No. 860,242. PATENTED JULY 16, 1907.

A. PARKER-SMITH.

SLACK ADJUSTER.

APPLICATION FILED NOV. 21, 1906.

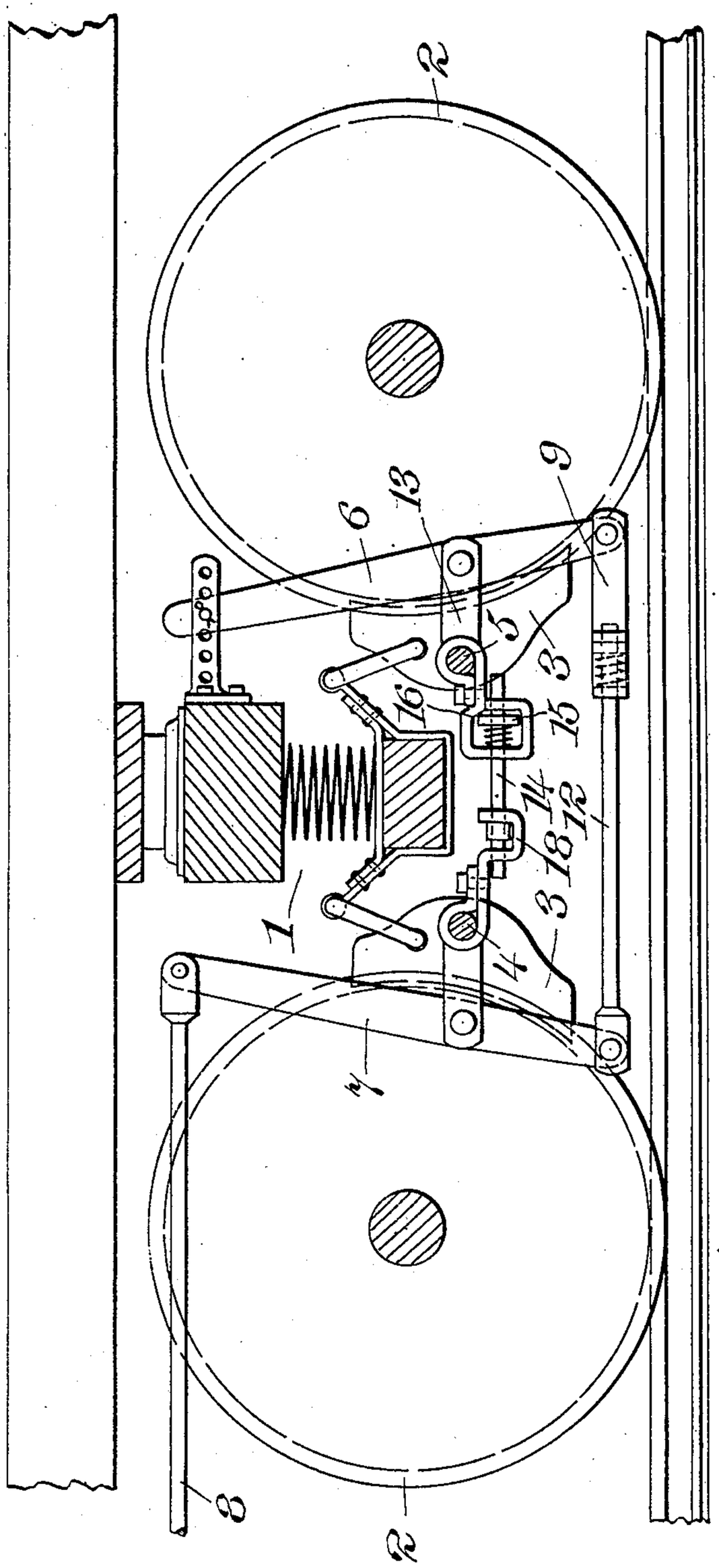

Fig. 1.

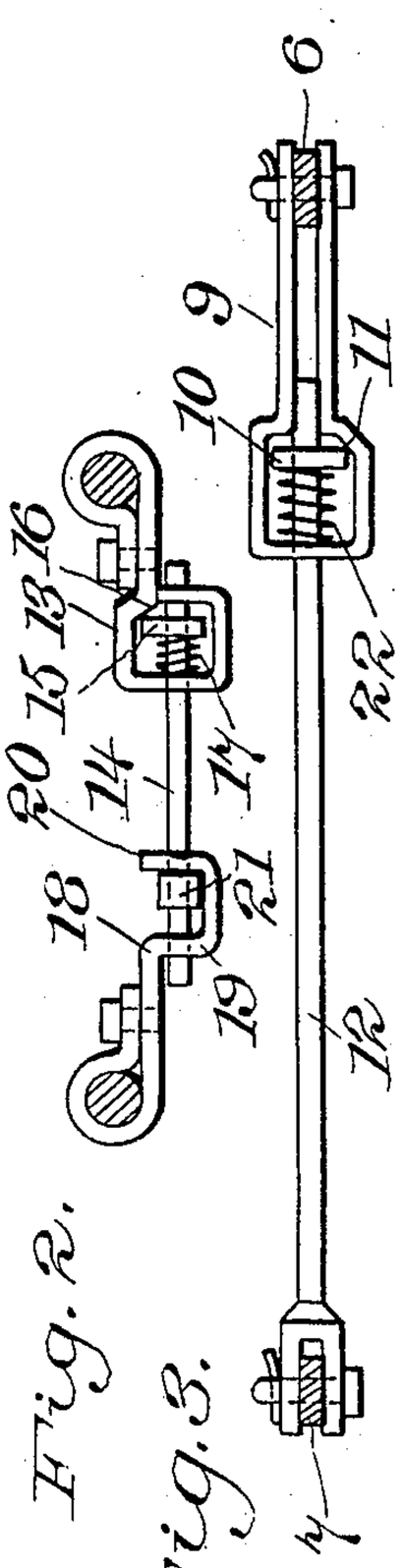

Fig. 2.

Fig. 3.

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SLACK-ADJUSTER.

No. 860,242. Specification of Letters Patent. Patented July 16, 1907.

Application filed November 21, 1906. Serial No. 344,435.

To all whom it may concern:

Be it known that I, AUGUSTUS PARKER-SMITH, a citizen of the United States of America, and a resident of the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Slack-Adjusters, of which the following is a specification.

My invention relates to mechanism for automatically adjusting the brake rigging on a railway or other car so that a uniform maximum of travel of the piston will be preserved as the brake shoes wear down.

The best form of apparatus at present known to me embodying my invention is shown in the accompanying drawings in which:

Figure 1 is a side elevation and partial section of the ordinary car truck and brake rigging thereon with my invention applied thereto. Fig. 2 is an enlarged detail of the take-up rod, and Fig. 3 is an enlarged detail of the bottom rod taken on a plane at right angles to that of Fig. 1, the brake levers being shown in section.

Throughout the drawings like reference figures indicate like parts.

1 is the car truck having wheels 2, 2, on which are applied the brake shoes 3, 3, by means of the brake beams 4 and 5, the ordinary "dead" lever 6, "live" lever 7 and top rod 8.

In place of the ordinary bottom rod, I employ the telescoping bottom rod composed of the stirrup 9 pivoted to the "dead" lever and having the perforated clutch dog 10 mounted therein and fulcrumed on the beveled corner 11 and the second or telescoping portion 12 of which is pivoted to the "live" lever and passes through a perforation in the outer end of the stirrup 9 and through the perforated clutch dog 10. This produces a telescoping bottom rod which can be lengthened by merely pulling the parts away from one another, but which normally cannot be shortened, the clutch dog holding to prevent the rod 12 from being forced into the stirrup 9. The clutch dog is held up to its work by spring 22. The brake beams 4 and 5 are connected by a take-up device which also comprises a telescoping section and a lost motion connection to one of the brake beams. As shown, this take-up device consists of the stirrup 13 fastened to the brake beam 5 and perforated at its outer end to permit of the passage of the rod 14. On this rod 14, which constitutes the other member of the telescoping section, is mounted the perforated clutch dog 15, which is fulcrumed against the beveled portion 16 of the stirrup 13, and held in operative position by the spring 17. To the other brake beam 4 is fastened the metal strip or bar 18, which is bent twice at right angles to its length, as shown at 19 and 20. These portions 19 and 20 are perforated for the passage of the rod 14 and on said rod between them is located the stop 21.

The operation of my invention is as follows: The stop 21 is so proportioned with reference to the distance between the sections 19 and 20 of the take-up device that the lost motion permitted to the rod 14 is just that which the brake shoes should have in a brake application in which the maximum allowable vibration of the "live" lever 7 occurs. If an excess movement of the "live" lever occurs, due to the wearing down of the brake shoes, the portion 20 of the bent strip 18 will strike the stop 21 and pull the rod 14 through the clutch dog 15 a distance equal to the excess movement of the brake shoes over and above the predetermined limit. On release of the brakes, the "live" lever 7 will tend to return to its normal position and in so doing, will cause the stop 21 to strike against the portion 19 of the take-up device, bringing the rod 14 to a bearing on the clutch dog 15, and holding the brake beams further apart than they were before by an amount equal to the excess travel of the brake shoes on the previous application of brakes. Further movement of the "live" lever on its return will cause it to lengthen the bottom rod by pulling out the telescoping joint and the dog 10 grasping the telescoping section 12 in its new position of adjustment, will serve to readjust the "live" lever and "dead" lever so that when the brakes are applied again only the standard maximum movement of the live lever will occur.

Among the advantages of my invention may be mentioned the fact that it accurately and exactly takes up the slack due to the wearing down of the brake shoes and does not take up the slack caused by springing of the brake rigging or by any change in position of the truck with reference to the car body. In short, my invention might be more accurately described as a "brake shoe clearance adjusting mechanism". The particular form of friction clutch shown is an important feature of my invention as it will accurately take up the small allowance of motion occurring in this form of mechanism. The mounting of the take-up device on the brake beams is also important as it produces a take-up action which is exactly equal to the excess movement of the brake shoes and is not disturbed by any variation of the angularity of the "live" and "dead" levers such as occurs as the shoes wear down.

Having, therefore, described my invention, I claim:

1. In a slack adjusting mechanism for railway brakes, the combination with the usual brake levers, rods and brake beams, of a telescoping bottom rod, the telescoping joint therein being provided with a friction clutch per-

mitting said rod to be lengthened but normally preventing it from being shortened, and a take-up rod connecting the two brake beams, said take-up rod having two sections joined together by a lost motion connection, and one of said sections having a telescoping joint provided with a friction clutch which permits the same to be lengthened but normally prevents its being shortened.

2. In a slack adjusting mechanism for railway brakes, the combination with the usual brake levers, rods and brake beams, of a telescoping bottom rod comprising a stirrup pivoted to one lever, and having a perforation in its outer end through which the other portion of the bottom rod pivoted to the other lever passes, a perforated clutch dog mounted on said other portion of the rod and fulcrumed on an inner portion of the stirrup and a spring mounted on said rod and compressed between said clutch dog and the outer portion of the stirrup.

3. In a slack adjusting mechanism for railway brakes, the combination with the usual brake levers, rods and brake beams, of a telescoping bottom rod comprising a stirrup pivoted to one lever, and having a perforation in its outer end through which the other portion of the bottom rod pivoted to the other lever passes, a perforated clutch dog mounted on said other portion of the rod and fulcrumed on an inner portion of the stirrup and a spring mounted on said rod and compressed between said clutch dog and the outer portion of the stirrup, said fulcrum being formed by a beveled shoulder in the stirrup.

4. In a slack adjusting mechanism for railway brakes, the combination with the usual brake levers, rods and brake beams, of a telescoping bottom rod, means permitting the lengthening of the bottom rod but normally preventing the shortening thereof, and a take-up device comprising a telescoping member connected at one end to one brake beam, and at the other end provided with a lost motion connection to the other brake beam, said lost motion connection comprising a bar fastened at one end to the brake beam, bent twice at right angles to its axis, and having said right angled bent portions perforated for the passage of the telescoping member, and a stop on said telescoping member between these two perforated portions.

5. In a slack adjusting mechanism for railway brakes, the combination with the usual brake levers, rods and brake beams, of a telescoping bottom rod, means permitting the lengthening of the bottom rod but normally preventing the shortening thereof, and a take-up device comprising a telescoping member connected at one end to one brake beam, and at the other end provided with a lost motion connection to the other brake lever, said lost motion connection comprising a bar fastened at one end to the brake beam, bent twice at right angles to its axis, and having said right angled bent portions perforated for the passage of the telescoping member, and a stop on said telescoping member between these two perforated portions, and said telescoping member comprising a stirrup fastened to the brake beam and perforated for the passage of the other member of the telescoping couple, and a friction clutch dog mounted in said stirrup and engaging said other member.

Signed at New York, N. Y. this 19 day of November 1906.

A. PARKER-SMITH.

Witnesses:

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M. G. CRAWFORD.