

(No Model.)

O. E. MOATS.
ROAD MAKING MACHINE.

No. 561,804.

Patented June 9, 1896.

Fig. 2.

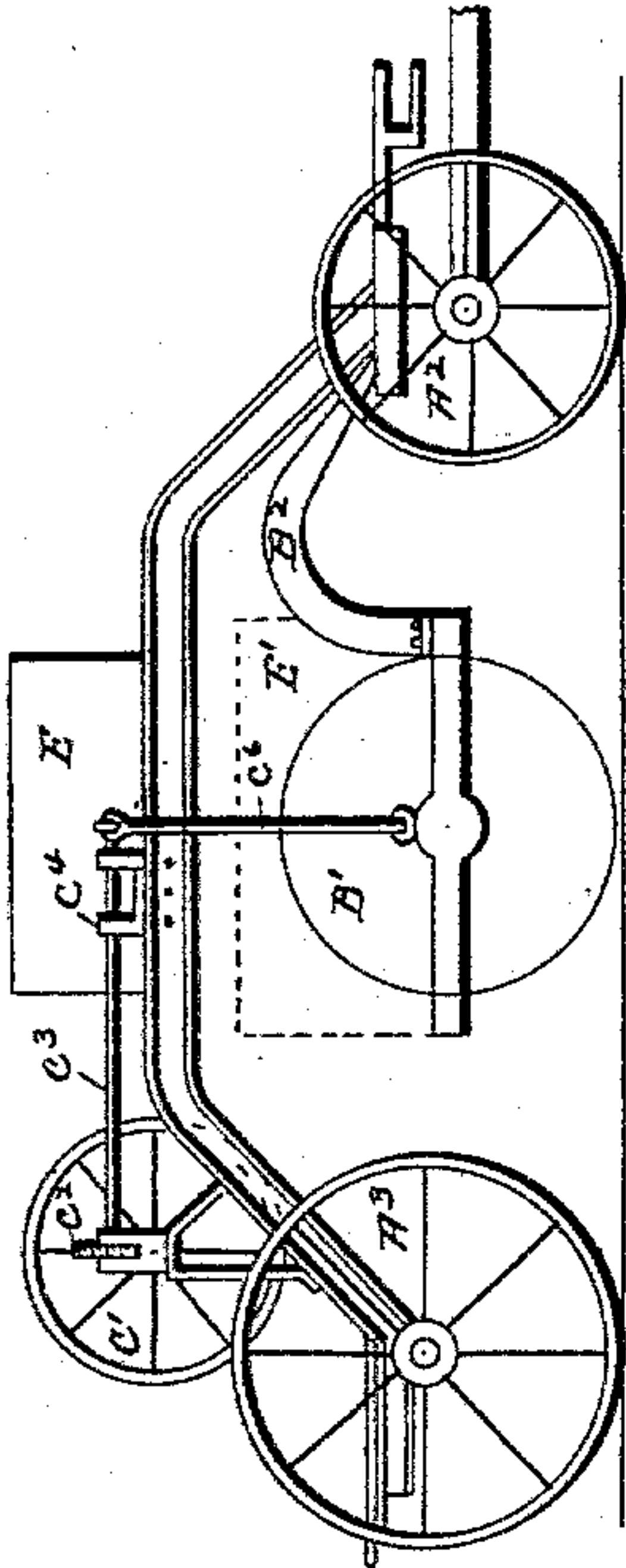
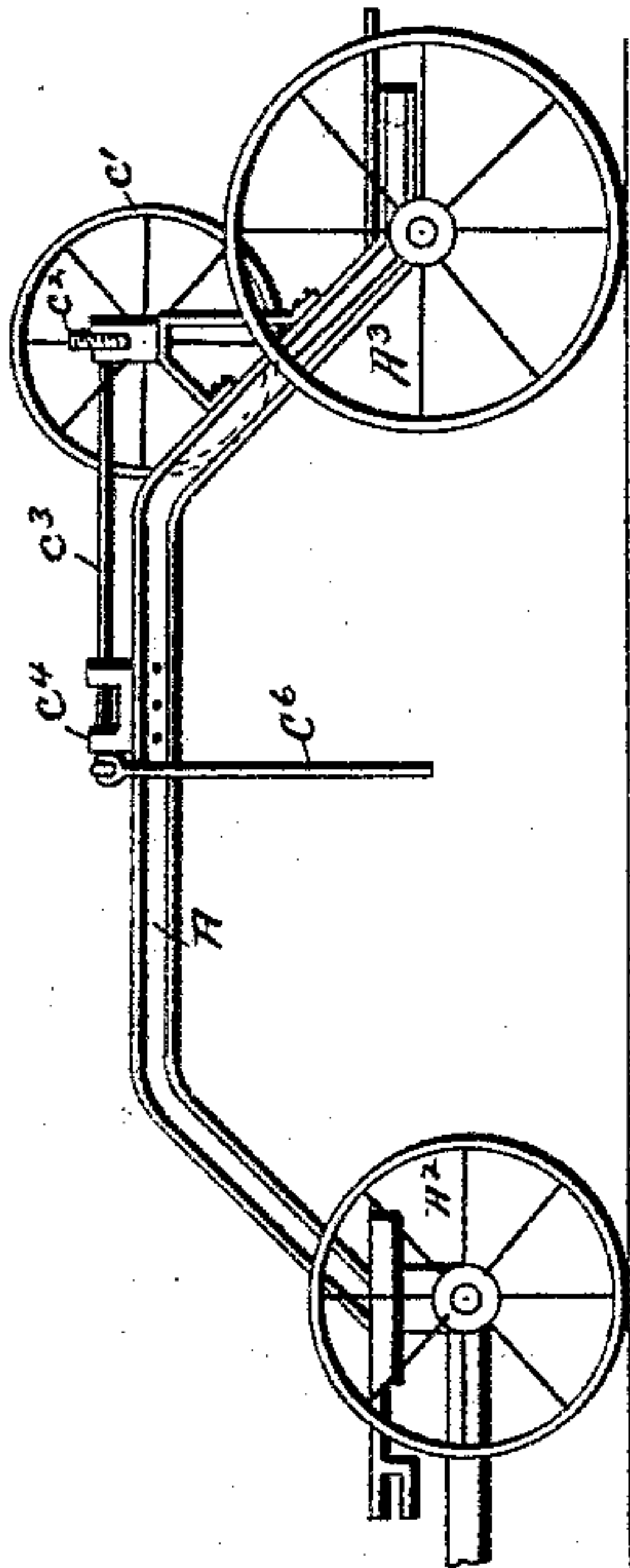


Fig. 1.



WITNESSES.

A. B. Degges
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Fig. 4.

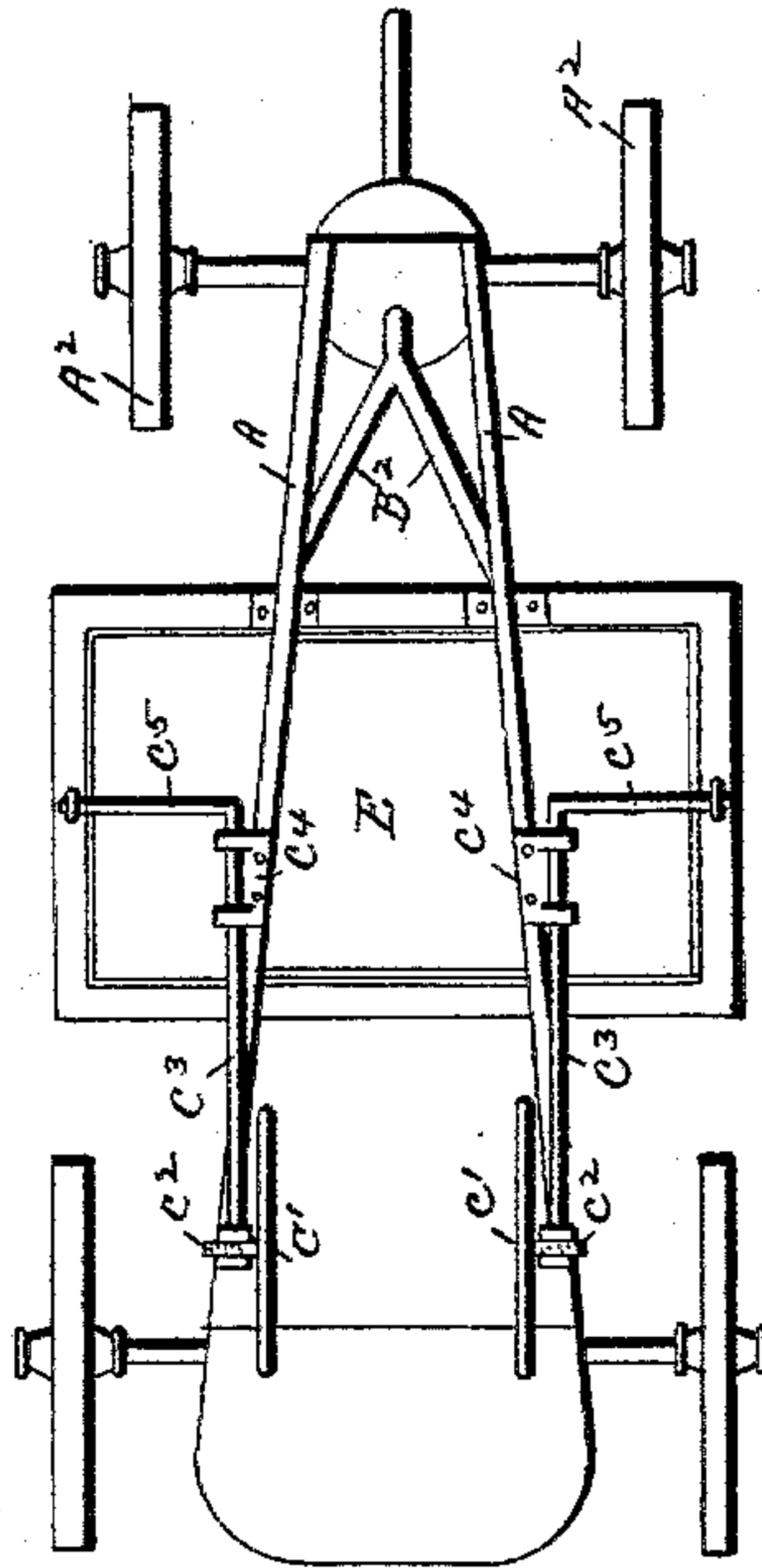
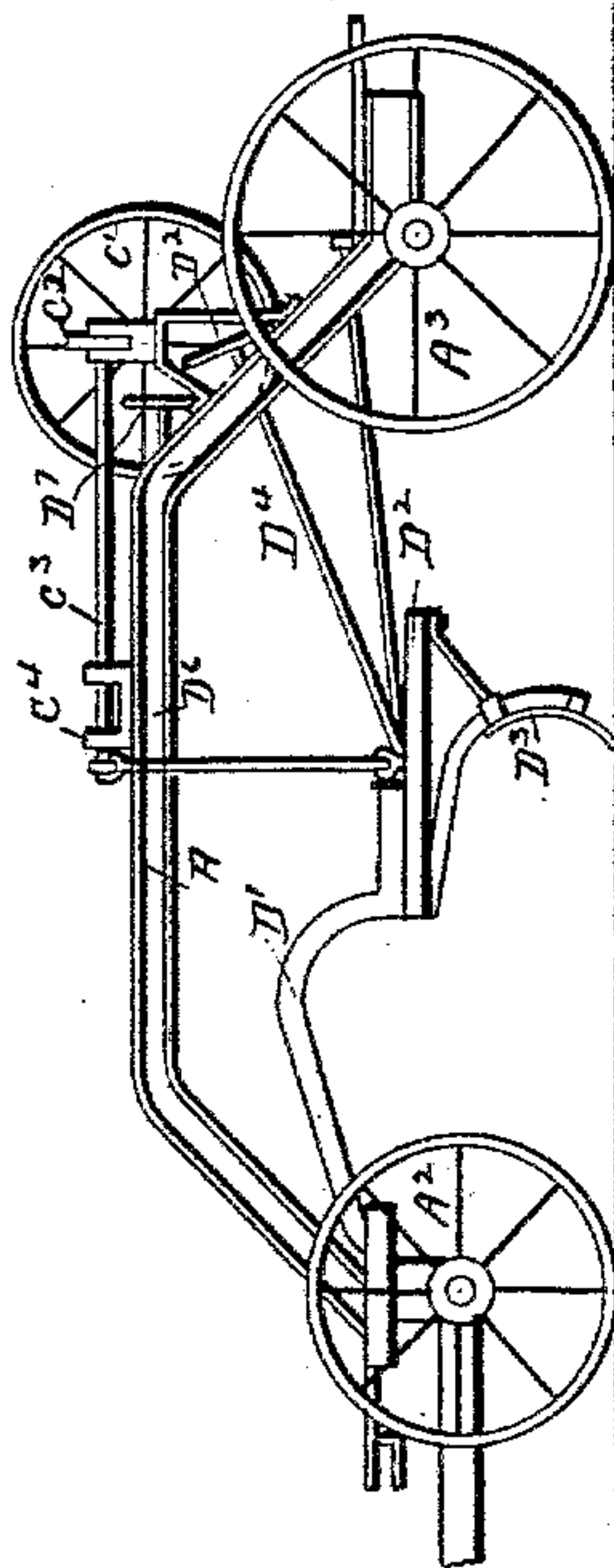


Fig. 3.



INVENTOR

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UNITED STATES PATENT OFFICE.

ORTUS E. MOATS, OF CANTON, OHIO, ASSIGNOR TO THE AULTMAN COMPANY, OF SAME PLACE.

ROAD-MAKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 561,804, dated June 9, 1896.

Application filed December 14, 1895. Serial No. 572,173. (No model.)

To all whom it may concern:

Be it known that I, ORTUS E. MOATS, a citizen of the United States, and a resident of Canton, in the county of Stark and State of Ohio, have invented a new and useful Improvement in Road-Making Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification.

The invention relates to an improvement in road-making machines, the essential features of which are a truck or wagon with four wheels, frame, and running-gears, a road plowing and scraping device to be attached thereto and carried under the frame between the front and rear wheels, such device to be interchangeable with a road-roller, the frame of the machine carrying certain lifting and controlling devices to be used in connection with either the scraper device or the roller, and so arranged as to carry the weight of the scraping device or the roller or to add the weight of the carriage to the scraper or the roller, as required. By this means the necessity for separate and independent machines for placing the material in position upon the road and for compacting it into a solid road-bed is obviated.

It will be understood from the following description and claims, reference being had to the accompanying drawings, which are made part hereof, in which—

Figure 1 represents in side elevation the carriage with the lifting and depressing device which is common to both scraper and roller. Fig. 2 represents the frame of the machine in side elevation with the roller attached. Fig. 3 represents the frame of the machine with the scraper attached. Fig. 4 represents a plan of the machine with roller, looking downward.

The parts marked A represent the main frame of the machine, composed, preferably, of arching longitudinally-arranged bars connected at their forward ends by a transverse bar secured to the forward axle or to the fifth-wheel thereof, as indicated, said longitudinal bars diverging rearwardly and being connected at their rear ends with the rear axle in any suitable manner. A² and A³ indicate

the front and rear wheels, upon which said frame is mounted.

The parts marked C represent the lifting device or mechanism, C' being a hand-wheel operating a worm (not shown in the drawings) rigidly connected with the center of said hand-wheel, said worm working into a driving-pinion C², mounted in proper bearings, as shown. From the center of each pinion extends the shaft C³, extending through bearings C⁴ and turned at right angles in front of said bearings, thereby forming the swinging arm C⁵, from the outer end of which and connected thereto by hook-and-eye or other swinging connection is the hanging link C⁶, the lower end of which is arranged to be connected either to the scraping device or the roller, as hereinafter described. One of these devices is provided for each side of the machine, as shown in the plan.

The parts marked B indicate the roller-frame, and B' the roller journaled at the ends of its shaft in said frame, which is made rectangular in form, surrounding the roller, as shown. The roller is located between the front and rear wheels, and its forward transverse bar has the rear ends of the arms of a bifurcated draft-bar B² rigidly connected with it, said arms being arched or made in gooseneck form, as shown, to permit the turning of the forward wheels, and converging forwardly are united in a single bar, which is flexibly connected with the truck-frame in any suitable way which will provide a free self-adjusting movement of the roller to the surface of the ground. As shown, such connection is effected by a pivotal union of the draft-bars with the main frame of the machine, the king-bolt, or fifth-wheel.

The parts marked D represent the scraping device, D' being the draft-bar, which is arched or made in gooseneck form, to be attached at its front end to the frame of the machine, the fifth-wheel, or the king-bolt, D² being the circle, attached to the draft-bar, with an interior swinging circle revolving on the inside of D² and carrying the scraper-blade D³. This inner circle is made to revolve within the outer circle by means of the shaft D⁴ and hand-wheel D⁵, by which means the blade is set at any desired angle to the line of draft,

and by means of a lock (not shown on the drawings) the blade can be fixed at any such angle. A lateral motion is given to the scraping device by means on the side-shift worm 5 by the bevel-gear D⁶ and the hand-wheel D⁷. I do not confine myself to this or any particular form of scraping device, but have described herein one which is in common use, but any form of scraper now commonly in 10 use upon four-wheeled road-machines can be used upon my machines with slight changes. The interchangeability of the roller and the scraper will be readily understood from the foregoing description.

15 Having reduced the road to the proper surface with the machine with the scraper attachment, the same can readily be removed by disconnecting the draft-bar D' and unhooking the links C⁶ at their lower ends. The 20 roller is then readily attached by connecting its draft-bar B² at its forward end and connecting the links C⁶ to the frame of the roller at B³. The operation of the machine when used as a roller is plain from the foregoing 25 description. For the purpose of transporting the roller from place to place it is raised from the ground by turning the two hand-wheels C'. When in use as a roller, the whole or a part of the weight of the roller may be 30 utilized in rolling and compressing the material by proper control from the hand-wheels C', and the weight of the carriage, in whole or in part, may be added to the weight of the roller, if desired, thereby gaining greatly-in- 35 creased rolling and compressing effect.

The box E, shown on the frame of the machine, is a weight-box, as is also E', shown on the frame of the roller, into either of which weights may be placed for increasing the 40 rolling and compressing effect. The arrangement shown for increasing the weight of the frame by loading the box E is deemed preferable, for not only can the weight of the machine and that of the weighted box be thrown 45 upon the roller, but the latter and its frame can be raised and carried upon the machine-frame more readily for moving from place to place than if the weights are placed upon the roller-frame directly.

50 The roller and the roller-frame may be of any usual or suitable material and construction. The links C⁶, carrying the roller-frame or the scraper, as desired, are shown with hook-and-eye connections; but any suitable 55 form of movable joint that will permit considerable range of movement—such, for example, as a ball-and-socket joint, that will accommodate itself to the turning of the machine and the adjustment of the roller-frame— 60 may be employed in lieu of that shown.

The draft-bars B² and D' may be connected at their forward ends in any suitable manner to permit the roller in one case and the scraper in the other to freely follow the surface over 65 which they are drawn and to swing laterally relatively to the machine-frame to accommodate the swaying and turning of the machine.

The roller B' shown in the drawings is one roller; but two rolls placed end to end in the ordinary manner is deemed preferable to facilitate the turning of the machine. While 70 the roller is spoken of as a "road-roller," it may be used for any other purpose for which earth-rollers are commonly employed.

Having thus described the invention, what 75 is claimed as new, and sought to be secured by Letters Patent, is—

1. A road-rolling machine comprising a four-wheeled truck and a roller located intermediate the front and rear wheels of said 80 truck in a frame flexibly connected to the truck-frame, substantially as described.
2. A road-rolling machine comprising a four-wheeled truck with a roller located between the front and rear wheels thereof in a 85 draft-frame flexibly connected to the forward part of the truck to be drawn therewith, substantially as described.
3. A road-rolling machine comprising a four-wheeled truck, a roller drawn between 90 the front and rear wheels of said truck by means of a separate frame having connection with the forward part of the truck, and means for suspending the roller from the truck for adapting the latter to carry the weight of the 95 roller in whole or in part, substantially as described.
4. A road-rolling machine comprising a wheeled truck, a roller drawn behind the front 100 wheels thereof by means of a separate frame having a flexible connection with the truck-frame, and adjusting devices connecting the roller and truck frames in such manner that the weight of either can be thrown, in whole 105 or in part upon the other, substantially as described.
5. A road-rolling machine comprising a wheeled truck, a roller mounted in a frame separate from the truck-frame but having a flexible connection therewith adapting it to 110 be readily detached from the truck, and means for adjusting said truck and roller, the one relatively to the other, for the purpose and substantially as described.
6. A road-rolling machine comprising a 115 wheeled truck, a roller mounted in a frame separate from the truck-frame and detachably connected therewith, weight-receptacles on each of said frames, and adjusting devices connecting said frames, whereby the weight of 120 either and of its weight-receptacle can be thrown, in whole or in part, upon the other, substantially as described.
7. A road-making machine comprising a wheeled truck, a roller mounted in a separate 125 frame flexibly connected to the truck-frame in such manner as to permit it to be readily removed and substituted by a scraper attachment, and means for adjusting the roller and truck frames, each relative to the other, where- 130 by either can be made to carry, in whole or in part, the weight of the other, substantially as described.
8. The combination with the frame and run-

5 ning-gear of a road-making machine, of a removable roller-frame and roller, flexibly connected with and made adjustable relative to the machine-frame, substantially as and for the purpose described.

10 9. The combination with the main or wheel frame of a road-making machine, of the detachable roller-carrying frame adjustably connected with said main frame, and means connected with said main frame for effecting the adjustment of the roller-frame, whereby either frame can be made to carry the weight of the other, substantially as described.

10. The combination in a road-grading ma-

chine, of the main or wheel frame, the roller- 15 frame and roller removably connected with said main frame, adjusting devices on the main frame for adjusting the roller-frame and roller, and a weight-box carried on the main frame and adapted to have its weight 20 transferred to the roller, substantially as described.

In testimony whereof I have hereunto set my hand this 9th day of December, A. D. 1895.

ORTUS E. MOATS.

Witnesses:

MELVILLE B. COX,

GEO. C. MARSH.