

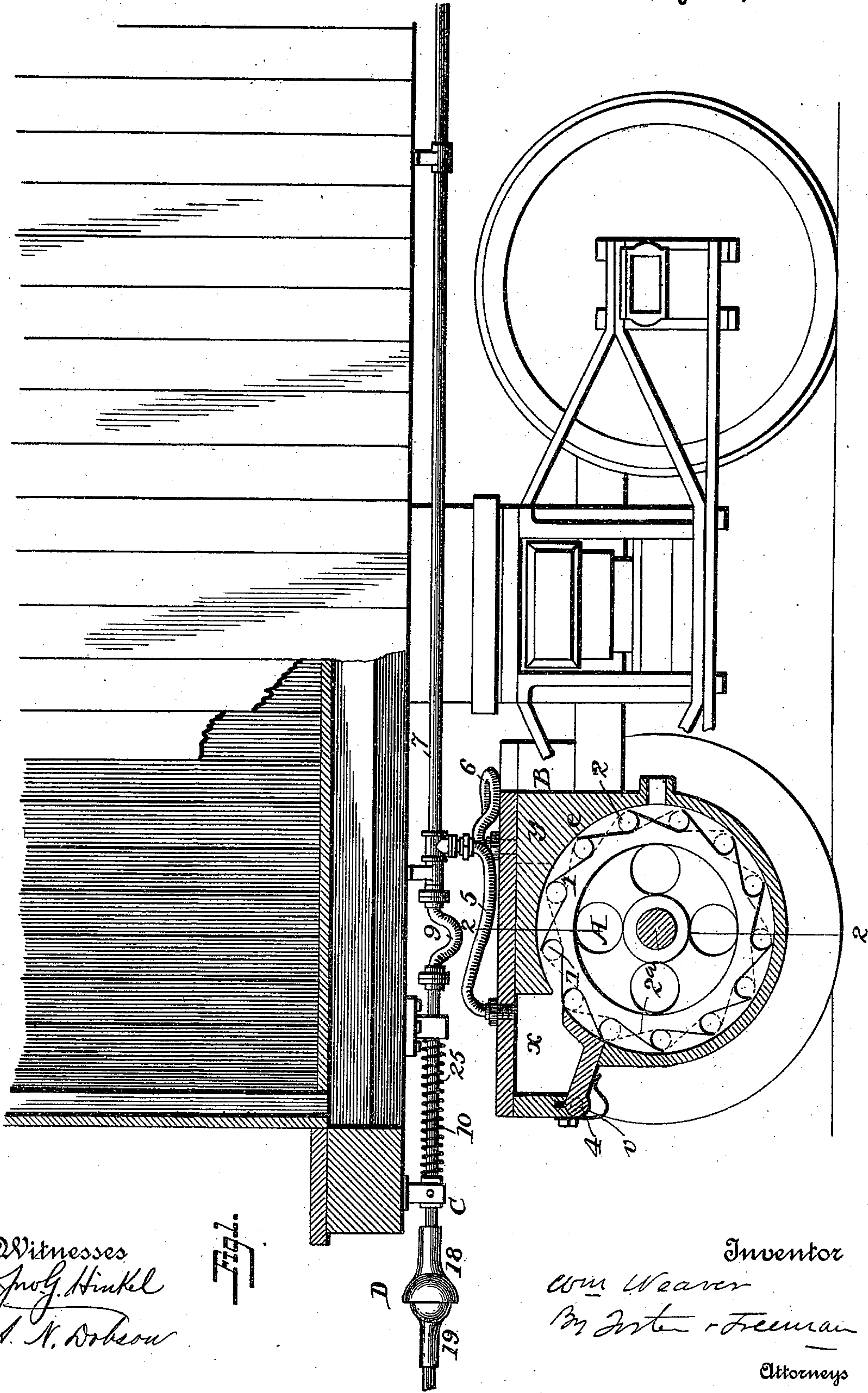
(No Model.)

2 Sheets—Sheet 1.

W. WEAVER.
CAR STARTER.

No. 501,595.

Patented July 18, 1893.



Witnesses
Jno. G. Hinkel
A. N. Dobson

Inventor
Edw Weaver
 By John Freeman
 Attorneys

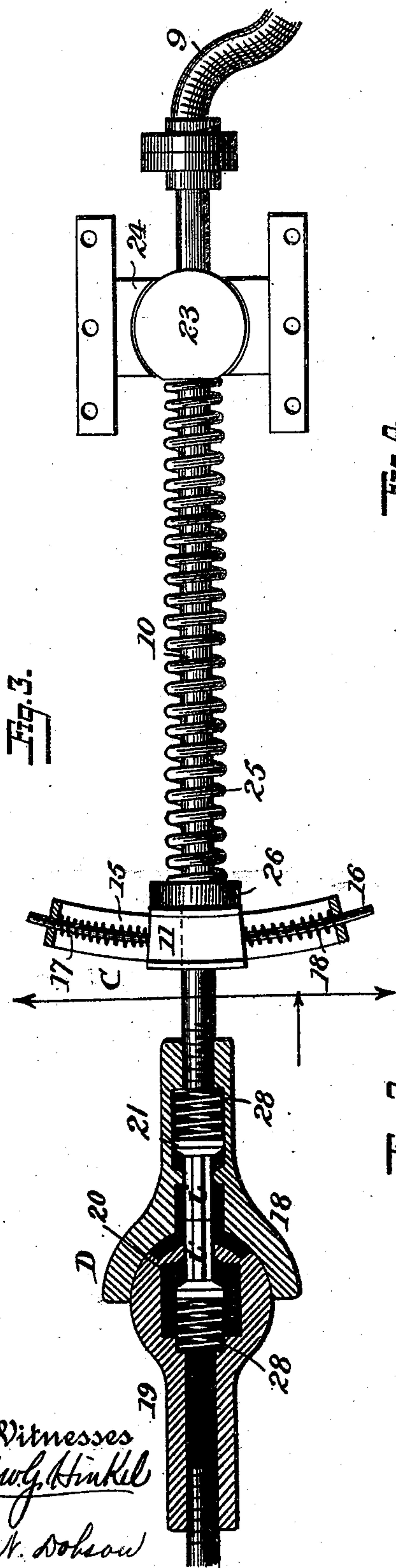
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2 Sheets—Sheet 2.

W. WEAVER.
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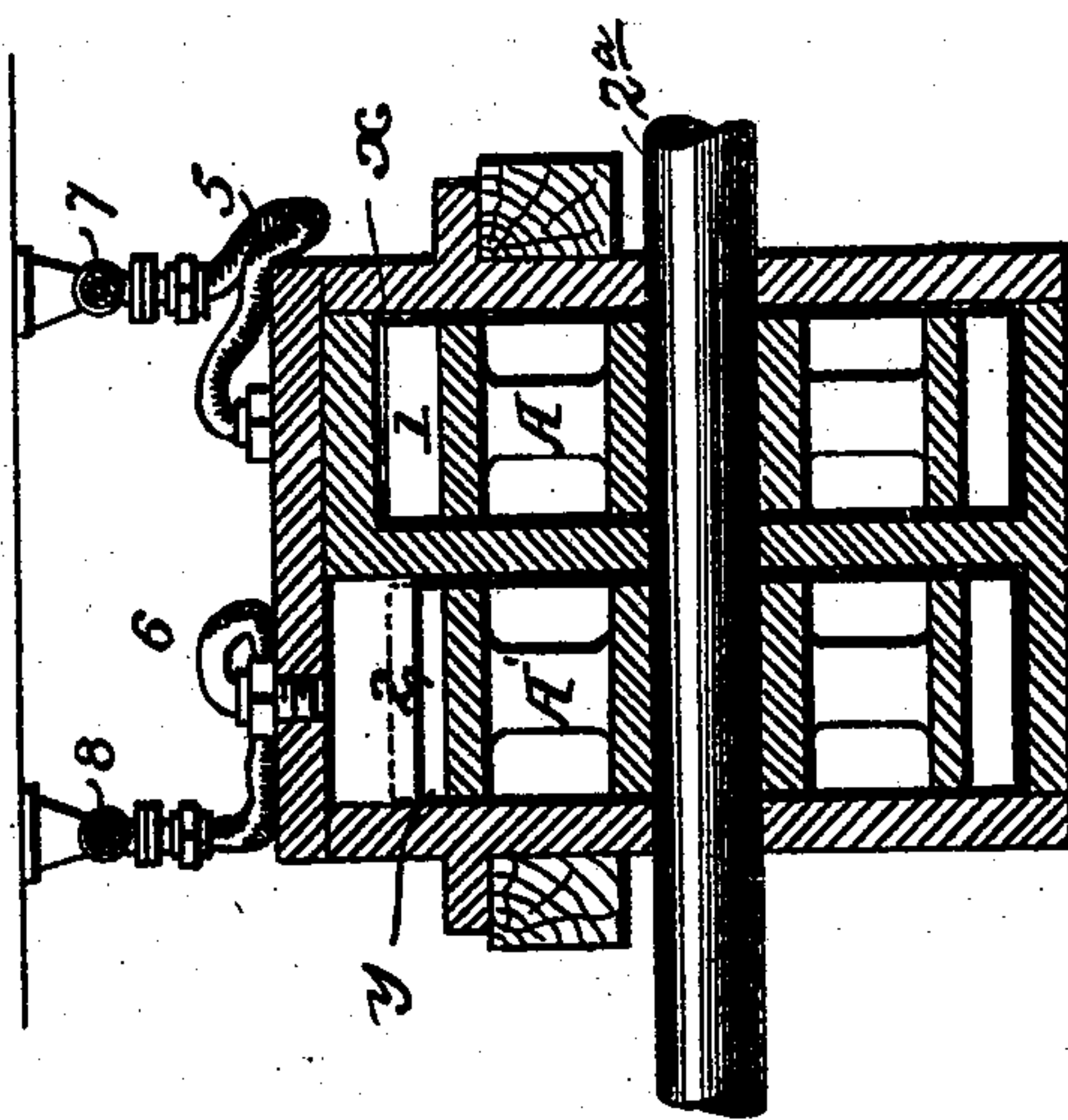
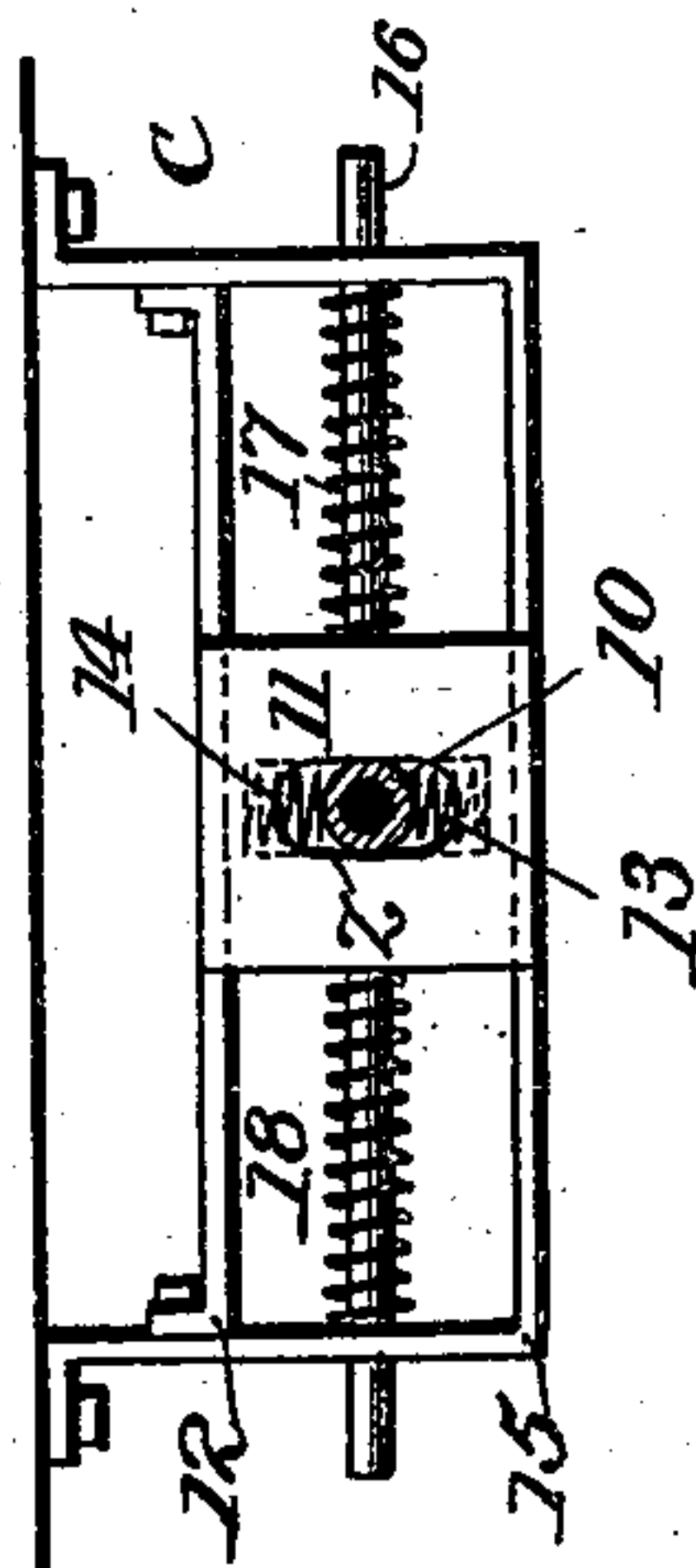
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Witnesses
Wm. G. Hinkel
A. N. Doherty

Fig. 4.



Inventor

Wm. Weaver
By John Freeman
Attorneys

UNITED STATES PATENT OFFICE.

WILLIAM WEAVER, OF NORWALK, CONNECTICUT, ASSIGNOR TO HIMSELF,
DEXTER HITCHCOCK, WILLIAM A. CURTIS, ARTHUR C. WHEELER, AND
CHARLES LAPHAM, OF SAME PLACE.

CAR-STARTER.

SPECIFICATION forming part of Letters Patent No. 501,595, dated July 18, 1893.

Application filed February 18, 1893. Serial No. 462,900. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM WEAVER, a citizen of the United States, residing at Norwalk, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Car-Starters, of which the following is a specification.

My invention relates to means for starting cars by bladed wheels acting under air or steam pressure, and means for bringing the air at will to bear upon blades at one side of one wheel or the opposite side of the other, to start the car in one or other direction as may be desired.

In the accompanying drawings: Figure 1 is an end view of part of a railway car, in part section, illustrating my improvement. Fig. 2 is a section on the line 2—2, Fig. 1. Fig. 3 is an enlarged section of the coupling and connections. Fig. 4 is a view looking in the direction of the arrow, Fig. 3. Fig. 5 is a sectional view illustrating the valve device for directing air under pressure to one or the other of the pipes extending along the train.

Upon one of the axles 2^a, of a car or truck, is mounted a wheel A having blades 1, of any suitable form and dimensions and upon the same or another axle is mounted another wheel A' also having blades 2. In the construction shown, both of the wheels are mounted upon the same axle 2, and the blades are in the form of ratchet-like projections arranged reversely in the two wheels. The upper portions, or as shown the whole of, the wheels turn in a casing B, which, as shown, is bolted securely to the frame of the truck, the blades traveling so close to the faces *c*, of the recess in the casing that there can be practically no leakage between the edges of the blades and the faces of the said recesses and at one side of the casing is a chamber *x* arranged in position to permit air introduced into the said chamber under pressure, to act upon the blades 1 of the wheel A while at the other side of the casing is a chamber *y* arranged in such position that air under pressure admitted to said chamber will act upon the blades 2 of the wheel A' to bring the pressure in the opposite direction from that in which it is applied upon the wheel A.

In order to maintain the chambers *x*, *y*, tight notwithstanding the wear, the bottom 4, of each chamber is preferably formed of a plate hinged at one edge, the outer edge, and the inner edge bears upon the periphery of the wheel so as to remain always in contact therewith and prevent the escape of air. By admitting air, steam or other fluid under pressure to the chamber, *x*, the wheel A and the axle connected therewith will be turned in one direction, while by admitting air under pressure to the chamber *y*, the air will act upon the blades of the wheel A' and turn the axle, 2, in the opposite direction.

The admission of air to one of the other chambers is controlled from the forward end of the train by a valve device E (Fig. 5), under the control of the engineer, and so constructed as to direct the air under great pressure to either one of two pipes 7, 8, that extend along the train, the air being stored in a suitable reservoir, 30, in a manner not necessary here to explain. A spring *v* lifts the plate off the wheel when there is no air pressure and prevents wear. Preferably the pipes 7, 8, extend in sections beneath the different cars of the train, a flexible pipe 5, extending from the section of the pipe 7 to the chamber *x*, and a flexible pipe 6, extending from the pipe 8 to the chamber *y*, these flexible pipes 5, 6, permitting the usual play of the truck without interfering with the arrangement of the pipes.

It is, of course, necessary to couple the different sections of pipes of the train and to make these couplings in such shape that they will couple as nearly automatically as possible and permit the play which is usual between the different cars of the train. For this purpose, I make use of automatic couplings D, one section 19, of each of which is in the form of a sphere or ball while the other section, 18, is in the form of a socket, and each section instead of being connected directly to one end of a section of the pipe 7 or 8, is connected to a sliding pipe 10 so supported and mounted beneath the platform of the car that it will slide longitudinally and also have a lateral and vertical play. As shown, each section, 10, is connected with the

stationary portion of the pipe by means of a flexible tube, 9, and said section, 10, slides in a ball bearing 23 that locks in a stationary bearing or case, 24, bolted to the under side of the car, and a spring 25, bearing on a shoulder 26, on the sliding tube 10, tends to throw the latter outward. The sliding tube, 10, near its outer end passes through a block, 11, which slides between guides 12, 15, of a frame C bolted near the front end of the platform, springs, 17, 18, on the opposite side of the block, 11, tending to maintain it in a central position, and in the said block is a vertical slot z through which the tube, 10, extends with a spring 13, in said slot below the tube and a spring 14, above the tube. When the cars are brought together so as to bring the sections, 18, 19 of the coupling D into contact, the tubes, 10, will slide back as far as necessary to permit such contact, and any change in the vertical positions of one or the other of the cars will be permitted by the springs, 13 and 14, and any change in the lateral position will be permitted by the springs, 17 and 18, but said springs will always tend to bring back the tube, 10, to its normal position. Each section of the coupling D, is provided with a valve 20 or 21 and a spring 28 tends to throw the valve forward so as to close the outer port of such section and prevent the escape of air, but each valve is provided with a stem i or i' extending outward, of such length and in such position that when the two sections, 18, 19 are brought together the contact of the two stems will throw both of the valves inward away from their seats so as to permit an air passage from one section of the coupling to the other.

It will, of course, be evident that there may be other and different means of connection between the stationary pipes and the chambers x and y , as through the medium of jointed pipes, and that the sections, 10, may be differently mounted so as to yield in different directions, and that the couplings D, instead of being made as described, may be made like those of the ordinary air-brake devices.

The features of construction embodied in Figs. 3 and 4 of the drawings, are intended to form the subject of a separate application;

consequently, I do not wish to be understood as laying any claim herein to such features.

Without limiting myself to the precise construction and arrangement of parts set forth, I claim as my invention—

1. The combination with a car of two wheels mounted upon the axle or axles thereof in proximity to a casing having an air-chamber, each of said wheels having blades and means for throwing air under pressure into one or other of said chambers to act upon opposite sides of the blades of said wheels, substantially as set forth.

2. The combination with the axle of a car of two bladed wheels, a chamber adjacent to each wheel in a casing B, two chambers on opposite sides of the axle, and means for throwing the air under pressure to one or other of said chambers, substantially as set forth.

3. The combination with the axle, its wheels, 1, 2, casing B, and chambers x, y , of pipes extending along a train and a valve device E, whereby air under pressure may be thrown into either set of pipes and to either chamber, substantially as set forth.

4. The combination of the truck, its wheels, casing and air-chambers, and pipes extending along the platform of the car, flexible connections between the said pipes and the air chambers, and means for throwing air into one or other of the said pipes, substantially as set forth.

5. The combination with the truck, wheels, air chambers and conducting pipes, 7, 8 secured fixedly to the platform, of sliding pipe sections 10, provided with coupling sections and connected with the stationary sections by flexible tubes 9, substantially as set forth.

6. The combination of the bladed wheel and casing containing an air chamber, a hinged plate constituting the bottom of said chamber and a spring arranged to lift the plate, substantially as described.

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

WILLIAM WEAVER.

Witnesses:

WM. A. CURTIS,

HOWARD J. BLOOMER.