F. I. SPELLMAN.

PORTABLE TESTING DEVICE FOR MECHANICALLY PROPELLED VEHICLES.

APPLICATION FILED APR. 15, 1910.

976,705. Patented Nov. 22, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

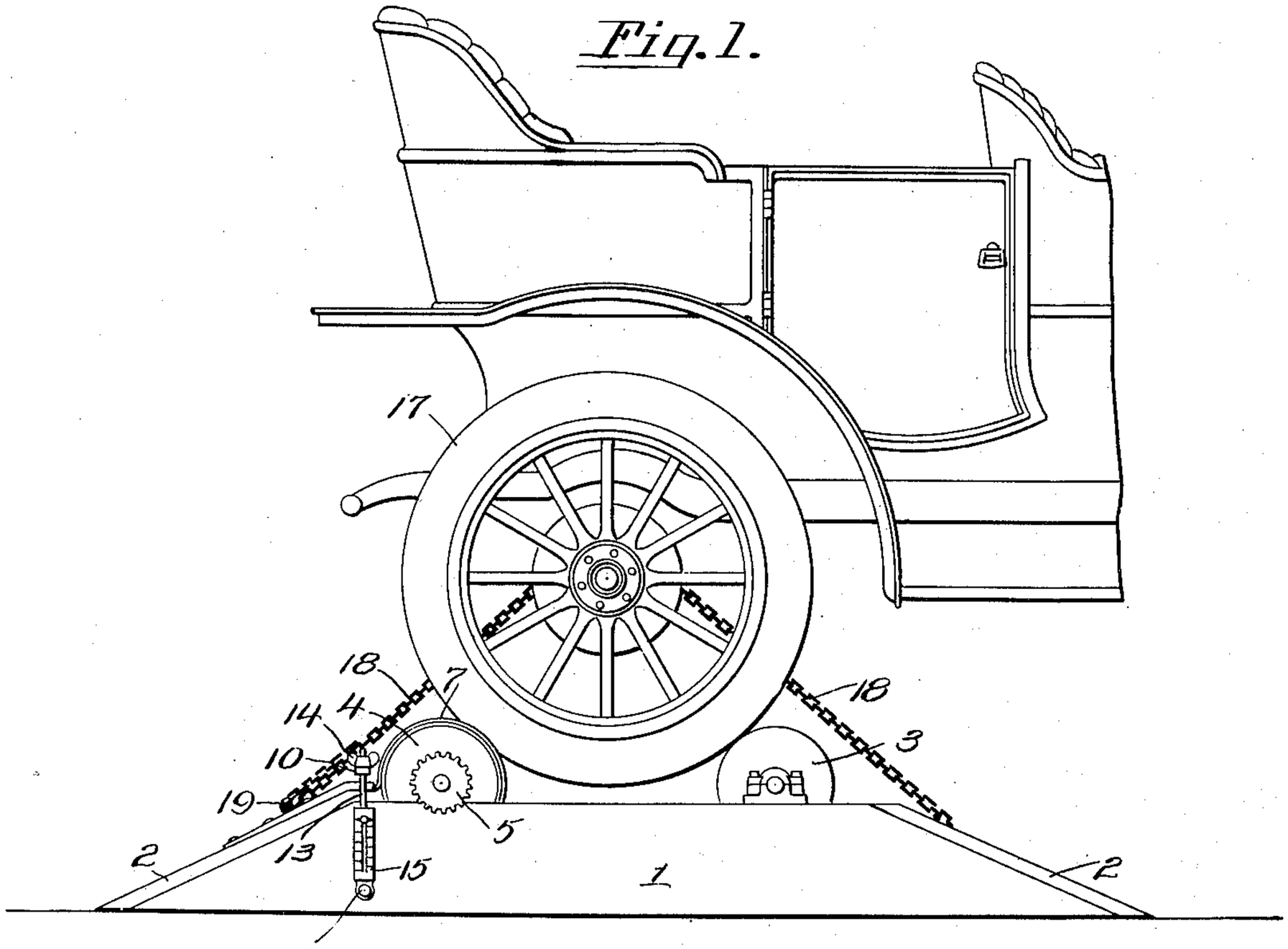
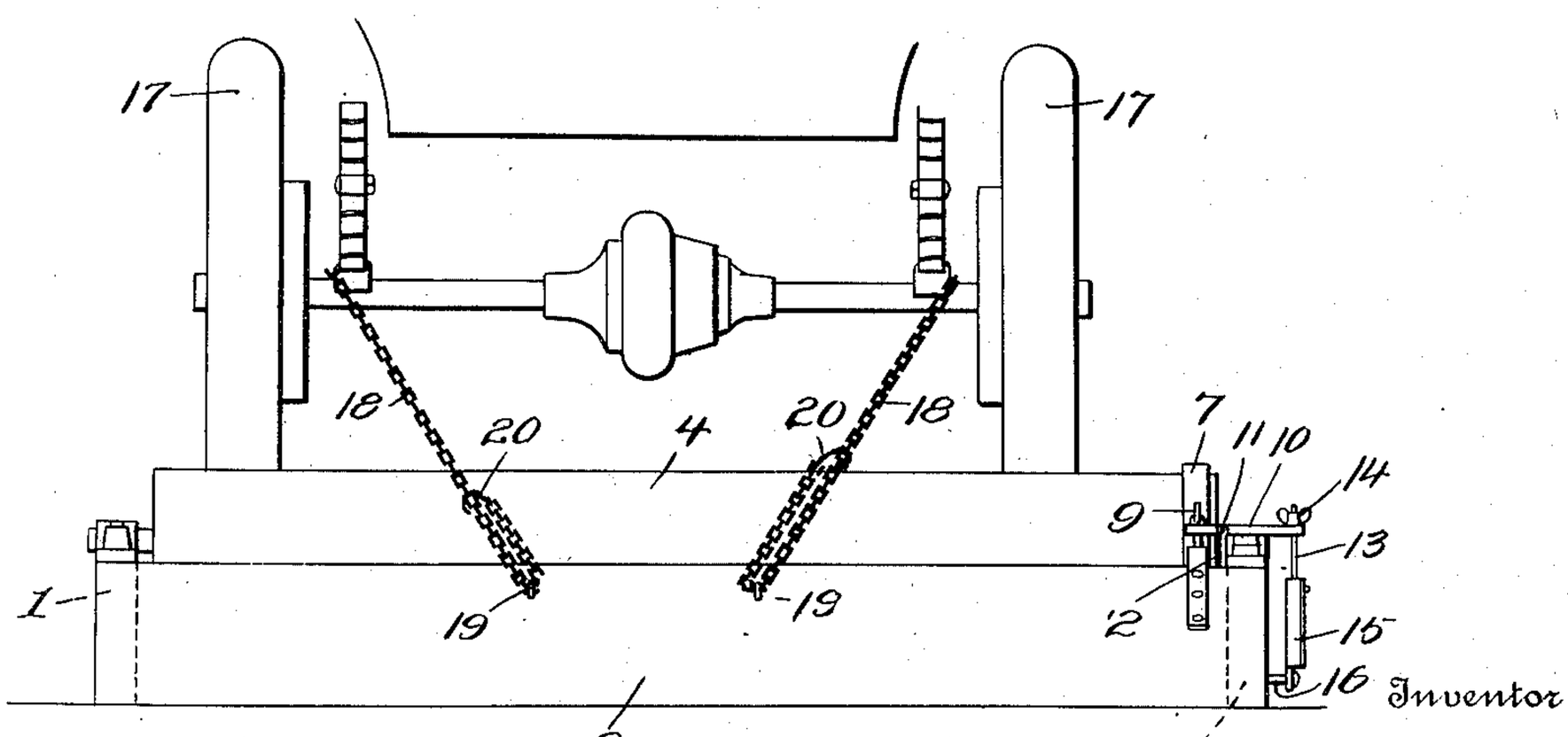


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

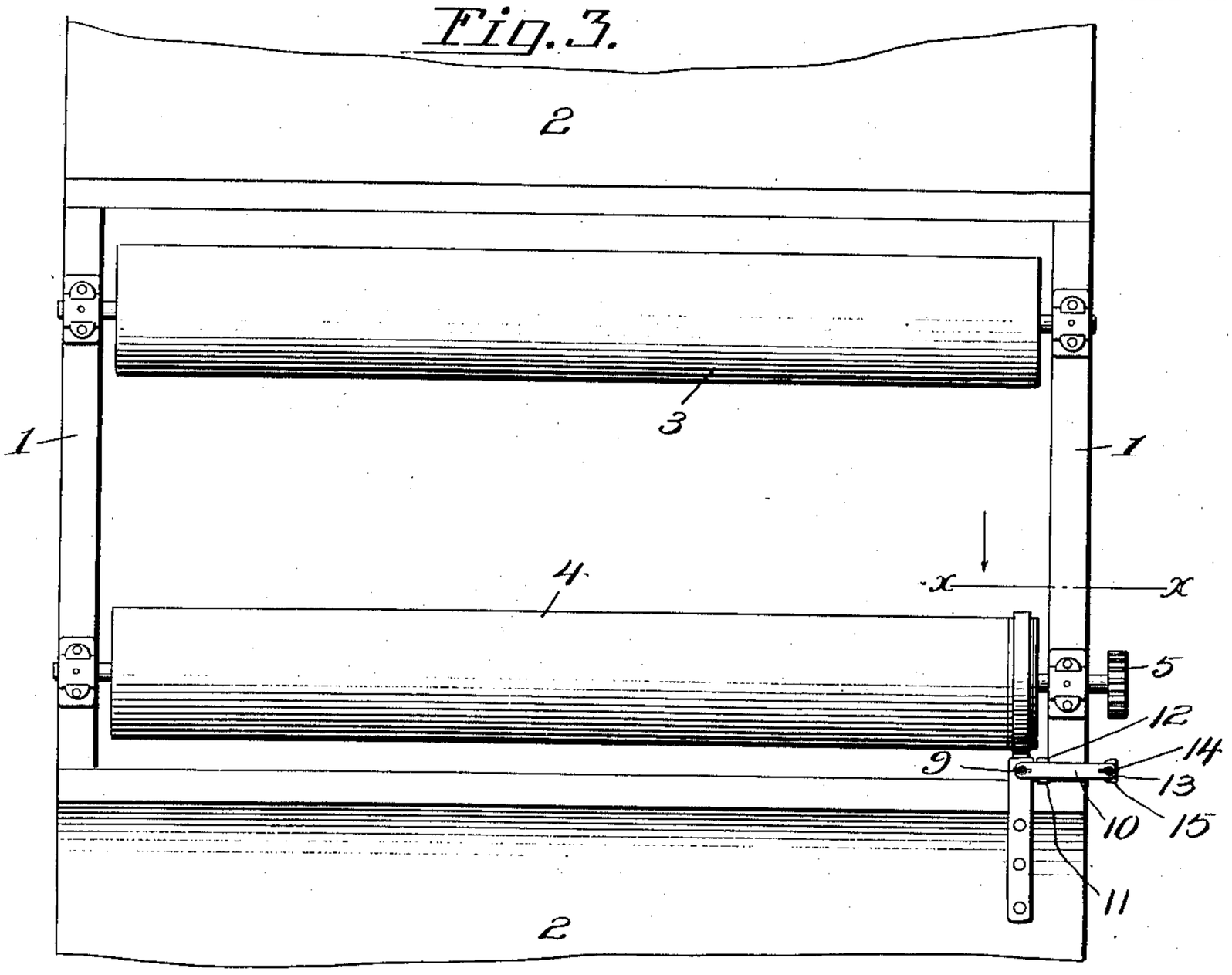


Fig. 4.

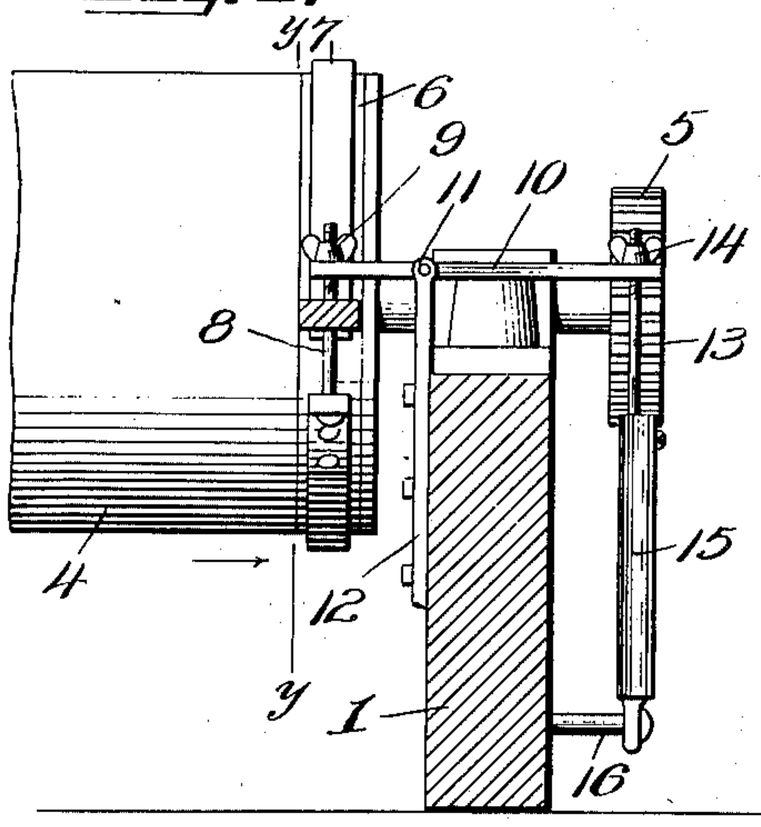
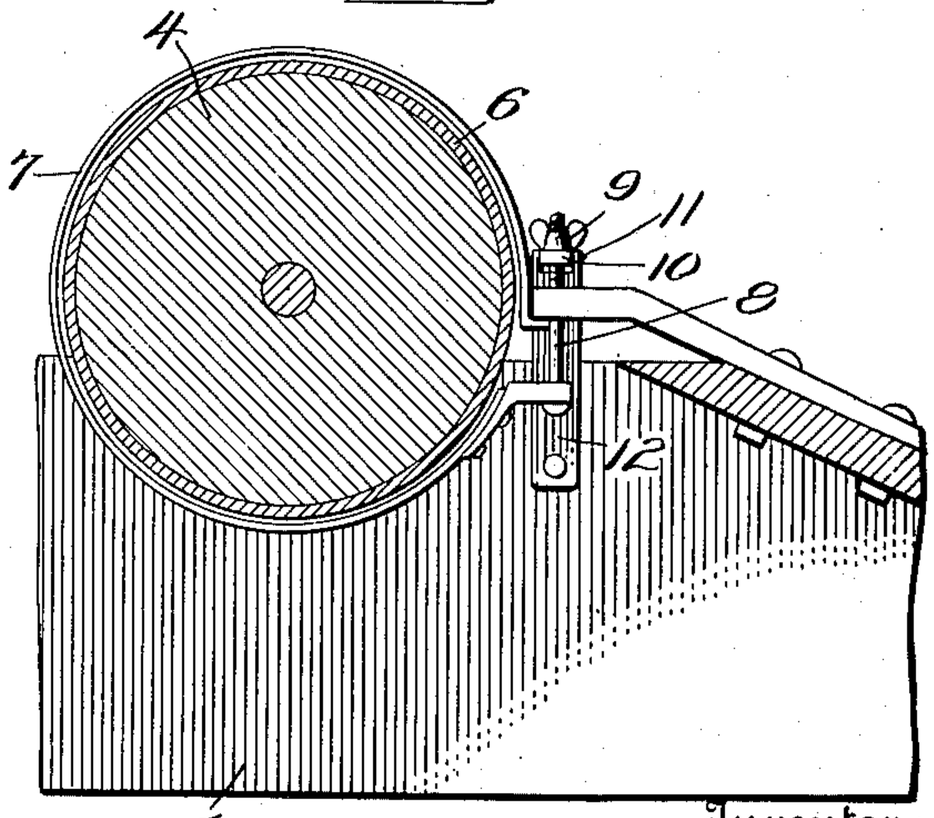


Fig. 5.



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UNITED STATES PATENT OFFICE.

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PORTABLE TESTING DEVICE FOR MECHANICALLY-PROPELLED VEHICLES.

976,705. Specification of Letters Patent. Patented Nov. 22, 1910.

Application filed April 15, 1910. Serial No. 555,597.

To all whom it may concern:

Be it known that I, FRED I. SPELLMAN, a citizen of the United States, residing at Mansfield, in the county of Richland and State of Ohio, have invented new and useful Improvements in Portable Testing Devices for Mechanically-Propelled Vehicles, of which the following is a specification.

The present invention is designed primarily to provide an appliance which is portable and adapted for supporting the drive wheels of a mechanically propelled vehicle, such as an automobile, when testing and adjusting the several parts, thereby admitting of the mechanical appliances of the vehicle being observed so that proper adjustments as to speed, load, and the like may be made so as to secure the best possible results.

The invention consists of the novel features, details of construction and combination of parts, which hereinafter will be more particularly set forth, illustrated in the accompanying drawings, and pointed out in the appended claim.

Referring to the drawings, forming a part of the application, Figure 1 is a side view of a testing appliance embodying the invention, showing the same in operative position. Fig. 2 is a rear view of the appliance, showing the means for securing the vehicle in position thereon. Fig. 3 is a top plan view of the device. Fig. 4 is a sectional detail on the line *x*—*x* of Fig. 3, showing the parts on a larger scale. Fig. 5 is a sectional view on the line *y*—*y* of Fig. 4, looking to the right.

Corresponding and like parts are referred to in the following description, and indicated in all the views of the drawings, by the same reference characters.

The appliance comprises a framework of substantially rectangular form and embodies longitudinal beams 1 and transverse pieces 2. The ends of the longitudinal beams are oppositely inclined and are connected by the transverse pieces 2, which are broad and serve to connect the longitudinal beams and to form skids for elevating the vehicle to be tested when run upon the appliance. Rollers 3 and 4 are located near opposite ends of the frame and are mounted in bearings applied to the longitudinal beams 1. The rollers 3 and 4 are spaced apart a distance to insure a substantial support for the driving wheels of the vehicle when in position thereon as indicated in Fig. 1. One of the rollers is provided with a resistance mechanism for testing the power of the engine of the vehicle, said resistance mechanism embodying a brake, a testing scale, and adjusting mechanism for varying the resistance of the brake and determinable by the testing scale. It is also contemplated to apply a speedometer, tachometer or the like to one of the rollers for indicating the speed or velocity of rotation of the rollers when the appliance is in operation. A gear element 5, such as a spur wheel, is secured to the shaft or journal of one of the rollers, as 4, and the instrument for indicating speed, velocity, or the like may be connected with said gear wheel in any well known manner so as to derive movement therefrom. The brake mechanism comprises a brake wheel 6 secured to a shaft or journal of one of the rollers, as 4, a brake band 7 coöperating with the brake wheel and tension means for setting the brake to any given point of resistance. The brake band 7 is secured at one end to a part of the framework and a threaded rod 8 is connected to the opposite end of the brake band and passes loosely through an opening in the end of the brake band attached to the framework and is provided with a set nut 9. A lever 10, fulcrumed at 11 to a support 12 extended upwardly from the framework, has one end apertured to receive the threaded rod 8, which passes loosely therethrough. The opposite end of the lever 10 is likewise formed with an opening to receive a threaded stem 13, which is provided with a set nut 14. A testing scale 15 is attached to one end of the threaded stem 13 and its opposite end is connected to the framework by means of a fastening 16. The parts are adjusted so that upon turning either one or both of the set nuts 9 or 14 the indication on the testing scale will show the amount of resistance offered by the brake through movement of the roller 4. By this means the speed of the part rotating the roller 4 may be determined as also the amount of work performed by the engine in operating the rotating part.

The vehicle to be tested is run upon the appliance so that its drive wheels 17 rest upon both rollers 3 and 4, as indicated in Figs. 1 and 2, after which the vehicle is secured to the framework so as to retain the same in place and insure a uniform engagement between the drive wheels 17 and the rollers 3 and 4, which is essential in order to secure accurate results. Chains 18 are

passed through openings formed in one of the transverse pieces 2 and are adapted to pass loosely through eyes 19 secured to the opposite transverse piece 2, said chains being provided at their free ends with hooks 20 to engage links of the chains and secure the latter when properly tightened to hold the drive wheels 17 of the vehicle upon the rollers 3 and 4. The chains 18 are preferably applied to the framework so that when engaged with the rear axle and rear springs of the vehicle they incline upwardly and downwardly, as indicated most clearly in Fig. 2, thereby preventing endwise movement of the axle upon the rollers.

The testing scale 15 may be of any structural type, a spring scale being preferred, as advantage may be taken of the yielding action of the spring to allow for inequalities of the engaging parts or unevenness in the movement of the rotating parts. The vehicle to be tested is run upon the appliance, the drive wheels ascending the inclined transverse pieces 2 and passing over the roller adjacent the inclined piece and dropping between the two rollers and resting thereon. After the vehicle is in position it is made secure by the chains 18, which are passed about the rear axle and springs and secured in the manner stated. When testing the parts the engine is set in motion and the parts observed in a manner similar to the operation of the vehicle when upon the road. By close observation parts of the mechanism may be adjusted and set so as to obtain the best results without necessitating the trying of the machine upon the road. The power and speed of the engine may be likewise ascertained by the resistance mechanism and an instrument such as a speedometer or a tachometer connected with the gear wheel 5.

From the foregoing description, taken in connection with the accompanying drawings, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention appertains, and while I have described the principle of operation of the invention, together with the device which I now consider to be the embodiment thereof, I desire to have it understood that the device shown is merely illustrative, and that such changes may be made when desired as are within the scope of the claim appended hereto.

Having thus described the invention what is claimed as new, is:—

A testing appliance for mechanically propelled vehicles comprising a framework, rotary supports mounted thereon, a brake wheel fastened to one of said rotary supports, a brake band, a threaded rod for drawing the brake band about the brake wheel, a lever having one end engaged by said threaded rod, a testing scale, a threaded stem extended from the testing scale and engaging the opposite end of said lever, and a set nut mounted upon the threaded stem and forming a point of resistance for the said lever.

In testimony whereof I affix my signature in presence of two witnesses.

FRED I. SPELLMAN.

Witnesses:
GEO. M. WINWOOD,
CLARA F. PARKER.