

No. 741,379.

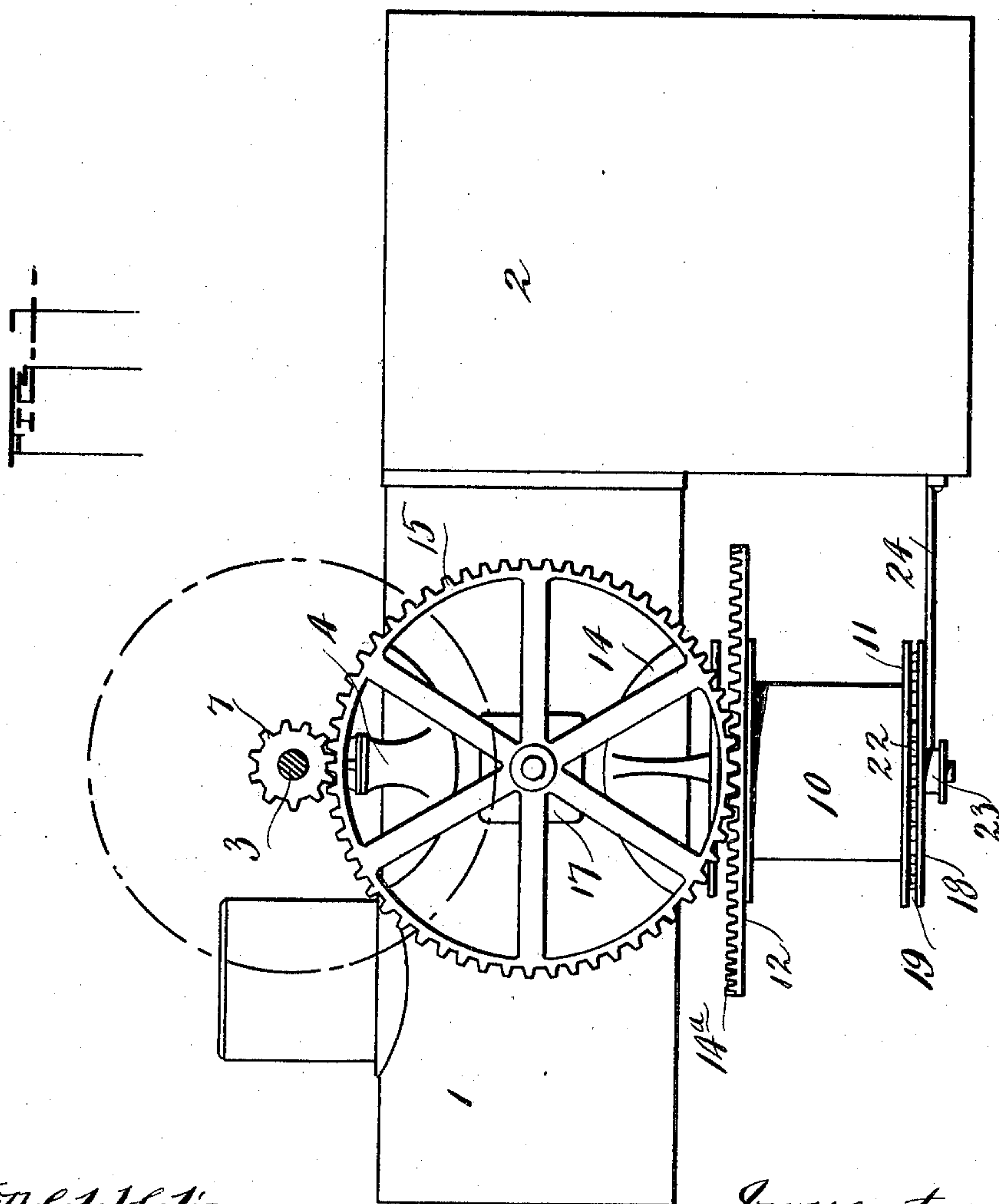
PATENTED OCT. 13, 1903.

J. SAUNDERS & E. G. ROWLANDS.
TRACTION ENGINE ATTACHMENT.

APPLICATION FILED SEPT. 23, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



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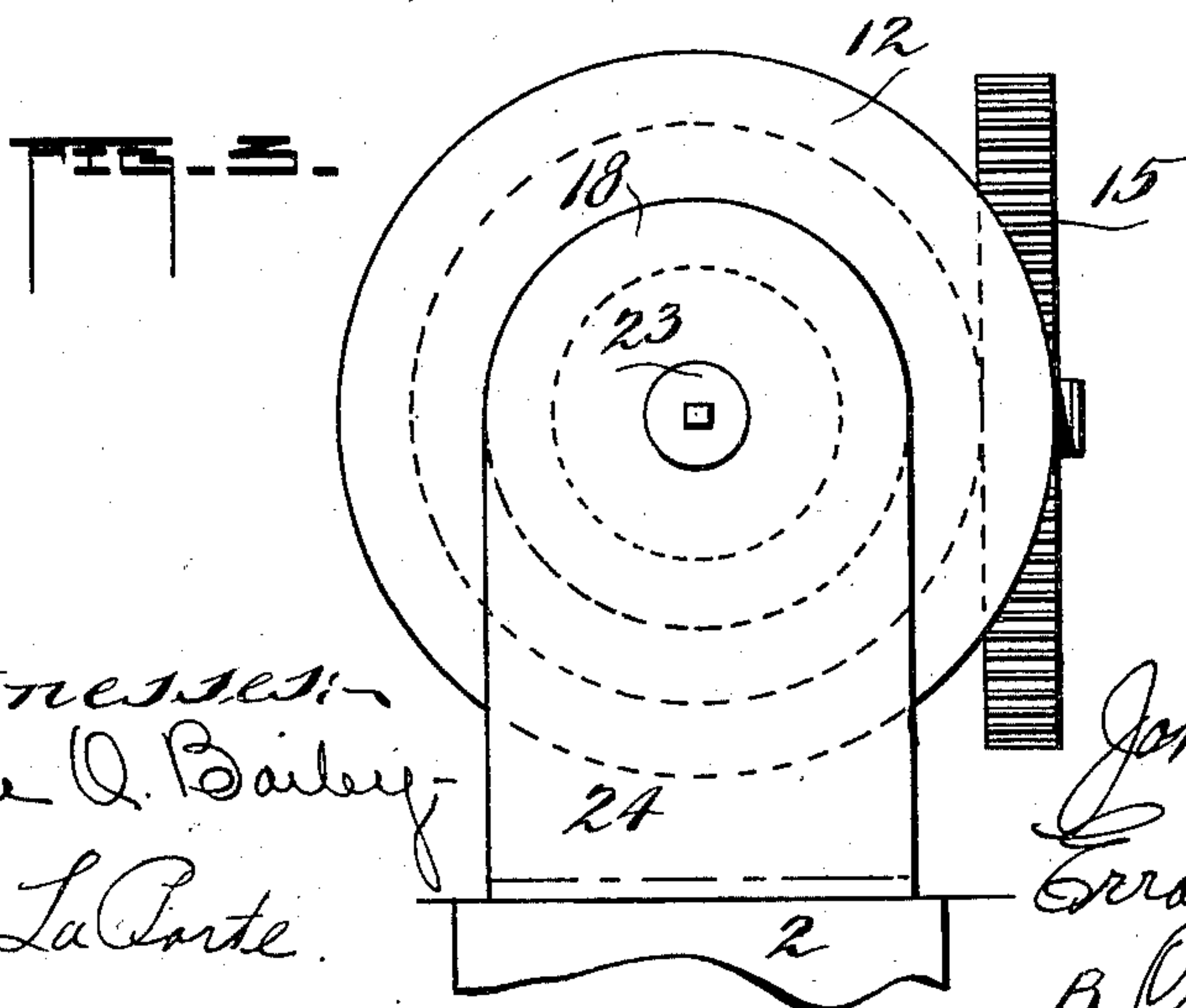
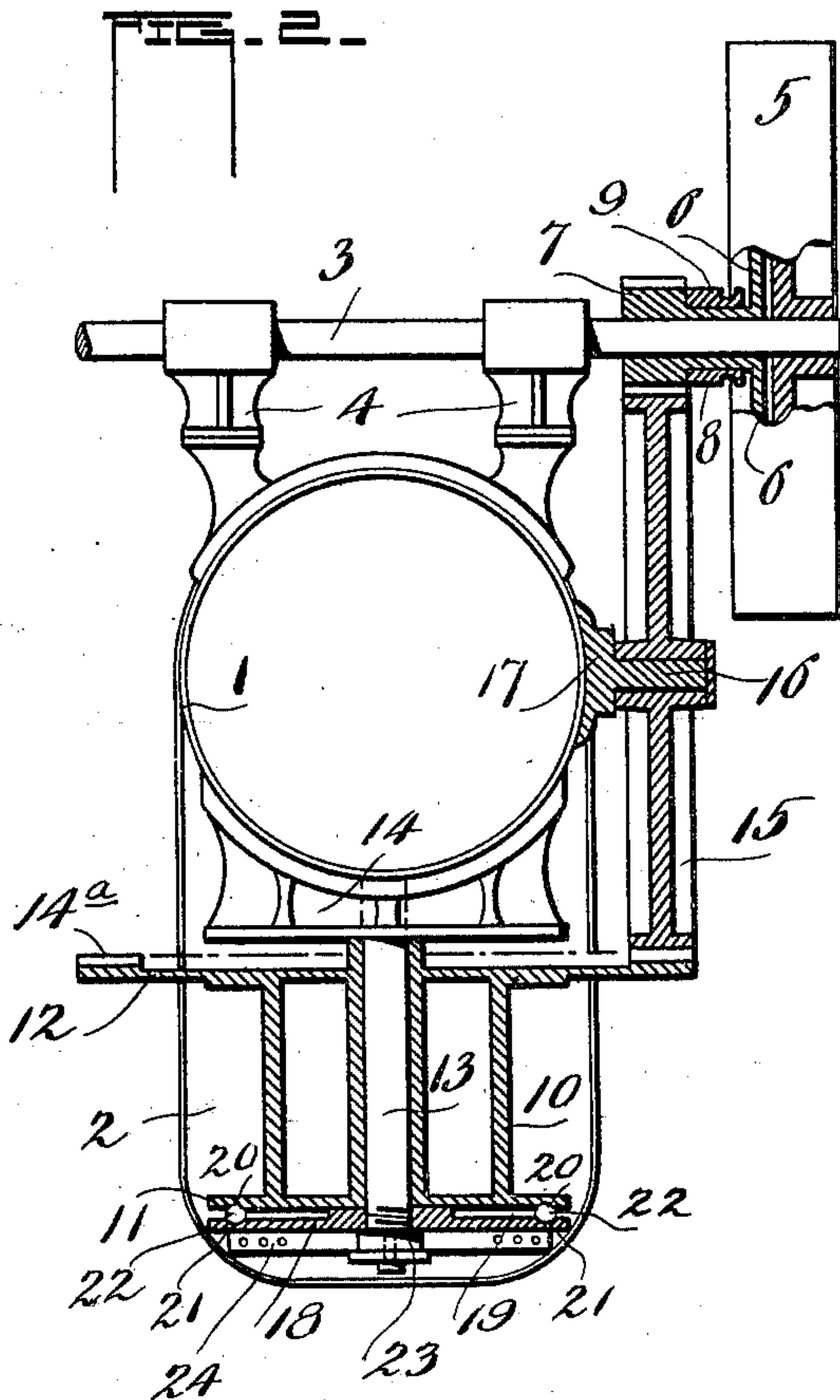
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UNITED STATES PATENT OFFICE.

JOHN SAUNDERS AND ERROLL G. ROWLANDS, OF PEORIA, ILLINOIS.

TRACTION-ENGINE ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 741,379, dated October 13, 1903.

Application filed September 23, 1902. Serial No. 124,571. (No model.)

To all whom it may concern:

Be it known that we, JOHN SAUNDERS and ERROLL G. ROWLANDS, citizens of the United States, residing at Peoria, in the county of Peoria and State of Illinois, have invented certain new and useful Improvements in Traction-Engine Attachments; and we 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.

This invention relates to an attachment for traction-engines, and has for its object the provision of mechanism supported by the boiler of an engine and in front of the fire-box adapted to be employed for plowing and grading purposes.

The invention consists, essentially, of a drum mounted upon a shaft, which said shaft is journaled in a bracket which is attached to the under side of an engine-boiler, of a ring gear forming a part of said drum, which has meshing therewith an idler-gear journaled on a short shaft or stem extending from the side of the boiler which is actuated by means of a pinion adapted to have a fast and loose connection with a main drive-shaft actuated from a suitable source of power.

The invention has for its further object details of construction and in the combination of parts hereinafter more fully described, and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of our attachment and so much of a traction-engine as will illustrate the practical application of our device. Fig. 2 is a vertical cross-section through the parts as shown in Fig. 1 with the addition of a fly-wheel and showing parts of a friction-clutch. Fig. 3 is a bottom plan of the drum and its support.

In the drawings like numerals of reference indicate corresponding parts of the figures.

In illustrating the device we have thought it necessary to illustrate only the outline of the boiler and fire-box of a traction-engine and the main drive-shaft, which is usually connected to a suitable source of power and

arranged for imparting momentum to the ground-wheels of an engine.

1 indicates a boiler, and 2 the fire-box, of the ordinary form of traction-engine now in use.

3 indicates a transversely-carried power-shaft journaled in brackets 4, supported by the boiler 1. The usual devices, such as a fly-wheel with its friction-clutch and a pinion, which are carried by the power-shaft 3, having connection with mechanism for transmitting power from the shaft 3 to the traction-wheels of a like vehicle, we have omitted from the drawings, as they form no part of this device; but were they shown they would appear upon the left-hand side of the boiler and on the shaft 3 when looking at Fig. 2 and upon the opposite side of Fig. 1.

The devices which form our invention are supported beneath the boiler and actuated by mechanism carried upon the opposite side of the machine and on the shaft 3 to the devices for imparting power to the traction-wheels above described as not being shown.

5 refers to a fly-wheel carried and rotatable with the shaft 3 and may be provided with arms 6, forming a part of a suitable friction-clutch adapted to engage the inner surface of the rim of the fly-wheel, and integral with such friction-clutch parts is a pinion 7, spaced a suitable distance from the fly-wheel by means of a collar or sleeve 8, forming a part of the arms 6 and the pinion 7, and 9 is a clutch member having a fixed relation with the collar or sleeve 8. We have described this means of making the pinion 7 fast and loose with the shaft 3 through the fly-wheel 5; but it is to be understood that other and various forms of mechanism may be employed for accomplishing this purpose.

10 indicates a drum having flange portions 11 and 12, and the same is designed to rotate horizontally on a vertical shaft 13, which is attached to or forms a part of a bracket or plate 14, designed to be suitably secured to the under side of the boiler 1 and in such a manner as to support the drum 10 for rotation beneath the boiler and slightly in advance of the fire-box 2. The flange 12 of the

drum 10 is much larger in circumference than the flange 11, and upon the upper face and at or near the outer edge thereof is shown a ring gear 14^a. Meshing with this ring gear 14^a, and also with the pinion 7, is an idler-gear 15, mounted upon a short stud or spindle 16, forming a part of an idler-bracket 17, which is fixedly attached to the side of the boiler 1 in the position shown in Figs. 1 and 2.

Referring again to the drum 10 and the shaft 13, 18 is a ball-disk which is screwed or otherwise secured to the lower end of the shaft 13 and arranged in such a manner as to form a channel 19 between the disks 18 and the lower face of the drum, and circumferentially arranged in the lower face of the drum and the upper face of the ball-disk are shown channels 20 and 21, in which are arranged ball-bearings 22, by means of which the drum 10 may have a free and easy movement on its support.

23 is a jam-nut on the outer end of the shaft 3, and 24 indicates a brace or support for supporting the ball-disk plate 18, and at its opposite end is secured to the fire-box 2. The bracket 24 may be integral with the ball-disk plate 18, if desirable.

The operation of the device from the drawings and the description thereof, it is believed, will be readily understood. Now, then, the function of such a device as attached to a traction-engine: While applicable for many purposes, it is designed to assist in plowing and grading, and especially over hilly ground. For instance, we will suppose that it is to be employed for leveling a road. A traction-engine would be placed on each side of the hill in the road and two parts of a cable attached to the grading or leveling machine and their opposite ends wrapped around the drums of the traction-engine, by means of which it is designed by one engine through such cable and drum to pull the grader or leveler to the same and by means of the oppositely-placed engine and its cable draw it back again. The engines being so placed and the drums rotating in the manner in which they do, the engines may be run forward or backward and the grader or leveler pulled from machine to machine until the desired object is accomplished.

We are aware that various changes may be made in the construction and application of the parts herein and details resorted to without departing from the spirit of invention herein.

Having thus fully described our invention, what we claim, and desire to secure by Letters Patent of the United States, is—

1. An attachment for traction-engines, comprising a drum mounted for horizontal rotation beneath the engine, an upwardly-presented ring gear of the drum, a power-shaft, and means having an intermittent fast connection with the shaft adapted when so connected to impart rotation to the drum, for the purpose set forth.

2. An attachment for traction-engines, comprising, a drum operatively mounted beneath its boiler, a ring gear of the drum, an idler-gear supported to mesh with the aforesaid ring, and means for intermittently actuating said gear, for the purposes set forth.

3. An attachment for traction-engines, comprising, a drum mounted on a vertical shaft suspended beneath its boiler, a ring gear of the drum, a power-shaft, a pinion carried upon said shaft, and an idler-gear supported to mesh with the aforesaid pinion, and ring gear of the drum, for the purposes set forth.

4. An attachment for traction-engines, comprising, a drum operatively mounted beneath its boiler, a disk supported beneath the drum and ball-bearings interposed between the disk and drum, a ring gear of the drum and mechanism for actuating said drum, for the purposes set forth.

5. An attachment for traction-engines, comprising, a drum mounted on a shaft suspended beneath its boiler and intermediate the end of said boiler and fire-box, a ring gear from the upper surface of the drum, a gear meshing with said ring supported from a shaft extending from the side of the engine-boiler, a power-shaft and means for imparting movement to the aforesaid gear, substantially for the purposes set forth.

6. In combination with a traction-engine, the shaft 13 supported by means attached to the engine-boiler, a drum 10 having means arranged to be actuated by supplemental devices, the disk 18, and the ball-bearings 22, between the disk and drum, substantially for the purpose described.

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN SAUNDERS.

ERROLL G. ROWLANDS.

Witnesses:

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