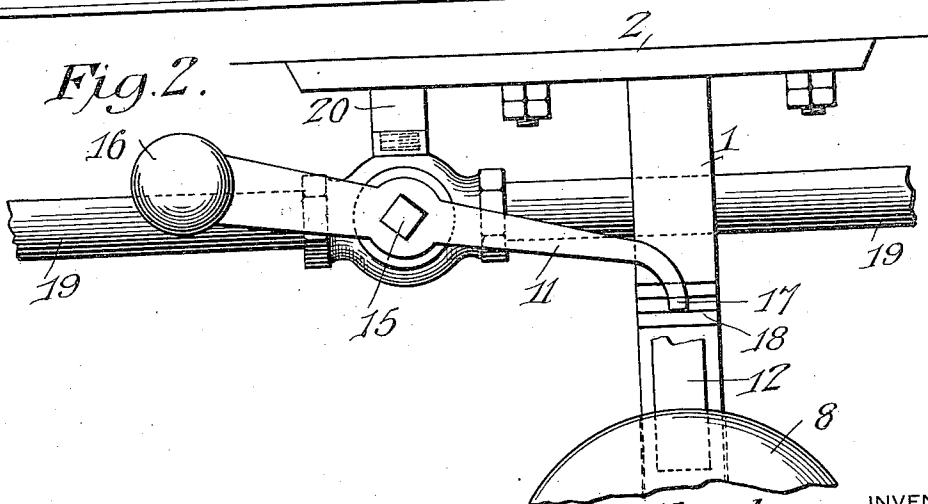
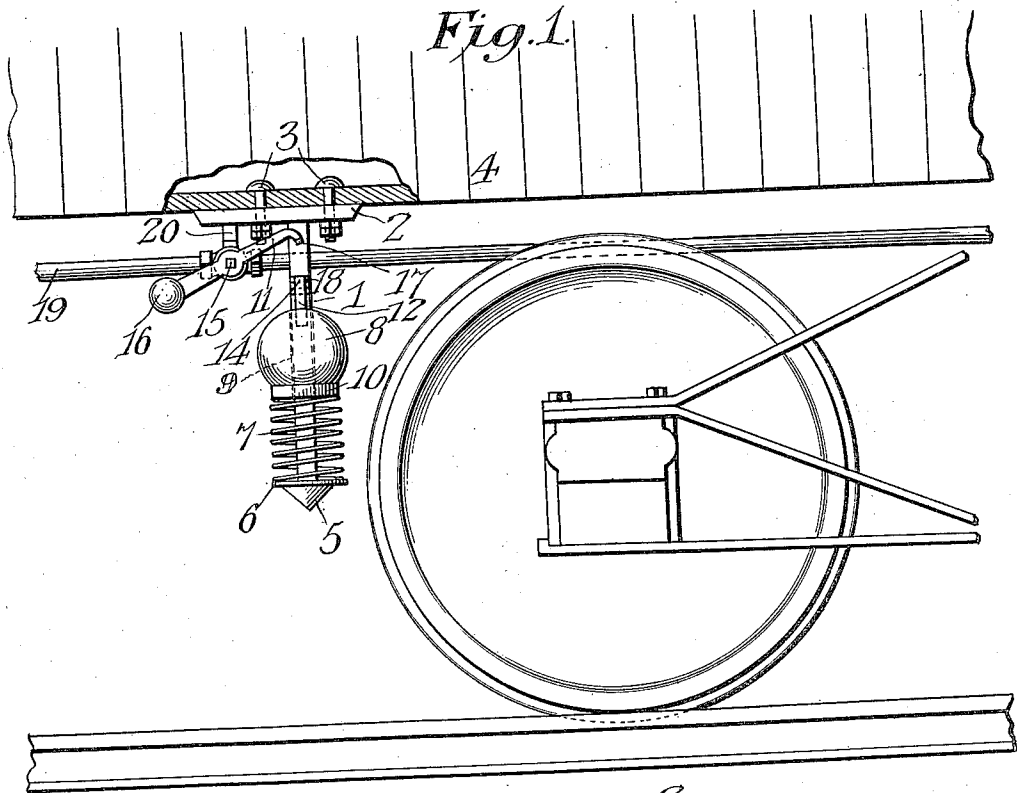


J. A. GYLLENBERG.
SAFETY AIR BRAKE APPLIANCE FOR RAILWAY CARS.
APPLICATION FILED FEB. 9, 1911.

Patented Apr. 23, 1912.
2 SHEETS—SHEET 1.

1,024,331.



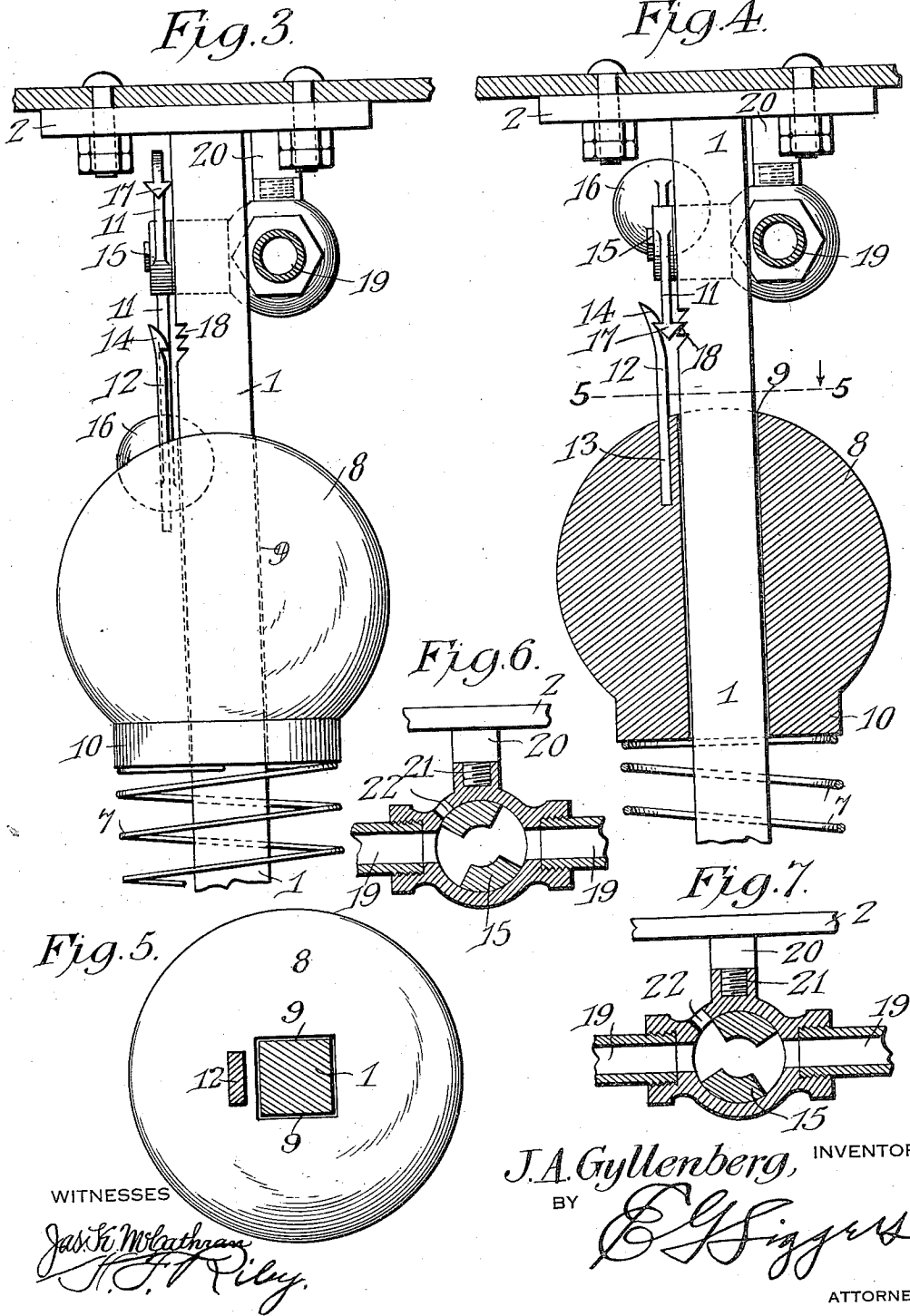
WITNESSES
Jas. K. McLaughlin
H. J. Kelly

J. A. Gyllenberg, INVENTOR
BY *E. J. Siggers*
ATTORNEY

J. A. GYLLENBERG.
SAFETY AIR BRAKE APPLIANCE FOR RAILWAY CARS.
APPLICATION FILED FEB. 9, 1911.

1,024,331.

Patented Apr. 23, 1912.
2 SHEETS—SHEET 2.



UNITED STATES PATENT OFFICE.

JOHN ALFRED GYLLENBERG, OF BAKER, OREGON, ASSIGNOR OF ONE-HALF TO JOHN L. RAND, OF BAKER, OREGON.

SAFETY AIR-BRAKE APPLIANCE FOR RAILWAY-CARS.

1,024,331.

Specification of Letters Patent.

Patented Apr. 23, 1912.

Application filed February 9, 1911. Serial No. 607,626.

To all whom it may concern:

Be it known that I, JOHN ALFRED GYLLENBERG, a citizen of the United States, residing at Baker city, in the county of Baker and State of Oregon, have invented a new and useful Safety Air-Brake Appliance for Railway-Cars, of which the following is a specification.

The invention relates to improvements in safety air brake appliances for railway cars.

The object of the present invention is to improve the construction of safety air brake appliances for railway cars, and to provide a simple, efficient and comparatively inexpensive device, adapted to be readily applied to a car to release automatically the air in the train pipe and apply the brakes on trains whenever a car or cars leave the rails while in motion, whether such accidents be caused by the spreading of the rails, running into an open switch, or in any other manner.

A further object of the invention is to provide a device of this character, which will be unaffected by the endwise movement, lateral vibration or ordinary vertical motion of a car body, and capable of operation through violent up and down movement only so that there will be no liability of the device being accidentally operated and effecting an application of the brakes through the ordinary motion of a train either in coupling, the bumping of the cars, or the usual motions when running.

With these and other objects in view, the invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended; it being understood that various changes in the form, proportion, size and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings:—Figure 1 is a side elevation, partly in section, of a portion of a car, equipped with a safety air brake appliance, constructed in accordance with this invention, the parts being in their normal positions. Fig. 2 is an enlarged side elevation of the upper portion of the device, the valve lever being locked in its open position. Fig. 3 is an enlarged front elevation

of the safety appliance, the car and the train pipe being in section and the parts being arranged as shown in Fig. 1. Fig. 4 is a similar view, the weight being also in section and the valve lever being locked in its open position. Fig. 5 is a horizontal sectional view on the line 5—5 of Fig. 4. Figs. 6 and 7 are detail views of the valve, showing the same in its closed and open positions.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

In the drawings illustrating the preferred embodiment of the invention, 1 designates a bracket consisting of a vertically disposed guide and supporting bar, preferably rectangular in cross section and provided at its upper end with an integral horizontal attaching flange or plate 2, secured by bolts 3, or other suitable fastening means to the bottom of the body 4 of a car, preferably adjacent to the truck, it being designed to equip a car at either or both ends with a safety air brake appliance. The vertical bar of the bracket 1 is provided at its lower end with a supporting head 5, having a flat upper face 6 forming a seat for a coiled spring 7. The supporting head may be applied to the lower end of the vertical bar of the bracket in any suitable manner.

Slidably mounted upon the vertical bar is a weight 8, preferably in the form of a ball and provided with a central vertical opening 9, rectangular in cross section and loosely receiving the bar of the bracket. The weight, which is slidable vertically on the bar of the bracket, is preferably provided with a circular base 10, having a flat lower face to fit the upper end of the coiled spring, as clearly illustrated in Figs. 3 and 4 of the drawings. The weight is of sufficient size and the coiled spring is of sufficient strength to prevent them from being materially affected by the ordinary motions of a car incident to coupling, bumping together, or swaying while running, but in event of the car leaving the rails, the violent vertical movement incident to the wheels jumping the track will cause the weight to compress the coiled spring, which will throw the weight upward into engagement with a valve lever 11.

The weight is equipped at the top with a resilient catch 12, consisting of a piece of spring metal, arranged in substantially a vertical position and having its lower portion 13 cast in or otherwise connected with the weight and provided at its upper end with a head 14, beveled at the inner side and having a shoulder at the bottom to engage with the valve lever 11. The lower portion of the catch is embedded in the weight. The valve lever is connected at an intermediate point with a rotary valve plug 15, and is provided at its outer end with a weight 16, normally maintaining its inner end in an elevated position, as clearly shown in Fig. 1 of the drawings. The inner end of the valve head is curved downward and is provided with an arrow head 17, located at one side of the vertical bar of the bracket and beveled at opposite sides and having opposite horizontal shoulders or faces at the top. When the weight 8, which is of greater power than the weight 16 of the outer arm of the valve lever, is thrown upward through the action of the coiled spring, the catch engages with the arrow head of the inner end of the lever at the outer face of the same, and the inner arm of the valve lever is drawn downward by the weight, and the inner side of the arrow head is engaged with one of a series of teeth 18, formed by notching or recessing the adjacent side of the vertical bar of the bracket. The inner arm of the valve lever is sufficiently resilient to be sprung into and out of engagement with the teeth 18, which lock the inner arm of the valve lever in its lowered position and maintain the valve in its open position.

The valve, which may be of any desired construction, is preferably an ordinary globe valve, arranged in the train pipe 19 and preferably connected with a depending stud 20 of the supporting bracket 1. The stud 20, which is preferably formed integral with the attaching plate 2, extends downwardly therefrom and has a threaded lower portion, which screws into a threaded socket 21 of the valve casing. The valve casing is provided at the top with a port or opening 22, which is closed or covered by the rotary valve plug or member, when the lever is in the inclined position shown in Fig. 1 and out of engagement with the bracket and the weight. The downward swinging of the inner arm of the valve lever opens the valve and moves the same from the position illustrated in Fig. 6 of the drawings to that shown in Fig. 7, and uncovers the port or opening 22 and releases the air, reducing the train pipe pressure instantly to a sufficient extent to effect an emergency application of the air brakes. The lever will remain locked until released by hand. The lower end of the device is above the plane of the bottom of the axles, so that snow or other obstruc-

tions will not interfere with its operation, and the position of the valve is such that there will be no liability of water accumulating and freezing and interfering with the operation of the safety appliance.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. A safety air brake appliance including a brake valve having an oscillatory operating arm, an actuating weight normally supported in an inert position, and means for connecting the weight with the arm when the device is subjected to violent vertical movement to cause the weight to actuate the arm and open the valve.

2. A safety air brake appliance including a brake valve having an oscillatory operating arm, an actuating weight normally supported in an inert position, means for connecting the weight with the arm when the device is subjected to violent vertical movement to cause the weight to actuate the arm and open the valve, and means arranged in the path of the arm for locking the valve in its open position.

3. A safety air brake appliance including a brake valve having an operating lever connected at an intermediate point with the valve and provided at one of its arms with a weight for holding the valve normally in its closed position, another weight normally supported in inoperative relation with the lever, and means for automatically connecting it with the lever when the device is subjected to violent movement.

4. A safety air brake appliance including an air brake valve having operating means, a weight normally located below the operating means and provided with means for engaging the same, and means for throwing the weight upward into engagement with the valve operating means when the appliance is subjected to violent movement incident to the wheels of a car leaving the track, whereby the valve will be opened and the brake applied.

5. A safety air brake appliance including a brake valve having operating means, a weight normally located beneath the operating means and provided with means for engaging the same, and a spring normally supporting the weight and adapted when the latter is subjected to violent movement to throw the weight upwardly into engagement with the valve operating means to cause the weight to open the valve and apply the brakes.

6. A safety air brake appliance including a brake valve having operating means, a weight normally located below the operating means and provided with a catch for engaging the same, and a spring normally supporting the weight and adapted when the weight is subjected to violent vertical

movement to throw the weight upwardly to cause the catch to engage the valve operating means.

7. A safety air brake appliance including a brake valve having an operating arm, a weight normally located below the arm and provided with a catch for engaging the same, and a spring supporting the weight and adapted when the weight is subjected to violent vertical movement to throw the weight upwardly to engage the catch with the arm of the valve, whereby the latter will be opened by the weight.

8. A safety air brake appliance including a brake valve having an operating arm, a weight having a catch arranged for engaging the arm, a spring normally supporting the weight and adapted when the weight is subjected to violent vertical motion to throw the weight upwardly to engage the catch thereof with the arm, and relatively fixed means arranged in the path of the arm for locking the same in its lowered position when the arm is swung downward by the weight.

9. A safety air brake appliance including a brake valve having an operating arm, a bracket arranged contiguous to the arm and provided below the same with means for locking the arm in its lowered position, a weight guided by the bracket and provided with means for engaging the arm, and a spring supported by the bracket and arranged to throw the weight upwardly when the same is subjected to violent vertical movement.

10. A safety air brake appliance including a brake valve having an operating arm, a bracket arranged contiguous to the operating arm and provided below the same with a plurality of teeth adapted to lock the arm in its lowered position when the same is moved downwardly, a weight movable upwardly and downwardly on the bracket and provided with means for engaging the operating arm of the valve and adapted to move the same downwardly when connected therewith, and a spring mounted on the bracket and normally supporting the weight and adapted to throw the same upwardly when the weight is subjected to violent vertical movement.

11. A safety air brake appliance including a brake valve having an operating arm, a bracket provided with a vertical guide bar located contiguous to the operating arm and provided below the same with means for holding the operating arm, a weight having an opening receiving the bar and slidable upwardly and downwardly thereon and provided with means for engaging the operating arm so as to move the latter downwardly when connected therewith, and a coiled spring mounted on the bar and normally supporting the weight.

12. A safety air brake appliance including a valve having an operating lever connected at an intermediate point with the valve and having one arm weighted, a vertical guide bar located adjacent to the other arm of the lever, a vertically movable weight slidable on the guide bar and normally located beneath the lever and provided with means for automatically engaging the same, said vertically movable weight being of greater force than the weight of the lever and adapted to operate the same when connected therewith, and a spring normally supporting the vertically movable weight and adapted to throw the same upward when the device is subjected to violent vertical movement.

13. A safety air brake appliance including a bracket comprising an attaching plate adapted to be secured to a car body, a depending guide bar, and a depending stud spaced from the guide bar, a brake valve supported by the stud and having an operating arm arranged contiguous to the guide bar, a slidable weight movable upwardly and downwardly on the guide bar and having a notch arranged to engage the operating arm of the valve, and a spring mounted on the bar of the bracket and arranged to throw the slidable weight upwardly when the device is subjected to violent vertical movement.

14. A safety air brake appliance including a brake valve having an oscillatory operating arm provided with a substantially arrow-shaped head, a bracket having a guide located adjacent to the arm of the valve and provided below the same with a recessed shoulder to engage with the inner adjacent side of the arrow head when the arm is swung downwardly to lock the valve in its open position, and means movable on the guide for automatically swinging the arm downwardly when the device is subjected to violent vertical movement.

15. A safety air brake appliance including a brake valve having an oscillatory operating arm provided with a substantially arrow-shaped head, a bracket having a guide located adjacent to the arm of the valve and provided below the same with a recessed shoulder to engage with the inner adjacent side of the arrow head when the arm is swung downwardly to lock the valve in its open position, a weight slidable on the guide and provided with a catch for engaging the arrow head at the outer side thereof, and means for automatically throwing the device upwardly when the same is subjected to violent vertical movement.

16. A safety air brake appliance including a brake valve having an oscillatory operating arm provided with a substantially arrow-shaped head, a bracket having a guide located adjacent to the arm of the valve and

provided below the same with a recessed shoulder to engage with the inner adjacent side of the arrow head when the arm is swung downwardly to lock the valve in its open position, a weight slidable on the guide and provided at the top with an upwardly extending resilient catch having a head arranged to engage the arrow head of the arm, and means for moving the weight upwardly on the guide when the device is subjected to violent vertical movement.

17. The combination with a pneumatic brake system having a train pipe, of a valve for reducing the pressure in said train pipe,

an arm for operating said valve, means acting upon said arm for normally holding it stationary, and means actuated by an abnormal jar to engage with the said arm for overcoming the first-mentioned means and operating the arm.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

JOHN ALFRED GYLLENBERG.

Witnesses:

EDITH STUMP,
A. A. SMITH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."