

No. 752,997.

PATENTED FEB. 23, 1904.

H. F. ONG.
GRIP WHEEL.

APPLICATION FILED JUNE 30, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

Fig 1

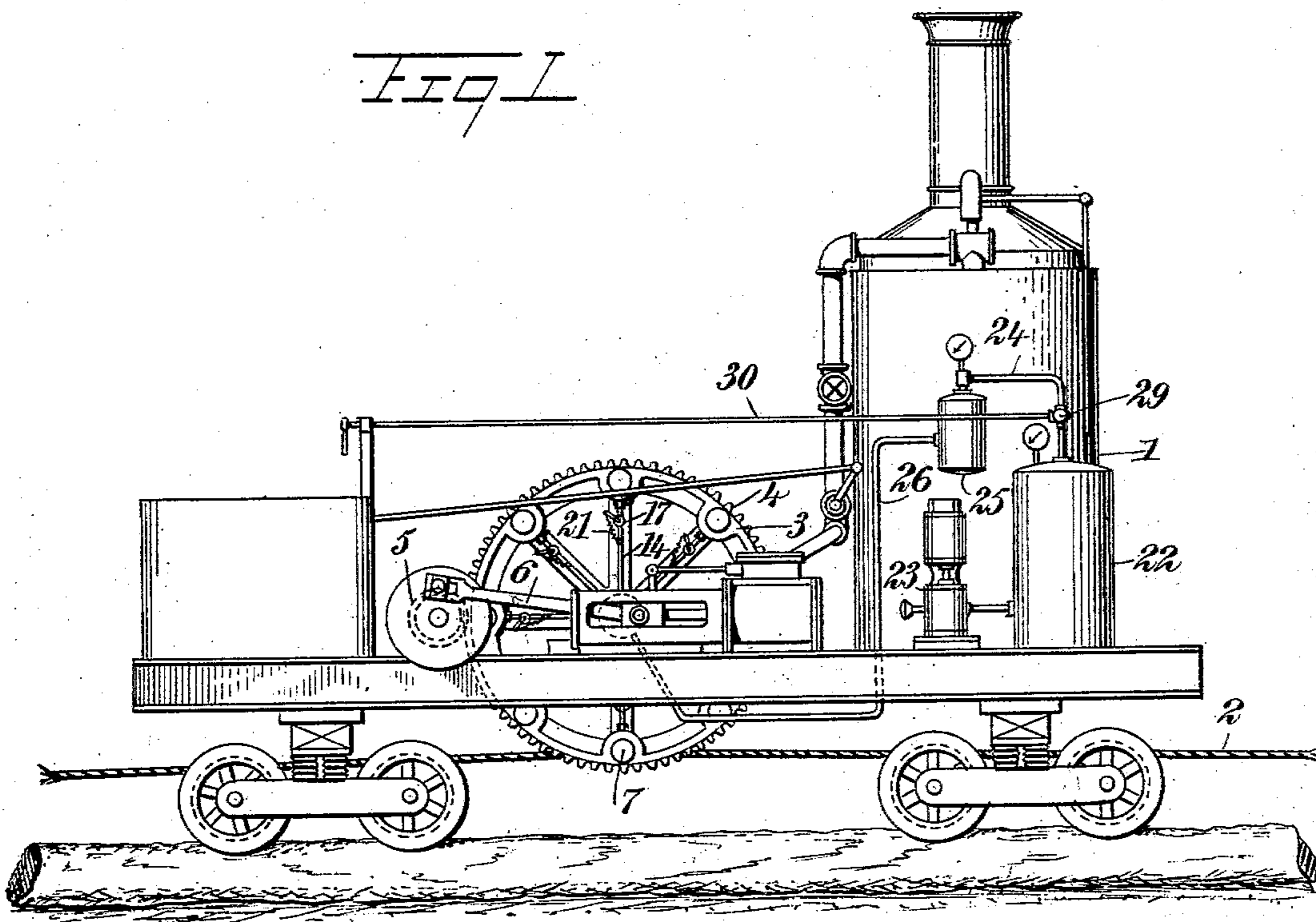
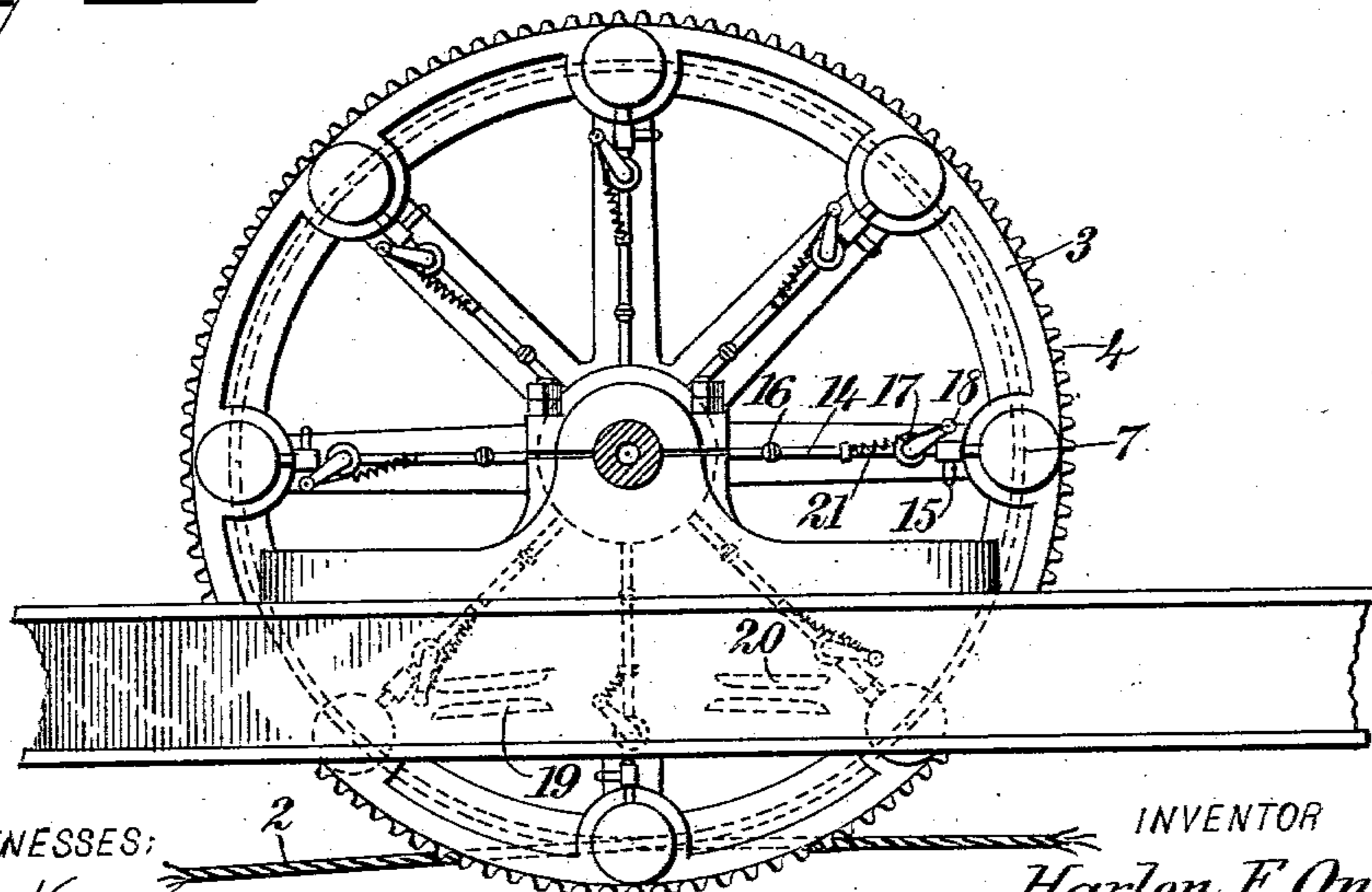


Fig 2



WITNESSES:

H. Walker
C. R. Ferguson

INVENTOR

Harlon F. Ong

BY

Mumma
ATTORNEYS.

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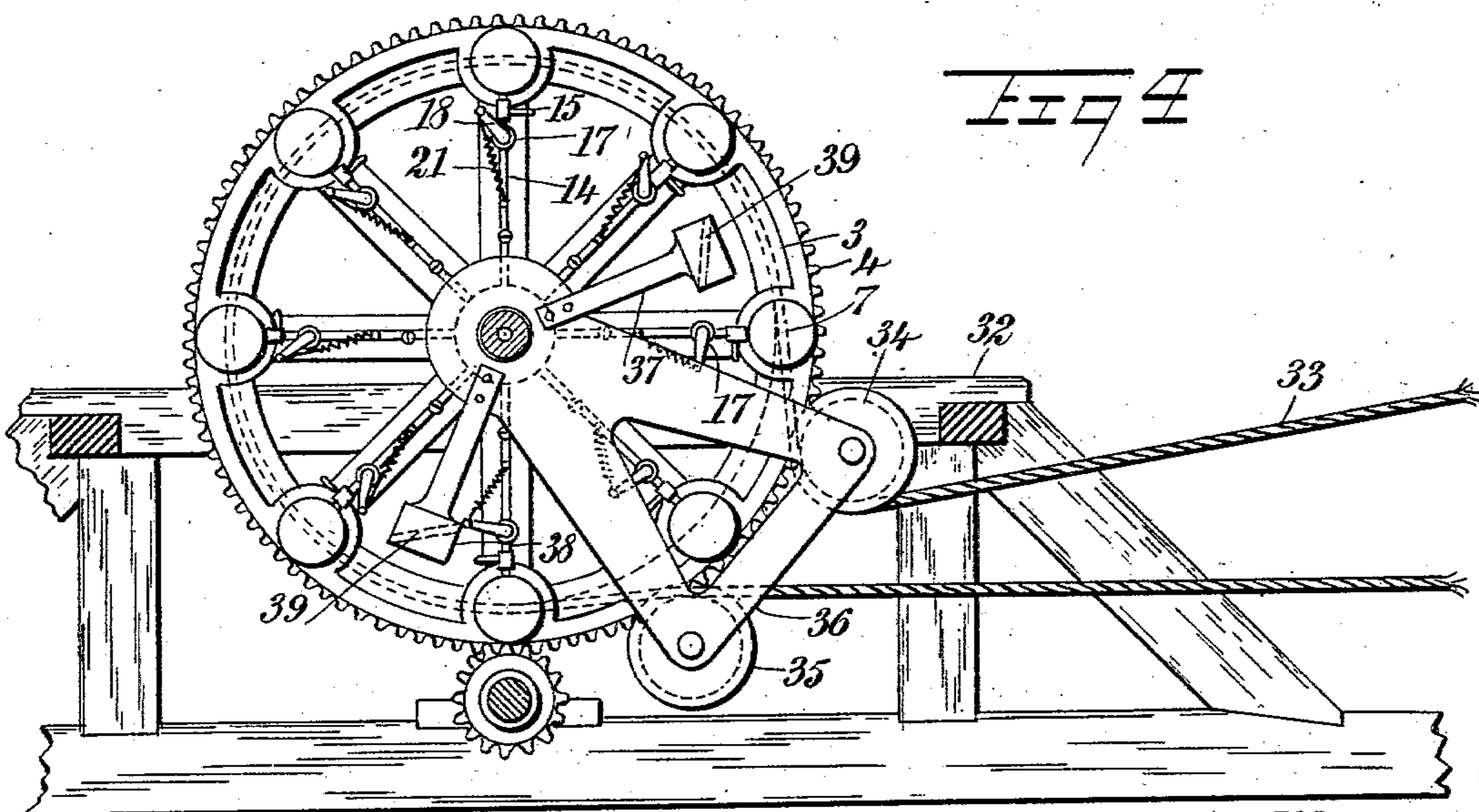
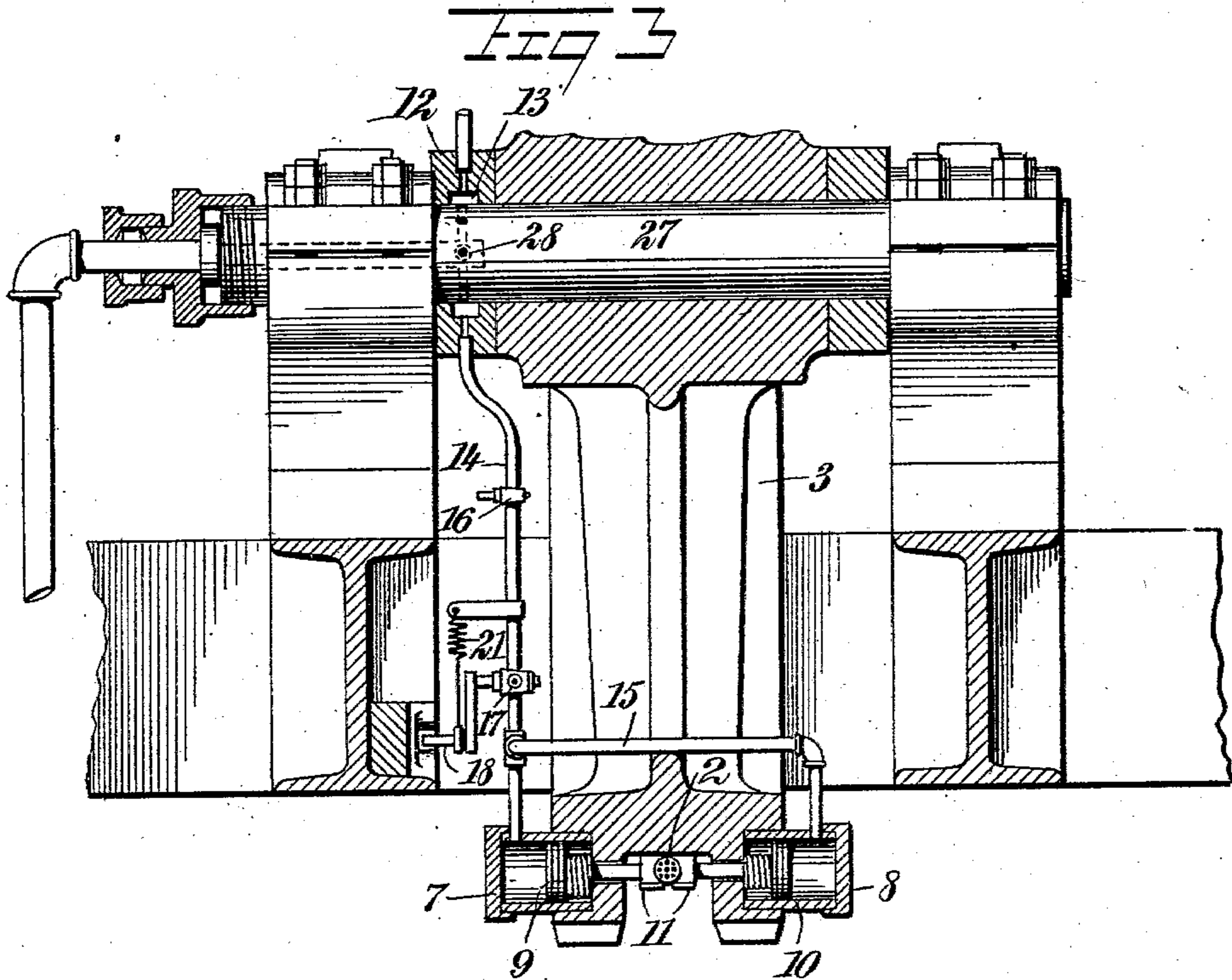
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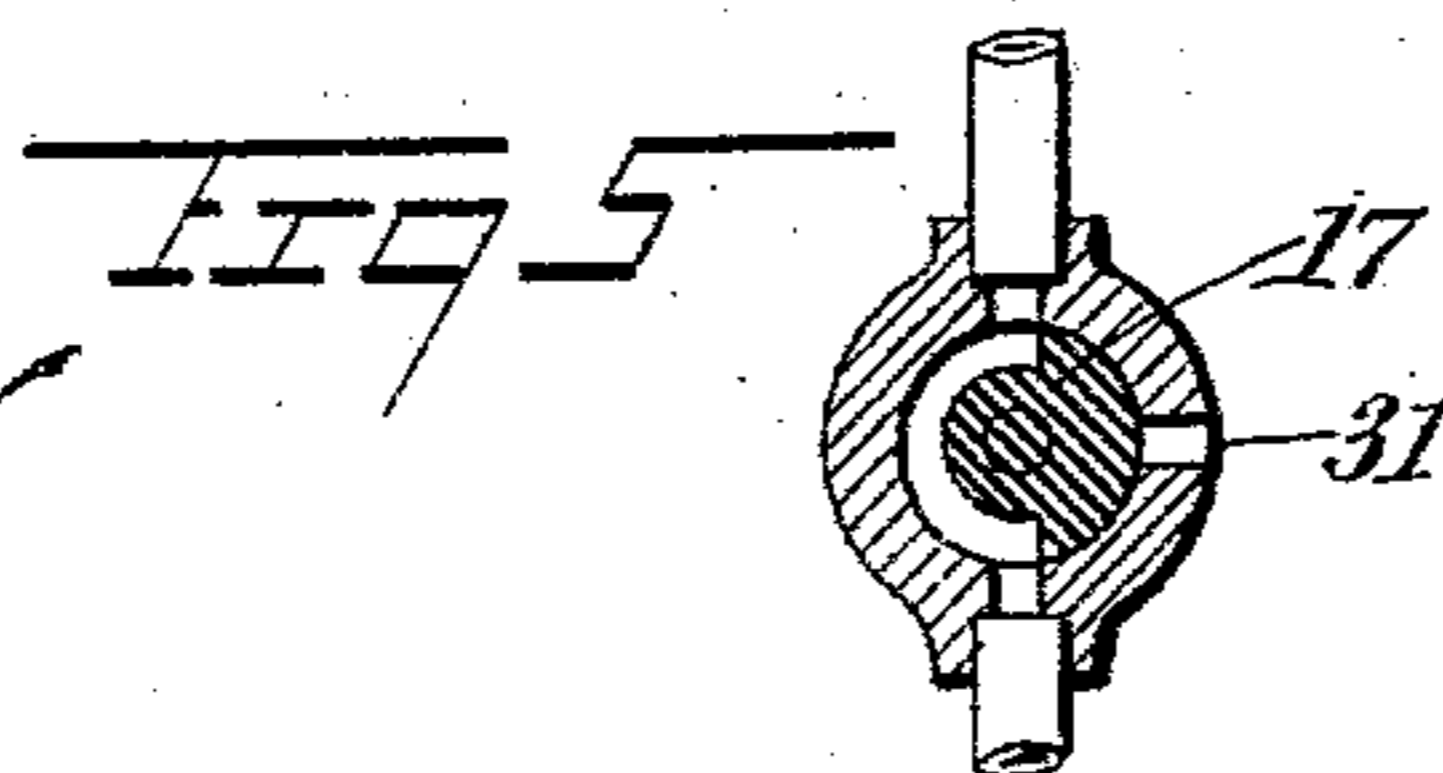
NO MODEL.

2 SHEETS—SHEET 2.



WITNESSES:

H. Walker
C. R. Ferguson



INVENTOR

Harlon F. Ong

BY *M. M. M.*

ATTORNEYS.

UNITED STATES PATENT OFFICE.

HARLON FINLY ONG, OF WENDLING, OREGON.

GRIP-WHEEL.

SPECIFICATION forming part of Letters Patent No. 752,997, dated February 23, 1904.

Application filed June 30, 1903. Serial No. 163,719. (No model.)

To all whom it may concern:

Be it known that I, HARLON FINLY ONG, a citizen of the United States, and a resident of Wendling, in the county of Lane and State of Oregon, have invented a new and Improved Grip-Wheel, of which the following is a full, clear, and exact description.

This invention relates to improvements in cable-grip wheels for logging or traction engines, an object being to provide a gripping mechanism operated by air or steam pressure and having means for automatically controlling the supply and exhaust of motive agent.

I will describe a grip-wheel embodying my invention and then point out the novel features in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of a traction-engine with a grip-wheel embodying my invention applied thereto. Fig. 2 is a side elevation of the wheel. Fig. 3 is a sectional view thereof. Fig. 4 shows the wheel as arranged in a stationary frame and operating to cause a drawing movement of the cable, and Fig. 5 is a sectional detail showing a valve mechanism employed.

Referring first to the example of my improvement shown in Figs. 1, 2, and 3, 1 designates a traction-engine movable along a track through the agency of a cable 2, which is fastened at its ends to suitable anchoring devices. The said cable passes around a grip-wheel 3, mounted on the engine, and on the periphery of this wheel are teeth 4 for engaging with a pinion 5, the wrist-pin of which is engaged by the engine driving-rod 6. Mounted at suitable distances apart on opposite sides of the wheel are cylinders 7 8, designed to receive a motive agent, such as air or steam. Operating in the cylinders 7 8 are the pistons 9 10, the stems of which pass through openings in the wheel-flanges. The inner ends of the stems are provided with gripping-jaws 11 for engaging with the cable.

Mounted on the shaft of the wheel is a ring 12, having a chamber 13 for receiving the motive agent, and extended from this chamber to

the cylinder 7 are pipes 14, and branches 15 lead from these pipes 14 to the opposite cylinder 8. In each pipe 14 is a cut-off valve 16, by means of which the air or other agent may be wholly cut off or may be regulated, and also in each pipe 14 is an automatically-actuated cut-off valve 17. On the stem of each valve 17 is a crank portion 18, designed to engage between the flanges 19, arranged on the frame of the engine, and also to engage between flanges 20, attached to the frame. The valves are held yieldingly in open or closed position by means of springs 21, attached at one end to the crank portions and at the other end to arms extended outward from the pipes 14.

Mounted on the frame of the engine is an air-tank 22, into which air is compressed by means of a pump 23. This tank 22 communicates through a pipe 24 with a supplemental tank 25, from which a pipe 26 extends to a connection with the shaft of the grip-wheel. As clearly shown, the shaft 27 of the wheel is made tubular for a portion of its length, and with this tubular portion the pipe 26 communicates, and the tubular portion communicates with the chamber 13 through ports 28. The pipe 24 is provided with a valve 29, from which a rod 30 extends rearward to the attendant's platform. When but low pressure is required, the valve 29 may be closed and the necessary air taken from the auxiliary cylinder or tank 25. When high pressure is necessary, however, the air will be taken from the cylinder or tank 22 and led through the cylinder or tank 25 and through the tubing.

In the operation as the traction-engine moves along all of the gripping devices will be in gripping contact with the cable excepting the lowermost one, or the one near the point of crossing of the cable. As the wheel turns the crank portion of a valve by engaging between the flanges 19 will turn the valve to closed position, shutting off the supply of motive agent to the said lowermost cylinder and permitting the exhaust to pass out through a port 31 in the valve-casing. After the released jaws shall have passed the crossed portion of the cable the crank of the valve therefore will operate by passing between the flanges 20 to again open the valve, permitting

the inflow of air or other motive agent to the cylinders and causing the jaws to clutch the cable.

In Fig. 4 I have shown a construction in which the wheel is arranged in a stationary frame 32 and is, of course, operated by a stationary engine, and in this case the cable 33 is movable. The said cable passes around guide-rollers 34 35, attached to a triangular frame 36, mounted on the shaft of the wheel, and extended outward from this frame are arms 37 38, each provided with a diagonally-disposed channel 39, into which the outwardly-extended portion of each crank passes, operating to open and close the valves, as first described. With this construction the gripping takes place about two thirds the diameter of the wheel.

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

1. The combination with a wheel, of gripping-jaws thereon, and means actuated by fluid-pressure for operating the jaws.

2. The combination with a grip-wheel, of a plurality of cylinders mounted thereon, pistons operating in the cylinders, gripping-jaws operated by the pistons, and means for controlling the inlet and exhaust of a motive agent for operating the pistons in the cylinders.

3. The combination with a cable-grip wheel, having peripheral flanges, of a plurality of pairs of cylinders mounted on said wheel, pistons operating in the cylinders, the flanges of said wheel having openings for the stems of the pistons, gripping-jaws on the piston-stems, a shaft for the wheel having a tubular portion, tubes leading from the cylinders and having communication with said tubular portion

of the shaft, means for conducting compressed air to said tubular portion, valves in the tubes, and means for moving said valves to open and closed position.

4. The combination with a traction-engine, of a cable-grip wheel thereon, a plurality of cylinders on the wheel, pistons in the cylinders, gripping-jaws operated by the pistons, a compressed-air tank on the engine, and pipe communications between said tank and the said cylinders.

5. The combination with a traction-engine, of a grip-wheel mounted thereon, a plurality of cylinders mounted on the wheel, pistons operating in the cylinders, gripping-jaws operated by the pistons, a main air-tank on the engine, a supplemental air-tank, a pipe connection between the main tank and supplemental tank, and pipe connections between said supplemental tank and the said cylinders.

6. The combination with a traction-engine, of a cable-grip wheel mounted thereon, a plurality of cylinders on the wheel, pistons operating in the cylinders, gripping-jaws connected to the pistons, an air-chamber casing mounted on the shaft of the wheel, means for supplying air thereto, pipe connections between said chamber and the several cylinders, valves in said pipe connections, and pairs of flanges for causing movements of the several valves to open or closed position.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HARLON FINLY ONG.

Witnesses:

R. H. GROGER,
W. D. HAYDEN.