

No. 685,759.

Patented Nov. 5, 1901.

A. M. GRINDER.  
TRACTION ENGINE.

(Application filed Jan. 26, 1901.)

(No Model.)

Fig. 1.

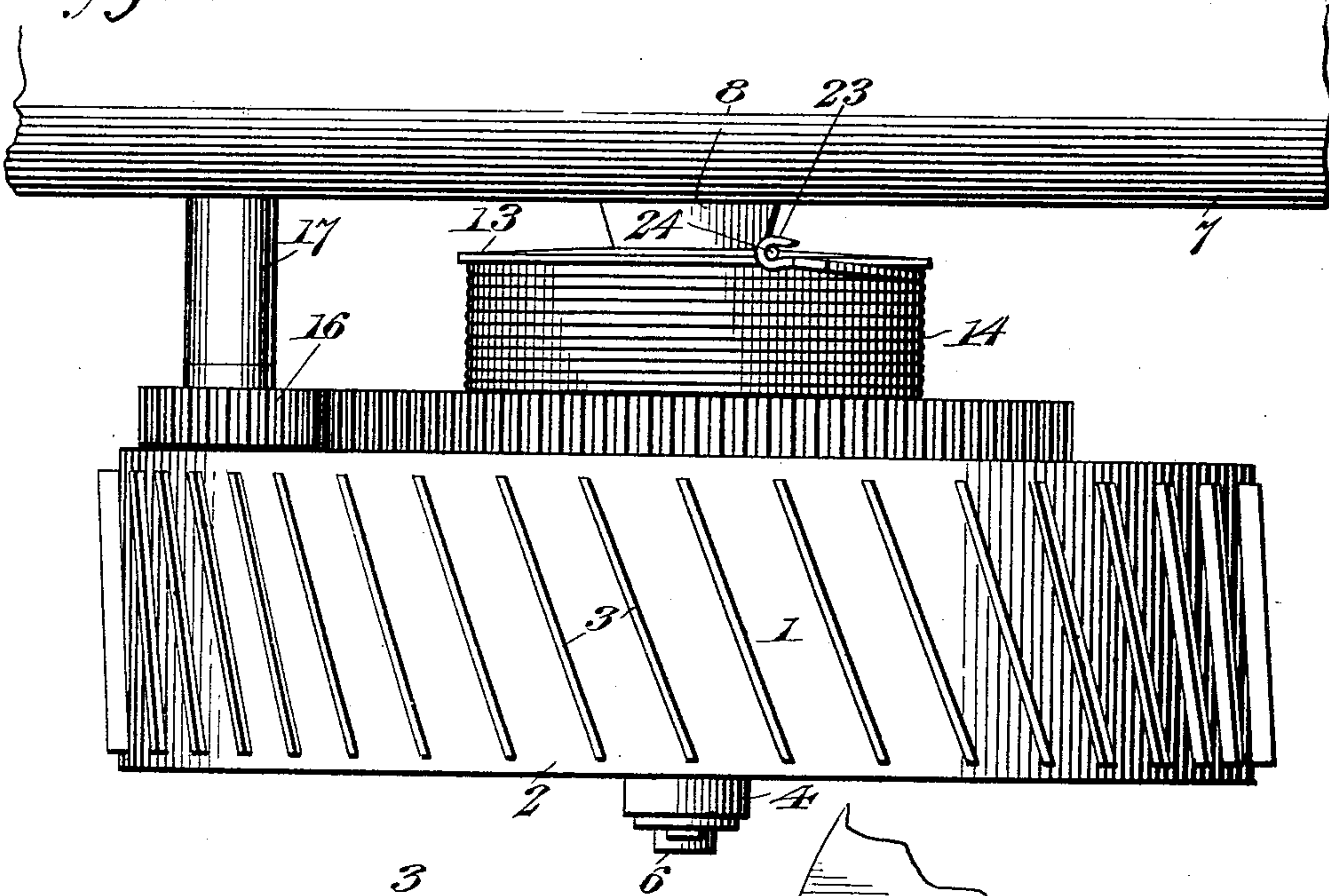
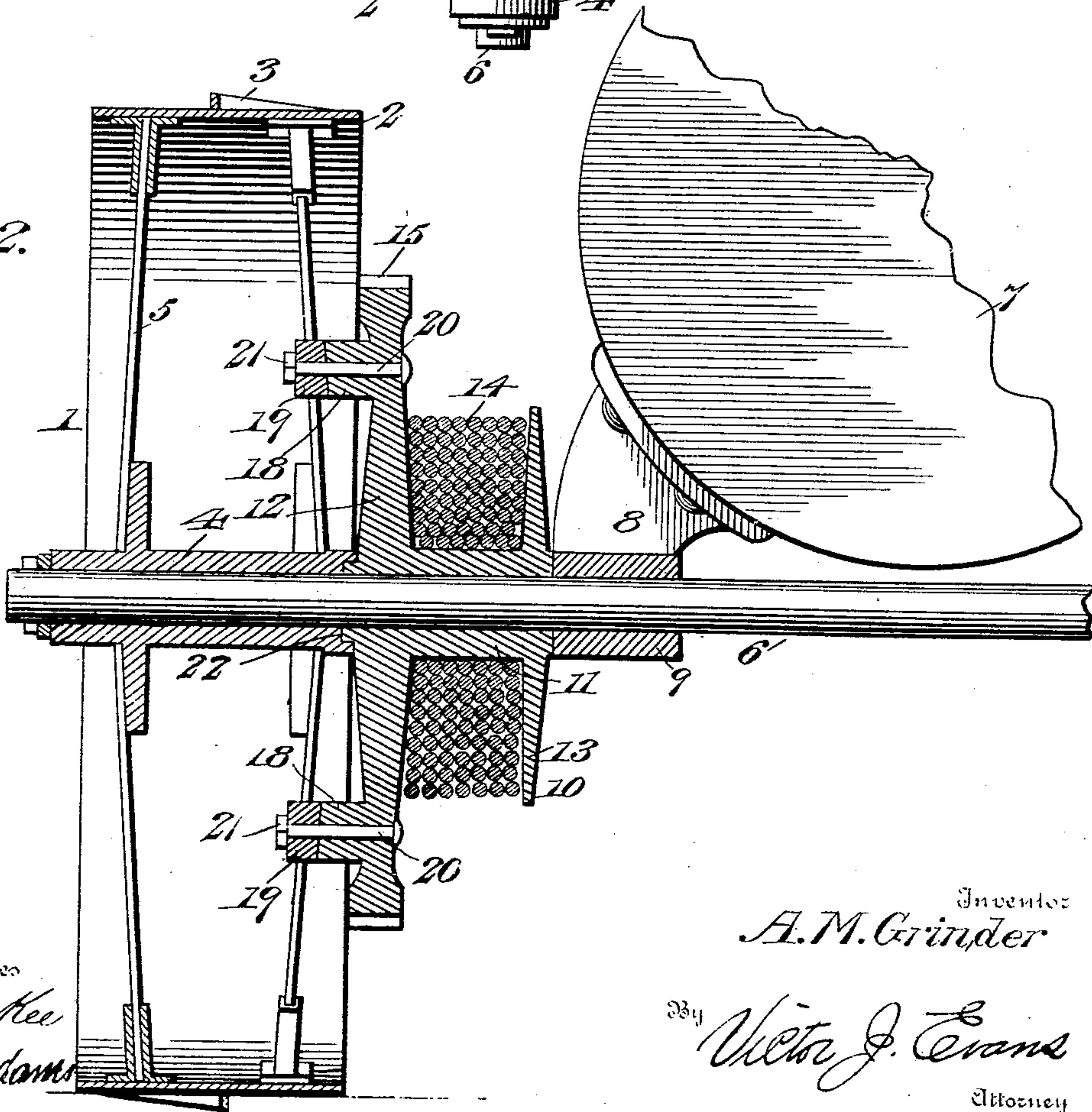


Fig. 2.



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# UNITED STATES PATENT OFFICE.

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## TRACTION-ENGINE.

SPECIFICATION forming part of Letters Patent No. 685,759, dated November 5, 1901.

Application filed January 26, 1901. Serial No. 44,888. (No model.)

*To all whom it may concern:*

Be it known that I, ANDREW M. GRINDER, a citizen of the United States, residing at Buffalo Center, in the county of Winnebago and State of Iowa, have invented new and useful Improvements in Traction-Engines, of which the following is a specification.

This invention relates to traction-engines; and the object in view is to provide a device in the form of an attachment which may be readily applied to any ordinary type of traction-engine and which is capable of being operated by the driving-gear in such engine for the purpose of enabling stumps, rocks, &c., to be extracted from the ground and for enabling houses and various objects to be moved from place to place. By means of the present invention it is also practicable to move the traction-engine itself after it has become embedded in the ground to such an extent as to render the ordinary propelling mechanism ineffective for the purpose stated.

The winding device forming the subject-matter of this invention is so applied to the traction-engine and so related to the traction-wheel and driving-gear thereof that it may be disconnected from the traction-wheel, so as to be operated independently thereof.

Further objects and advantages of the invention will appear more fully in the course of the ensuing description.

The invention consists in certain novel features and details of construction and arrangement of parts, as hereinafter fully described, illustrated in the drawings, and incorporated in the claims.

In the accompanying drawings, Figure 1 is a plan view of a sufficient portion of a traction-engine to illustrate the application of the present improvement thereto. Fig. 2 is a vertical sectional view taken longitudinally of the main axle of the machine and illustrating the manner of coupling and uncoupling the winding-drum and traction-wheel.

Similar numerals of reference designate corresponding parts in the figures of the drawings.

Referring to the drawings, 1 designates one of the traction-wheels of an ordinary traction-engine, the same being provided with the usual traction-rim 2, ground-engaging ribs 3, and hub 4, with spokes 5.

6 designates the main axle of the machine, and 7 the boiler, which is provided with boiler-lugs 8, having bearings 9, which receive the axle 6.

In carrying out the present invention I employ a winding-drum or windlass 10, comprising the hub portion 11 and the flanges or heads 12 and 13, said drum being adapted to receive a cable 14, which is wound thereon and is retained between the heads 12 and 13. The head 12, which lies adjacent to the traction-wheel, is made of relatively large diameter and is provided with a toothed rim or periphery 15, which meshes with and is actuated by a driving-pinion 16, mounted upon the driving-shaft 17 of the engine, the parts 15, 16, and 17 forming the ordinary driving-gear of a traction-engine. It will be understood, however, that the gear 15 forms an integral part of one of the heads of the drum or windlass. The head 12 is provided upon the side adjacent to the traction-wheel with a number of bosses 18, and connected with the spokes or frame of the traction-wheel is a corresponding series of bearings or seats 19, against which the bosses 18 are adapted to rest, as clearly illustrated in Fig. 2. The bosses 18 and the bearings or seats 19 are provided with registering openings for the reception of a series of coupling devices 20, which for convenience are shown in the form of ordinary bolts, which are passed through the head 12 and the seats 19 and secured by means of the holding-nuts 21. By means of the construction just described the drum may be readily coupled to or uncoupled from the traction-wheel, so that the drum may be operated in unison with or independently of the traction-wheel for the purpose which will hereinafter more fully appear. The drum 10 and the hub 4 of the traction-wheel are also provided with interfitting ends, as shown at 22, so that the parts will properly aline. One end of the cable 14 is permanently secured to the hub of the drum, and the opposite end of the cable is provided with a terminal hook 23, which is adapted to engage with a retaining-pin 24 on one of the heads of the drum, as shown in Fig. 1, after the cable has been wound upon the drum and when it is no longer required for use.

The operation of the device is as follows:



When the traction-engine becomes too firmly embedded in the ground to be capable of freeing itself by means of its own motive power applied to the traction-wheel, the drum or windlass 10 is uncoupled from the traction-wheel by removing the bolts 20. The cable is then unwound from the drum and carried to solid ground, where it is connected to a suitable anchor or tree or other permanent object, after which the cable is extended back to the engine and connected therewith. In this way the traction-wheels are left free to roll upon the ground and the power is applied directly to the winding-drum. A small expenditure of power thus applied will revolve the drum upon the axle and wind the cable thereon, thereby pulling the engine out of the soft ground in which it has become embedded. After this operation has been completed the cable may be rewound upon the drum and fastened by means of the hooks 23 and pin 24. The drum is then coupled to the traction-wheels by means of the bolts 20, after which the power of the engine is utilized for propelling the machine. It will be noted that the provision of the winding-drum, &c., does not interfere in the least with the usual operation of the rest of the mechanism of the engine.

It will be understood that the invention is susceptible of various changes in the form, proportion, and minor details of construction, which may be accordingly resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

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

1. The combination with one of the ground-wheels and the axle of the ground-wheels, of a winding-drum having its hub mounted to said axle and having its outer end interfitted in the inner end of the hub of the ground-wheel and its inner flange or head formed with gear-teeth on its perimeter, and apertured bases extending laterally from its outer face, apertured seats mounted on the spokes of the ground-wheel, detachable fastening-bolts through the said bases and seats, a cable carried by the winding-drum, and a gear engaging the gear-teeth on the drum-flange to rotate the drum, substantially as described and for the purpose set forth.

2. The combination with the wheel of a traction-engine provided with seats on opposite sides of the wheel-hub formed with bolt-holes, and having one end of the hub recessed; of a winding-drum comprising a hub and heads projecting therefrom, one of said heads having a projection fitting the recess in the wheel-hub, and a plurality of bosses fitting the seats on the wheel and having openings registering with the bolt-holes in said seats.

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

ANDREW M. GRINDER.

Witnesses:

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