

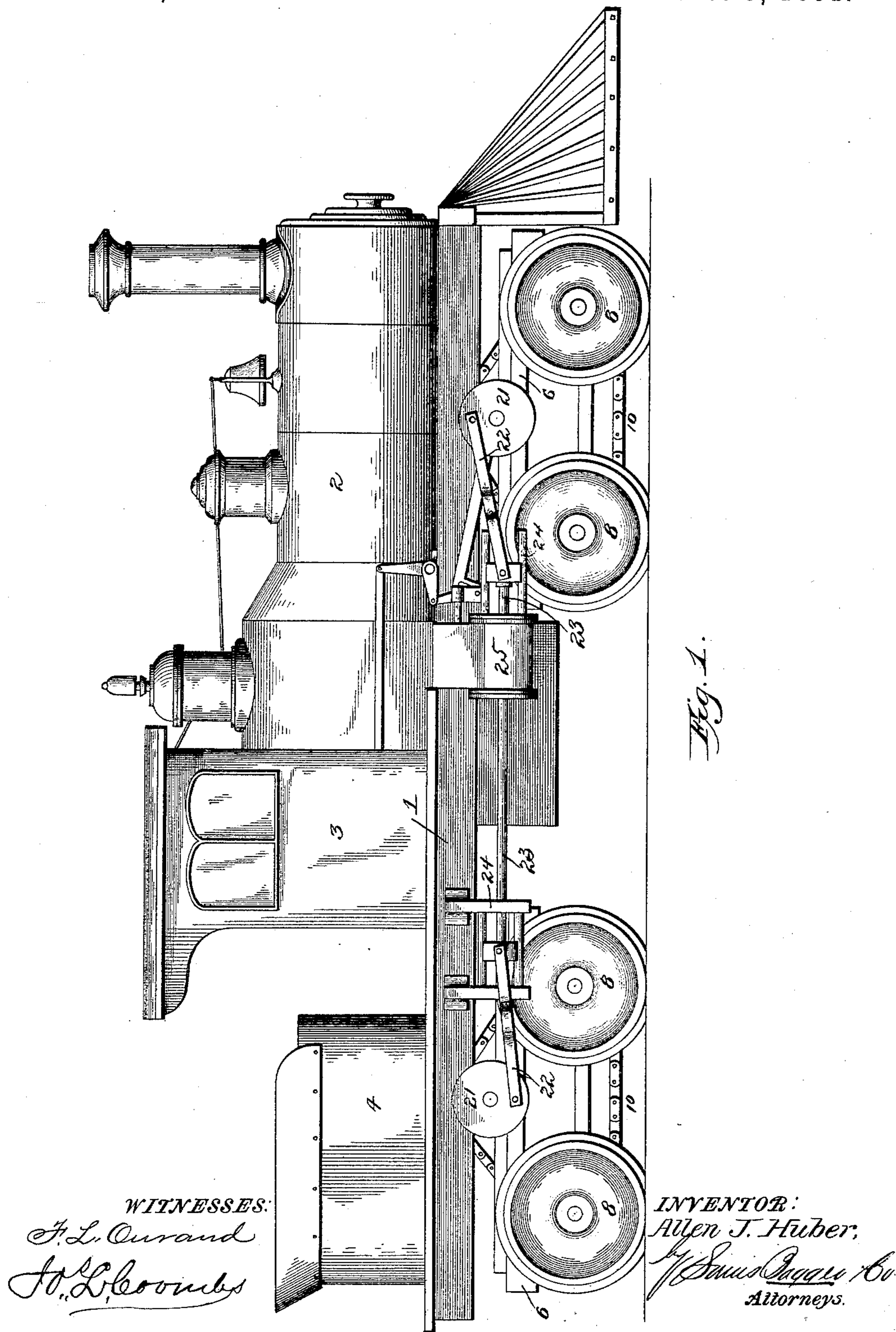
(No Model.)

2 Sheets—Sheet 1.

A. J. HUBER.  
LOCOMOTIVE ENGINE.

No. 462,556.

Patented Nov. 3, 1891.



WITNESSES:

*F. L. Curand*  
*J. L. Coombs*

INVENTOR:

*Allen J. Huber,*  
*J. Smith & Co.*  
Attorneys.

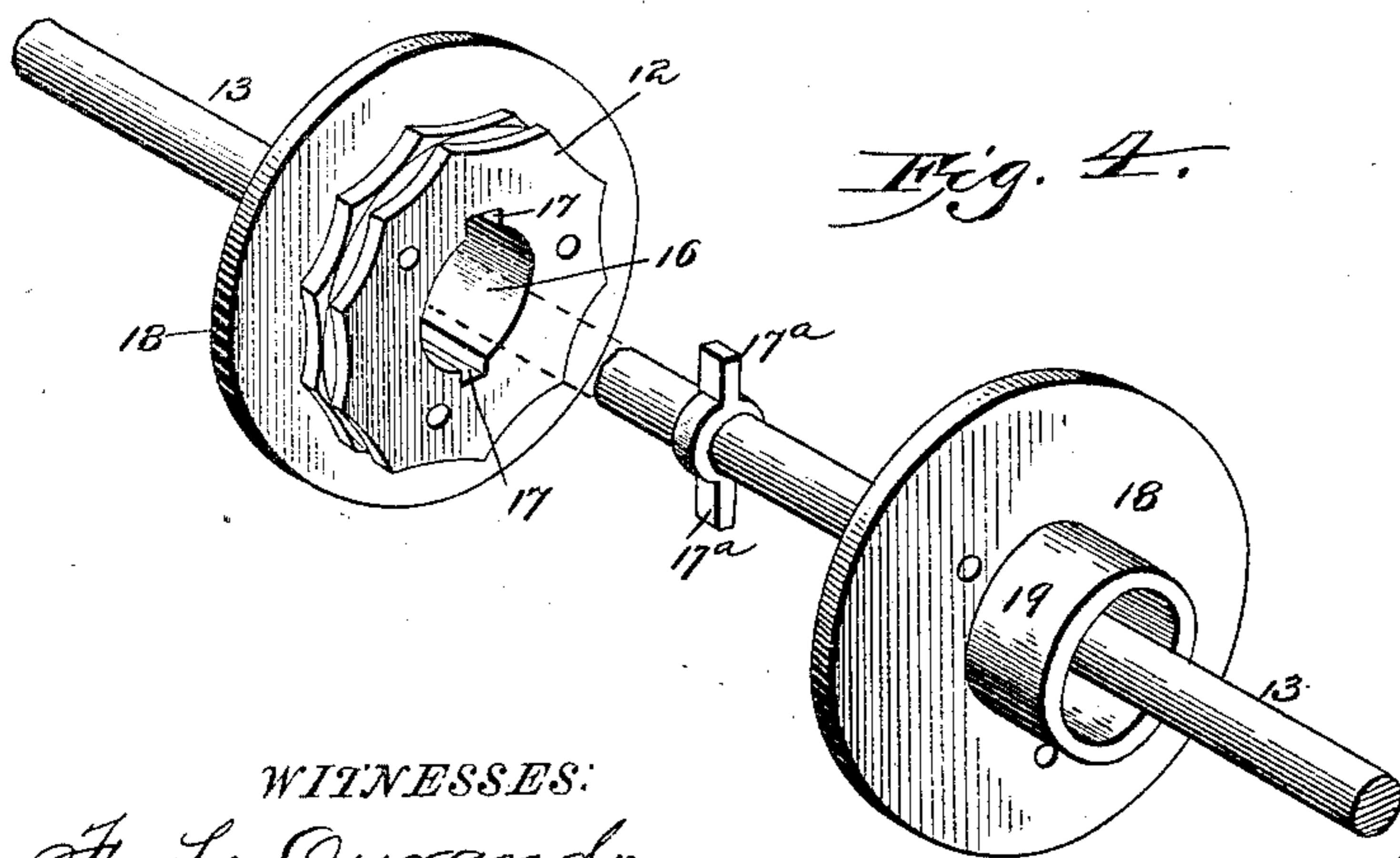
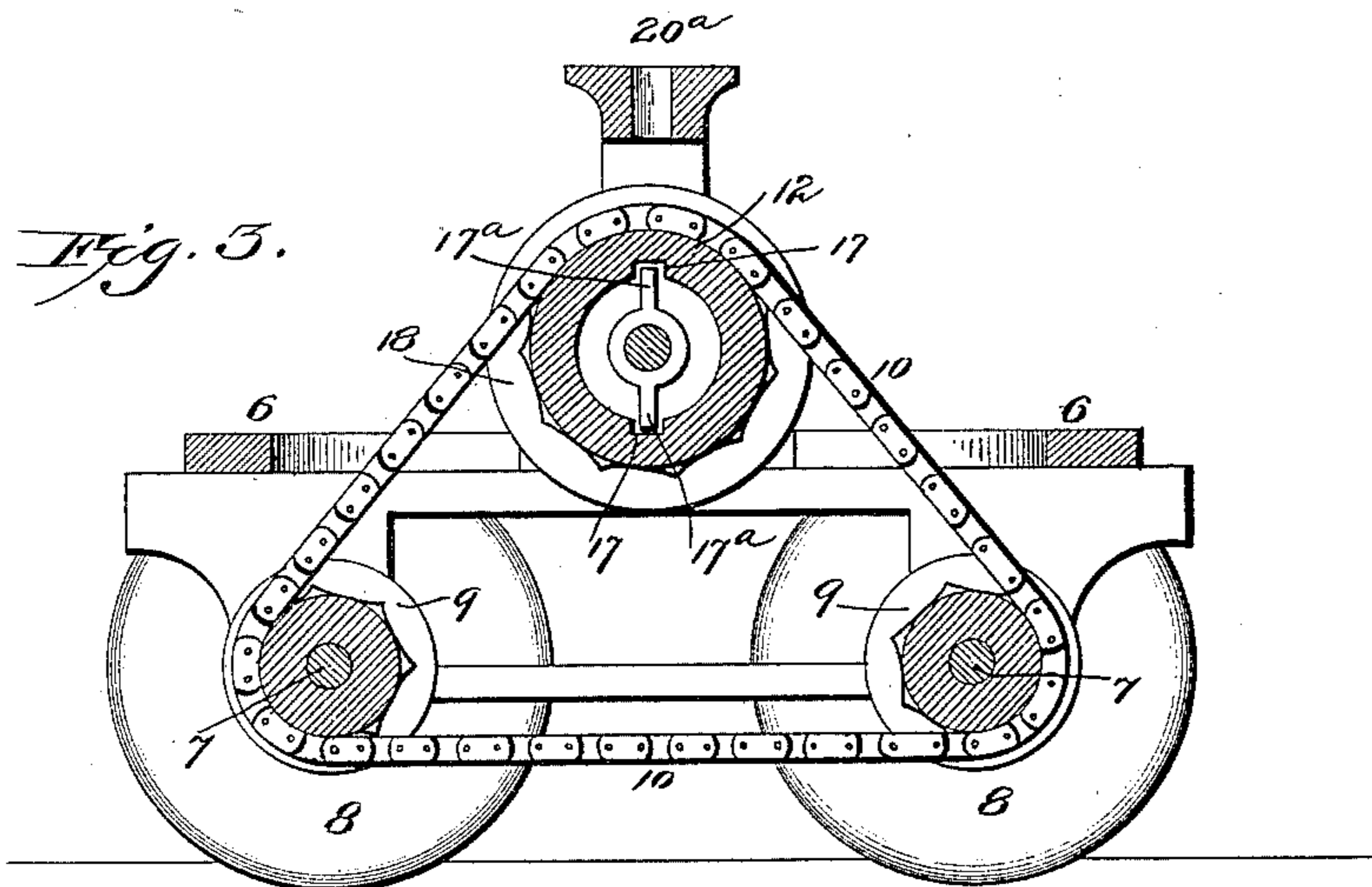
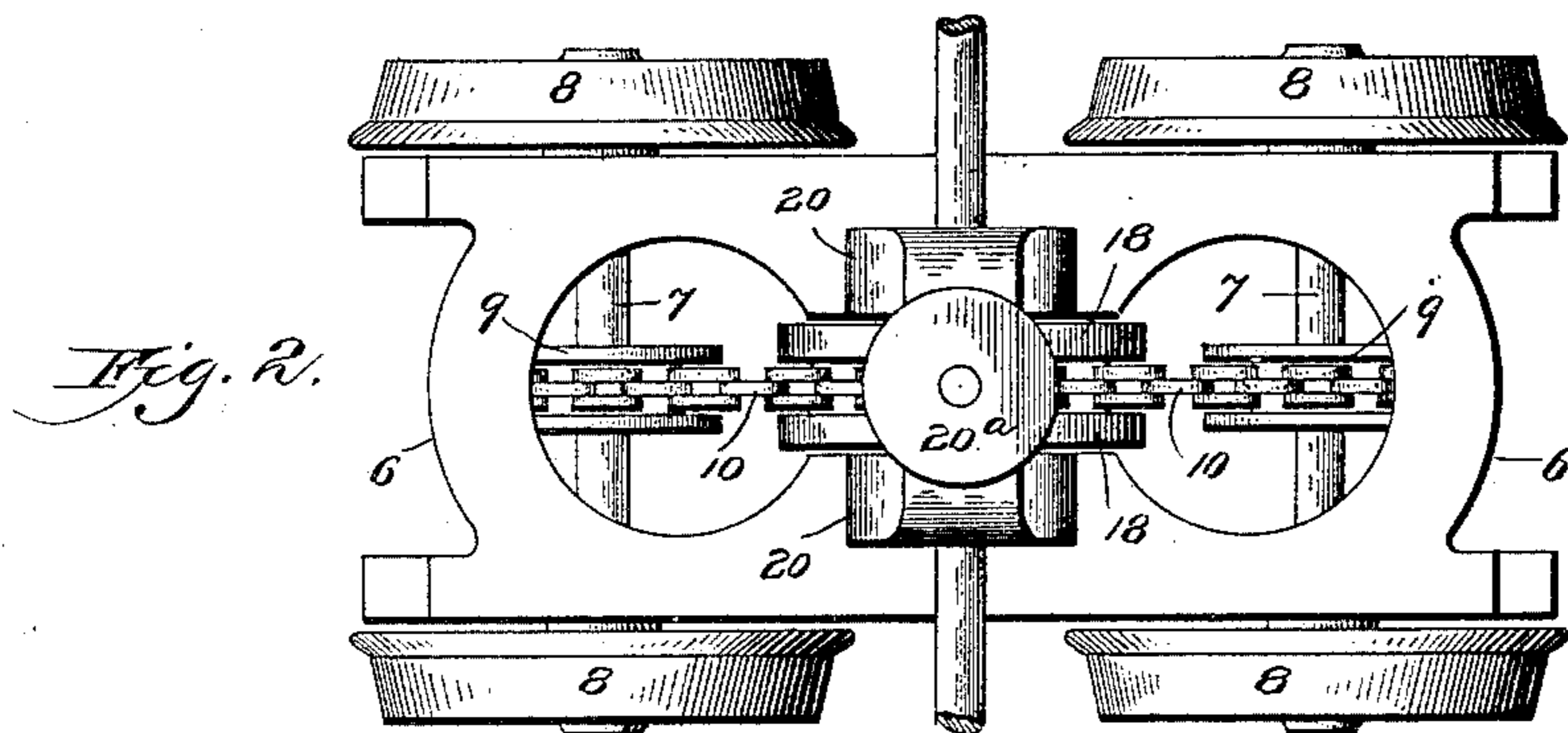
(No Model.)

2 Sheets—Sheet 2.

A. J. HUBER.  
LOCOMOTIVE ENGINE.

No. 462,556.

Patented Nov. 3, 1891.



WITNESSES:  
*F. L. Ourand*  
*J. L. Crook*

INVENTOR:  
*Allen J. Huber,*  
*Sam. Capper & Co.*  
Attorneys.

# UNITED STATES PATENT OFFICE.

ALLEN J. HUBER, OF LIMA, OHIO.

## LOCOMOTIVE-ENGINE.

SPECIFICATION forming part of Letters Patent No. 462,556, dated November 3, 1891.

Application filed May 16, 1891. Serial No. 392,986. (No model.)

*To all whom it may concern:*

Be it known that I, ALLEN J. HUBER, a citizen of the United States, and a resident of Lima, in the county of Allen and State of Ohio, have invented certain new and useful Improvements in Locomotive-Engines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to improvements in locomotive-engines, the object being to dispense with the ordinary driving-wheels with which the pistons are connected and to substitute therefor improved means for supporting and driving the engine, whereby important advantages are gained with respect to efficiency in operation, economy in running expenses, and security from accidents.

The invention consists in the novel construction and combination of parts herein-after fully described, and specifically pointed out in the claim.

In the accompanying drawings, Figure 1 is a side elevation of a locomotive constructed in accordance with my invention. Fig. 2 is a plan view of one of the trucks. Fig. 3 is a sectional view of the same. Fig. 4 is a detail perspective view of the wobbling sprocket and its shaft.

In the said drawings the reference-numeral 1 designates the base or frame of the locomotive; 2, the boiler; 3, the cab, and 4 the tender, the latter in this instance being mounted upon the frame 1, although it may be made separate therefrom, if desired.

Centrally pivoted in the cross-beams, near the front and rear ends of the frame 1, are trucks 6, in each of which are journaled axles 7, provided with ordinary flanged wheels 8. Centrally fixed to these axles are sprocket-wheels 9, around each pair of which passes a sprocket-chain 10, which also passes over a sprocket-wheel 12 on a transverse shaft 13.

The sprocket-wheels 12 are of peculiar construction, so as to have a wobbling motion upon their shafts to compensate for the swing-

ing or vibrating movement of the trucks. They each consist of an annular disk having sprockets upon the periphery and a central aperture 16 with radial notches 17, which receive the ends of radial arms or cranks 17<sup>a</sup> on the shaft 13, the notches being larger than the ends of said arms, so that the latter can wobble or move in any direction therein. Upon the faces of the disks are secured annular plates 18, having outwardly-extending hollow hubs 19, which are secured to the blocks 20 at the center of the truck, connected with hangers 20<sup>a</sup>, pivoted to the frame 1. Upon their outer ends the shafts 13 are provided with crank-wheels 21, which are connected with the pitman 22, connected with the piston-rods 23, which work in the ways or guides 24. It will be seen that the steam-cylinders 25 are located intermediate of the front and rear trucks and that the piston-rods pass through both ends thereof, thus greatly adding to the efficiency of the engine.

The engine is provided with the usual link-motion, steam-chest, valves, and connections; but as they form no part of the present invention no detailed description is deemed necessary, as they may be of any ordinary or suitable construction.

The operation will be readily understood. As the piston is actuated the piston-rods, which, as before stated, project through both ends of the cylinder, will be alternately reciprocated back and forth and, through the medium of the pitmen and crank-wheels, revolve the shafts 13. The sprocket-chains will cause the truck axles and wheels to revolve, thus driving the engine, and by reason of the wobbling movement of the sprockets on the shafts 13 the trucks can swing or vibrate without checking the speed of the wheels and without danger of throwing the chains off their sprockets.

Having thus described my invention, what I claim is—

In a locomotive-engine, the combination, with the front and rear pivoted trucks, the axles and wheels, the sprocket-wheels secured to the axles, the shafts having radial arms, the sprocket-disks having central apertures and radial notches, and the annular plates se-

cured to said disks and provided with hollow  
hubs journaled in bearings secured to the  
trucks, of the cylinders located intermediate  
of said trucks, the pistons, the piston-rods  
5 passing through both ends of the cylinders,  
the pitmen, and the crank-wheels, substan-  
tially as described.

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

ALLEN J. HUBER.

Witnesses:

A. L. MENTIS,  
D. G. MUSSER.