No. 645,494. Patented Mar. 13, 1900.

W. D. ROGERS.

BRAKE INDICATOR.

(Application filed Oct. 23, 1899.)

(No Model.)

Fig. 1.

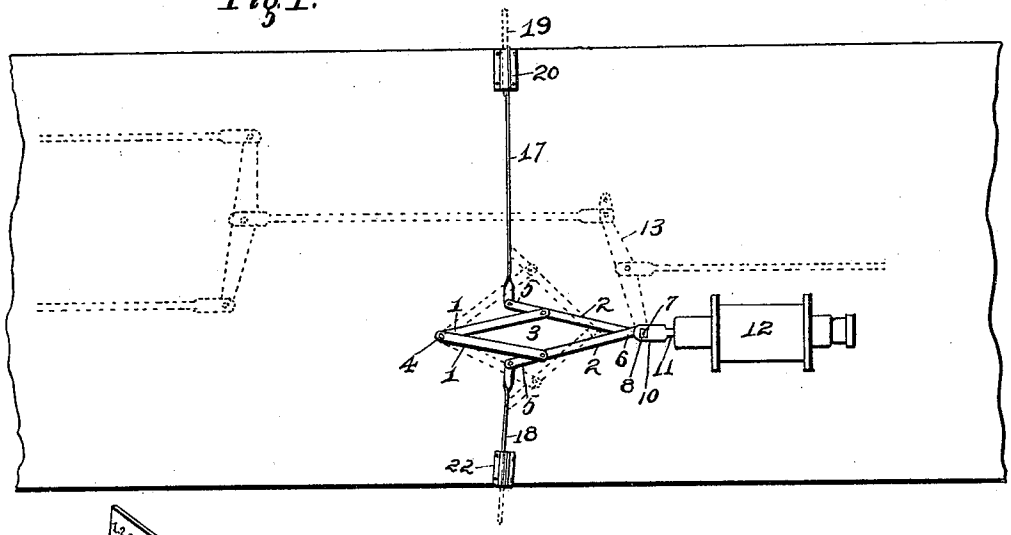


Fig. 2.

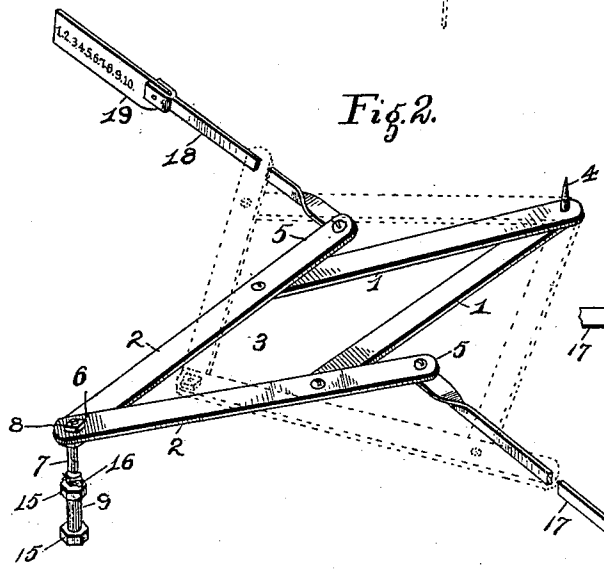


Fig. 3.

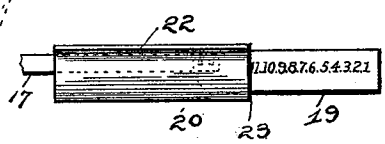
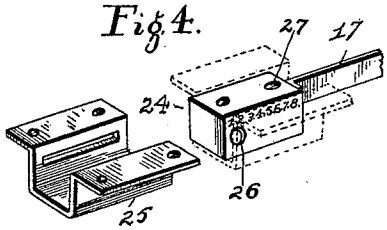
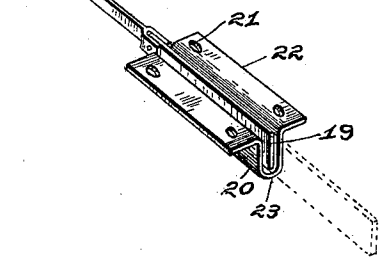


Fig. 4.





Witnesses.
Alfred A. Ficks
Maude Griffin.

Inventor.
William D. Rogers.
By. Higdon & Longan Attys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM D. ROGERS, OF ST. LOUIS, MISSOURI.

BRAKE-INDICATOR.

SPECIFICATION forming part of Letters Patent No. 645,494, dated March 13, 1900.

Application filed October 23, 1899. Serial No. 734,535. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM D. ROGERS, of the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Brake-Indicators, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to brake-indicators; and it consists of the novel construction, combination, and arrangement of parts hereinafter described and claimed.

The object of this invention is to construct a brake-indicator to be applied to the under surface of a car and operated by the same air-piston that now operates the brake to bring in observation indicators located at the edge under the car-body.

In the drawings, Figure 1 is a bottom plan view of a car-body, showing my complete invention in position and in operative communication with the air-brake cylinder. Fig. 2 is a perspective view of my invention detached from the car. Fig. 3 is a detail side elevation of one of the indicators and guide-cap in which said indicator is supported. Fig. 4 is a perspective view of a modified form of indicator and cap for carrying a lamp to be used at night.

In the construction I provide toggle-levers 1 and 2, pivotally secured together, forming a lazy-tongs 3. One end of the levers 1 is secured to the under surface of the car-floor by means of a screw 4 or like device, so arranged as to allow said lever to freely move on said screw as a pivot. The other ends of said levers are pivoted to the levers 2 a short distance from their free ends 5 and also arranged for free movement. The ends 6 of the levers 2 are provided with apertures, through which passes one end of a bolt 7 and held thereto by a nut 8. This bolt is provided with an enlargement 9, which is passed through the bifurcated end 10 of the air-piston 11, operated by the air-cylinder 12, secured to the under surface of said car-body. Said bolt also holds in position the brake-lever 13. (Shown in dotted lines in Fig. 1.) This mechanism and the air-cylinder are old and used now on all systems of air-brakes; but I show the same to illustrate the relation between the present system of brake-operating mechanism and my invention operated thereby. The bolt 7 is held in place by means of nuts 15, one located at the top and bottom of said air-piston and locked thereon by a spring-cotter 16, passing through said bolt for the purpose of acting as a nut-lock, preventing the same from working loose by the continual jolting of the car-body while in action.

To the free ends 5 of the levers 2 I secure indicator-arms 17 and 18, extending from the levers under the car, operating in any ordinary bearing or strap and attached to indicators 19, held and guided in a cap 20, which is of the same length as the indicator 19 and secured to the bottom of the car by means of screws passing through the apertures 21, formed in its flange 22. The indicators 19 are provided with graduations, or preferably numerals, ranging from "1" to "12," or the scale may vary according to the stroke of the air-piston.

The lazy-tongs 3 is so arranged from center to center to operate the arms 17 and 18, attached to the indicators, as shown by dotted lines in Figs. 1 and 2, causing the indicators 19 to project through the outer end of the caps 20 the same distance and so marked as to indicate the stroke of the air-piston 17. By this action when the air-brake is operated from the locomotive the brakeman can see by the indicators 19 whether or not the air-cylinder is operating and at the same time can ascertain how many inches the air-piston travels.

According to the various systems of air-brakes the stroke of the air-piston of the air-cylinder varies from six to eleven inches, and if the system to which my invention is applied is arranged for a stroke of eleven inches the indicators 19 will in such case project beyond the cap 20, as shown in Fig. 3, to the numeral "11." The indicators are read from the end 23 of the cap 20, from either side. If at any time the indicator should indicate more than eleven inches or less than eleven inches, the brakeman will then know that the piston 17 of the air-cylinder is not operating properly and will so make his report to the master mechanic. By this arrangement the engineer or fireman of the locomotive can also see the indicators from the cab-window and can so ascertain the correct action of the air-brake.

When this device is to be used at night, the indicator 24 is attached to the arm 17 and operates in like manner in the cap 25. This indicator 24 is provided with an aperture 26, in which is placed a strip of mica or other transparent material. In this indicator is placed a small lamp or electric light, which light will radiate through said aperture and can be seen by the brakeman or engineer, thus informing him of the action of the brake. This indicator is also provided with a scale in case the same is desired to be used in the day. It is also provided with apertures 27, which are for the purpose of providing ventilation for the lamp placed therein.

The indicators 19 are constructed of flexible material and preferably painted white. The object of the flexible material is in case a person should be standing at the side of the car in alinement with the indicator he will not be injured in any way should he come in contact with the end of said indicator when the same is forced outwardly by the action of the air-piston.

The invention is very compact and so arranged to occupy but little space under a car and in no way interferes with any of the brake or other mechanism now carried by the car.

If at any time it is desired to remove the indicator mechanism, all that is necessary is to release the nut 8 and the screw 4 and the entire device can be removed from its position and be readily replaced in like manner.

I claim—

In a brake-indicator, operating-rods, indicators composed of flexible material carried on the ends of said rods, which indicators are of such character as that they will bend when they come in contact with other objects, an indicating-scale on said indicators, guide-caps carried by the under side of the car in which caps the said flexible indicators are held when not in use, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM D. ROGERS.

Witnesses:
ALFRED A. EICKS,
M. GRIFFIN.