

No. 667,343.

Patented Feb. 5, 1901.

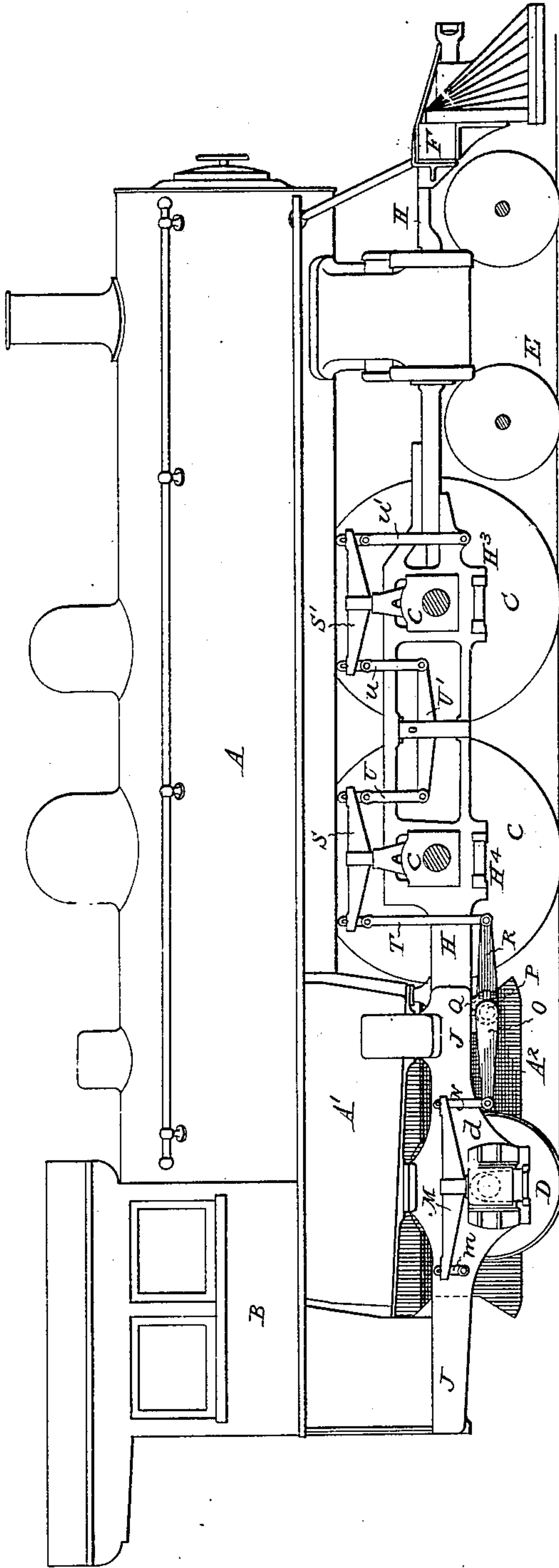
J. E. SAGUE.
LOCOMOTIVE.

(Application filed Oct. 19, 1900.)

(No Model.)

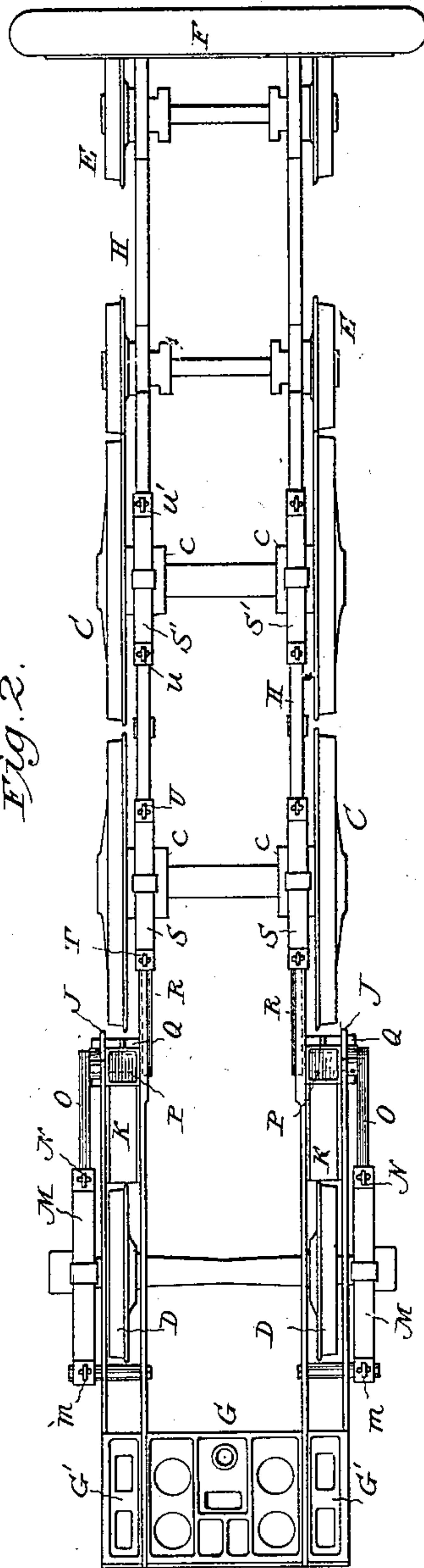
2 Sheets—Sheet 1.

Fig. 1.



Witnesses
Sidney P. Hollingsworth
Ed. Balloch

Fig. 2.



Inventor,
James E. Sague
by his attorneys
Baldwin, Davidson & Wright

No. 667,343.

Patented Feb. 5, 1901.

J. E. SAGUE.
LOCOMOTIVE.

(Application filed Oct. 19, 1900.)

(No Model.)

2 Sheets—Sheet 2.

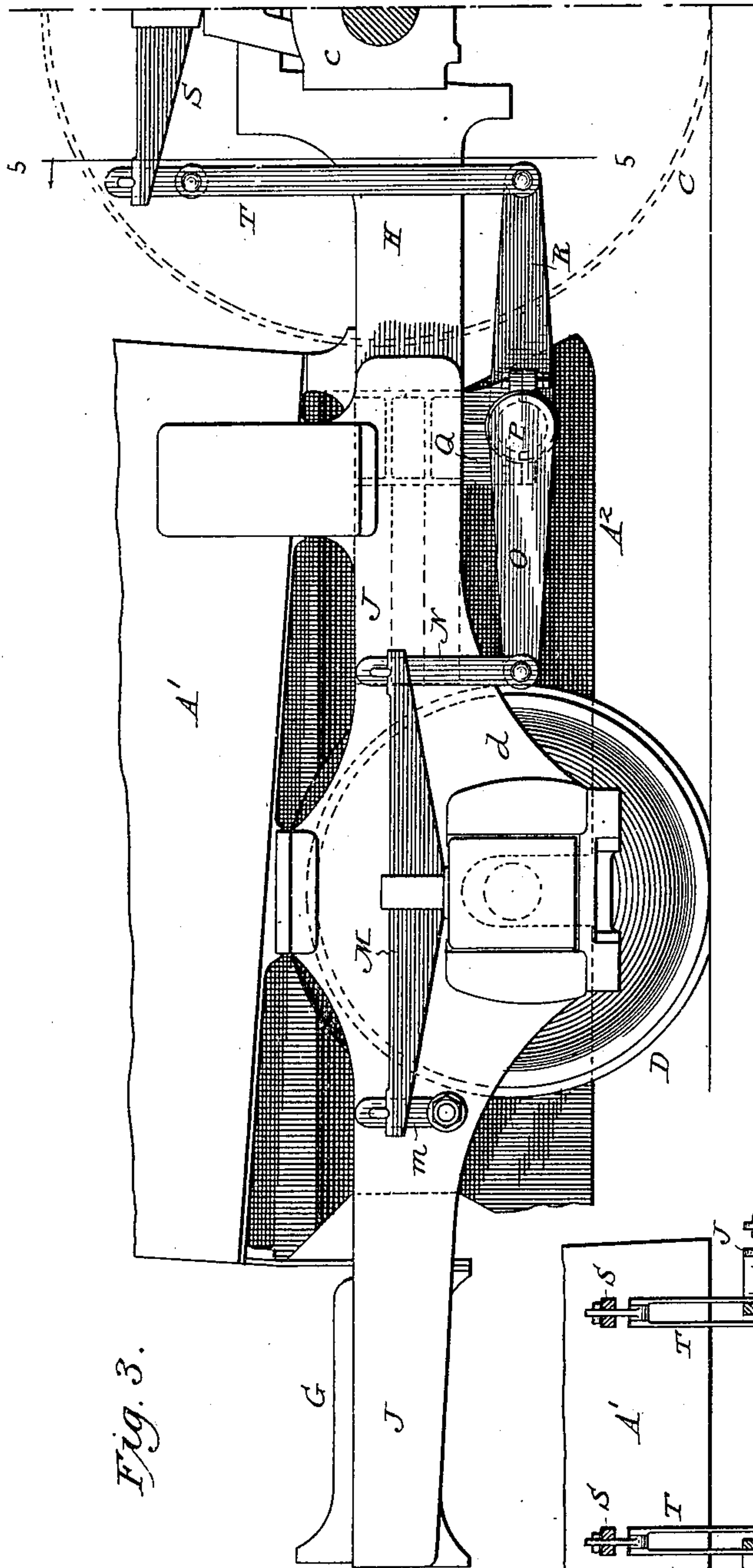


Fig. 3.

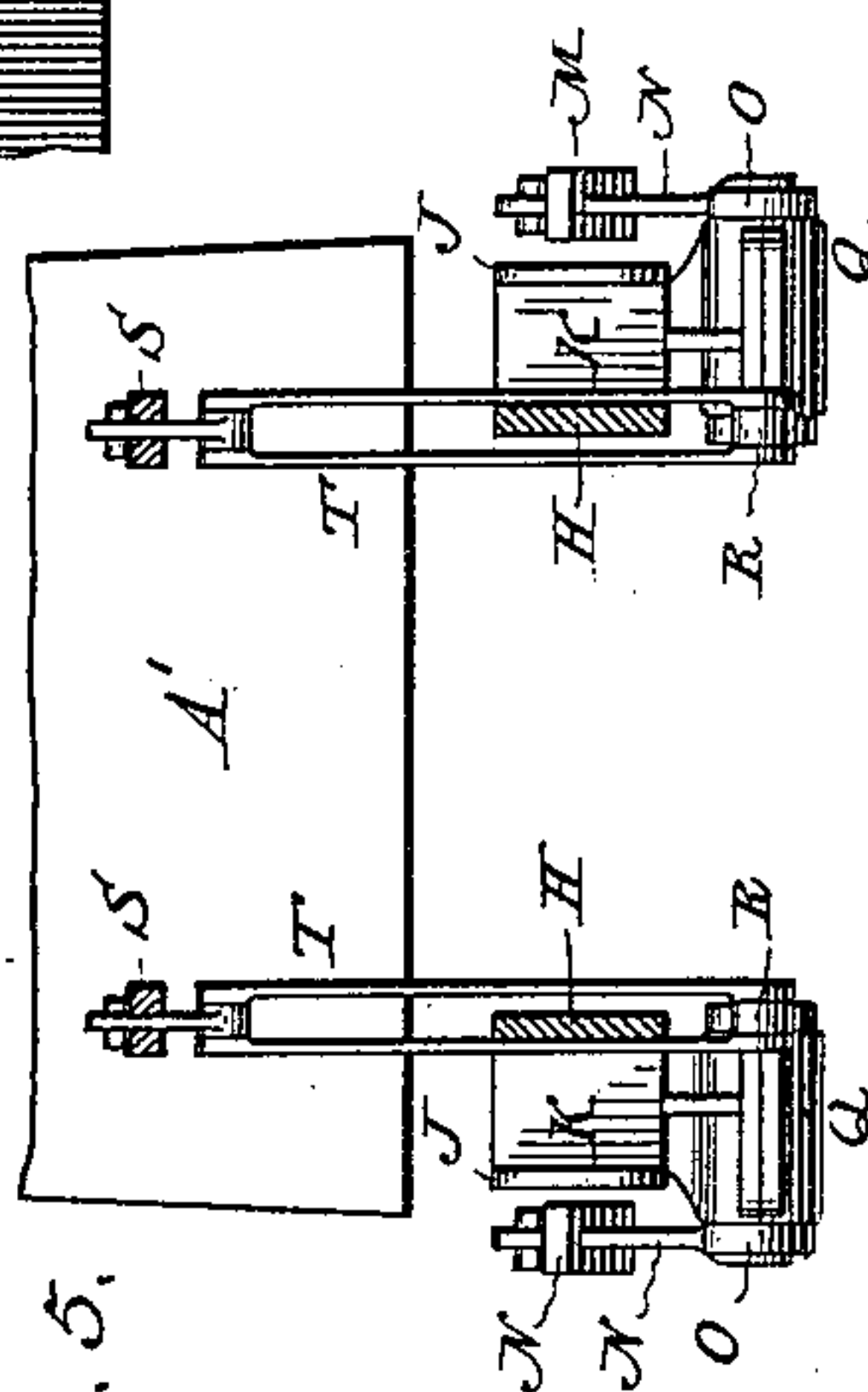


Fig. 5.

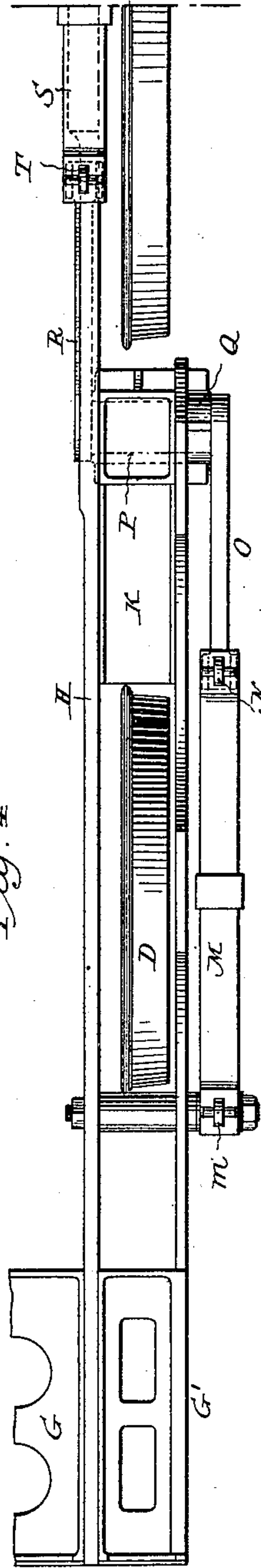


Fig. 4.

Witnesses
Edmund F. Kingsworth
E. A. Balloch

Inventor
James E. Sague
by his attorneys
Beeson, Davis & Wright

UNITED STATES PATENT OFFICE.

JAMES E. SAGUE, OF SCHENECTADY, NEW YORK.

LOCOMOTIVE.

SPECIFICATION forming part of Letters Patent No. 667,343, dated February 5, 1901.

Application filed October 19, 1900. Serial No. 33,553. (No model.)

To all whom it may concern:

Be it known that I, JAMES E. SAGUE, a citizen of the United States, residing at Schenectady, in the county of Schenectady and State of New York, have invented certain new and useful Improvements in Locomotives, of which the following is a specification.

This invention relates to that class of locomotives in which the fire-box is made of extra width in order to obtain an ample grate area without unnecessarily increasing the length thereof. It is desirable that the fire-box should be located at the rear of the locomotive in order that the fireman and engineer may be together. In such locomotives it is necessary to provide one or more pairs of supporting or trailing wheels under the fire-box, and in order to obtain the greatest width of fire-box and ash-pan the sides of the ash-pan should be brought as close as possible to the inner sides of the trailing wheels. In the locomotive hereinafter described the axle-boxes of the trailing wheels are arranged outside of the truck-frame, by which construction the sides of the ash-pan may be arranged close to the inner sides of the trailing wheels, thus giving to the ash-pan a greater width than could be obtained where the axle-boxes are arranged inside the wheels. Such an arrangement also prevents the journals of the trailing wheels from being heated by close proximity to the ash-pan. The bearings are readily accessible for oiling, &c., and the lateral distance between the points of support is increased, thus making the engine much steadier and freer from a tendency to roll, as is the case where the axle-boxes are arranged inside the wheels.

While, broadly stated, it is not new to arrange the axle-boxes of trailers outside the wheels, it is new to so arrange the axle-boxes in connection with the improved devices employed by me for equalizing the weight, as hereinafter described. The equalizing mechanism is of an improved construction and arranged in an improved way. Springs are attached to the axle-boxes of the driving-wheels and the trailers, and they are connected together by links and levers arranged in an improved way and in such manner as to prop-

erly distribute the weight. The axle-boxes of the driving-wheels are arranged inside the truck-frame, and special mechanism is employed by me for connecting the springs attached to the axle-boxes of the drivers with the springs attached to the axle-boxes of the trailing wheels, which, as before stated, are arranged outside the truck-frame.

The details of construction will be hereinafter more fully described.

The subject-matter deemed novel will be set forth in the claims.

In the accompanying drawings, Figure 1 shows a side elevation of a locomotive embodying my present invention. Fig. 2 is a plan view of the truck thereof. Fig. 3 is a detail view showing particularly the manner of connecting the springs of the drivers with the springs of the trailing wheels. Fig. 4 is a detail plan view of this mechanism, and Fig. 5 shows a transverse section on the line 5-5 of Fig. 3.

The boiler A and cab B, with their appurtenances, are of usual construction. The fire-box A' and ash-pan A² are mounted on a frame supported on driving-wheels C, trailing wheels D, and pilot-wheels E. The main frame is preferably continuous, the front ends of the side pieces H thereof being secured to a buffer F, while the rear ends are connected by a cross-frame G. The frame H is formed with pedestals or guides H³ H⁴ for the boxes c of the driving-wheels. Outside frame pieces or plates J are provided, and they have each a guide or pedestal d extending over the axle-box of the corresponding trailer. These frame pieces or plates J are arranged outside the vertical plane of the trailing wheels over the trailing axle, and the rear ends of the frame-pieces H also extend over the trailing axle inside the wheels, as indicated, for instance, in Fig. 2. Filling-pieces K are interposed between the outside frame-pieces J and the adjacent sides of the frame-pieces H and are bolted thereto. The outside frame-pieces J and the rear ends of the main frame-pieces H are also connected together between the cross-frame G and the trailing axle by means of bolts. Filling-pieces G' are interposed between the rear ends of the

outside plates J and the rear ends of the frame-pieces H and are securely bolted thereto and to the cross-frame G, as indicated.

The construction which I have just described is not herein claimed as part of my present invention, as substantially the same construction is shown and claimed in my application for patent, Serial No. 26,779, filed August 13, 1900. That application, however, shows different mechanism for equalizing the weight or connecting the springs of the drivers with the springs of the trailing wheels. In the present instance a spring M is mounted on top of the axle-box of each trailing wheel. The rear end of each spring is connected with the corresponding outside frame-piece J by means of a link *m*. The front end of each spring M is connected by means of a link N with a lever O, secured to a short rock-shaft P, mounted in bearings in a hanger Q, depending from the truck-frame. The lever O is parallel with the frame-pieces J and H, and it is arranged outside the vertical plane of both frames. The short rock-shaft P extends inwardly beneath the frame-pieces J and H, and to its inner end is secured a lever R, which is arranged in the same vertical plane as the springs S S', which are attached to the axle-boxes of the driving-wheels C. The lever R is connected by means of links T with the rear end of the spring S of the rear driving-wheel. This spring is shown as being mounted on top of the axle-box of the rear driving-wheel; but it may be otherwise attached thereto. The arrangement on opposite sides of the locomotive is precisely the same.

In the present instance, where the springs S and S' are mounted on top of the axle-boxes of the driving-wheels, the front end of each spring S is connected, by means of links U, with a centrally-pivoted lever U', the opposite end of which is in turn connected by links *u* with the rear end of the spring S', while the front end of the spring S' is connected, by means of links *u'*, with a bracket on the main frame H. The arrangement of the springs S and S' and their connections is the same on both sides of the truck.

The arrangement of my improved equalizing mechanism enables me to secure a large area of ash-pan. The ash-pan may be extended to its full length without interference with the equalizing mechanism. It is only necessary to reduce the area of the ash-pan to accommodate the trailing axle. This arrangement also affords all the necessary space required for conveniently hanging and operating the brakes, while still connecting in an efficient

manner the springs of the driving-wheels with the springs of the trailing wheels, which are, as before stated, in different vertical planes.

I claim as my invention—

1. The combination of the driving-wheels, their axles, the axle-boxes thereof arranged inside the wheels, the trailing wheels, their axles, the axle-boxes thereof arranged outside the wheels, springs attached to the axle-boxes of the driving-wheels and to the axle-boxes of the trailing wheels, the truck-frame, short rock-shafts arranged in bearings thereon, levers projecting from the outer ends of said rock-shafts and connected with the front ends of the springs of the trailing wheels, and levers projecting from the inner ends of said rock-shafts, and connected with the rear ends of the springs of the rear driving-wheels.

2. The combination of the driving-wheels, their axles, the axle-boxes thereof arranged inside the wheels, the trailing wheels, their axles, the axle-boxes thereof arranged outside the wheels, springs attached to the axle-boxes of the driving-wheels and to the axle-boxes of the trailing wheels, the truck-frame, short rock-shafts arranged in bearings attached to the truck-frame, levers projecting from the outer ends of said rock-shafts and connected with the front ends of the springs of the trailing wheels, levers projecting from the inner ends of said rock-shafts and connected with the rear ends of the springs of the rear driving-wheels, a fire-box and an ash-pan projecting forwardly of the trailing axle and having a maximum area in front of the trailing axle, substantially as described.

3. The combination of the inside main frame, the outside frame-pieces, the driving-wheels, their axles, the axle-boxes thereof, arranged inside the wheels, the trailing wheels their axles, the axle-boxes thereof arranged outside the outside frame-pieces, springs attached to the axle-boxes on the driving-wheels, and to the axle-boxes of the trailing wheels, short rock-shafts arranged in bearings attached to the truck-frame, levers projecting from the outer ends of said rock-shafts, and connected with the front ends of the springs of the trailing wheels, and levers projecting from the inner ends of the rock-shafts and connected with the rear ends of the springs of the rear driving-wheels.

In testimony whereof I have hereunto subscribed my name.

JAMES E. SAGUE.

Witnesses:

WILLIAM SEMPLE,
GEO. S. CLARE.