No. 847,576. PATENTED MAR. 19, 1907.

M. W. HEYENGA.

VEHICLE.

APPLICATION FILED FEB. 23, 1906.

2 SHEETS—SHEET 1.

Fig.1.

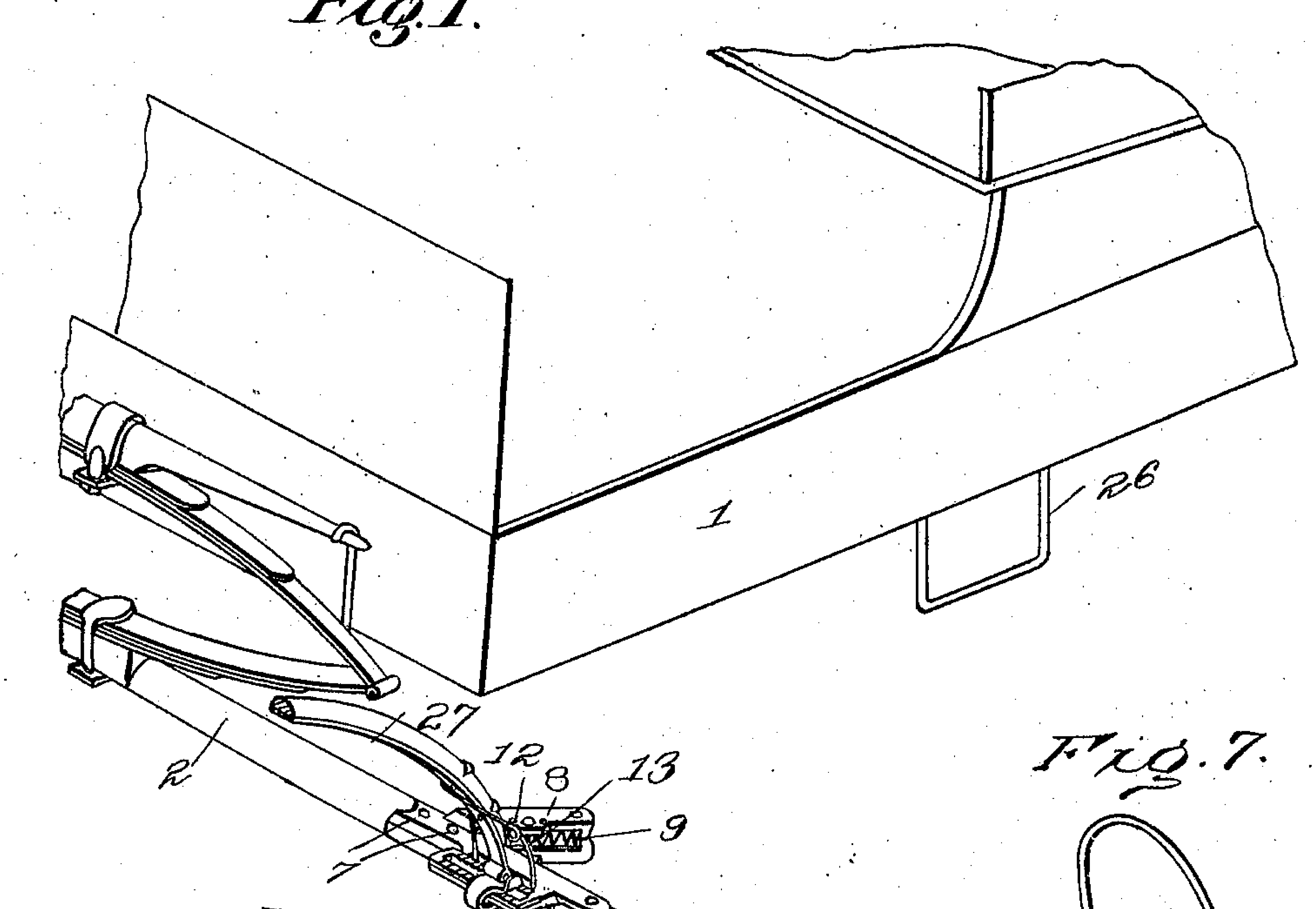


Fig.2.

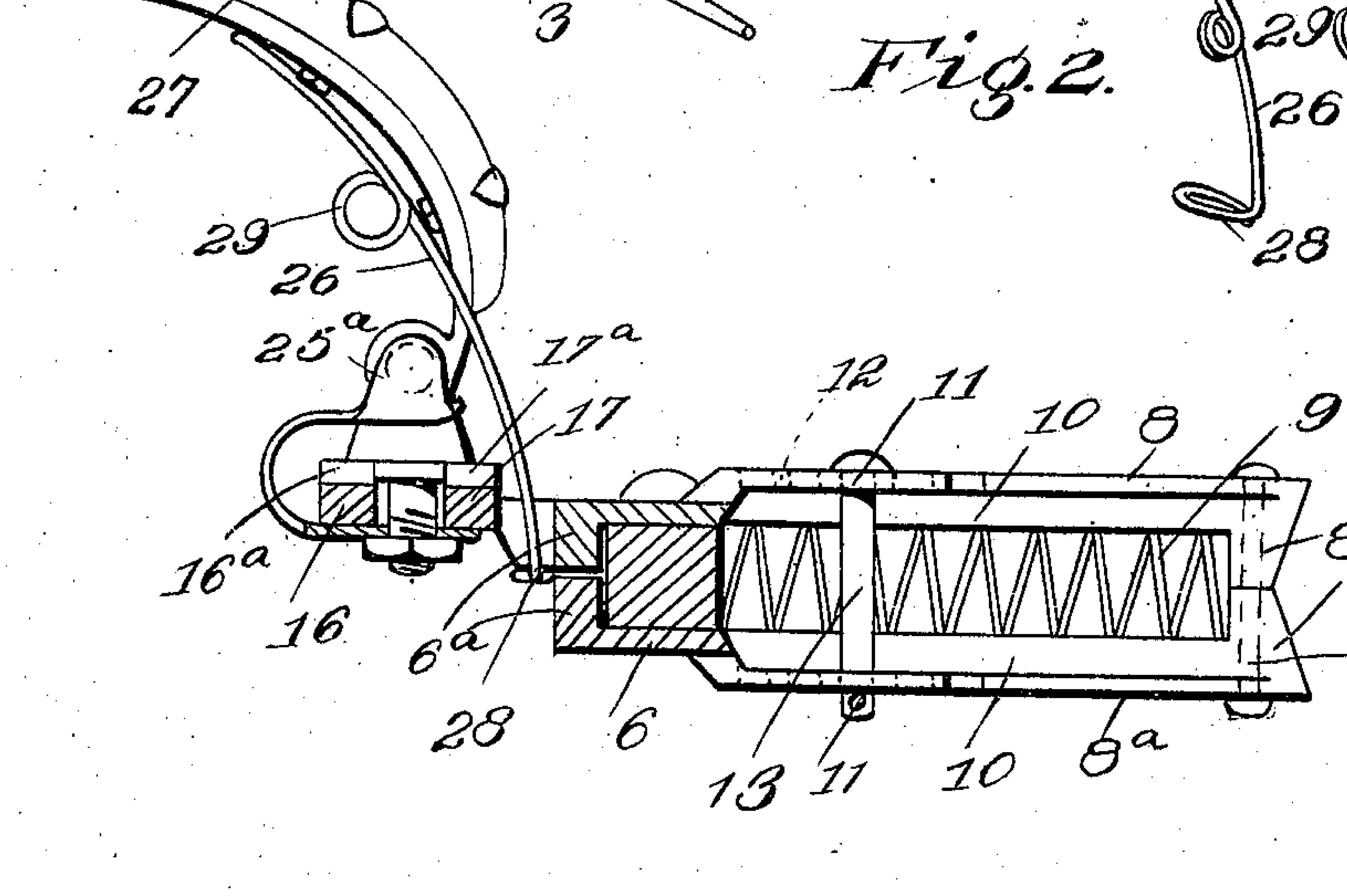
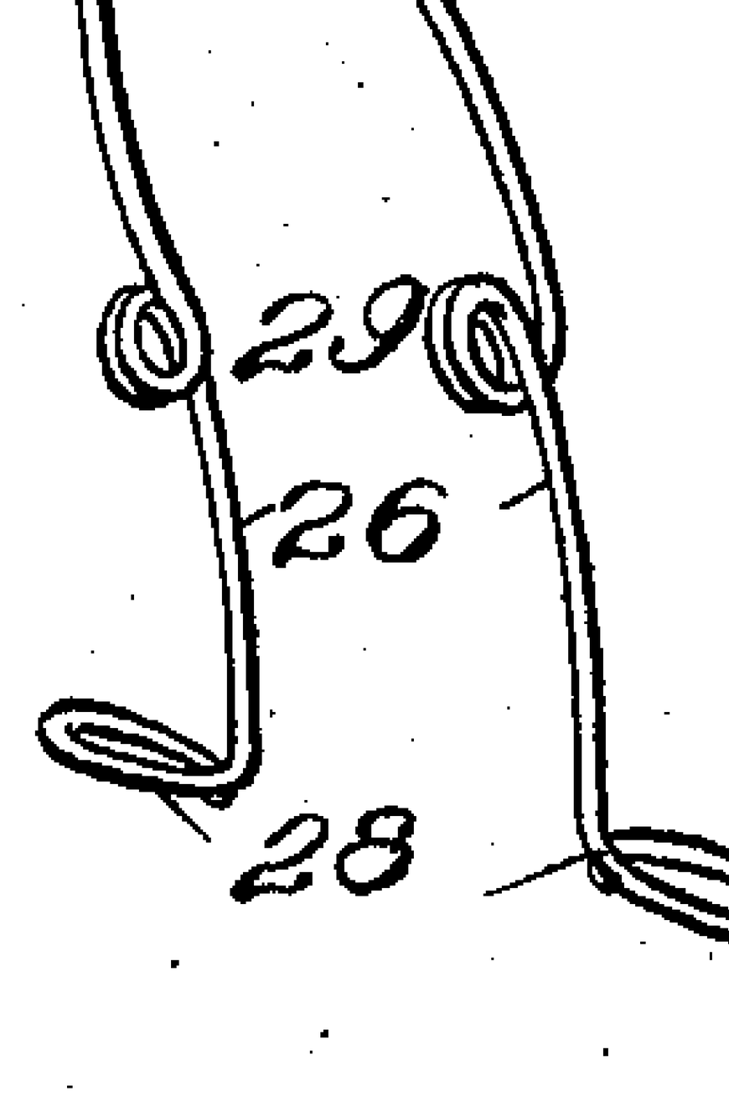


Fig.7.



Witnesses

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By

Attorneys

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2 SHEETS—SHEET 2.

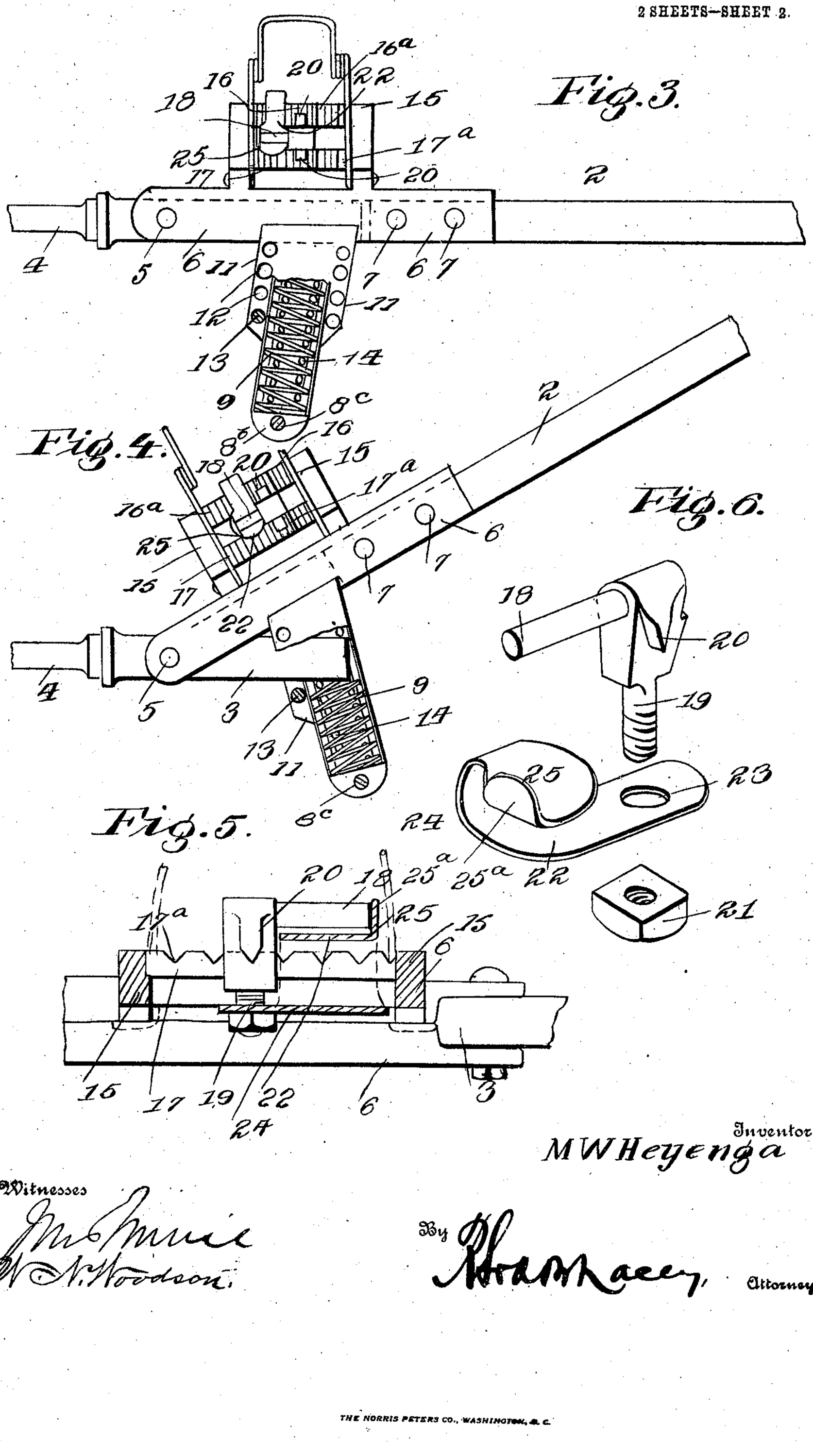

Fig. 3.

Fig. 4.

Fig. 6.

Fig. 5.

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UNITED STATES PATENT OFFICE.

MARTIN W. HEYENGA, OF HARTSBURG, ILLINOIS.

VEHICLE.

No. 847,576. Specification of Letters Patent. Patented March 19, 1907.

Application filed February 23, 1906. Serial No. 302,594.

To all whom it may concern:

Be it known that I, MARTIN W. HEYENGA, a citizen of the United States, residing at Hartsburg, in the county of Logan and State of Illinois, have invented certain new and useful Improvements in Vehicles, of which the following is a specification.

My invention contemplates certain new and useful improvements in vehicles.

One of the objects of the invention is to provide in a vehicle an improved construction of front axle the parts of which will be so arranged in an improved manner that all liability of upsetting the vehicle when making sharp turns will be avoided.

A further object of the invention is to provide in connection with the non-upsetting front-axle mechanism an improved construction of thill-support, which forms part of the mechanism for preventing the upsetting of the buggy or other vehicle when making sharp turns.

With these and further objects in view, as will more fully appear as the description proceeds, the invention consists of certain constructions, arrangements, and combinations of parts hereinafter fully described, and specifically set forth in the appended claims.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and accompanying drawings, in which—

Figure 1 is a perspective view of a portion of a buggy-body and front axle embodying the improvements of my present invention. Fig. 2 is a side elevation, with parts in section, of the axle embodying such improvements, on an enlarged scale. Figs. 3 and 4 are top plan views illustrating, respectively, the normal position of the axle and the position of the same when making a sharp turn to the left. Fig. 5 is a detail sectional view of the improved thill-support. Fig. 6 is a detail perspective view of parts of the thill-support shown detached from each other. Fig. 7 is a detail perspective view of one of the shaft-supporting springs.

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.

Referring to the drawings, the numeral 1 indicates a vehicle-body, which may be of any desired construction, and 2 designates the main portion of the front axle. Those portions of the axle that carry the traveling wheels are stub-axles (designated 3) and are provided with the usual spindles 4. The stub-axles 3 are pivotally mounted intermediate of their ends on pins 5 and are held between upper and lower brackets 6, that are bolted to ends of the main portions 2 of the axle, as indicated at 7. The brackets 6 form extensions on the main portion of the axle 2, and the stub-axles 3 are so pivoted between the extending portions of the brackets that they may normally lie in longtiudinal alinement with the main portion 2 of the axle and also under certain conditions swing rearwardly therefrom. The inner ends of the stub-axles 3 are prevented from swinging forwardly by means of angular flanges 6^a on the brackets 6.

Both the upper and lower members of the brackets 6 are provided with rearwardly-extending plates extending in vertical alinement with each other and spaced apart vertically to receive a helical spring. The uppermost plate is designated 8 and the lowermost plate 8^a, and the spring is designated 9. Both upper and lower plates 8 and 8^a are provided at their ends with stop-lugs 8^b, against which the end of the spring 9 is adapted to bear. The plates 8 and 8^a may, if desired, be connected together at their rear ends, where the stop-lugs 8^b are formed, by means of a stud or trunnion or similar device 8^c, which may be constituted by a bolt, if desired. The spring 9 is received between the upper and lower plates 8 and 8^a, they constituting an open housing therefor, and preferably each of said plates is provided with side flanges 10, forming guideways for said spring.

Both the upper and lower plates are provided along one edge with flanges 11, which extend only a portion of the length of the plates. In each flange there is formed a plurality of apertures 12. A pin 13 is intended to be received in any one of said apertures of both plates, and the purpose of said pin is to limit the rearward movement of the stub-axles 3. It is evident that this movement may be limited to different degrees by changing the position of the pin from one aperture to another. The lowermost plate 8^a is provided, in addition to the apertures in its flange 11, with a comparatively large number of apertures 14. The purpose of these last-named apertures is to allow grit or dirt, which might collect between the plates, to be ground out

through the apertures by the working of the spring, so that the housing constituted by said plates will be always kept clear and in working condition. The uppermost plates 8 on both sides of the vehicle may serve by their position as steps upon which a person's foot may rest in getting into or alighting from the vehicle.

To each of the uppermost plates 8 and preferably integral therewith are secured two forwardly-extending arms 15, that are connected at their outer ends by a cross-bar 16, provided on its upper surface with a series of notches 16[a]. A corresponding cross-bar 17 extends from one of said fingers 15 to the other in the rear of the cross-bar 16 and parallel to said cross-bar 16 and is likewise provided on its upper surface with a series of notches, (designated 17[a].) A thill-iron 18 is provided with a shank 19, designed to extend downwardly between the two cross-bars 16 and 17, and said shank is formed on opposite sides with lugs 20, designed to take into the two sets of notches 16[a] and 17[a] whereby to hold the thrill-iron at different lateral adjustments. The shank 19 of the thill-iron is threaded to receive a nut 21, which is located at the lower side of the two cross-bars 16 and 17 and is adapted to bind up against said cross-bars to hold the thill-iron rigid at its different lateral adjustments. Preferably a plate 22, provided with an aperture 23 to receive the shank 19, is interposed between the nut 21 and the lower face of said cross-bars, and the said plate 22 is formed with a lateral extension 24 and an upwardly and rearwardly returning end 25, which constitutes a spring-leaf designed to extend underneath the thill-iron and bear against the lower sides of the thill-eye. By this means the said plate 22 serves as an antirattler for the thill as well as a washer for the nut 21. As before stated, the thill-support constituted by the fingers 15 and attached parts is integral with the uppermost plate 8 of the bracket for supporting the pivotal stub-axles and forms part of said plate.

As illustrated best in Fig. 6, the plate 22 is provided at its rearwardly-returning end portion 25 with an upturned extension 25[a]. In the assembled relation of the parts, as illustrated in the other views, the upward extension 25[a] is intended to bear against the outer end of the thill-iron 18, so as to prevent the thill-eye from working off the same, while at the same time the part 25 serves as an antirattler and the part 22 or the main apertured portion 23 as a washer.

From the foregoing description, in connection with the accompanying drawings, it is manifest that when the vehicle is rounding a sharp turn the near or inturning wheel will bear against a wheel-guard 26, which may be of different shapes or construction, according to the different types of vehicles and axles in which my inventions are embodied, but which preferably extends downwardly to a plane about on a level with the axle, so that the wheel may not climb thereover or thereunder to upset the vehicle. When the said wheel contacts with the wheel-guard 26, the wheel will be permitted to yield with its stub-axle 3 and will thereby preclude any liability of overturning the vehicle.

It is to be understood that when the wheel contacts with the wheel-guard in making a sharp turn it will slide or work toward the rear of the wheel-guard and cause the wheel to have a flat side pressure against the vehicle-body, or rather the wheel-guard thereof, and thereby render it impossible for the wheel to cut or gash a rut in the wheel-guard by a continuous wear on one place.

It will be seen that the thills may be readily adjusted laterally toward and from each other whenever desired by the adjustable thill-iron before described.

Springs 26, one of which is shown in detail in Fig. 7, are preferably provided to support the shafts or thills 27, so as to relieve the horse from the weight of the same. In the preferred construction these springs are provided with outwardly-extending ends returned upon themselves to form hooks 28, and they are held in place in proper relation to the shafts 27 by having said hooks extend downwardly and taking outwardly underneath the forwardly-extending arms 15. By this means the springs may be readily applied in place and as readily detached whenever desired. The springs 26 are preferably coiled in both arms, as indicated at 29, and are of substantially inverted-U shape and extend underneath the guards and shafts, as illustrated in the drawings.

It is to be understood that the devices of my invention are made to fit all the different styles and makes of axles that are manufactured.

The apertures 12 for the reception of locking-pin 13 may be provided on either or both sides of the housing formed by the upper and lower plates 8 and 8[a]. Such construction is illustrated in Fig. 3, where it will be seen that the flanges of the upper plate are on both sides of the same and are provided with apertures 12.

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

1. A vehicle, provided with a thill-support, comprising two forwardly-extending arms, two spaced-apart cross-bars connecting said arms, said parts being notched on their upper surfaces, a thill-iron provided with a threaded shank inserted between said cross-bars, means for clamping said shank to said cross-bars, the shank being provided with lugs taking into the notches of the bars, and a washer provided with an aperture by which it may be received on said shank and

having a portion designed to extend around the thill-iron whereby it will contact with the thill, as and for the purpose set forth.

2. A vehicle provided with a thill-support comprising two outwardly-extending arms, two spaced-apart cross-bars connecting said arms and notched on their upper surface, a thill-iron provided with a threaded shank inserted between said cross-bars and formed with oppositely-extending lugs taking into the notches on the upper surface of the said bars, a nut adapted to screw on the said shank underneath the cross-bars whereby to clamp the iron to said bars, a washer provided with an aperture by which it may be received on the said shank, said washer extending laterally underneath the thill-iron, thence forwardly and upwardly, and finally rearwardly around said thill-iron, the said returned portion being adapted for spring engagement with the thill received on said thill-iron, as and for the purpose set forth.

3. A vehicle provided with a thill-support comprising two outwardly-extending arms, two spaced-apart cross-bars connecting said arms and notched on their upper surface, a thill-iron provided with a threaded shank inserted between said cross-bars and formed with oppositely-extending lugs taking into the notches on the upper surface of the said bars, a nut adapted to screw on the said shank underneath the cross-bars whereby to clamp the iron to said bars, a washer provided with an aperture by which it may be received on the said shank, said washer extending laterally underneath the thill-iron, thence forwardly and upwardly, and finally rearwardly around said thill-iron, said last-named portion being adapted for spring engagement with the thill received on said thill-iron and having its side edge turned upwardly, for the purpose specified.

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

MARTIN W. HEYENGA. [L. S.]

Witnesses:

JOHN EDMONDS,

JOSEPH P. DEHNER.