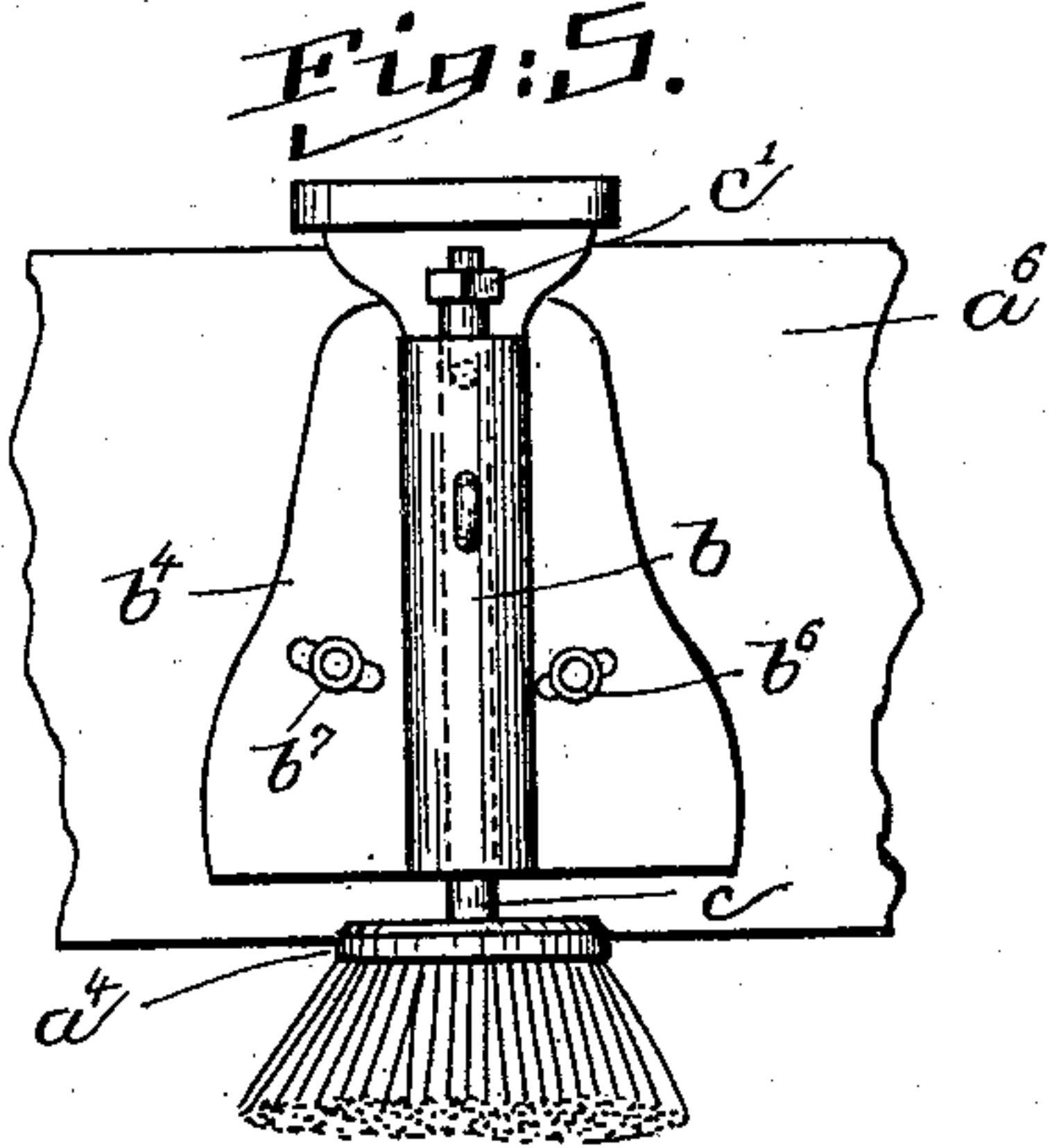
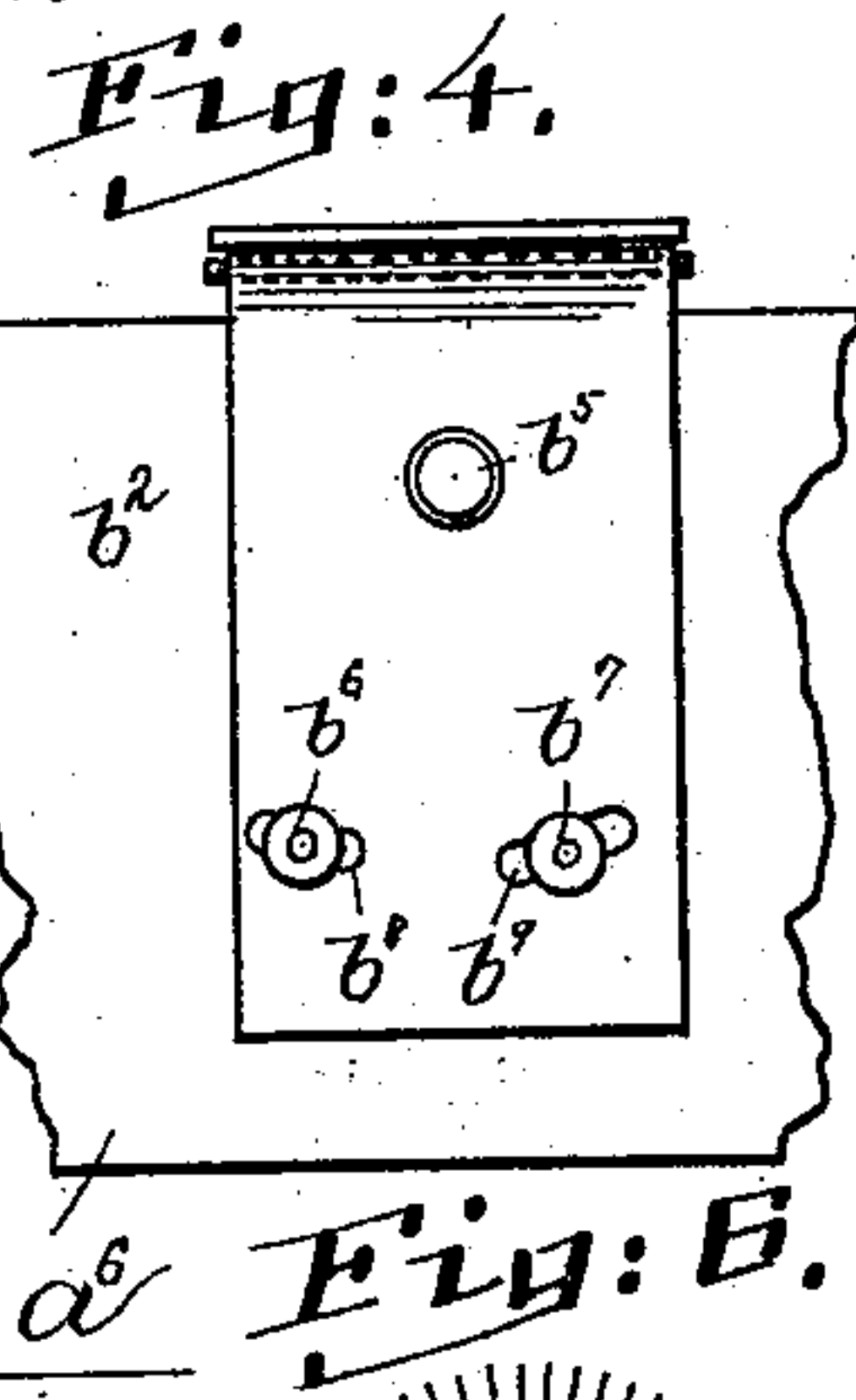
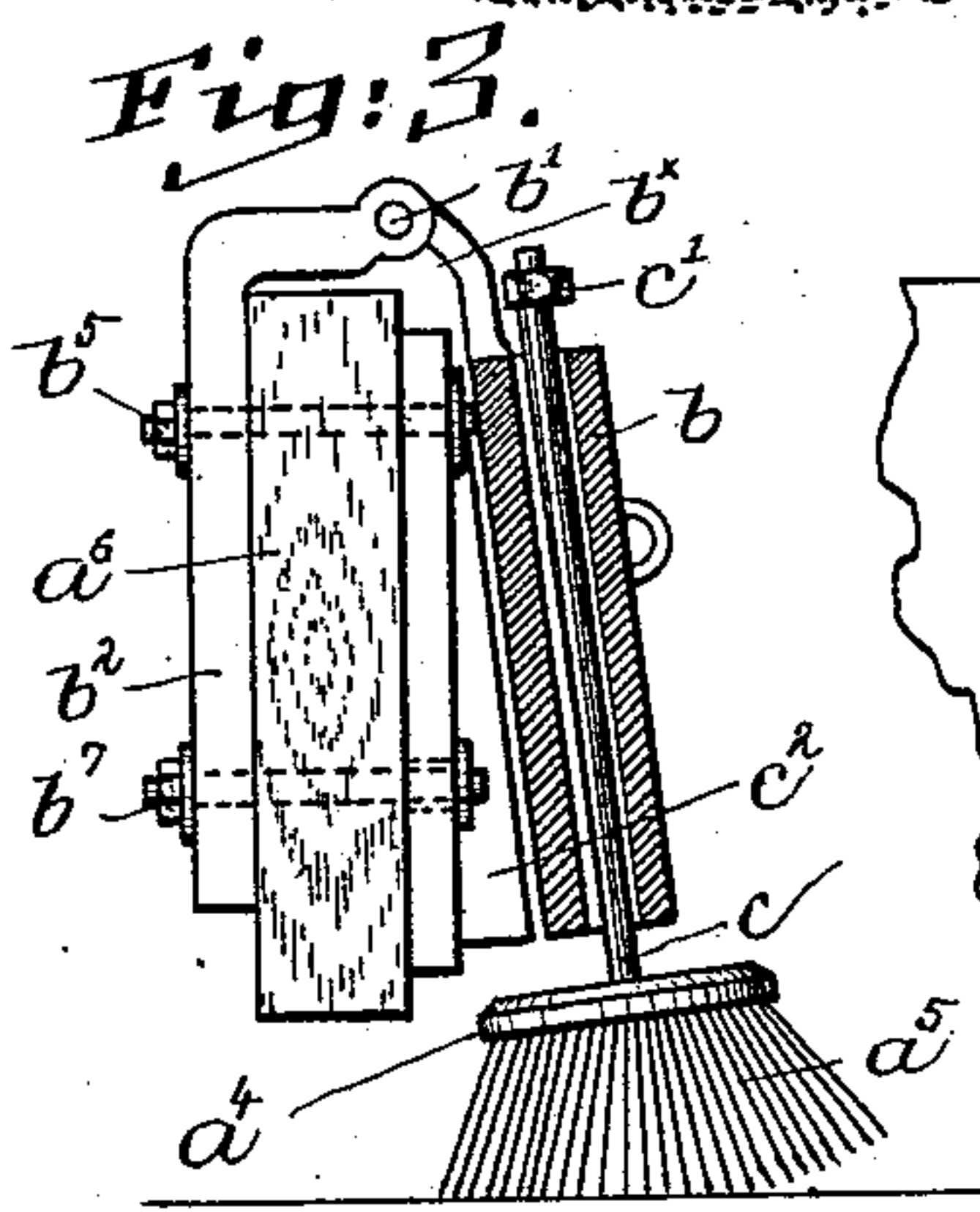
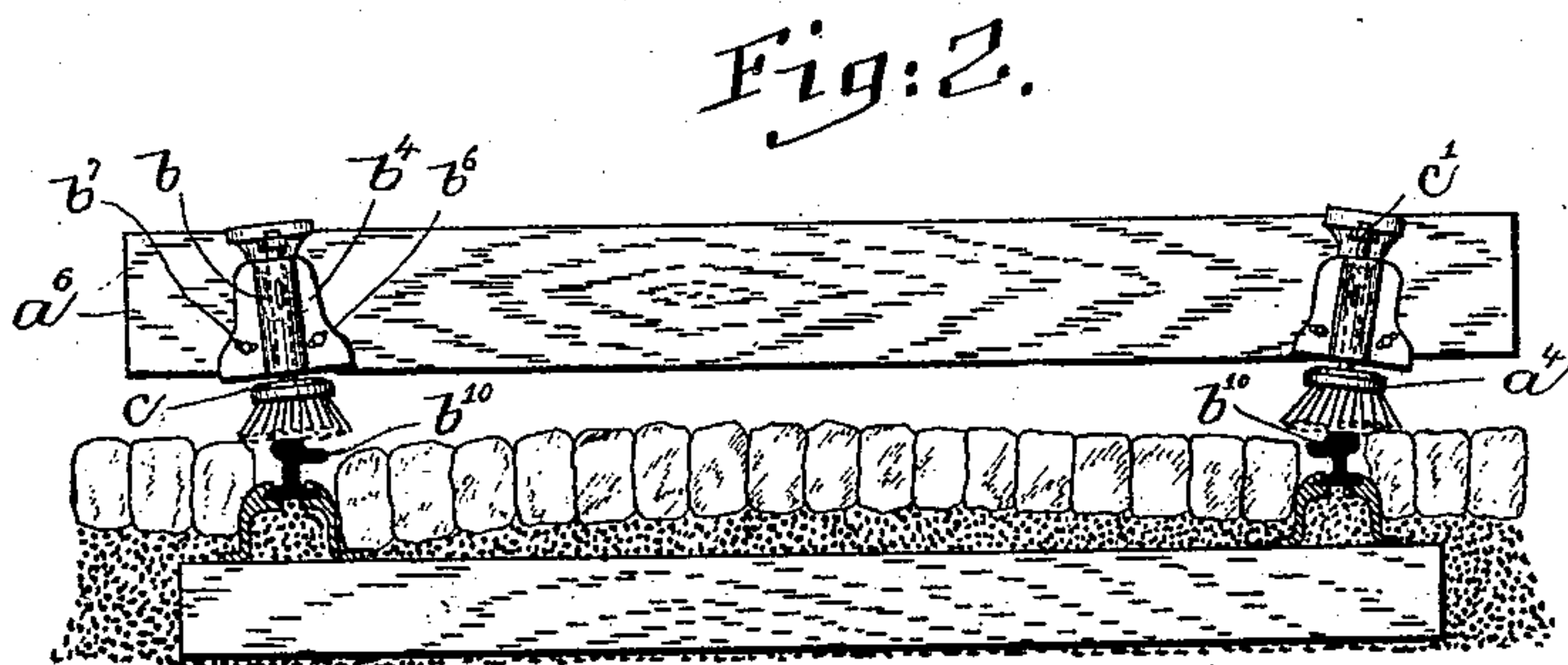
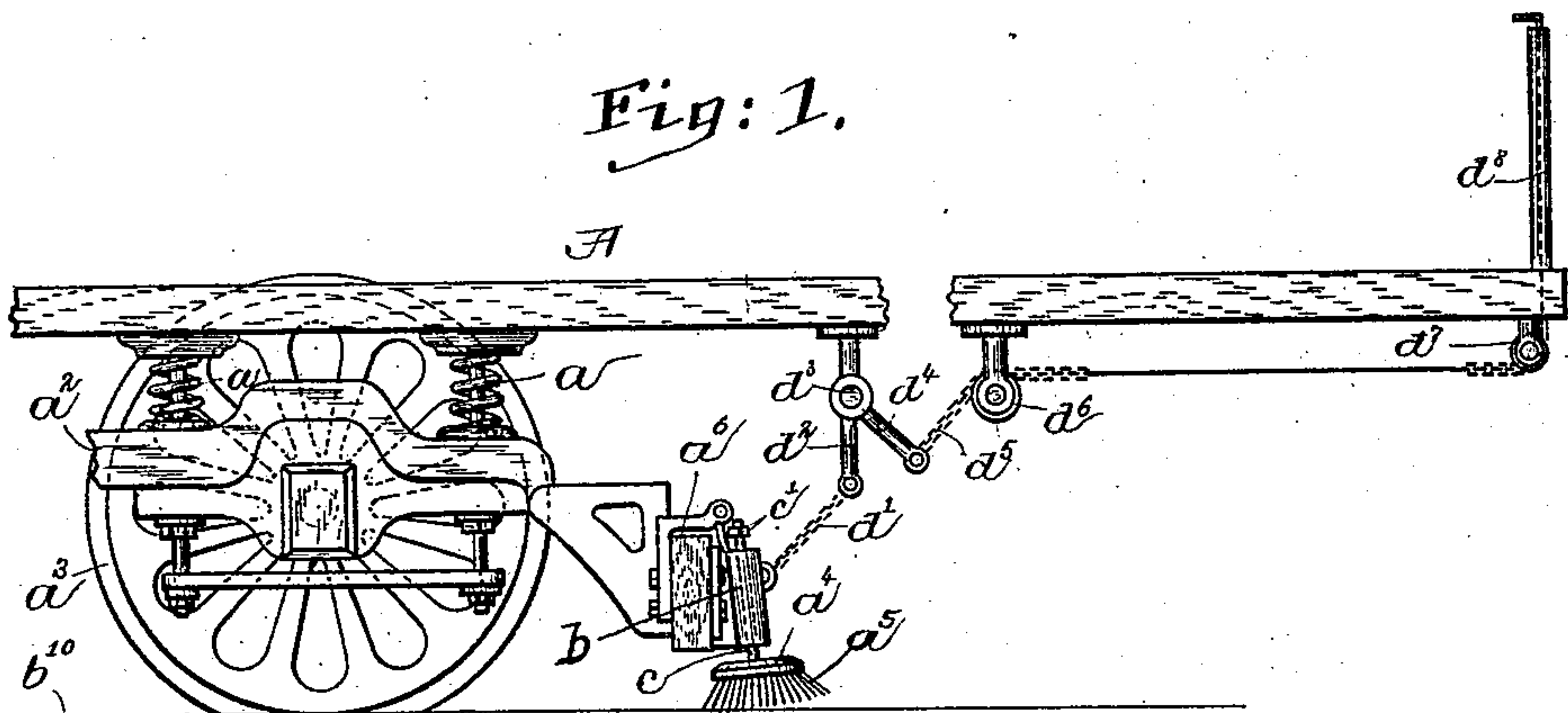


(No Model.)

P. A. DOWD & T. LONG.
TRACK CLEANING APPARATUS.

No. 471,814.

Patented Mar. 29, 1892.



Witnesses.
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UNITED STATES PATENT OFFICE.

PETER A. DOWD AND THOMAS LONG, OF BOSTON, MASSACHUSETTS.

TRACK-CLEANING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 471,814, dated March 29, 1892.

Application filed April 23, 1891. Serial No. 390,112. (No model.)

To all whom it may concern:

Be it known that we, PETER A. DOWD and THOMAS LONG, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Track-Cleaning Apparatus, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to a track-cleaning apparatus especially adapted to be used for cleaning the tracks of street-railways.

Prior to this invention we are aware that a flat brush rigidly secured to the car has been used; but experience has demonstrated that such a device, although effective when first applied, soon wears away and rapidly becomes useless for the purpose intended. So, also, we are aware that a revolving brush having its axis mounted horizontally and parallel with the track or roadway has been used; but such a construction is objectionable, owing to the brush becoming rapidly clogged or filled up with mud and dirt. In accordance with our invention the car has attached to it one or more gravitating brushes, there preferably being one for each rail of the track, and the said brushes are preferably secured to the car-truck or to the guard-bar carried thereby, so that the axis of the brush is at an angle to the rail to be cleaned. The gravitating brush is preferably made circular in shape and is for the best results made rotatable, as by inclining its axis to the rail of the track. When inclined, only a small portion of the rotatable brush is in contact with the ground and rail at any one time and that portion in contact sweeps transversely across the rail.

Our improved track-cleaning brush or apparatus may be loosely carried by an adjustable support or guide, in which it is free to rise and fall, and by means of which the said brush may be tipped or inclined to any desired angle with relation to the rail to cause a greater or less amount of the brush to come in contact with the ground and with the rail to be cleaned.

Our invention in track-cleaning apparatus therefore consists in the combination, with the car, of a gravitating rotatable brush loosely carried thereby and free to rise and

fall, the said brush being rotated by contact with the track, substantially as will be described.

Other features of our invention will be pointed out in the claims at the end of this specification.

Figure 1 represents a sufficient portion of a street-railway car provided with our improved track-cleaning apparatus to enable the invention to be understood. Fig. 2 represents a portion of a roadway and the guard-bar of a car provided with our improved track-cleaning brushes; Fig. 3, a detail, on an enlarged scale, in elevation and section to more clearly show the construction of the apparatus; Figs. 4 and 5, details to be referred to, and Fig. 6 a detail of the brush.

Referring to Fig. 1, A may represent the body of a street-car of ordinary construction, it being supported, as herein shown, upon springs a , resting upon a truck-frame a^2 of any usual construction, supported on the car-axes, provided with the wheels a^3 .

The railway-car is provided with our improved track-cleaning apparatus, preferably made as a circular brush a^4 , having its bristles a^5 extended outward therefrom, as represented in Fig. 6. The brush a^4 is preferably attached to the usual guard-bar a^6 , fastened to the car-truck, and extended across the track by a brush-carrier or supporting-guide, (herein shown as a sleeve or cylinder b ,) provided with an arm b^x , pivoted, as at b' , to a metal plate or casting b^2 , secured to the guard-bar, the said plate or casting being for the best results fastened to a plate or casting b^4 on the front side of the guard-bar. The plates or castings b^2 b^4 are secured together, as herein shown, by a bolt or threaded rod b^5 , forming a pivot for the said plates, and by bolts or rods b^6 b^7 , extended through slots b^8 b^9 in the said plates or castings, and by means of which the brush-carrier may be adjusted laterally with relation to the rails b^{10} of the track, so as to place the brush in correct working position. The brush a^4 is secured to its carrier b , as herein shown, by means of a handle, stem, or axis c , extended loosely through the sleeve b and provided above the said sleeve with an adjusting device or nut c' , by which vertical movement or play of the brush may be regulated, as desired. The brush-carrying sleeve

or cylinder b may be set obliquely with relation to the guard-bar a^6 by means of a wedge-shaped bar c^2 , (herein shown as forming part of the casting or plate b^4 ;) but, if desired, the said sleeve may be adjusted in any other suitable manner—for instance, by means of the pivoted bolt or rod b^5 , which may be extended beyond the casting or plate b^4 more or less, according to the inclination it is desired to give the brush-carrying sleeve. By adjusting the brush-carrier b as described the brush is inclined with relation to the ground and to the rail of the track, so that a greater or less portion of the brush is brought in contact with the ground and with the said rail, as may be desired. The brush is rotated by the movement of the car, and preferably only a substantially small portion of the brush is in contact with the ground and with the rail at any one time, and at the same time the brush is free to rise and fall at irregularities in the track, it being guided in its upward movement by the sleeve b and being acted upon by gravity to keep it in contact with the ground and with the rail, or it may be by gravity assisted by a spring or weight. (Not shown.)

As represented in Fig. 1, the track-cleaning brush may be lifted out of contact with the rail by suitable mechanism under control of the operator on the platform of the car. The mechanism, as herein shown, consists of a chain or flexible connection d' , joining the sleeve b to an arm d^2 on a rock-shaft d^3 , supported in suitable bearings below the car-body, the said rock-shaft having a second arm d^4 , to which is secured one end of a flexible connection d^5 , passed over a pulley d^6 , under a pulley d^7 , and up through a suitable guide or tube d^8 , where the said flexible connection may be secured in any suitable manner.

Our improved track-cleaning apparatus is especially designed to be used on electric street-railway cars to keep the rails free from sand, mud, snow, or other insulating bodies, and thus present a substantially clean rail to the wheel, for in practice it frequently happens that the resistance interposed in the motor-circuit by sand, snow, dirt, &c., on the rail is so great as to diminish the current to such extent that the car will travel at an abnormally slow speed and oftentimes stop, even when the full current is supplied to the motor. The ground or rail acts as a medium by contact with which the brush is rotated as the car is moved. The axis or handle of the

brush is at an angle with the rail of the track, and when a circular brush is used it sweeps transversely across the rail, and by reason of the small portion of the brush being in contact with the rail at any one time the brush is self-cleaning, the dirt, mud, &c., being thrown away from the brush by centrifugal action.

We claim—

1. In a track-cleaning apparatus for railway-cars, the combination, with the car, of a gravitating rotatable brush loosely carried thereby and free to rise and fall, the said brush being rotated by contact with the track, as and for the purpose specified.

2. In a track-cleaning apparatus for railway-cars, the combination, with the car, of a gravitating rotatable brush inclined with relation to the rail of the track and rotated by contact with the same, substantially as described.

3. In a track-cleaning apparatus for street-railway cars, the combination, with the car, its truck, and guard-bar, of a brush-carrier consisting of a sleeve pivotally supported by the guard-bar, a circular brush provided with a handle or stem extended loosely into said sleeve, and means to adjust the said sleeve with relation to the guard-bar, substantially as described.

4. In a track-cleaning apparatus for street-railway cars, the combination, with a car, its truck, and guard-bar, of a brush-carrier located at an angle to the track and a rotatable brush carried by said carrier, substantially as described.

5. In a track-cleaning apparatus for street-railway cars, the combination, with the car and brush-carrier attached thereto, of a gravitating rotatable brush loosely carried by said carrier and rotated by contact with the track, substantially as described.

6. In a track-cleaning apparatus for street-railway cars, the combination, with a guide b , attached to the car at an angle to the track, of a rotatable brush having its axis or handle extended loosely into said guide, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

PETER A. DOWD.
THOMAS LONG.

Witnesses:

JAS. H. CHURCHILL,
E. L. RICHARDS.