

(No Model.)

2 Sheets—Sheet 1.

A. VON BABO.
DEVICE FOR TRANSMITTING POWER.

No. 419,386.

Patented Jan. 14, 1890.

Fig. 1.

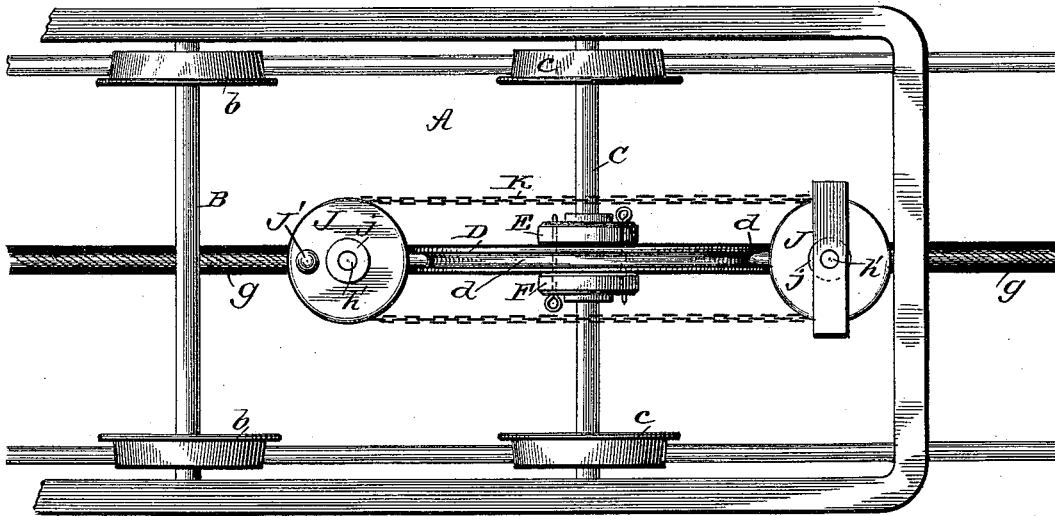
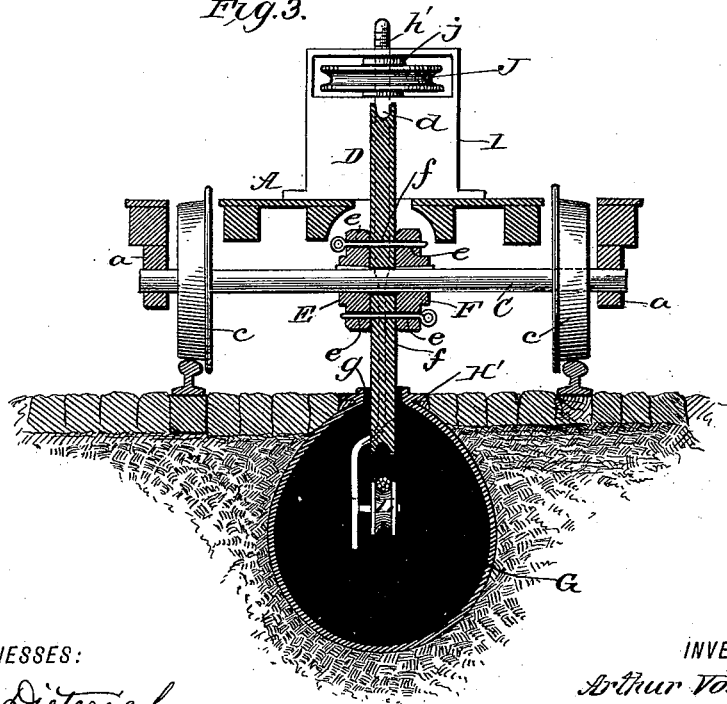


Fig. 3.



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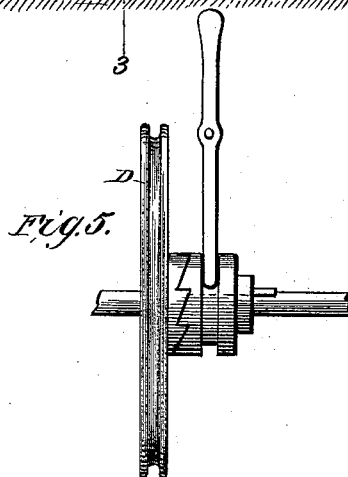
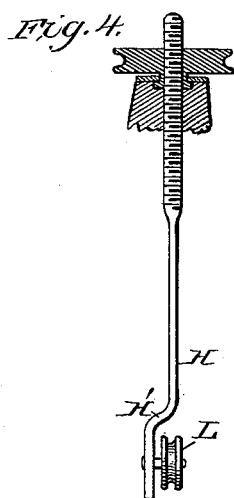
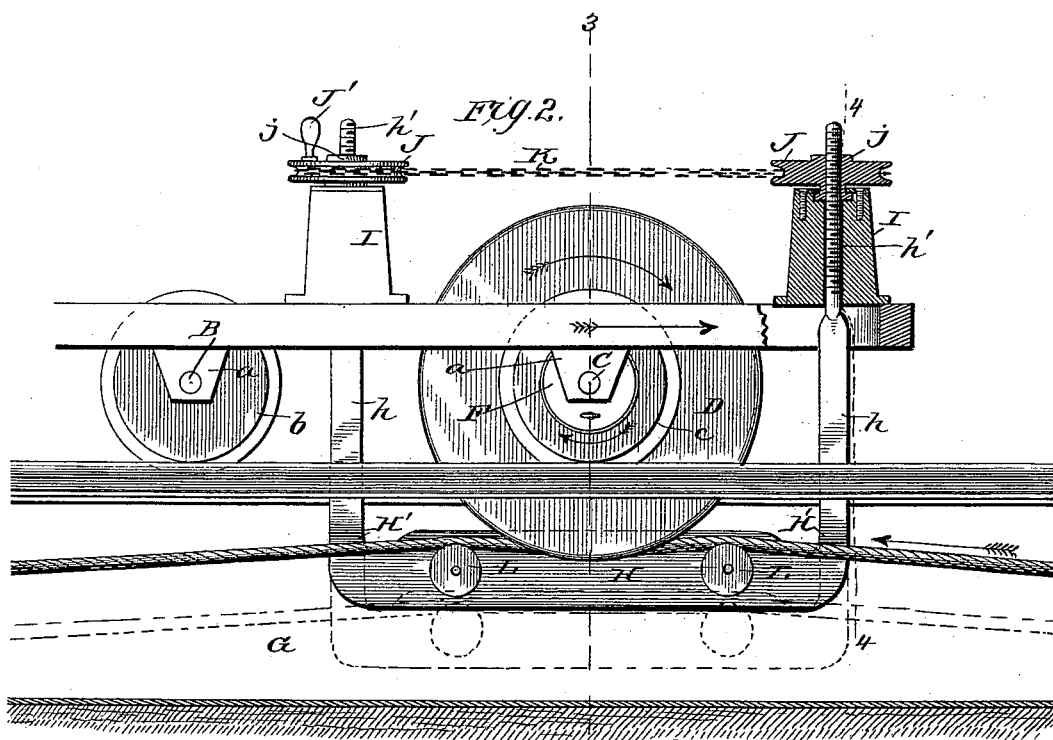
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UNITED STATES PATENT OFFICE.

ARTHUR VON BABO, OF SEATTLE, WASHINGTON.

DEVICE FOR TRANSMITTING POWER.

SPECIFICATION forming part of Letters Patent No. 419,386, dated January 14, 1890.

Application filed August 2, 1889. Serial No. 319,575. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR VON BABO, a subject of William II., Emperor of Germany, residing at Seattle, in the county of King and Territory of Washington, have invented a new and Improved Device for Transmitting Power, of which the following is a specification.

The object of my invention is to provide a suitable device whereby reversible motions for a wheeled vehicle may be obtained from a continuous-running chain or cable; and it is more especially adapted for use in connection with cable traction railways where there is but one cable operating in a street.

The purport of my invention is to utilize a single cable line so as to run the cars in opposite directions upon the same track by simply operating the reversible device, which in this case effectually operates as a means for reversing the moving direction of the car.

It has also for its object to so construct the said reversing device as to enable the same to be quickly turned into a simple and effective gripping device when it is desired to run the car in the same direction with the movable cable.

To this end my invention consists in certain novel features of construction and peculiar combination of parts, all of which will hereinafter be fully described in the annexed specification, and be particularly pointed out in the claims, reference being had to the accompanying drawings, in which—

Figure 1 is top plan view of a portion of a car-body with my improvements applied. Fig. 2 is a side elevation of the same with the conduit shown in section. Fig. 3 is a transverse vertical section taken on the line 3 3, Fig. 2. Fig. 4 is a vertical section taken on the line 4 4, Fig. 2; and Fig. 5 is a detail view hereinafter referred to.

In the accompanying drawings, A indicates a portion of the car-body provided with journal-bearings *a a*, in which are journaled the truck-axles B and C, provided with the truck-wheels *b* and *c*, as shown. One of these axles C, which I will term the "power axles," has formed centrally thereon hubs or collars E F, keyed or otherwise fixedly secured thereto, and between which is loosely journaled the cable or power wheel D.

e e denotes a series of aligning apertures formed in the hubs E F, and *f* a series of transverse apertures formed in the body of the wheel D, which are adapted to register with the apertures *e e* in the hubs, through which and the apertures in the wheel a series of detachable bolts are passed, and by means of which the wheel D is fixedly secured to turn with the power-shaft C.

In practice I prefer to construct the power-wheel D of twice the diameter of the car-wheels C and form the same with a peripheral groove *d*, adapted to receive the cable. The lower portion of the wheel D is passed down through the slot *g* of the conduit G and is adapted to be engaged with the cable in a manner presently described.

H denotes a metallic U-shaped frame, the lower portion of which is disposed within the conduit, while the vertical arms *h h* extend up through the conduit-slot, one at each side of the power-wheel, and have their upper screw-threaded ends *h' h'* fitting in apertured bearing-boxes I I, mounted on the car-frame, as most clearly shown in Fig. 2 of the drawings.

J J denote chain-wheels provided with screw-threaded hubs *j j*, through which the upper ends *h'* of the arms *h* are passed, said wheels being connected by a chain K, as shown. One of said wheels J is provided with a suitable crank-handle *J'*, by means of which the said wheels J J may be conveniently operated.

The lower end of the U-shaped frame is bent laterally, as shown at H', and upon the front face of said end is journaled two sheaves L L, arranged one to each side of the power-wheel D and in the same horizontal plane, as most clearly shown in Fig. 3 of the drawings. These sheaves serve to support the cable.

When the several parts are adjusted as above described, they are arranged to operate to obtain a reversible movement for the car—*i. e.*, to cause the car to travel in a direction opposite the moving cable.

It will be seen that by securing the power or cable wheel to the power-shaft to turn with it, by turning the chain-wheels J the U-shaped frame will rise and bring the cable into frictional contact with the power-wheel

and cause it to revolve in a direction opposite the moving direction of the cable, as indicated by arrows in Fig. 3.

When it is desired to adjust the device to
 5 operate as a gripper, the bolts are removed from the hubs E and F and the wheel D thereby released from turning with the shaft. Now by adjusting the U-shaped frame up and bringing the cable into tight frictional
 10 contact with the power-wheel the same will bind against the axle C and be thereby held from revolving on said axle and forming a grip between the car and cable and causing the car to be moved in the same direction
 15 with the cable, the axle C, however, turning in the wheel D. As before stated, the diameter of the power-wheel D is twice the diameter of the car-wheels C C. By this construction I am enabled to produce exactly the same
 20 speed in both cars going back and forth.

That the cars should move in opposite directions at the same speed is very essential, so as to cause the same to reach sidings or
 25 main track at predetermined intervals and thereby permitting said cars to pass each other.

In practice I prefer to construct the U-shaped frame of one piece of steel.

30 From the foregoing description, taken in connection with the drawings, the advantages of my improvement will readily appear. It will be observed that by arranging the power-wheel so as to project into the conduit to engage the cable I transmit the power to the
 35 truck-shafts without the necessity of intermediate gearing devices.

My improved device is exceedingly simple in construction, cheap as to cost, and effective
 40 in its desired operation.

Instead of employing the hubs and pin-connection between power-shaft and power-wheel, I might employ a sliding-clutch mechanism, as shown in Fig. 5, operated by a lever
 45 extended up to the car-body, which can be operated by the gripman at will.

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

50 1. The combination, with the axle C, journaled to the car-body and provided with truck-wheels c c at its outer ends, a power-

wheel mounted on said axle to turn therewith, said wheel provided with a peripheral groove, the lower portion of said wheel adapted
 55 to project within the conduit and engage the cable, of a cable-lifter secured to the car-body and projected down within the conduit to each side of the power-wheel, and cable-supporting wheels journaled on the lower end of
 60 said lifting-frame, substantially as and for the purpose described.

2. The combination, with one of the truck-axes provided with the car-wheels c c, and a power-wheel mounted on said axle to turn
 65 therewith, having a diameter twice the diameter of the car-wheel, said wheel having a direct engagement with the cable, of a cable-lifting device operated from the car-body, adapted to raise the cable into frictional contact with said power-wheel, substantially as
 70 and for the purpose described.

3. The combination, with one of the car-axes, of a power-wheel loosely mounted thereon, the lower portion of said wheel projected
 75 below the conduit-slot, a cable-lifter operated from the car-body and projected in the conduit to each side of said power-wheel, and cable-supporting sheaves journaled to said
 80 lifter, said lifting-frame adapted to bring the cable in tight frictional contact with said power-wheel, substantially as and for the purpose described.

4. The cable-lifter consisting of a U-shaped frame, cable-supporting sheaves journaled in
 85 the lower end thereof, the vertical arms thereof provided with screw-threaded ends vertically adjustable in apertured bearings secured to the car-body, screw-threaded chain-wheel secured upon the said screw-threaded
 90 ends of the vertical arms, a chain connecting said wheels and means for turning said chain-wheels, in combination with the power-wheel mounted to rotate on one of the car-axes,
 95 said wheels disposed centrally between said vertical arms of the cable-lifter, and provided with a peripheral groove adapted to engage the cable when said cable is brought into contact by the lifting device, substantially as and for the purpose described.

ARTHUR VON BABO.

Witnesses:

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