

No. 742,737.

PATENTED OCT. 27, 1903.

J. F. RADEBAUGH.

FLY WHEEL.

APPLICATION FILED AUG. 6, 1903.

NO MODEL.

Fig. 1.

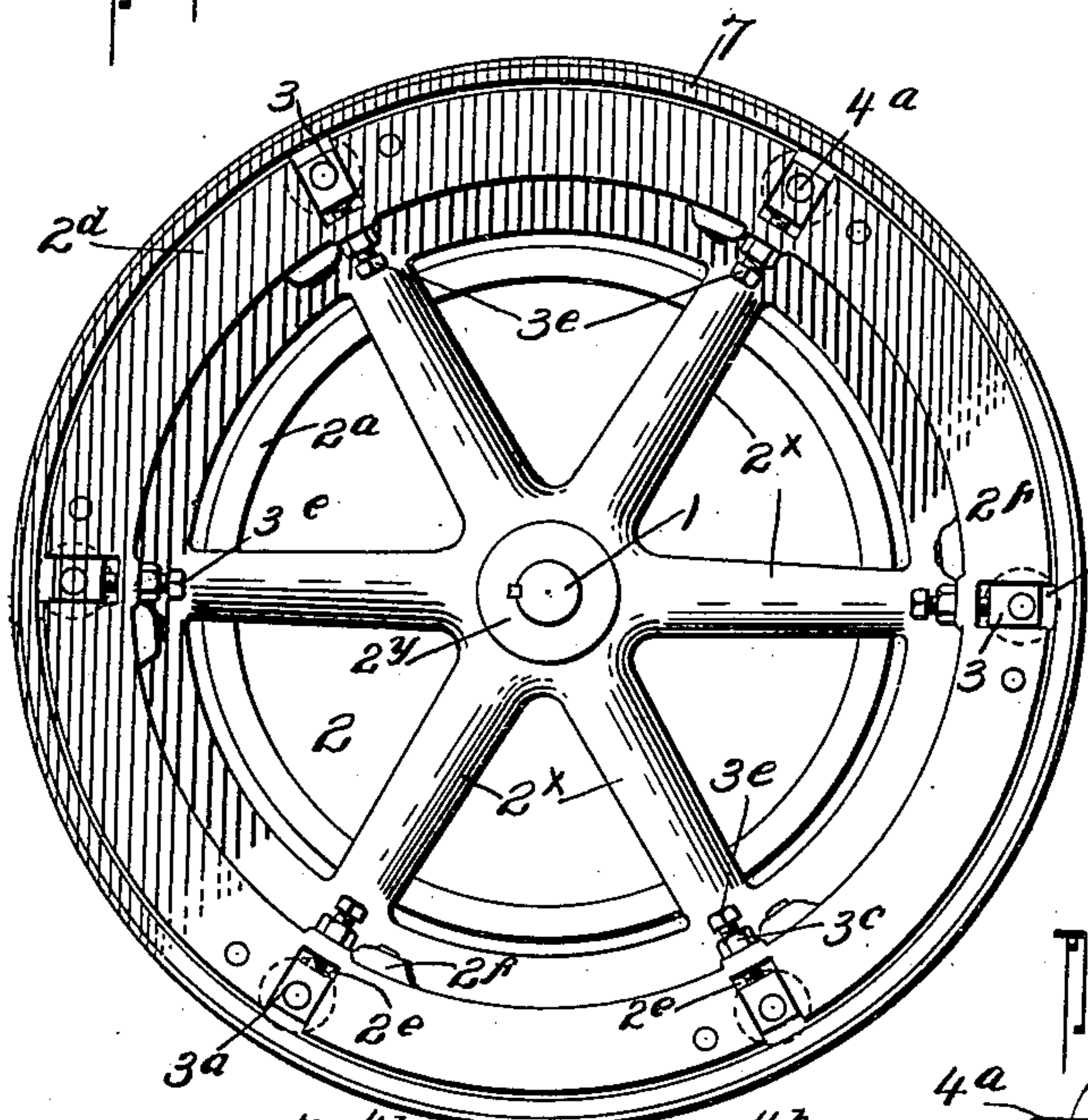


Fig. 3.

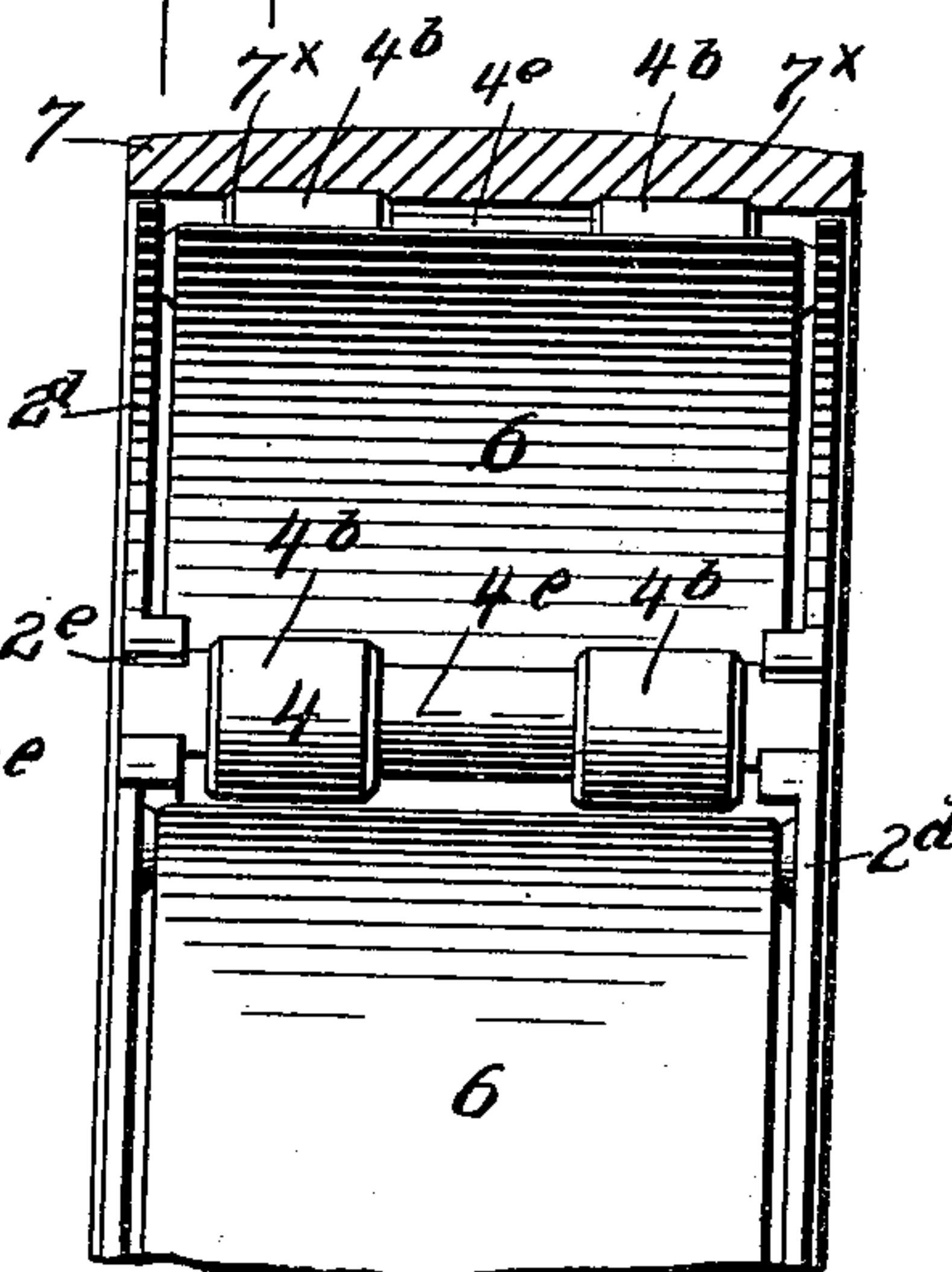


Fig. 4.

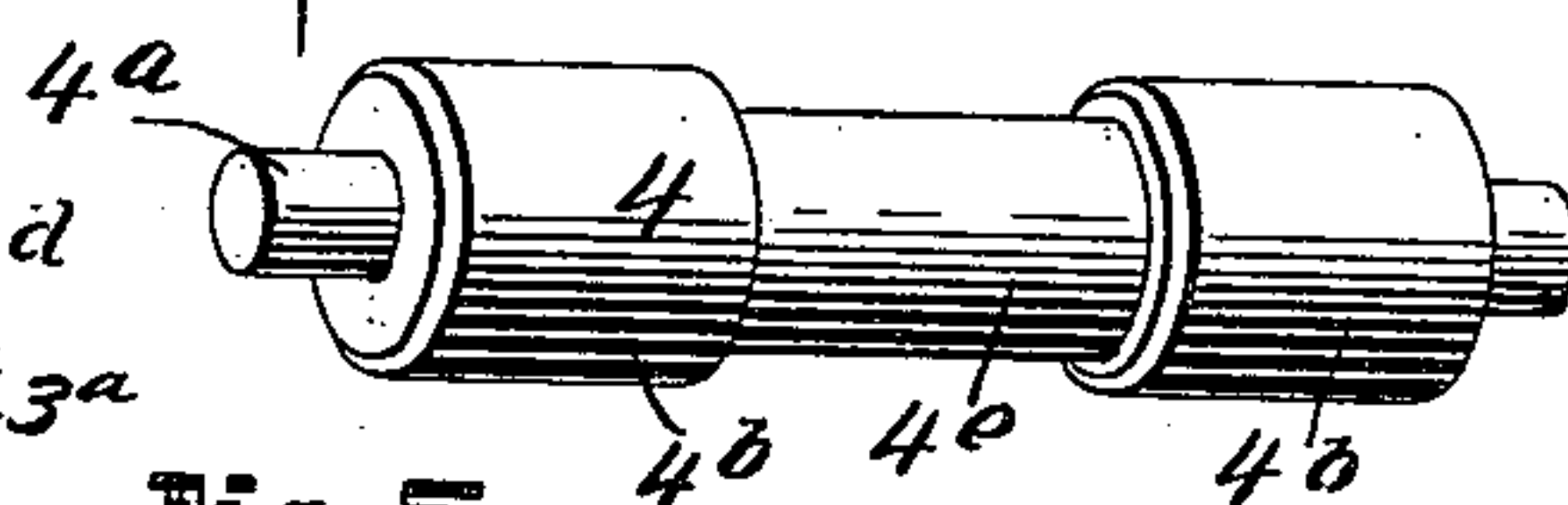


Fig. 5.

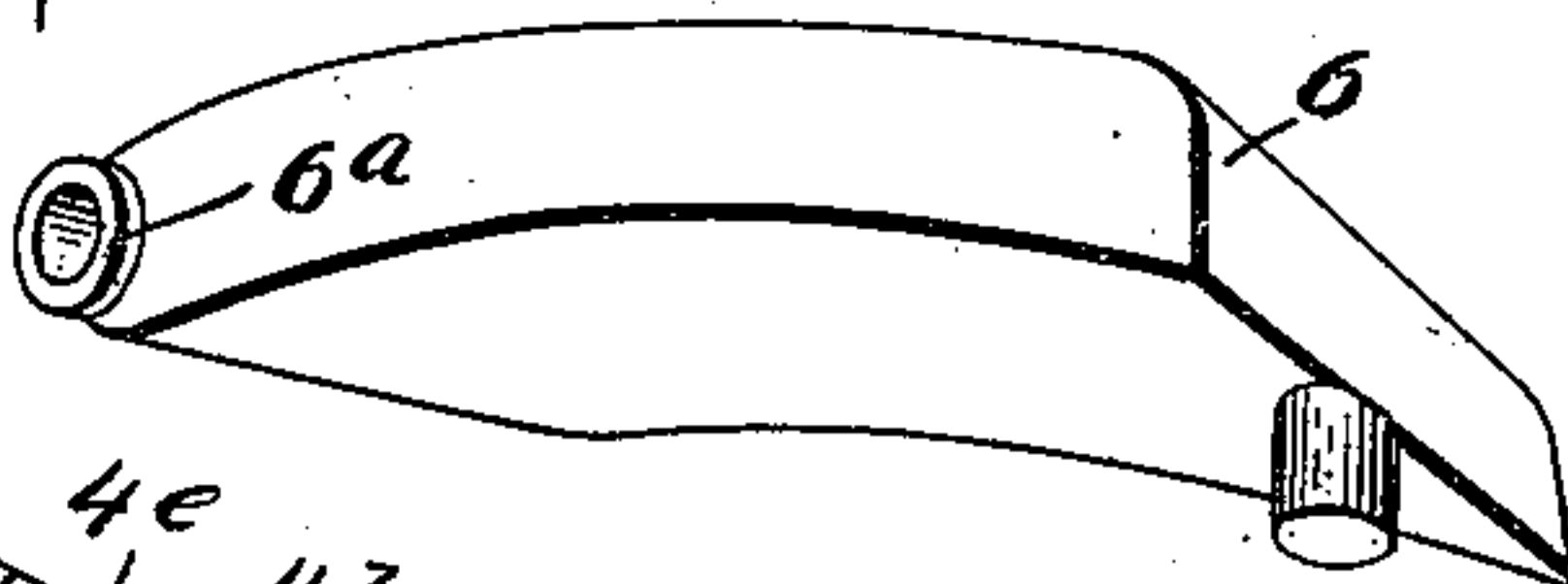
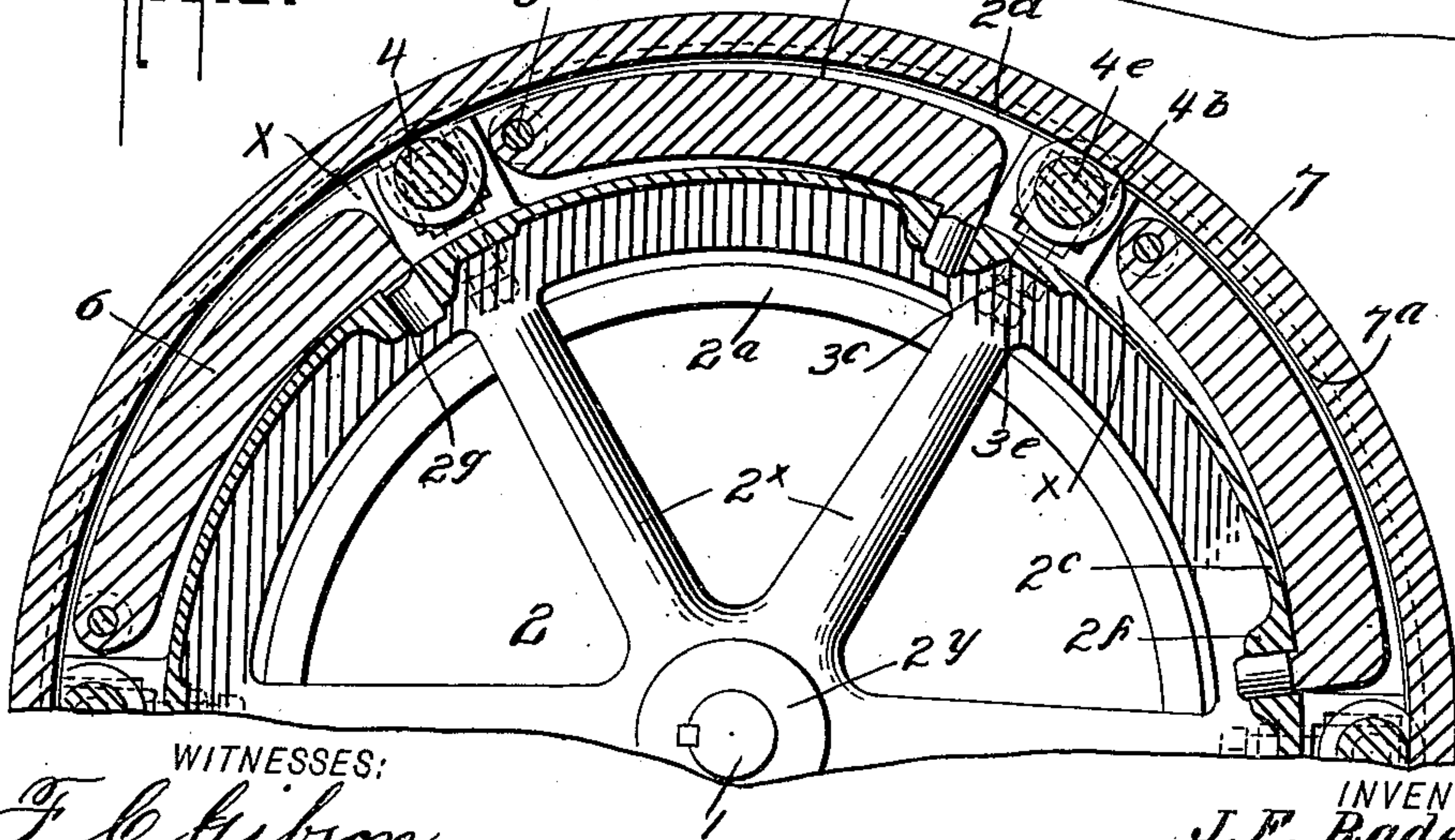


Fig. 2.





## UNITED STATES PATENT OFFICE.

JOSEPH F. RADEBAUGH, OF DANVILLE, ILLINOIS.

## FLY-WHEEL.

SPECIFICATION forming part of Letters Patent No. 742,737, dated October 27, 1903.

Application filed August 6, 1903. Serial No. 168,498. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH F. RADEBAUGH, residing at Danville, in the county of Vermilion and State of Illinois, have invented certain new and useful Improvements in Fly-Wheels, of which the following is a specification.

My invention relates to fly-wheels; and it more particularly seeks to provide a fly-wheel for traction-engines, including a belt-wheel having a drive-rim mounted upon a shaft and a second rim loosely mounted to turn thereon, a clutch device disposed between said rims to cause them to move in unison, the first-named rim also having a clutch-surface adapted to be engaged by the clutch connected to the traction-gears.

The invention has for its object to provide a device of this character of a simple, economical construction; and it more particularly seeks to provide an improvement on the type of fly-wheel disclosed in my copending application, filed March 8, 1902, Serial No. 97,383, allowed May 23, 1903.

Further objects and advantages of my invention will be hereinafter apparent; and the invention consists in certain novel construction and arrangement of parts, which will be first described in detail and then be specifically pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of my improved fly-wheel. Fig. 2 is a vertical longitudinal section thereof. Fig. 3 is a detail plan view of a portion of the inner or drive rim, showing the friction-rollers mounted thereon. Fig. 4 is a detail perspective view of one of the rollers detached. Fig. 5 is a detail view of one of the clutch-shoes. Fig. 6 is a detail sectional view of a portion of my invention.

Referring now to the accompanying drawings, in which like numerals and letters of reference indicate like parts in all the figures, 1 designates the main drive-shaft, upon which is keyed the main fly-wheel 2, having a clutch-flange 2<sup>a</sup> for coöperating with the clutch-flange on the traction-gear when my invention is used on traction-engines, and the wheel 2 has a peripheral rim 2<sup>c</sup>, having side flanges 2<sup>d</sup> for a purpose presently to appear.

The side flanges 2<sup>d</sup> have a series of radially-disposed slots 2<sup>e</sup>, in which are mounted bearing-boxes 3, (shown in detail in Fig. 6,) and the said bearing-boxes 3 have apertures 3<sup>a</sup> to receive the spindle ends 4<sup>a</sup> of the friction-rollers 4, and the said bearing-boxes 3 are capable of radial adjustment in the slots 2<sup>e</sup> by the screw-bolts 3<sup>b</sup>, mounted in the rim 2<sup>c</sup> and having a check-nut 3<sup>c</sup>. The friction-rollers 4 consist of large rolling-surface portions 4<sup>b</sup> 4<sup>b</sup> and a reduced portion 4<sup>c</sup> between said portions 4<sup>b</sup> 4<sup>b</sup>. To one side of the center the rim 2<sup>c</sup> has a series of radial arms 2<sup>x</sup>, which connect the rim 2<sup>c</sup> to the hub 2<sup>y</sup>, keyed to the drive-shaft 1, as clearly shown, and the clutch-flange 2<sup>a</sup>, before referred to, is formed integral with the said arms 2<sup>x</sup>. Midway the side of the rim 2<sup>c</sup> and on the under face thereof the said rim has a series of radially-disposed enlargements 2<sup>f</sup>, having apertures 2<sup>g</sup> therethrough, and the said enlargements are disposed out of alinement with the slots 2<sup>e</sup>, and the said apertures 2<sup>g</sup> are adapted to loosely receive the clutch-shoe arm 6<sup>a</sup> of the clutch-shoes 6, fulcrumed on pins 6<sup>b</sup>, which are mounted in apertures *x* in the side flange 2<sup>d</sup>. (See Fig. 2.) The said clutch-shoes have clutch-faces 6<sup>c</sup> to engage the centrally-disposed clutch-face 7<sup>a</sup> of the loose-belt-rim 7, which has longitudinal grooves 7<sup>x</sup> 7<sup>x</sup> in its inner face, with which portions 4<sup>b</sup> 4<sup>b</sup> of the rollers 4 coöperate.

So far as described it will be noticed that as the rim 7 is loosely mounted to turn on the rim 2 by means of the friction-rollers 4 the belt 10 may be easily placed on the rim 7 without the necessity of turning the remaining parts of the wheel and the operative parts connected with the drive-shaft 1. After the belt is in position the traction-gear clutch can be moved into engagement with the clutch-flange 2<sup>a</sup> and the engine backed until the belt is turned sufficiently tight, after which the traction-gear clutch is thrown out of engagement with the flange 2<sup>a</sup>. As the fly-wheel attains a predetermined speed the clutch-shoes will engage the clutch-face 7<sup>a</sup> of the pulley-rim 7 to cause said pulley-rim to turn therewith.

From the foregoing description, taken in connection with the accompanying drawings, it is thought the advantages and complete



operation of my invention will be readily apparent to those skilled in the art to which it appertains.

It will be seen that by providing the outer belt-rim with grooves 7<sup>x</sup> to cooperate with the friction-roller portions 4<sup>b</sup> the said rim will be held from lateral movement by the said friction-rollers.

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

1. In a fly-wheel of the character stated, a main drive-wheel adapted to be keyed to the drive-shaft, said main drive-wheel including a peripheral rim, a supplemental rim loosely mounted to turn on said peripheral rim, means carried by said peripheral rim to hold said supplemental rim from lateral movement, for the purposes specified.
2. In a fly-wheel of the character stated, a main drive-wheel adapted to be keyed to the drive-shaft, said main drive-wheel including a peripheral rim, a supplemental rim loosely mounted to turn on said peripheral rim, means carried by said peripheral rim to hold said supplemental rim from lateral movement, and clutch devices carried by said main drive-wheel peripheral rim for engaging said supplemental rim to cause said main wheel and supplemental rim to turn together, for the purposes described.
3. In a fly-wheel, a main drive-wheel mounted upon the drive-shaft, said wheel including a peripheral rim having slotted side flanges, adjustable bearing-boxes mounted in said slotted portions of the side flanges, friction-rollers mounted at the ends in said bearing-boxes and including enlarged and reduced portions, a belt pulley or rim mounted to turn on said friction-rollers and having longitudinal grooves for cooperating with said enlarged portions of the friction-rollers.
4. In a fly-wheel, a main drive-wheel mounted upon the drive-shaft, said wheel including a peripheral rim having slotted side flanges, adjustable bearing-boxes mounted in said slotted portions of the side flanges, friction-rollers mounted at the ends in said bearing-boxes and including enlarged and reduced portions, a belt pulley or rim mounted to turn on said friction-rollers and having longitudinal grooves for cooperating with said enlarged portions of the friction-rollers, clutch-shoes

mounted on said main wheel-rim to turn therewith for engaging said belt-pulley, for the purposes specified.

5. In a fly-wheel, a main drive-wheel mounted upon the drive-shaft, said wheel including a peripheral rim having slotted side flanges, adjustable bearing-boxes mounted in said slotted portions of the side flanges, friction-rollers mounted at the ends in said bearing-boxes and including enlarged and reduced portions, a belt pulley or rim mounted to turn on said friction-rollers and having longitudinal grooves for cooperating with said enlarged portions of the friction-rollers, clutch-shoes mounted on said main wheel-rim and between said main rim and said pulley to cause said wheel and pulley to rotate together, for the purposes specified.

6. In a fly-wheel, a main drive-wheel mounted upon the drive-shaft, said wheel including a peripheral rim having slotted side flanges, adjustable bearing-boxes mounted in said slotted portions of the side flanges, friction-rollers mounted at the ends in said bearing-boxes and including enlarged and reduced portions, a belt pulley or rim mounted to turn on said friction-rollers and having longitudinal grooves for cooperating with said enlarged portions of the friction-rollers, said main-rim flange having apertures therein, pins passing through said apertures, clutch-shoes fulcrumed between said flanges on said pins, and having arms, said main wheel-rim having apertured portions for receiving said arms, for the purposes specified.

7. In a fly-wheel, a main drive-wheel including a peripheral rim having side flanges, friction-rollers adjustably mounted on said peripheral rim and having enlarged roller-surfaces, a belt-pulley mounted to turn on said drive-wheel rim and having a pair of longitudinally-disposed parallel grooves to receive the enlarged portions of the friction-rollers, and a friction-surface between said grooves, clutch devices carried by said drive-wheel, for engaging with said friction-surface of the belt-pulley, all being arranged substantially as shown and for the purposes described.

JOSEPH F. RADEBAUGH.

Witnesses:

FRED DRAPER,  
JESSE L. SUAPP.