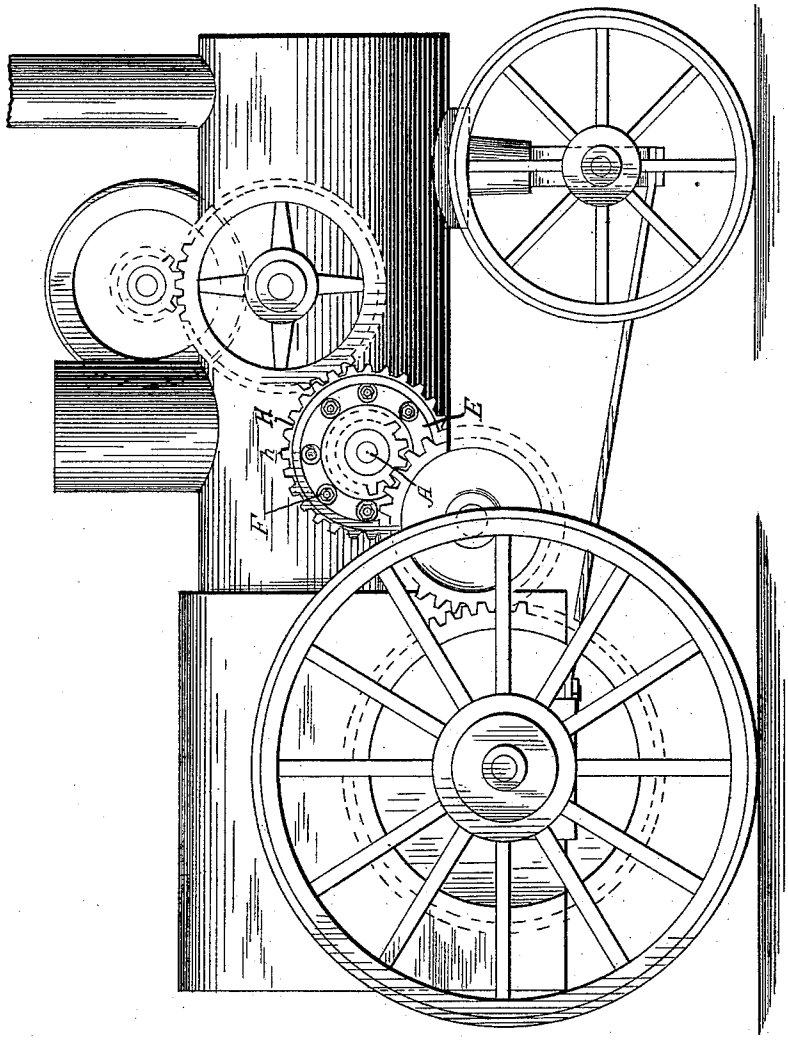
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F. M. WALKER.

GEARING FOR TRACTION ENGINES.

No. 424,383. Patented Mar. 25, 1890.

Fig. 1.



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Fig. 3.

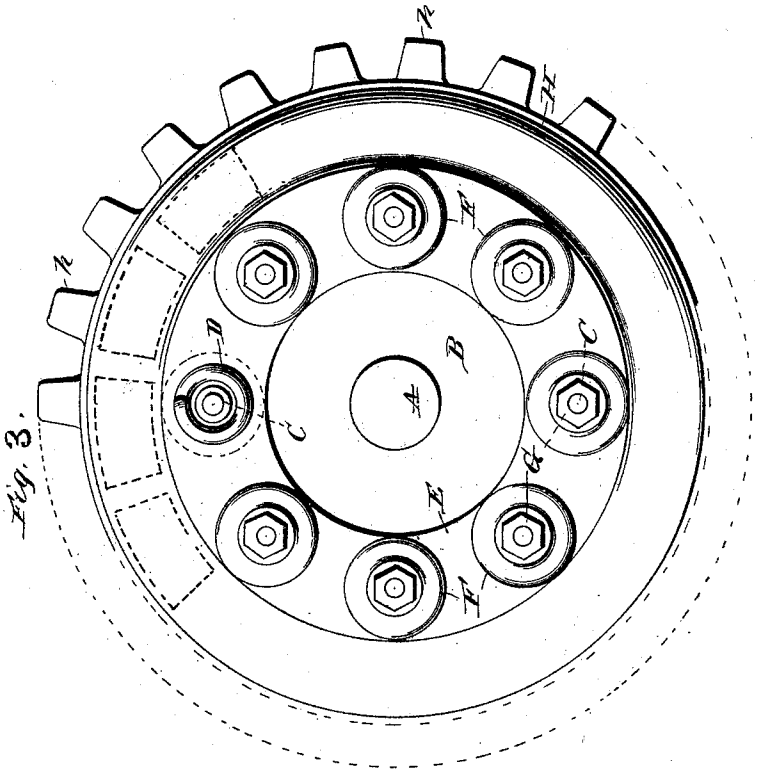
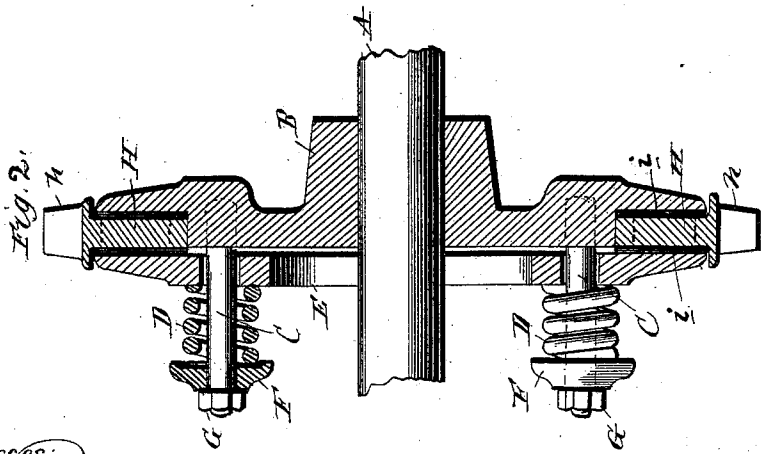


Fig. 2.



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UNITED STATES PATENT OFFICE.

FRANCIS M. WALKER, OF NEWARK, OHIO, ASSIGNOR OF ONE-HALF TO JAMES H. SMITH, OF SAME PLACE.

GEARING FOR TRACTION-ENGINES.

SPECIFICATION forming part of Letters Patent No. 424,383, dated March 25, 1890.

Application filed November 6, 1889. Serial No. 329,416. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS M. WALKER, a citizen of the United States, residing at Newark, in the county of Licking and State of Ohio, have invented certain new and useful Improvements in Gearing for Traction-Engines; and I do 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 appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This improvement relates to a device for use mainly in traction-engines, by which the power of the engine may be steadily and constantly transmitted to the driving-wheels and yet the gearing is protected from injury or breakage by any sudden or undue strain; and the invention consists in the peculiar construction, arrangement, and combination of parts hereinafter more particularly described, and then definitely pointed out in the claim.

In the accompanying drawings, Figure 1 is a side view of an ordinary traction-engine provided with my improvement. Fig. 2 is a central vertical cross-section of a wheel constructed according to my improvement. Fig. 3 is a plan of the same.

The engine shown in Fig. 1 is an ordinary form of engine—such, for instance, as that shown in Patent No. 227,259, which I have selected for illustration; but I do not limit myself to this particular form, as I intend to apply it to other forms of traction-engines, and particularly to the subject-matter of the Patents Nos. 357,431 and 379,996.

As nothing is claimed on the general construction of the engine used, it being only shown to comply with the rules of the Patent Office, it is unnecessary to describe it further, and I will therefore refer in my description only to that part of my invention which I claim as new.

Referring now more particularly to Figs. 2 and 3, A represents one of the shafts of an engine, such as the main or counter shaft, on which is keyed or otherwise firmly secured the wheel-plate B, carrying studs C C, around each of which is a spring D, which presses upon an annular friction-plate E, said springs being held in compressed condition by the caps F and nuts G, which last may be used to adjust the force of the springs by screwing them down on the studs C C.

Between the wheel-plate B and the friction-plate E is a toothed annulus H, having its teeth *h* formed either for regular toothed or sprocket gearing, as the case may be, and on each side of this annulus is a ring I, of some suitable substance, preferably leather, which should be secured by cement or otherwise either to the wheel-plate and friction-plate or to the sides of the annulus H.

The operation is as follows: The engine being so arranged that its power is transmitted to the annulus either by gearing, as shown in Fig. 1, or chain-gearing, as the case may be, and when everything is in its normal condition for work the friction between the annulus and the plates due to the pressure of the springs upon the plate E will be sufficient to drive the shaft A; but should any undue or sudden strain be accidentally put upon the engine, such as would be likely to damage an engine not having such a device, then the annulus would slip between the plates and no damage would result. As soon as the sudden or undue strain is overcome or removed the engine will resume its normal action without further care or attention, because the friction between the annulus and the plates is sufficient to carry the proper load of the engine at all times, and will only allow of slipping action when too much strain is put upon it.

I do not intend to limit myself to the use of leather or similar material between the annulus and plates, for in some cases it may be dispensed with. I may sometimes set blocks of wood in recesses in the annulus, as shown in dotted lines, and thus dispense with the rings of leather; or, for the same purpose I may make the inner part of the annulus of wood with a metallic ring or tire on the outside to carry the teeth.

It is evident that the annulus may be made to receive the power from the engine and transmit it to the wheel-plate, or that the power may be given first to the wheel-plate

and transmitted by it to the annulus, as preferred.

What I claim as new is—

The combination of a shaft A, a wheel-plate B, fast thereon, a friction-plate E, carried by said wheel-plate, studs C, projecting from the wheel-plate, springs D, pressing on the friction-plate, and the toothed annulus H, set between said wheel and friction plates and transmitting the power of the engine to the traction-wheel, substantially as described.

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

FRANCIS M. WALKER.

Witnesses:

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A. A. STASEL.