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F. BURGER.

APPARATUS FOR UTILIZING MOMENTUM OF MOVING BODIES.

(Application filed Apr. 2, 1898. Renewed May 8, 1899.)

(No Model.)

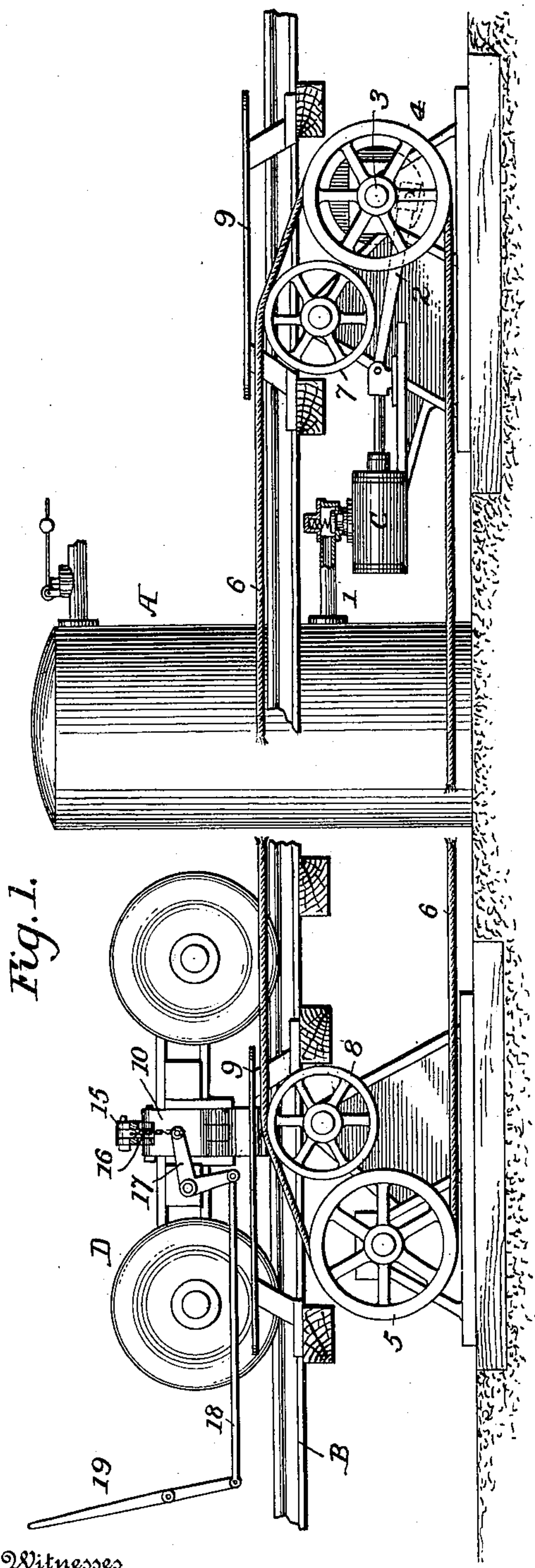


Fig. 1.

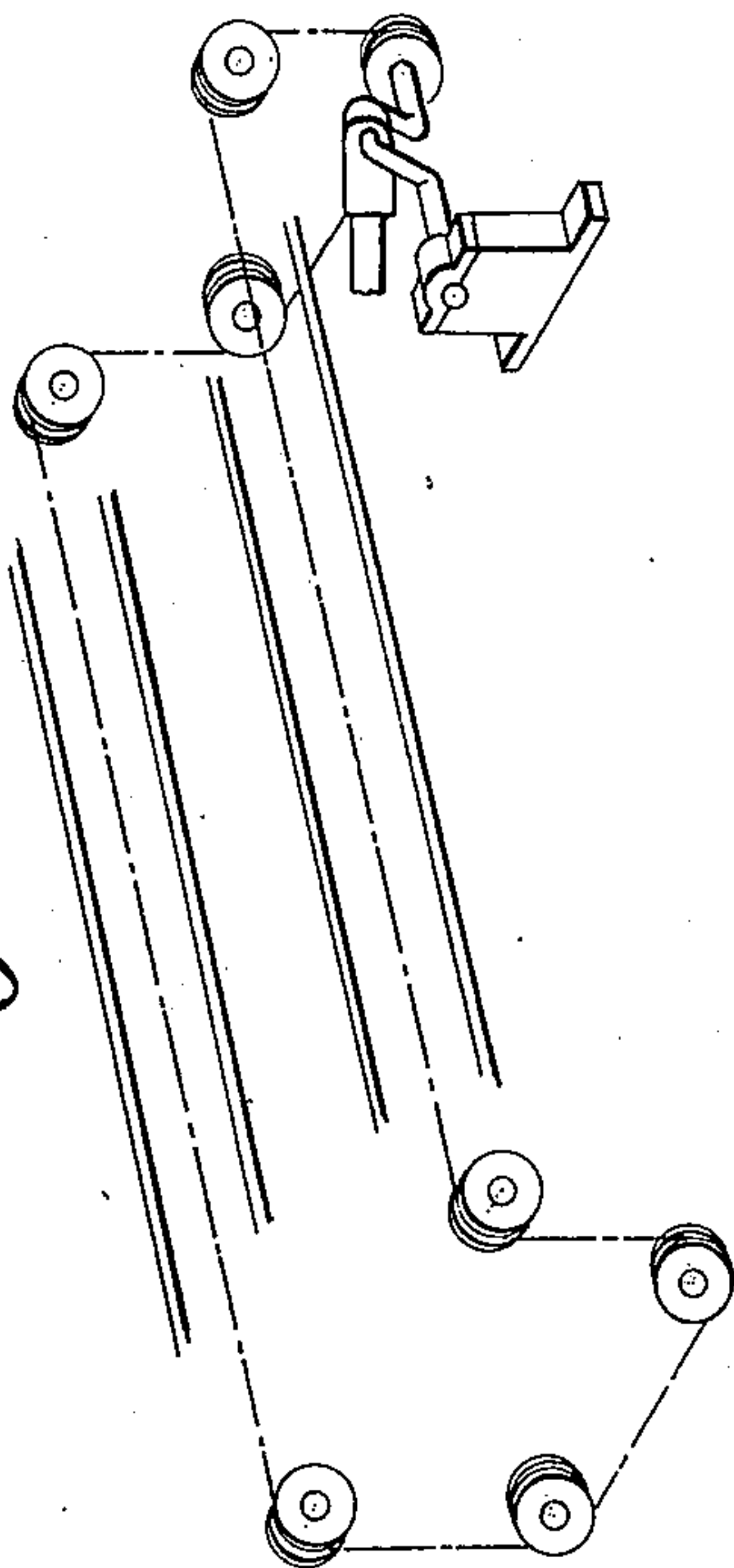


Fig. 3.

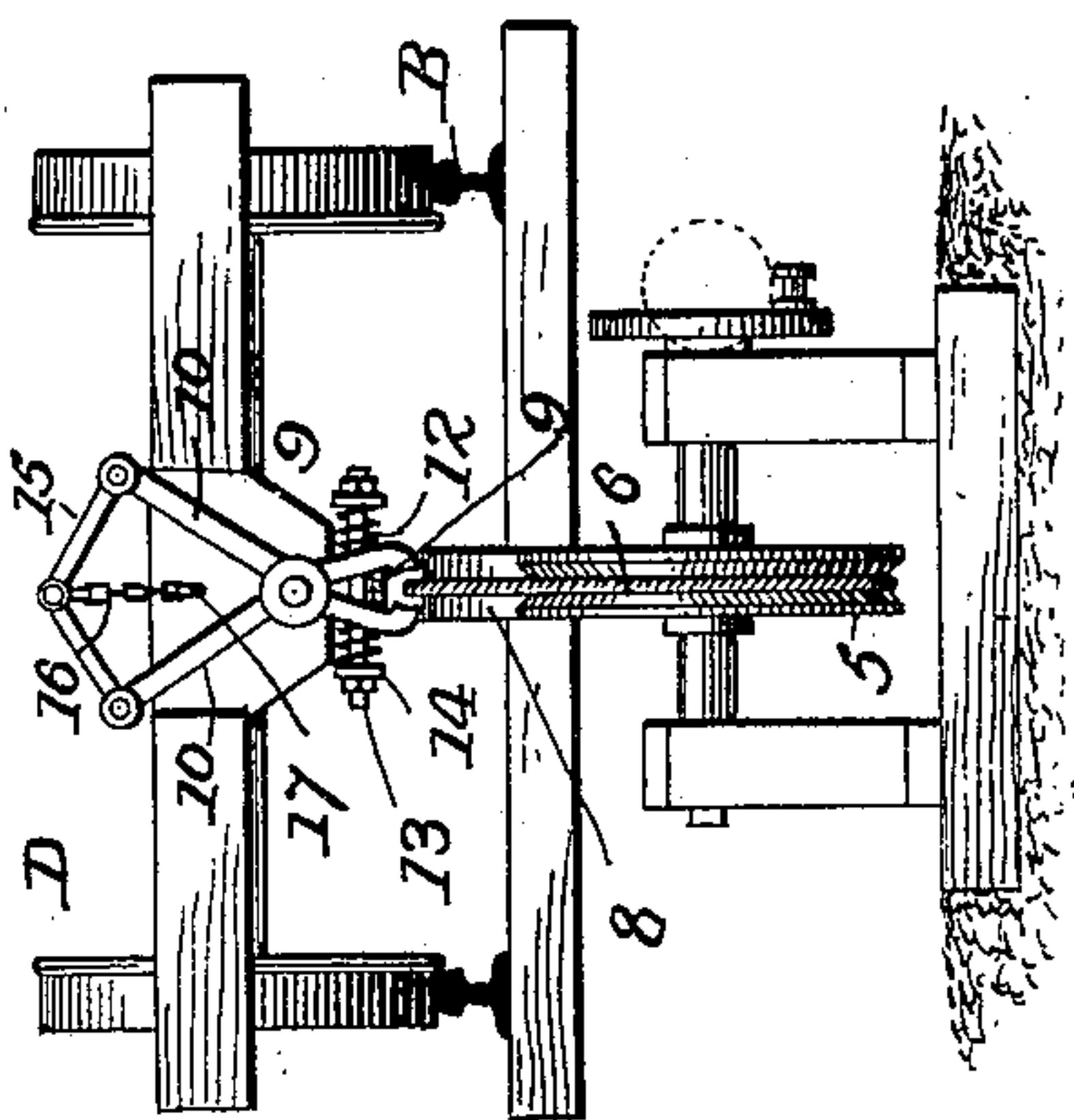


Fig. 2.

Witnesses

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APPARATUS FOR UTILIZING MOMENTUM OF MOVING BODIES.

SPECIFICATION forming part of Letters Patent No. 639,706, dated December 26, 1899.

Application filed April 2, 1898. Renewed May 8, 1899. Serial No. 715,980. (No model.)

To all whom it may concern:

Be it known that I, FRANZ BURGER, a citizen of the United States, residing at Fort Wayne, in the county of Allen and State of Indiana, have invented certain new and useful Improvements in Apparatus for Utilizing the Momentum of Moving Bodies, of which the following is a specification.

This invention relates to certain new and useful improvements in apparatus adapted to be operated from a moving body to store up power within or force fluid to a suitable reservoir, having for its object to provide means for this purpose which is simple in construction and certain and effective in operation; and with this object in view the invention consists in the novel construction and arrangement of parts hereinafter more particularly described.

In the accompanying drawings, forming a part of this specification, and in which like letters and numerals of reference indicate corresponding parts, Figure 1 is a side elevation of apparatus embodying the invention. Fig. 2 is an end elevation thereof, and Fig. 3 is a diagrammatic view illustrating a different arrangement of the parts.

Referring more particularly to the drawings, A designates a reservoir located in the vicinity of a railroad-track B, communicating with which, through a valve-controlled pipe 1, is a pump or an air-compressor C, the piston of which is connected, by means of the usual connecting-rod 2, with a crank-shaft 3. Mounted upon the shaft 3 is a sheave 4, around which and a corresponding sheave 5, located at a suitable distance therefrom, passes an endless chain or cable 6. From the sheaves 4 5 the cable passes over two guide-wheels 7 8, located, respectively, adjacent and above the said sheaves. These guide-wheels are mounted in the same horizontal plane and are located, preferably, intermediate the rails of the track B, with their upper edges above the plane of the rails, the cable 6 being taut and extending from one of said wheels to the other in a straight line.

Supported above each of the guide-wheels in the vertical plane of the cable 6 is a clutch or grip operating device 9, the opposite ends

of which are pointed. The purpose of these devices will presently appear.

Mounted upon the truck D of a locomotive-engine or of a car is a suitable clutch or grip which depends from the truck into position to grasp the cable 6 when brought over it, and while this grip may be constructed in various ways that shown is preferred on account of its simplicity and effectiveness. As shown, the grip comprises two arms 10, pivotally supported intermediate their ends upon a truck-beam. The extreme lower ends of these arms are normally maintained in engagement by means of springs 12, which springs are arranged upon opposite sides of the grip and surround a rod 13, passing through openings in the arms of the grip. This rod is provided at its ends with collars 14, and the springs 12 are interposed between these collars and the outer faces of the arms to press in opposite directions and hold the arms together. Just above their lower extremities the arms of the grip are slightly separated to form an opening, which opening is in line with the points of the grip-operating devices. Above their pivotal point the grip-arms diverge, and at their extreme upper ends they are connected by a toggle 15, the levers of which are normally maintained at an angle to each other by the springs 12. Connected to the pivot of the toggle-lever is a chain 16, the lower end of which is in turn connected to one arm of a bell-crank lever 17, pivoted upon the truck-frame. To the other arm of the bell-crank lever is connected one end of a rod 18, the opposite end of which is pivotally connected to the lower end of an operating-lever 19, pivoted intermediate its ends and extending to a point within convenient reach of an operator. With the parts thus constructed and arranged when a train approaches the grip-operating devices in either direction the pointed end of one of said devices enters the opening between the lower end of the arms of the grip and gradually forces them apart to bring them upon opposite sides of the cable 6. When the grip leaves the opening device, the arms thereof are forced toward each other and firmly grip the cable, causing it to travel with the grip. This effects the rotation of

the crank-shaft and through the connecting-lever operates the compressor or pump C to force water or air under pressure into the reservoir, from which it may be subsequently withdrawn as desired. When the grip reaches the second operating device, the point thereof enters the opening between the arms of the grip and forces them apart, thereby effecting the disengagement of the grip and cable. From this it will be apparent that the engagement and disengagement of the grip with the cable is automatically effected and does not depend upon any action upon the part of the operator. When a train is traveling at a high rate of speed, it is sometimes desirable that the grip be prevented from grasping the cable, and it will be obvious that this may be effected by operating the lever 19, causing it, through the rod 18, to rock the bell-crank lever 17, which pulls upon the chain and straightens the toggle 15, thereby forcing the lower end of the arms of the grip apart, so that they cannot engage with the cable.

The construction shown in Figs. 1 and 2 is adapted for use in connection with a single track. When the apparatus is to be used in connection with a double track, two sets of sheaves and guide-wheels are employed, one set being arranged beneath each track, and instead of arranging the axes of the guide-wheels and sheaves parallel they are arranged at right angles to each other, as shown in diagram Fig. 3.

Without limiting myself to the precise construction and arrangement of parts shown and described, since various changes in such construction and arrangement may be made without departing from the spirit or scope of the invention,

What I claim is—

1. In apparatus of the character described, the combination of separated sheaves, an endless cable passing around said sheaves and having one limb extending above a track, a grip or clutch carried upon a truck adapt-

ed to move upon the track, said grip having separable parts for engaging opposite sides of the cables, means upon or adjacent the track for automatically effecting the engagement and disengagement of the grip with the cable, a reservoir, an engine communicating therewith and connections between the engine and the shaft of one of the sheaves, substantially as described.

2. In apparatus of the character described, the combination of an endless cable having one of its limbs extending above a track, a clutch or grip carried upon a truck adapted to move upon the track, said grip having separable parts adapted to engage opposite sides of the cable, and stationary devices arranged upon the track above the cable at the bends thereof for automatically effecting the opening of the grip to cause it to engage and disengage the cable, substantially as described.

3. In apparatus of the character described, the combination of an endless cable having one of its limbs extending above a track, a grip carried upon a truck adapted to move upon the track, said grip comprising pivoted arms and springs for maintaining them in contact and devices adjacent the cable adapted to enter between the arms of the grip and force them apart, substantially as described.

4. The combination of an endless cable, a grip carried upon a truck adapted to move upon a track, relatively stationary means located at separated points upon or adjacent the track, for effecting the automatic engagement and disengagement of the grip with the cable, and means upon the truck for opening the grip, substantially as described.

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

FRANZ BURGER.

Witnesses:

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K. C. NISRONGER.