

(No Model.)

F. A. FISH.
AIR BRAKE.

No. 593,996.

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Fig. 1.

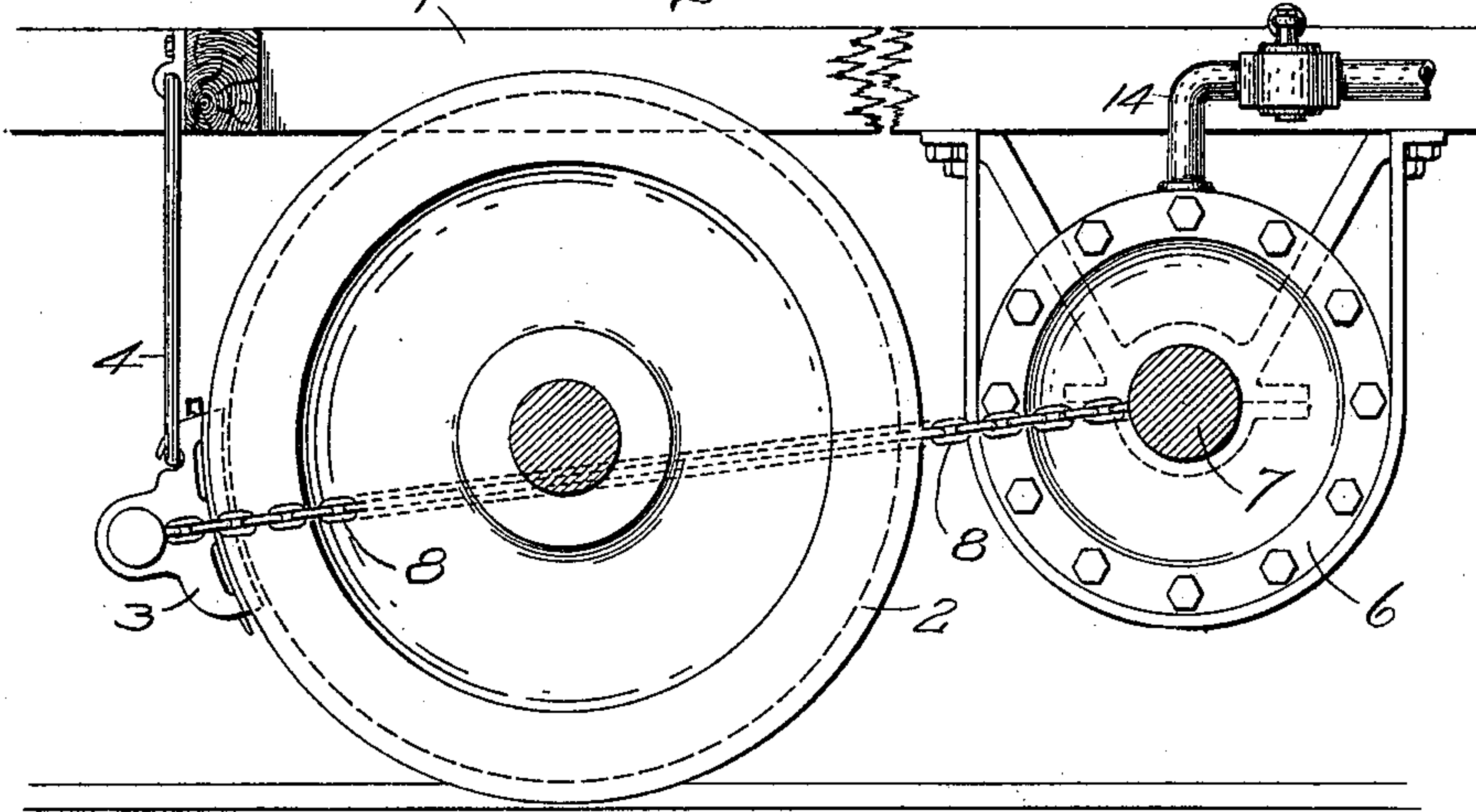


Fig. 2.

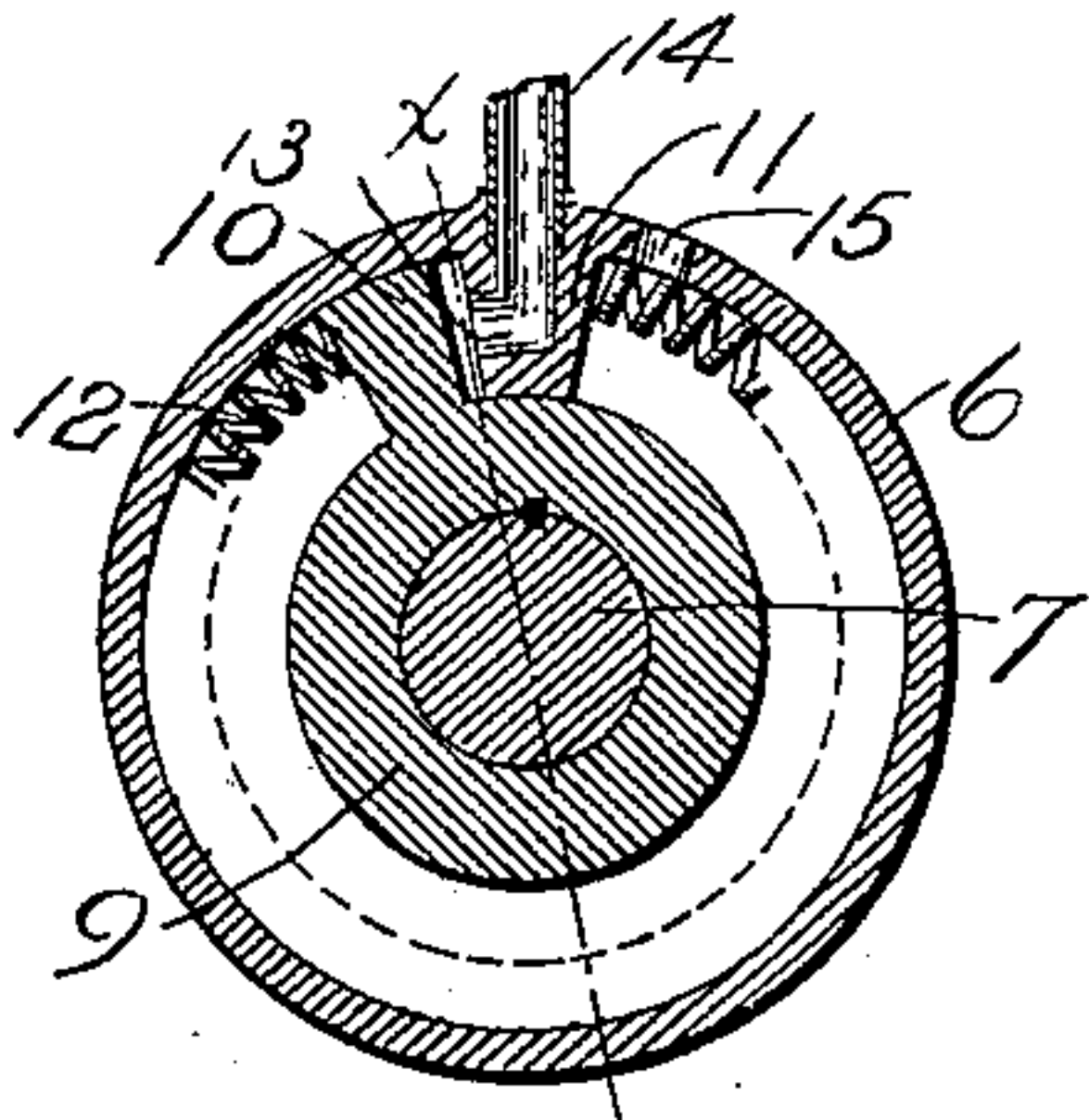


Fig. 3.

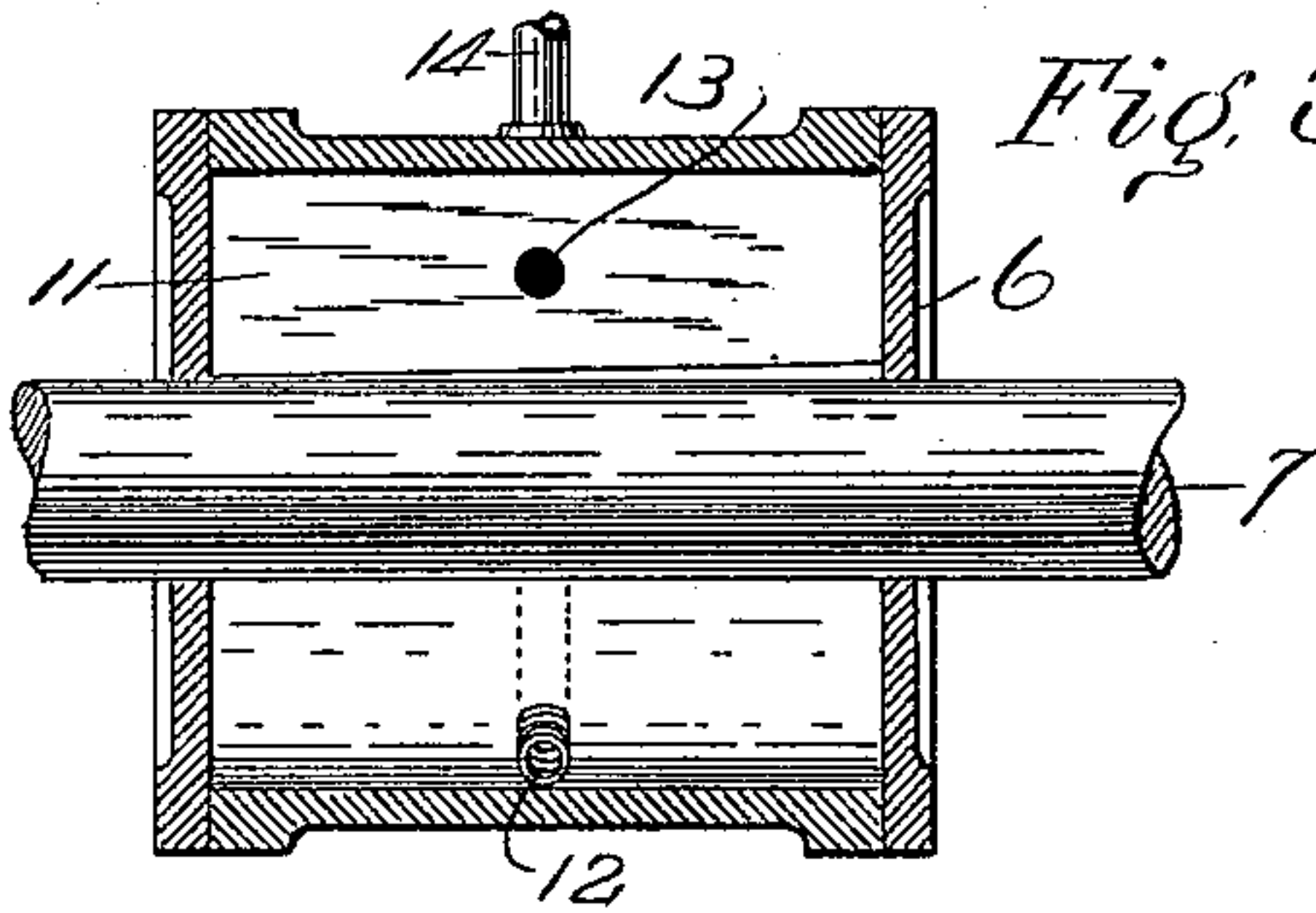
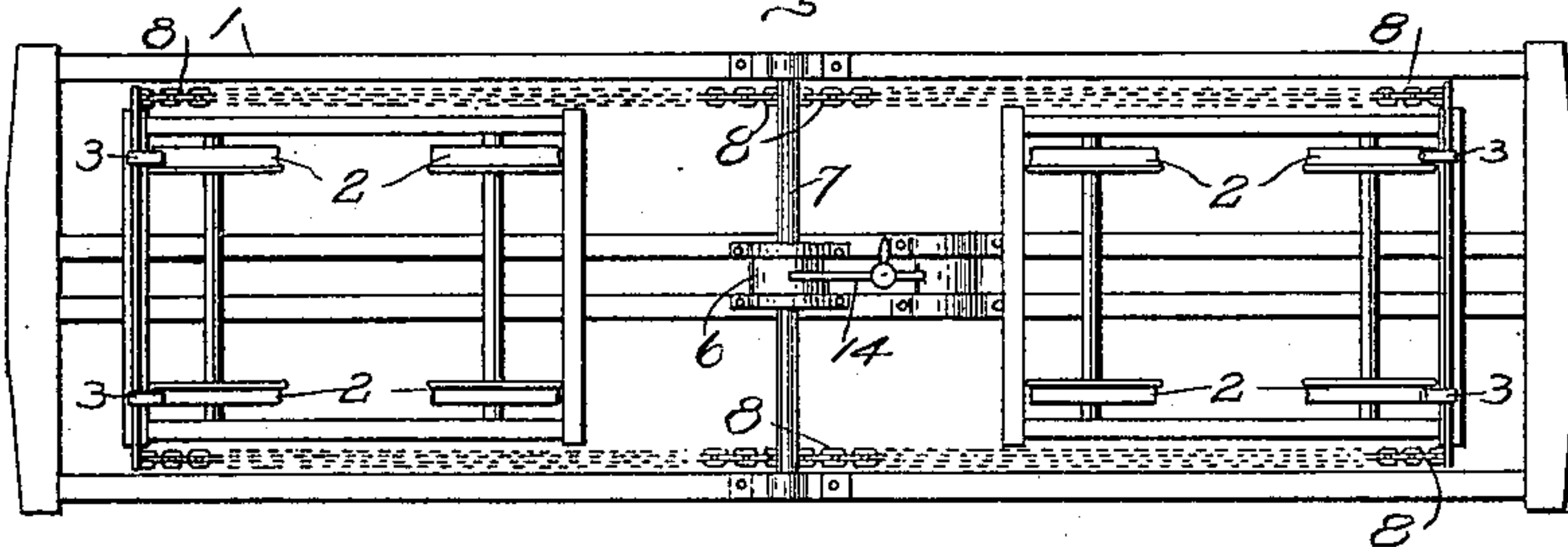


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

FRED A. FISH, OF KINGMAN, MAINE.

AIR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 593,996, dated November 23, 1897.

Application filed July 15, 1896. Serial No. 599,315. (No model.)

To all whom it may concern:

Be it known that I, FRED A. FISH, a citizen of the United States, residing at Kingman, in the county of Penobscot and State of Maine, have invented certain new and useful Improvements in Air-Brakes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it ap-
10 pertains to make and use the same.

My invention relates to air-brakes for railway-cars.

The invention resides particularly in the construction of the brake-cylinder and the
15 operative parts connected thereto.

In the well-known Westinghouse air-brake system the main supply-pipe for compressed air leads along the under side of each car constituting a train and is connected with auxiliary reservoirs upon the under side of each car, with which are employed a triple valve and a brake-cylinder connected with said valve. The said brake-cylinder as ordinarily constructed is provided with a reciprocating
25 piston, the piston-rod of which is connected through intermediate mechanism with the brake-shoes. Instead of employing said reciprocating piston I use a rotary piston attached to a shaft which extends transversely
30 of the car and has connected to its outer ends chains which are themselves attached to the brake-shoes bearing against the rims of the car-wheels.

The invention is clearly illustrated in the accompanying drawings, in which—
35

Figure 1 represents a side elevation of a portion of a car with my improvements applied thereto. Fig. 2 is a cross-section of the brake-cylinder. Fig. 3 is a section on the line xx
40 of Fig. 2, the shaft on which the brake-cylinder is mounted being shown in elevation; and Fig. 4 is a bottom plan view of a car with my improvements applied.

Like reference-numerals indicate like parts
45 in the different views.

As stated above, my improved brake is intended to be used in connection with the well-known Westinghouse air-brake system, employing the usual main supply-pipe for compressed air, the usual auxiliary chamber, and
50 triple valve. As these devices form no part of my invention, they will not be described

herein, their construction being well known to those acquainted with the art.

The car 1 is provided with the usual wheels 2 2 and has the brake-shoes 3 3, suspended upon links or brackets 4 and adapted to be thrown into engagement with the rims of the wheels 2. Mounted in brackets 5 upon the under side of the car at a point just in advance of the rear wheels thereof is a brake-cylinder 6, the same extending transversely of the car and having a shaft 7 extending centrally through the same and projecting slightly beyond the heads of the cylinder. 65 Upon the outer ends of the shaft 7 are connected chains 8 8, which are in turn connected at their opposite ends to the brake-shoes 3. Keyed or otherwise secured to the shaft 7 and located upon the inside of the cylinder 70 6 is a sleeve 9, having a web or projection 10 thereon, the whole constituting a rotary piston. Attached at one end to web 10 and bearing at its opposite end upon the lug or shoulder 11 is a spiral spring 12, which tends 75 to urge said piston normally into the position in which it is shown in Fig. 2. The lug or shoulder 11 referred to is secured to or formed integral with the metal of which the cylinder is composed and has a port 13 leading therethrough to the inside of said cylinder, the said port discharging in a direction parallel to the outer surface of said cylinder. A pipe 14 is provided for conducting air under pressure to the port 13, the same being 85 itself connected directly with the main supply-pipe or with the pipe leading from the triple valve and auxiliary reservoir.

An exhaust-port 15 is provided in the side of the cylinder 5 at a point adjacent to the 90 lug or shoulder 11 for the escape of air on the opposite side of the web 10 to that which receives the direct impact of the air from the port 13.

The operation of my device is as follows: 95 With the parts in the position in which they are shown in Fig. 2 if it be desired to throw on the brakes to stop the train it is merely necessary to so operate the valves connected with the main supply-pipe or auxiliary reservoir that air under pressure will be admitted 100 through the pipe 14 and port 13 to the inside of the cylinder 5. This being done, the rotary piston 9 10 is turned against the pressure

of the spring 12. This operation, by reason of the rigid connection between the sleeve 9 and the shaft 6, turns said shaft and winds the chains 8 upon the outer ends thereof, 5 drawing the brake-shoes 3 into close engagement with the rims of the wheels 2. When the pressure of air is relieved, the rotary piston is returned to its normal position by means of the spring 12.

10 The device is extremely simple in construction, effective in operation, and is economical in that it can be operated with a much smaller expenditure of the power of the compressed air from the main supply-pipe than by any 15 other form of air-brake known to me.

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

20 In a brake for railway-cars, the combination of a brake-cylinder having a lug or shoulder upon the inner surface thereof provided with an L-shaped port whose lower end is concentric with said cylinder, connections be-

tween said port and the main supply-pipe or auxiliary reservoir for air under pressure, a 25 rotary piston upon the inside of said cylinder, a shaft to which said piston is keyed or otherwise secured projecting out through the heads of said cylinder, a substantially circular coil-spring located on the inside of said 30 cylinder for returning said piston to its normal position after it has been actuated, one end of said spring engaging the internal lug or shoulder on said cylinder, and the other 35 end engaging the blade of said piston, and chains attached to the outer ends of said shafts and connected to the brake-shoes, substantially as and for the purpose described.

In testimony whereof I have signed this specification in the presence of two subscribing 40 witnesses.

FRED A. FISH.

Witnesses:

A. C. GATES,
A. DAVIS.