E. AKINS.

FLY WHEEL.

APPLICATION FILED JULY 20, 1914.

1,168,142.

Patented Jan. 11, 1916.

2 SHEETS—SHEET 1.

Fig. 1.

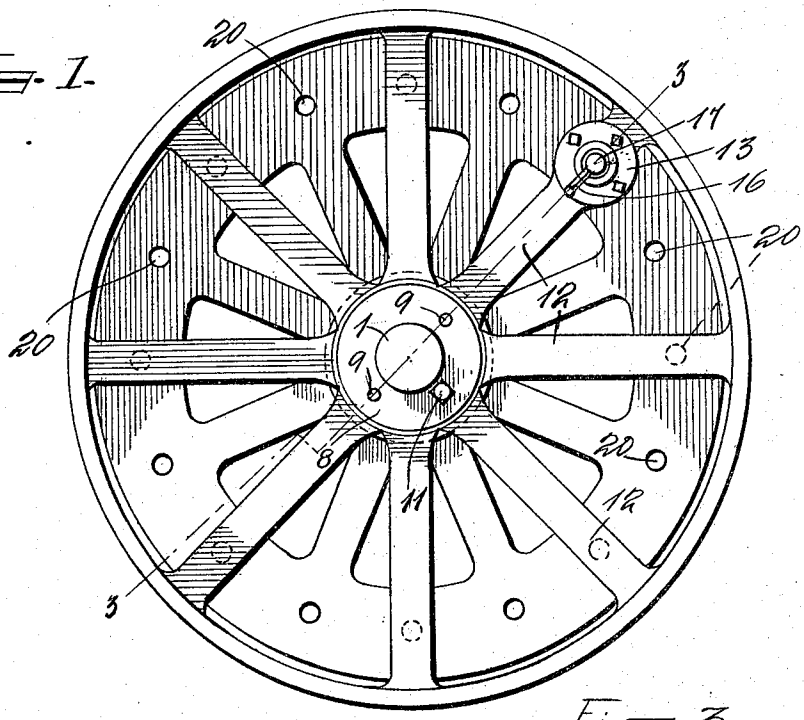
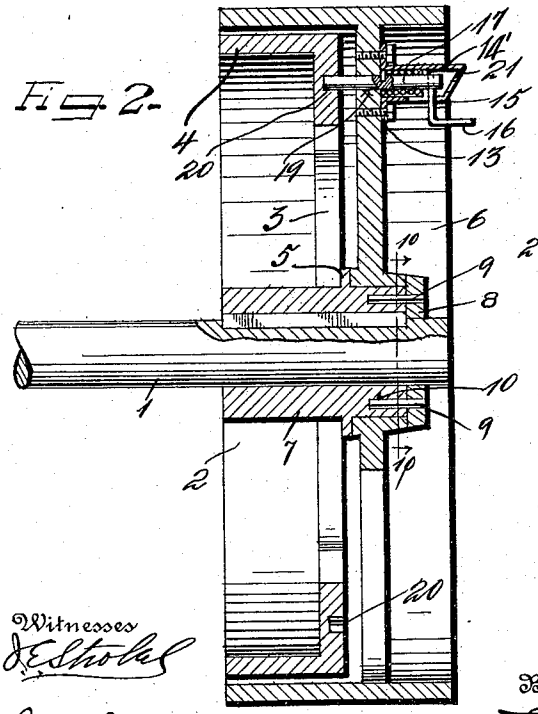


Fig. 3.

Fig. 2.



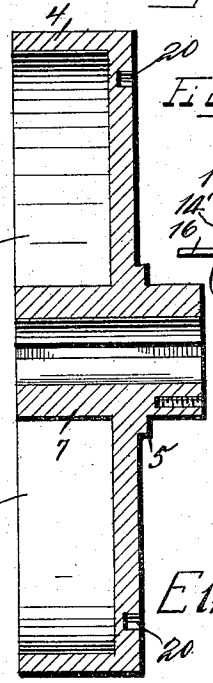
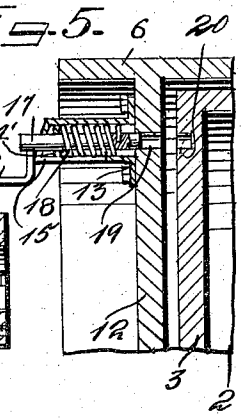


Fig. 5.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 4.

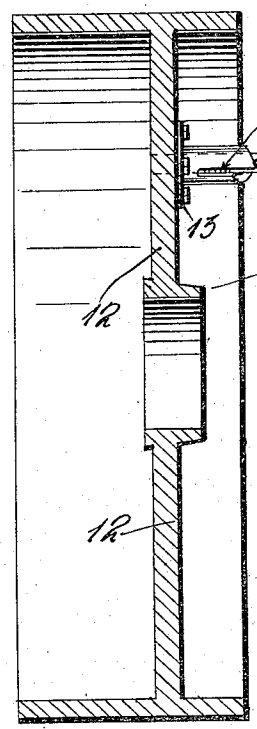


Fig. 6.

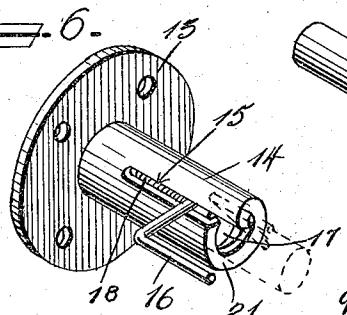


Fig. 7.

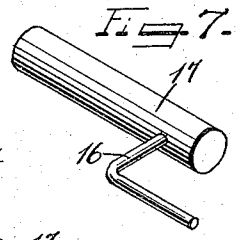


Fig. 8.

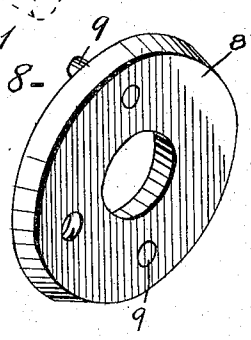
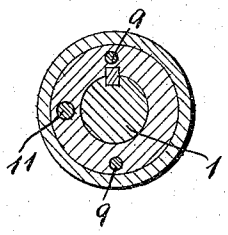


Fig. 9.



Witnesses

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FLY-WHEEL.

1,168,142. Specification of Letters Patent. Patented Jan. 11, 1916.

Application filed July 20, 1914. Serial No. 851,994.

To all whom it may concern:

Be it known that I, ELMER AKINS, a citizen of the United States, residing at Fair Play, in the county of Polk and State of Missouri, have invented certain new and useful Improvements in Fly-Wheels, of which the following is a specification.

This invention relates to fly wheels for engines and the like and has especial reference to a fly wheel which is adapted to be used in connection with a traction engine, wherein it is found often necessary to tighten the belt adapted to drive the threshing machine or other device of like nature by moving the traction engine away from the machine which it is adapted to operate.

Another object of this invention is the production of simple and efficient means for locking the fly wheel with the driving wheel adapted to be carried by the operating shaft.

With these and other objects in view, this invention consists in certain novel combinations, constructions and arrangements of parts as will be fully described and claimed.

In the accompanying drawings, Figure 1 is a side elevation of the fly wheel. Fig. 2 is a section taken on line 3—3 of Fig. 1. Fig. 3 is a vertical section through the inner driving wheel. Fig. 4 is an enlarged sectional view through the outer fly wheel or belt-engaging wheel. Fig. 5 is an enlarged sectional view through the locking plunger showing the manner in which the plunger is supported relative to the outer and inner drive wheels. Fig. 6 is a perspective view of the plunger-carrying casing. Fig. 7 is a perspective view of the locking plunger. Fig. 8 is a perspective view of the outer retaining disk adapted to hold the outer fly wheel upon the supporting shaft. Fig. 9 is a section taken on the line 10—10 of Fig. 2, looking in the direction of the arrow.

By referring to the drawings, it will be seen that 1 designates the driving shaft upon which is keyed the inner drive wheel 2 in the usual manner. This inner drive wheel 2 is provided with a plurality of radiating spokes 3 carrying a laterally-extending rib 4 upon the outer periphery thereof. The hub of the wheel 2 is provided with a circumferential flange 5 which is intermediately spaced from each end of the hub of the wheel and an outer fly wheel 6 is loosely mounted upon the hub of the wheel 2, as clearly illustrated in Fig. 3.

The outer fly wheel 6 is held against accidental displacement from the hub 7 of the wheel 2 by means of a retaining plate 8. This retaining plate 8 comprises a disk-like body having a plurality of inwardly-extending pins 9, which pins fit into the sockets 10 formed in the hub 7 of the wheel 2. The retaining plate 8 is also firmly held against removal from the hub 7 by means of a locking screw 11. It should be understood, however, that the outer fly wheel 6 may readily rotate upon the hub 7 of the wheel 2.

The outer wheel 6 is provided with a plurality of radiating spokes 12 and one of these spokes 12 carries a plunger housing 13 which housing is provided with an outwardly-extending circular body portion 14. This body portion 14 is provided with a longitudinally-extending slot 15 in which works the outwardly-extending operating arm 16 of the spring-pressed plunger 17. This plunger 17 is slidably mounted within the body portion 14 of the housing 13 and carries a compression spring 18 adapted to normally force the plunger 17 inwardly. The plunger 17 is adapted to pass through an aperture 19 formed in one of the spokes 12.

The inner drive wheel 2 is provided with a plurality of spaced sockets 20 which sockets are adapted to register with the aperture 19 formed in one of the spokes 12 and allow the spring-pressed plunger 17 to engage therein and lock the inner drive wheel in engagement with the outer fly wheel 6 as clearly illustrated in Fig. 2.

The outer end of the body portion 14 is formed to constitute a spiral-like track 21 producing a cam face upon which is adapted to work the outwardly-extending arm 16 of the plunger 17, thereby allowing the plunger 17 to be drawn outwardly by swinging the arm 16 upon the cam or spiral-track 21, as will be clearly understood by carefully considering Fig. 6.

From the foregoing description, it will be seen that the plunger 17 may be released by allowing arms 16 to pass in the slot 15 and thereby cause the plunger to engage one of the notches 20 formed in the inner wheel 2, thereby locking the inner and outer wheels together.

It should be understood that the spring 18 is carried by the plunger 17 and bears against the inner end of the collar 14′, thereby urging an inward pull upon the plunger 17, and this will cause the arm 16

to be firmly held in engagement with the cam surface 21 of the casing 14, and in this manner the plunger will be prevented from being accidentally drawn inwardly after the arm 16 has been set in the desired position upon the cam face 21. It should be understood that plunger 17 may be conveniently and easily drawn out of one of the notches 20 by swinging the outwardly extending arm 16 upon the cam or spiral track 21. It will therefore be seen that the plunger may be drawn to an inoperative position by the rotation of the plunger through the medium of the arm 16 in place of a direct outward pull. If, however, it is desired to allow the engine to continue to operate without the necessity of operating the outer wheel 6, the plunger 17 may be drawn outwardly and out of engagement with one of the sockets 20 of the inner wheel 2, thereby allowing the inner wheel to readily rotate without affecting the outer wheel 6.

The present invention is especially adapted for traction engines and the like as above described, for the reason that it is often found necessary to tighten a belt by moving the engine away from the machine which it is adapted to drive or operate. In tightening the belt, unless the fly wheel 6 is allowed to remain stationary, the belt is likely to fly off and out of engagement with the fly wheel 6. By means of the present invention, however, the fly wheel 6 may be disengaged from the inner wheel 2 and allowed to remain stationary while the inner wheel 2 revolves with the operating shaft 1.

It should be further understood that the present invention is especially adapted for use in connection with threshing machines and the like, wherein the machine is being repaired, and by having the wheel 6 which supports the driving belt disengaged from the wheel 2, there will be no likelihood of the machine starting accidentally while the same is being repaired, thereby obviating the danger of injury to the person repairing the machine.

From the foregoing description, it will further be seen that a very simple and efficient device for accomplishing the desired result has been produced.

What is claimed is:

A device of the class described comprising a shaft, a fixed wheel carried thereby, said fixed wheel provided with a laterally-extending flanged periphery, said fixed wheel provided with a plurality of sockets formed therein, a loose wheel mounted adjacent said fixed wheel, a housing supported upon said loose wheel, a spring pressed plunger positioned within said housing and adapted to engage one of said sockets formed in said fixed wheel for locking the said wheels together for simultaneous rotation, said housing provided with a cam outer face, and an arm carried by said spring pressed plunger and adapted to ride upon said cam outer face for drawing said plunger out of engagement with said fixed wheel.

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

ELMER AKINS.

Witnesses:
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H. M. KENNEDY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."