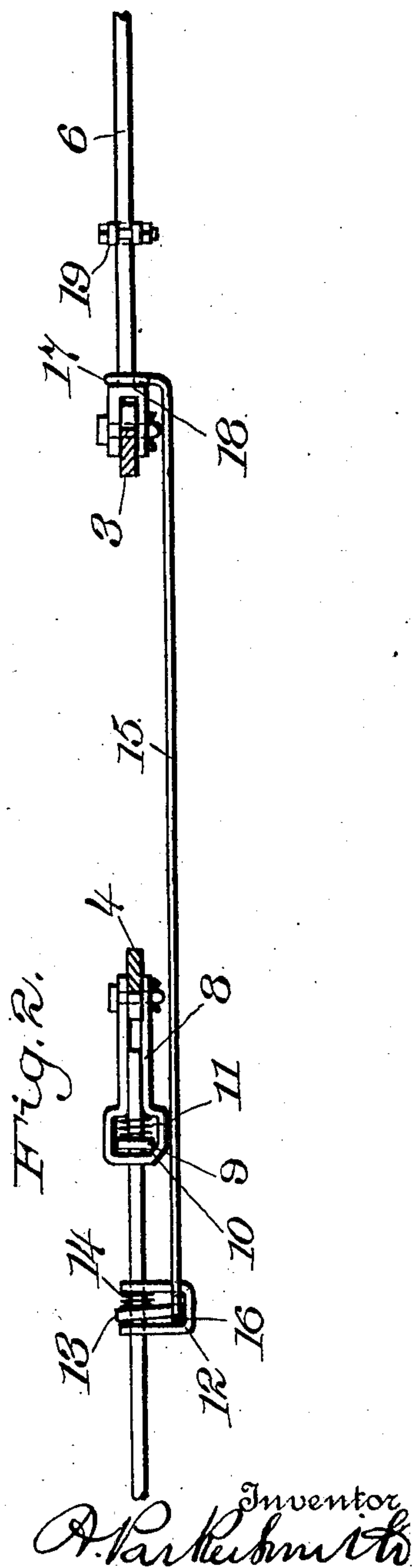
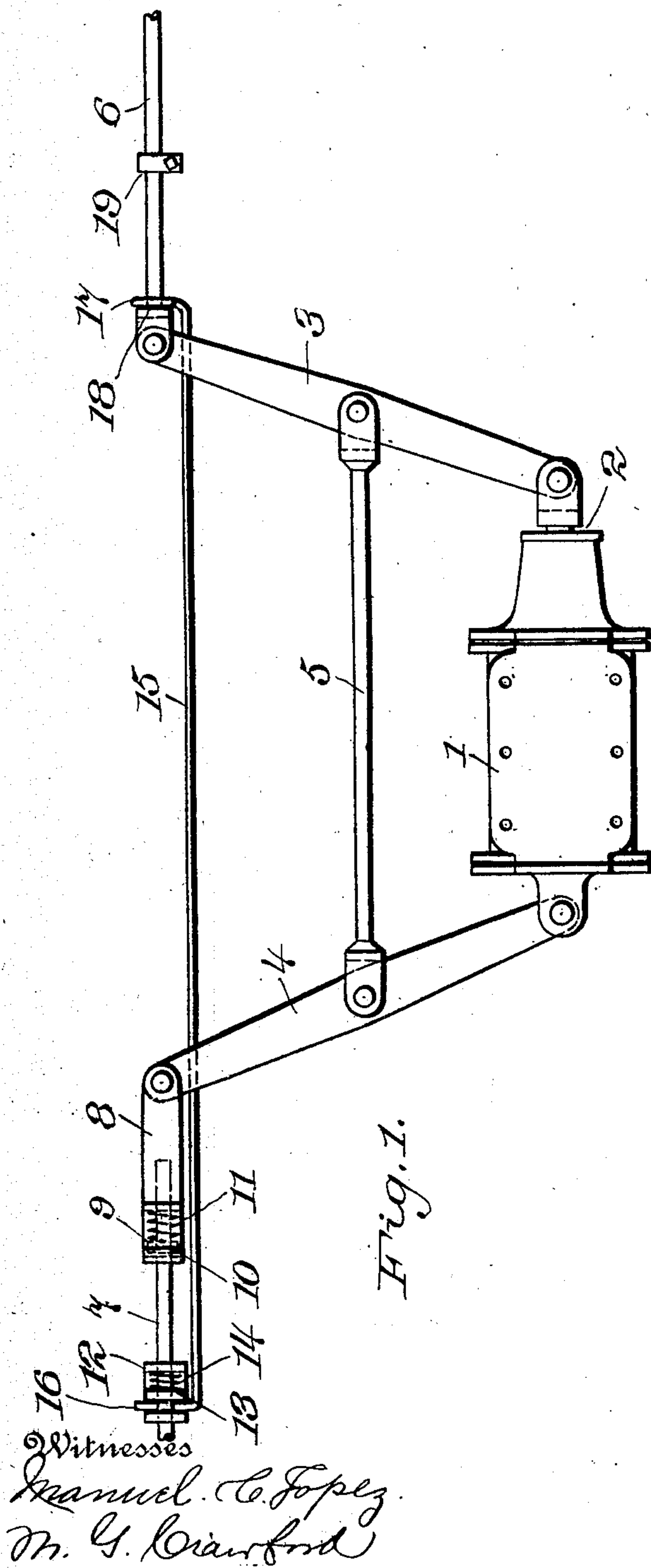


No. 860,240.

PATENTED JULY 16, 1907.

A. PARKER-SMITH.
SLACK ADJUSTER.

APPLICATION FILED NOV. 21, 1906.



UNITED STATES PATENT OFFICE.

AUGUSTUS PARKER-SMITH, OF NEW YORK, N. Y., ASSIGNOR TO ATLAS SLACK ADJUSTER COMPANY, A CORPORATION OF NEW YORK.

SLACK-ADJUSTER.

No. 860,240.

Specification of Letters Patent.

Patented July 16, 1907.

Application filed November 21, 1906. Serial No. 344,433.

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 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 drawing in which:

Figure 1 is a plan view of a portion of the usual brake rigging with my invention applied thereto, and Fig. 2 is a side elevation of the same with parts broken away.

Throughout the drawings, like reference figures indicate like parts.

1 is the compressed air cylinder, 2 the piston, 3 the right hand brake lever, 4 the left hand brake lever, 5 the tie-rod, 6 the right hand top rod and 7 the left hand top rod, all of usual construction except that top rod 7 is not pivoted direct to brake lever 3, but passes through the clutch stirrup 8, as shown in Fig. 2.

The stirrup 8 is pivoted to the brake lever and contains the perforated clutch dog 9, engaging top rod 7, fulcrumed on the beveled corner 10 of the stirrup and held in operative position by spring 11. The top rod 7 is also grasped by a second, adjustable clutch or other gripping device preferably composed of the frame 12, clutch dog 13, and spring 14. The second friction clutch is connected to the other top rod 6, by any convenient form of lost motion connection preferably by means of the reach rod 15 which has the bent portion 16 inserted in the frame 12 and serving as a fulcrum for the clutch dog 13. The other end of the reach rod loosely engages the top rod 6, as by means of the ring-shaped end portion 17 and the movement of this reach rod on the top rod 6 is limited between the shoulder 18 of the fork on the end of the top rod and the adjustable clamp 19, which forms an adjustable stop.

In operation the take-up clutch comprising the frame 12 and its contents will move with the top rod 7, and the ring-shaped end 17 of the reach rod will slide back and forth between the shoulder 18 and the stop 19 as the brakes are applied and released. If the movement of the top rod 7 relative to the top rod 6, however, exceeds the predetermined limit determined by the location of the stop 19, the end of the reach rod will strike said stop and during further movement of the two top rods toward each other will serve to force the frame 12 and dog 13 to the left along the top rod 7

by an amount equal to such excess movement. On the release of the brakes, the kick springs and piston springs, not shown, will cause the shoulder 18 to strike the ring-shaped end 17 of the reach rod and pull the take-up clutch and with it the top rod 7 toward the right. This will telescope the top rod into the stirrup 8 by an amount equal to the excess of the movement of the top rods over and above a predetermined limit upon the previous brake application. The holding clutch 9 will grip the top rod in its new position and the brake rigging will be adjusted automatically thereby so that on subsequent applications of the brakes the movement of the top rods relative one to another and consequently of the piston in its cylinder, will not exceed the predetermined amount.

The advantages of my invention comprise its ease of attachment to existing brake apparatus, its simplicity, fewness of parts, cheapness of first cost and accuracy of action. It can be readily adjusted to produce any desired amount of piston travel by simply shifting the adjustable clamp 19 on the top rod 6. The take-up action is produced by the kick springs and the cylinder springs themselves instead of being produced by a special spring which has to act in opposition to the kick springs and overcome the same, as is the case with many other slack adjusting devices. The slack adjusting function does not in any way cut down the pressure applied to the brake shoes and the attachment can be applied to passenger cars and other cars having the standard passenger car brake rigging without in any way interfering with the operation of said rigging or requiring the modification thereof.

It is evident, of course, that other forms of friction clutch or gripping device might be substituted for those shown and the relative arrangement of the gripping devices might be varied. The take-up clutch might be placed upon the other top rod and the reach rod connection reversed; the reach rod might not have a direct connection to the other top rod, but be indirectly connected thereto, but these and other similar modifications in detail of construction would not depart from the principle of operation of my invention.

Having, therefore, described my invention, what I claim is:

1. In an automatic slack adjusting mechanism for railway brakes, the combination with the usual brake rigging including two brake levers and top rods pivoted thereto, of a telescoping section in one of said top rods, a gripping device in said telescoping section which permits the rod to be shortened but normally prevents its being lengthened, and means for shortening said top rod by taking up said telescoping section after the release of the brakes by an amount equal to the excess movement of one top rod with reference to the other over and above a predetermined limit of such movement.

2. In an automatic slack adjusting mechanism for rail-
way brakes, the combination with the usual brake rigging
comprising a cylinder, piston, two brake levers, top rods
and a tie-rod, of a telescoping joint in one of said top rods,
5 a gripping device in said joint which permits the top rod
to be shortened but prevents its being lengthened, and
means operating on the release of the brakes after an ex-
cessive movement of the piston to take up the telescoping
joint by an amount sufficient to limit the next movement
10 of the piston to the standard length of stroke.
3. In an automatic slack adjusting mechanism for rail-
way brakes, the combination with the usual brake rig-
ging including two brake levers and top rods pivoted
thereto, of a telescoping section in one of said top rods, a
15 gripping device in said telescoping section which permits
the rod to be shortened but normally prevents its being
lengthened, and means for shortening said top rod by tak-
ing up said telescoping section after the release of the
brakes by an amount equal to the excess movement of one
20 top rod with reference to the other over and above a pre-
determined limit of such movement, said means comprising
a second adjustable gripping device mounted on one top
rod and having a lost motion connection to the other top
rod.
4. In an automatic slack adjusting mechanism for rail-
way brakes, the combination with the usual brake rigging
including two brake levers and top rods pivoted thereto, of
a telescoping section in one of said top rods, a friction
clutch in said telescoping section which permits the rod to
25 be shortened but normally prevents its being lengthened,
and means for shortening said top rod by taking up said
telescoping section after the release of the brakes by an
amount equal to the excess movement of one top rod with
reference to the other over and above a predetermined

limit of such movement, said means comprising a second 35
friction clutch device mounted on one top rod, a reach rod
extending therefrom to and loosely engaging the other top
rod and stops on said other top rod limiting the movement
of the top rod thereon.

5. In an automatic slack adjusting mechanism for rail- 40
way brakes, the combination with the usual brake rigging
including two brake levers and top rods pivoted thereto, of
a telescoping section in one of said top rods, a friction
clutch in said telescoping section which permits the rod to
be shortened but normally prevents its being lengthened, 45
and means for shortening said top rod by taking up said
telescoping section after the release of the brakes by an
amount equal to the excess movement of one top rod with
reference to the other over and above a predetermined
limit of such movement, said means comprising a second 50
friction clutch device mounted on one top rod, a reach rod
extending therefrom to and loosely engaging the other top
rod and stops on said other top rod limiting the movement
of the top rod thereon, one of said stops being adjustable.

6. In an automatic slack adjusting mechanism for rail- 55
way brakes, the combination with the standard brake rig-
ging of a stirrup pivoted to one brake lever and perforated
at its outer end, a top rod passing through said perfora-
tion, a clutch dog mounted in the stirrup and engaging the
top rod to prevent the withdrawal thereof, a second fric- 60
tion clutch device mounted on the top rod, and a lost mo-
tion connection therefrom to the other top rod.

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

A. PARKER-SMITH.

Witnesses:

MANUEL C. LOPEZ,
M. G. CRAWFORD.