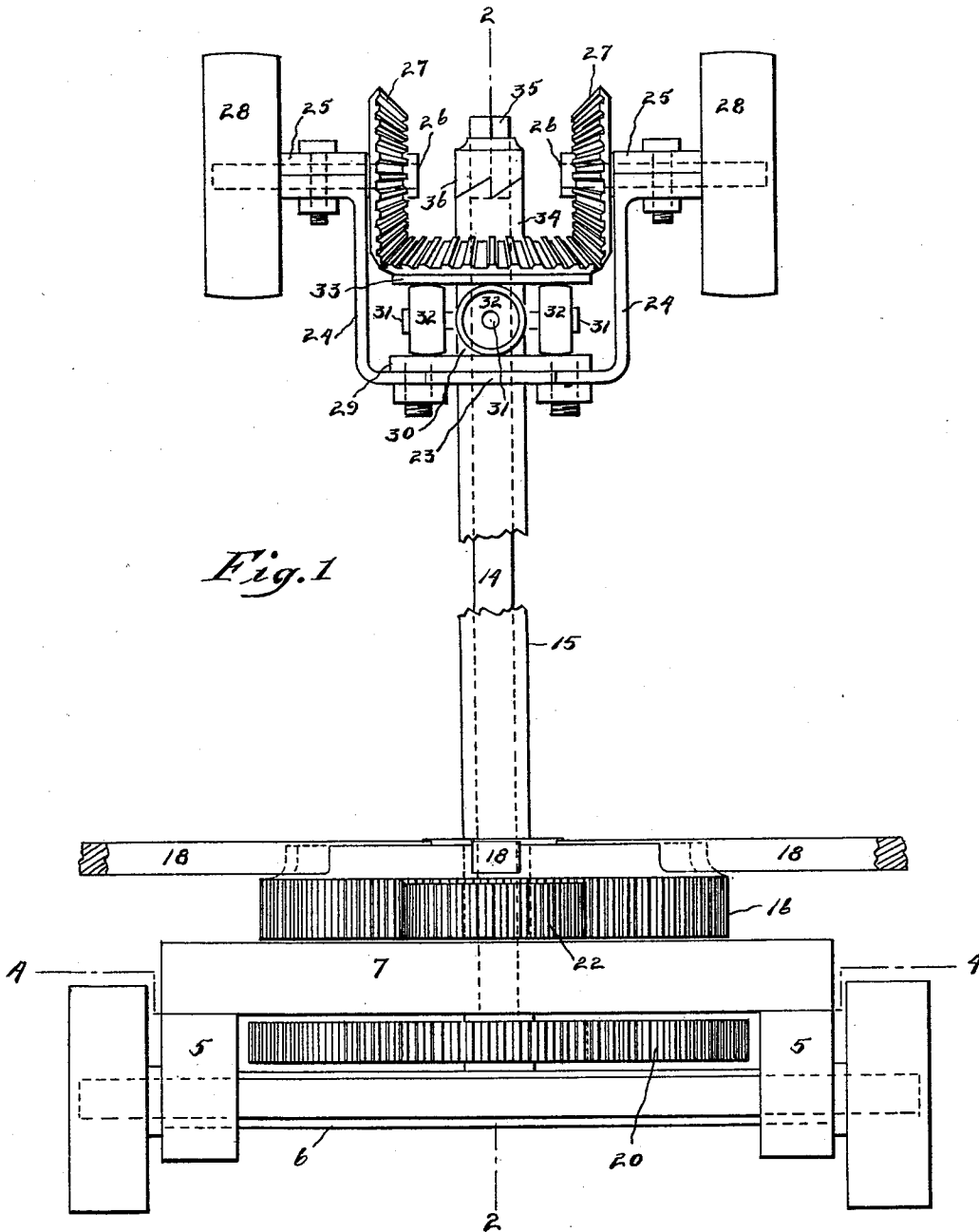


F. NOGUES.
HORSE POWER APPARATUS.

No. 583,076.

Patented May 25, 1897.



WITNESSES

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INVENTOR

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(No Model.)

3 Sheets—Sheet 2.

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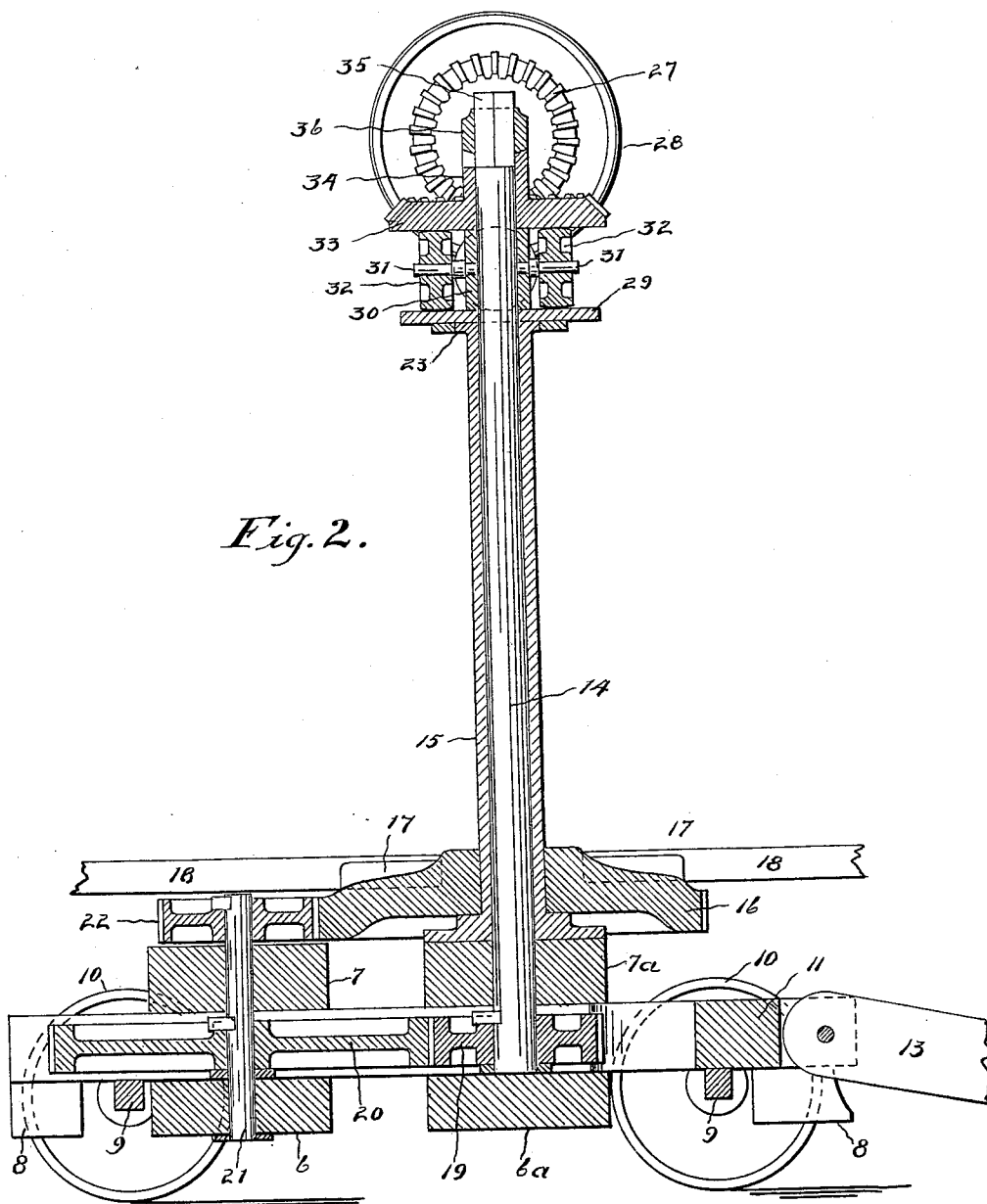


Fig. 2.

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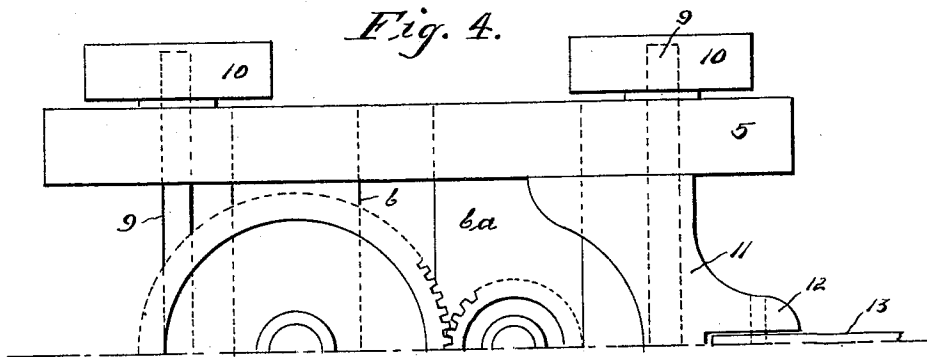
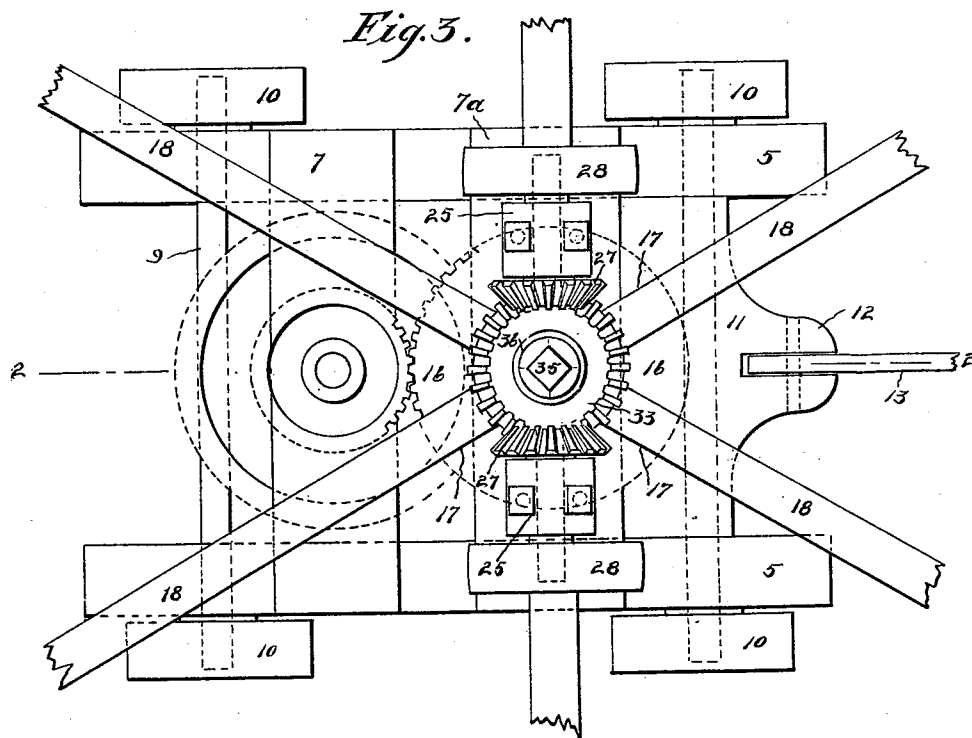
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Patented May 25, 1897.



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HORSE-POWER APPARATUS.

SPECIFICATION forming part of Letters Patent No. 583,076, dated May 25, 1897.

Application filed January 18, 1897. Serial No. 619,634. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS NOGUES, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Horse-Power Apparatus, of which the following is a full and complete specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to horse-power apparatus such as is usually employed to furnish power for running various forms of machinery; and the object thereof is to provide an improved apparatus of this class which is provided with two separate power-transmitting shafts which revolve in opposite directions and by means of which separate machinery on the opposite sides of the power apparatus may be operated, a further object being to provide a power apparatus of the class herein specified in which the power-transmitting shafts and the machinery operated thereby will keep in motion and gradually come to a stop after the horses have been stopped and without revolving that part of the power apparatus to which the horses are hitched; and with these and other objects in view the invention consists in the construction, combination, and arrangement of parts hereinafter described and claimed.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which—

Figure 1 is a rear end view of my improved power apparatus; Fig. 2, a centrally vertical section on the lines 2 2 of Figs. 1 and 3; Fig. 3, a plan view of the apparatus; and Fig. 4 is a section on the line 4 4 of Fig. 1, only half of the bottom portion of the apparatus being shown.

In the drawings forming part of this specification the separate parts of my improvement are designated by the same numerals of reference in each of the views, and in the practice of my invention I provide a truck-frame which consists of two horizontal bars 5, which are connected by cross-plates 6 and 6^a, secured to the bottom thereof, and corresponding cross-plates 7 and 7^a, which are secured to the top thereof, and the extreme ends of the horizontal bars 5 are provided

with legs or feet 8, which are intended to support the apparatus when in operation, and mounted beneath the horizontal bars 5 are axles 9, on the ends of which are mounted the usual truck-wheels 10, by means of which the apparatus may be transported from one point to another, and secured in one end of the truck-frame or between the horizontal bars 5 thereof is a cross-head 11, which is provided with a forwardly-directed shoulder or projection 12, in which is pivoted a tongue or pole 13, by which the apparatus may be drawn, as will be readily understood.

The cross-plates 7^a and 6^a of the truck-frame are located directly back of the forward truck-wheels 10, and passing vertically through the cross-plate 7^a and resting on the cross-plate 6^a is a shaft 14, which is inclosed in a tubular shaft 15, which rests on said cross-plate 7^a, and mounted on the lower end of the tubular shaft is a gear-wheel 16, which is provided in the upper side thereof with a plurality of radial sockets 17, which are designed to receive levers 18, by which the apparatus is operated in the usual manner, and any desired number of said levers may be employed.

The shaft 14 is provided at its lower end with a pinion 19, which is mounted between the cross-plates 7^a and 6^a, and said pinion is designed to operate a gear-wheel 20, which is mounted between the cross-plates 7 and 6 on a shaft 21, which passes through said cross-plates, and the upper end of said shaft is provided with a pinion 22, which is operated by the gear-wheel 16, and in the operation of the device the gear-wheel 16, which is revoluble on the tubular shaft 15, operates the pinion 22, and said pinion operates the gear-wheel 20, which in turn operates the pinion 19, which revolves the shaft 14.

The tubular shaft 15 is provided at its upper end with a flange or head 23, to which are secured upwardly-directed side arms 24, each of which is provided at its upper end with horizontal bearings 25, in each of which is mounted a shaft 26, the inner ends of each of which is provided with a gear-wheel 27 and the outer ends with a power-transmitting wheel 28, and mounted on the flange or head 23 is a circular plate 29, above which is mounted on the shaft 14 a sleeve 30, which is

provided with four radial arms or shafts 31, which are arranged at equal distances apart thereon, and each of said radial arms or shafts is provided with a loosely-mounted roller 32, 5 and the sleeve 30 and the rollers 32 rest on the plate 29 and are free to turn thereon, the said sleeve being adapted to turn on the shaft 14, as will be readily understood.

Resting on the sleeve 30 and on the rollers 10 32 is a beveled gear-wheel 33, the gear of which is directed upwardly, and the beveled gear-wheel 33 operates the beveled gear-wheels 27 on the shafts 26, on which the power-transmitting wheels or pulleys 28 are 15 mounted, and the said beveled gear-wheel 33 is free to revolve on the shaft 14.

The beveled gear-wheel 33 is provided with an upwardly-directed tubular hub 34, and that part of the shaft 14 above said tubular 20 hub is angular in cross-section, as shown at 35, and mounted on and vertically movable on the angular portion of the shaft 14 is a clutch-head 36.

The upper end of the hub 34 of the gear- 25 wheel 33 is provided with triangular notches or recesses in the perimeter thereof, and the lower end of the clutch-head 36 is provided with similar notches or recesses, whereby triangular teeth or projections are formed on 30 both the hub and the clutch-head, and the triangular teeth or projections on the clutch-head project to the left, while those on the hub project to the right, as shown in Fig. 1.

The operation will be readily understood 35 from the foregoing description when taken in connection with the accompanying drawings and the following statement thereof: When the shaft 14 is revolved to the right, as hereinbefore described, by means of the gear- 40 wheel 16, the clutch-head 36 will revolve the beveled gear-wheel 33 and said beveled gear-wheel 33 will revolve the gear-wheels 27 in opposite directions, and these gear-wheels, being keyed to their respective shafts 26, will 45 revolve said shafts in the same manner, and the power-transmitting wheels or pulleys 28 will therefore be turned in opposite directions. When the gear-wheel 16 is revolved to the left, the clutch-head 36 will move up 50 and down over the hub 34 of the wheel 33, and said wheel and the gear-wheels 27 will not be operated and the shafts 26 and power-transmitting pulleys or wheels 28 will therefore remain stationary.

55 The gear-wheel 33 rests upon and revolves on the rollers 32, and said rollers revolve on the plate 29 and constitute an antifriction-bearing for the wheel 33, and the entire device is simple in construction and operation, 60 and it is apparent that changes in and modifications of the construction herein described may be made without departing from the spirit of my invention or sacrificing its advantages.

65 When the horses which are hitched to the levers 18 are stopped, the gear-wheel 16 and that part of the apparatus connected there-

with and with the truck will also immediately stop, but the machinery by which the power pulleys or wheels 28 are operated will 70 keep on moving and gradually come to a stop, and the said power wheels or pulleys and the shafts on which they are mounted, the gear-wheels 27, and the beveled gear-wheel 33 will also keep on moving in the same direction 75 exactly as they did before the horses were stopped, this operation being accomplished by reason of the fact that the beveled gear-wheel 33 is loosely mounted and the further 80 fact that the clutch-head 36 is free to rise and fall on the angular extension 35 of the shaft 14. This feature of the construction constitutes a great advantage over horse-power apparatus as heretofore constructed, in which 85 that part of the machinery with which the levers 18 are connected would keep on moving after the horses are stopped, thus rendering it very difficult to bring the latter to a stop or to stop the apparatus, for the reason 90 that the horses were compelled to be brought gradually to a standstill.

My invention is also not limited to the method herein described for connecting the levers 18 with the gear-wheel 16, as it will be 95 apparent that this connection may be made in a number of ways, and it will also be apparent that other means may be employed for revolving the wheel 16 without the use of the levers 18, said gear-wheel being capable 100 of being operated by gear-wheels connected with an ordinary steam-engine or other source of power-supply.

Having fully described my invention, I 105 claim as new and desire to secure by Letters Patent—

The herein-described horse-power apparatus comprising a truck-frame consisting of two horizontal bars connected by cross-plates 110 secured to the bottom, and cross-plates secured to the top thereof, the extreme ends of said bars being provided with legs or feet, said frame being mounted on the usual trucks and provided with a pole, the cross-plates at the forward end of said bars being mounted 115 thereon just back of the front truck-wheels, a shaft passing through said upper cross-plate and resting on said lower cross-plate, said shaft being inclosed in a tubular shaft which rests on said upper cross-plates, the lower end 120 of said tubular shaft being provided with a gear-wheel which is provided with a plurality of radial sockets on the upper side thereof, said sockets being designed to receive levers, or operating-arms, said shaft being provided 125 at the lower end with a pinion mounted between said cross-plates, said pinion being designed to operate a gear-wheel mounted between said cross-plates on a shaft which passes 130 therethrough, and is provided at the upper end thereof with a pinion which is operated by the gear-wheel on the lower end of said tubular shaft, said tubular shaft being provided at the upper end thereof with a flange or head having upwardly-directed side arms

secured thereto, each of which is provided at the upper end thereof with horizontal bearings in each of which is mounted a shaft, the inner end being provided with a beveled gear, 5 and the outer end with a power-transmitting wheel, said head being provided with a circular plate above which is mounted a sleeve having four radial arms or shafts arranged at equal distances apart, each of said arms being 10 provided with a loosely-mounted roller, a beveled gear revolubly mounted on said upright shaft and adapted to rest on the said sleeve and roller, and adapted to operate the beveled gears mounted in the upwardly-directed arms, said beveled gear being provided 15 with an upwardly-directed tubular hub and that part of said shaft being angular in cross-section and having a vertically - movable

clutch-head mounted thereon, the upper end of said tubular hub being provided with triangular notches in the perimeter thereof, and 20 said clutch-head being provided with similar notches whereby triangular teeth are formed, said triangular teeth of the one projecting in one direction, and of the other in the opposite 25 direction, thereby forming a clutch, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 16th 30 day of January, 1897.

FRANCIS NOGUES.

Witnesses:

CHARLES S. ROGERS,
C. GERST.