C. SADLO.

FENDER ATTACHMENT FOR AUTOMOBILES.

APPLICATION FILED APR. 9, 1915.

1,256,497.

Patented Feb. 12, 1918.

8 SHEETS—SHEET 1.

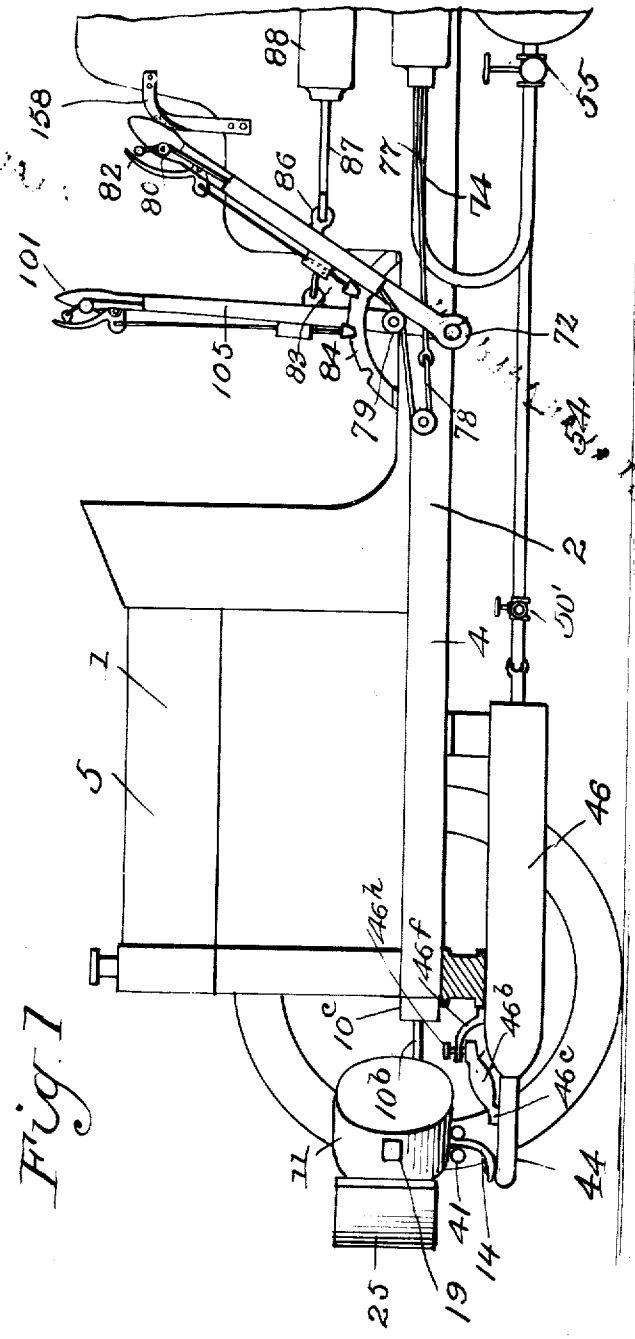


Fig. 7

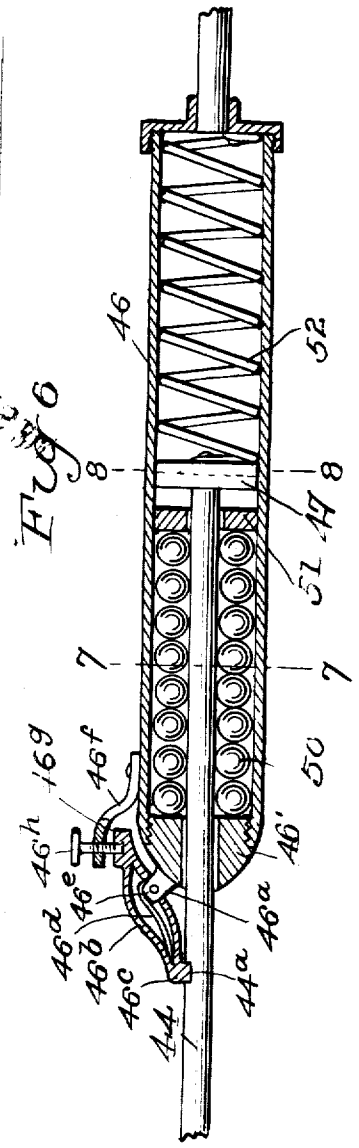


Fig. 6

Witnesses

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8 SHEETS—SHEET 2.

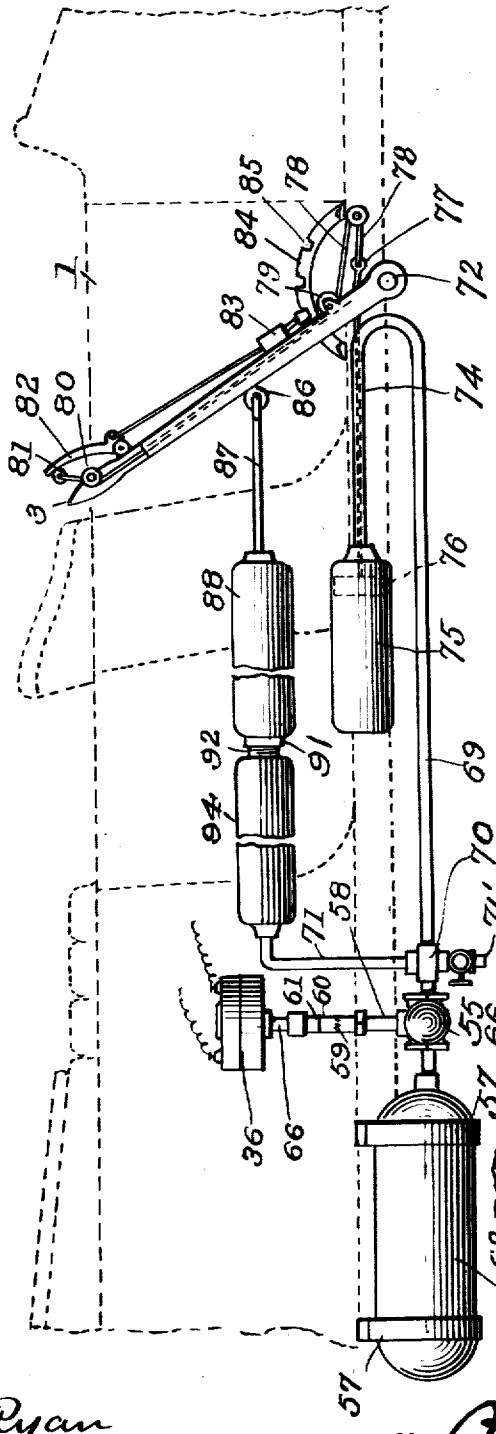


Fig. 2.

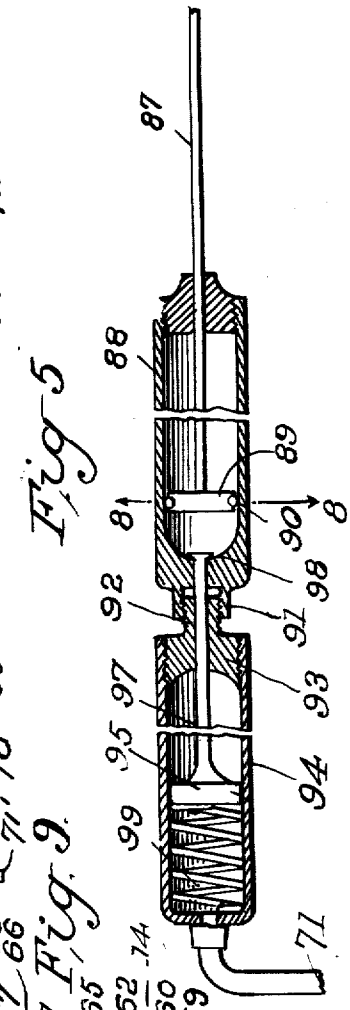


Fig. 5

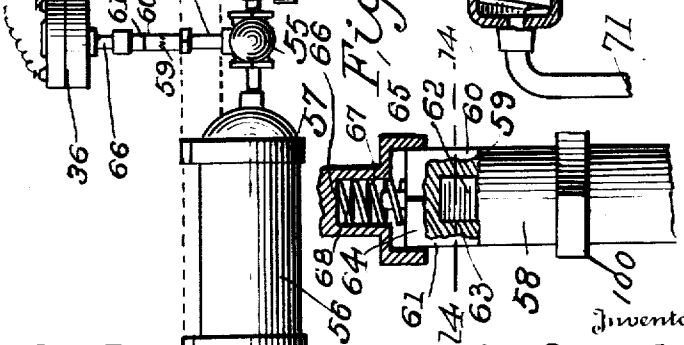


Fig. 9.

Witnesses

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8 SHEETS--SHEET 3.

Fig. 7.

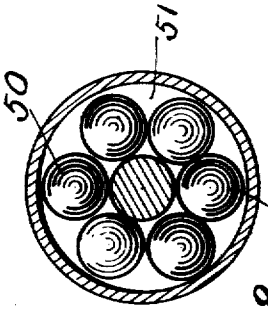


Fig. 8.

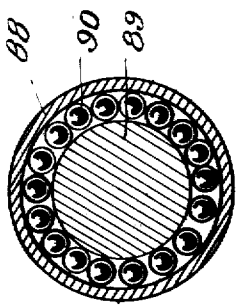
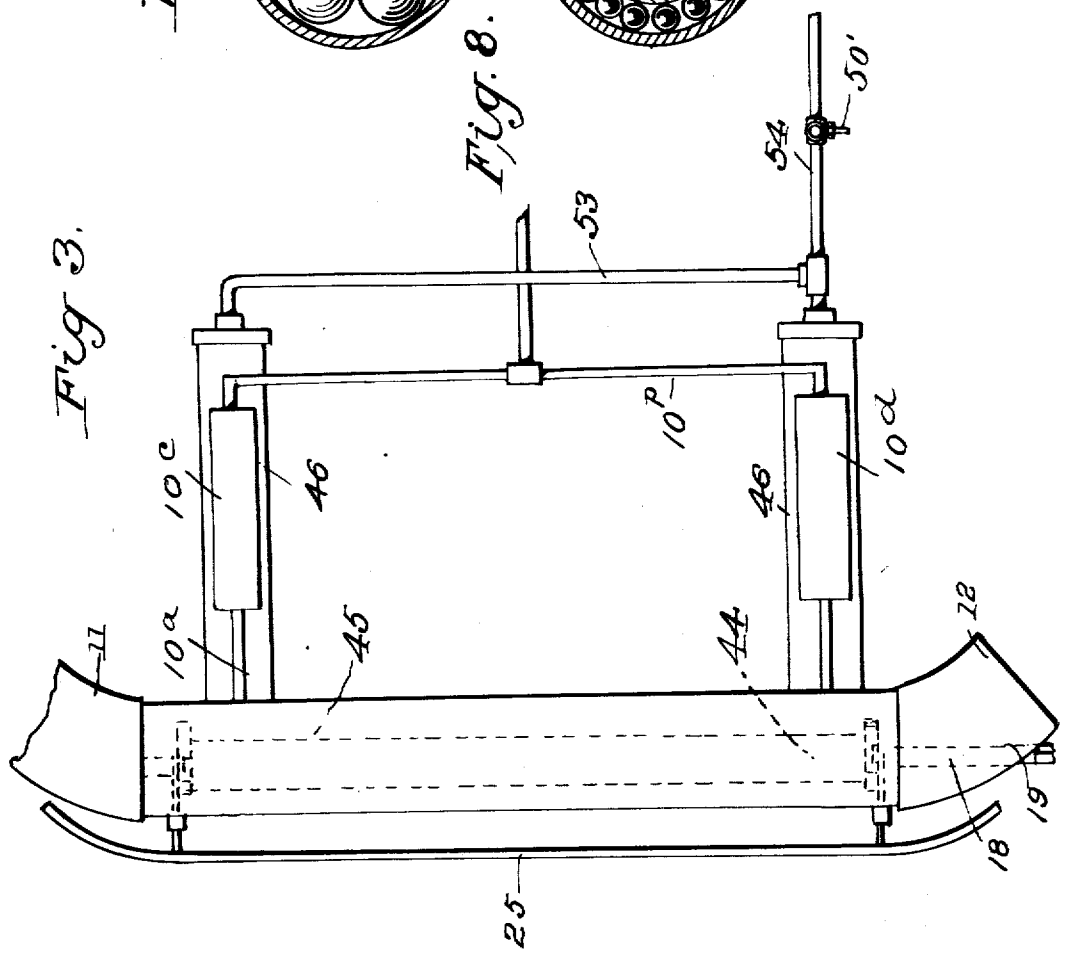


Fig. 3.



Witnesses
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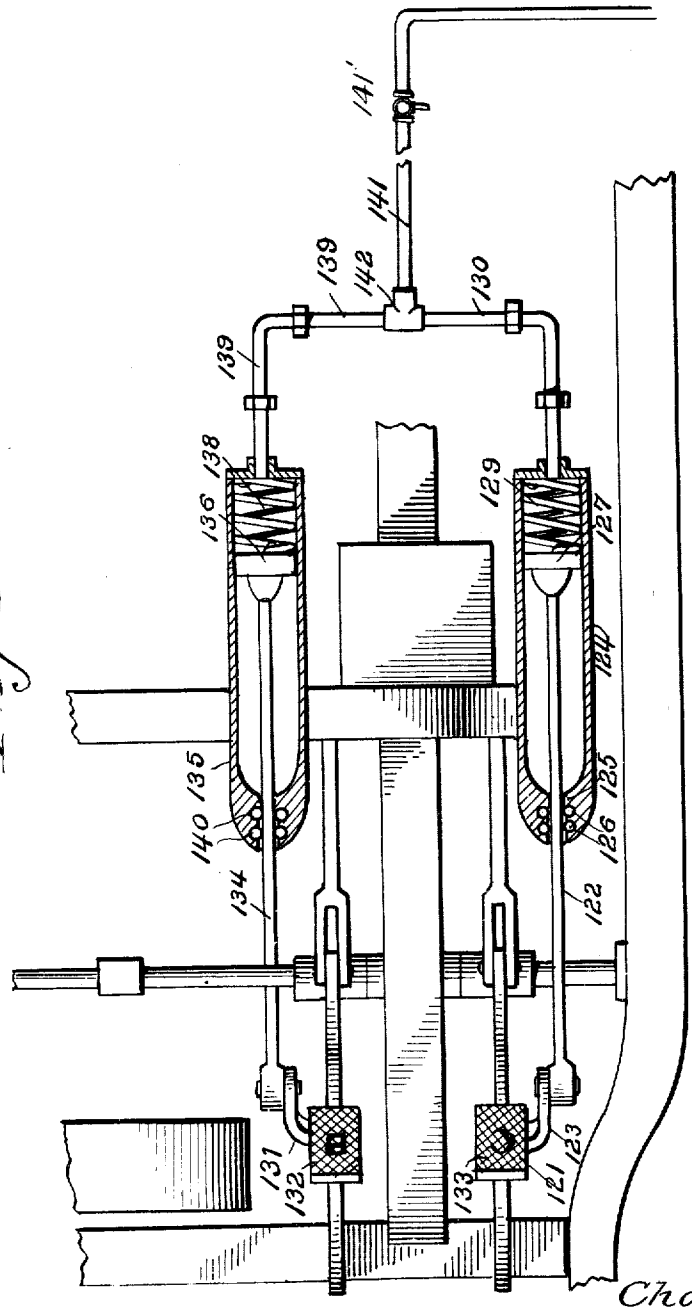
APPLICATION FILED APR. 9, 1915.

1,256,497.

Patented Feb. 12, 1918.

8 SHEETS—SHEET 4.

Fig. 4.



Witnesses

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8 SHEETS—SHEET 5.

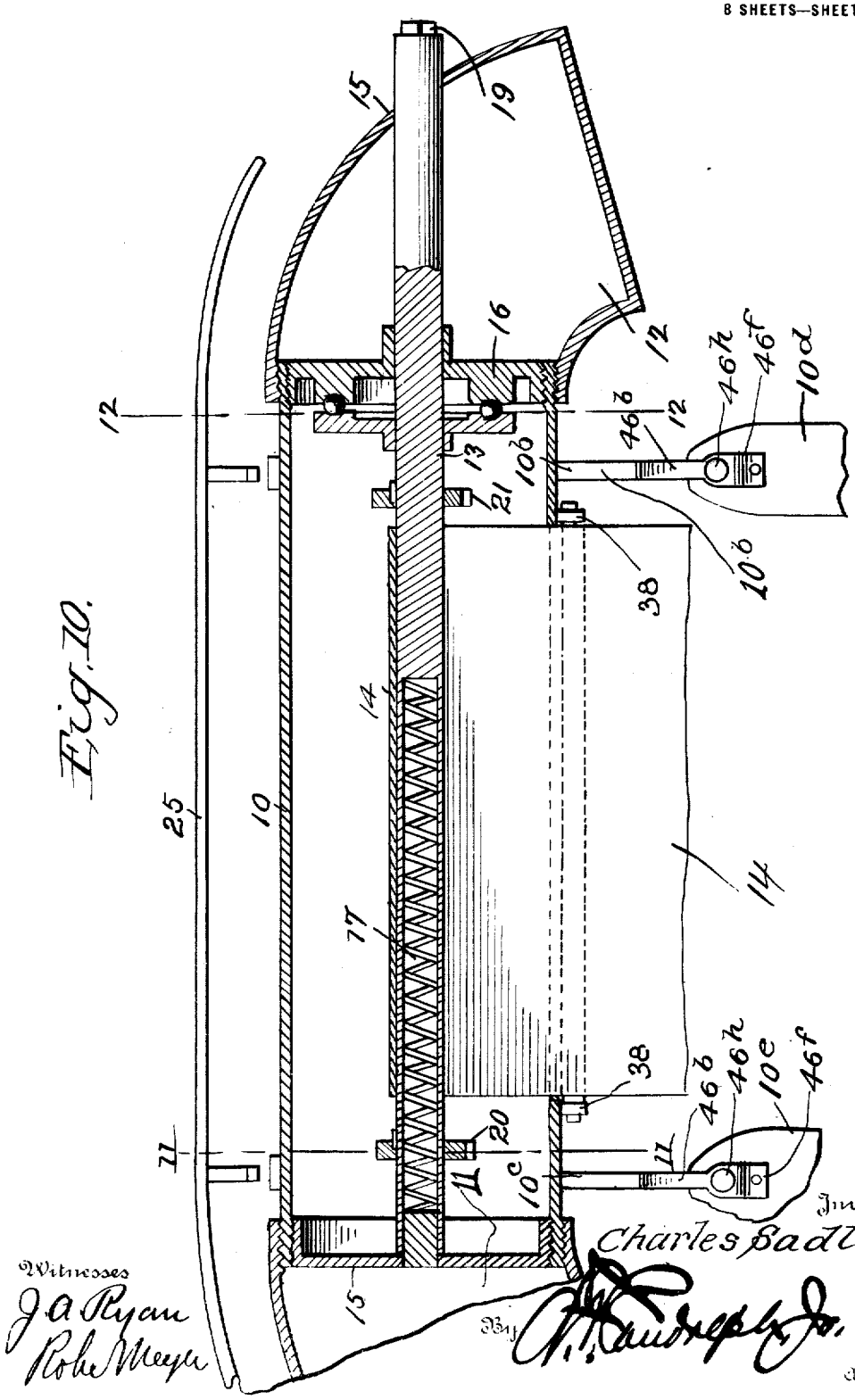


Fig. 10.

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1,256,497. **Patented Feb. 12, 1918.**

8 SHEETS—SHEET 6.

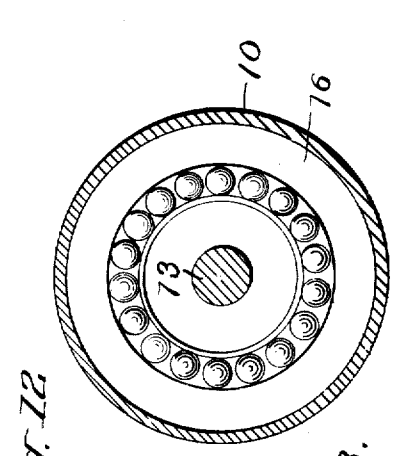


Fig. 12.

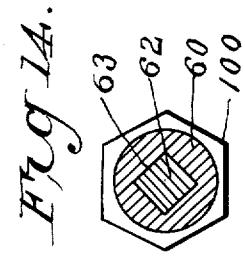


Fig. 14.

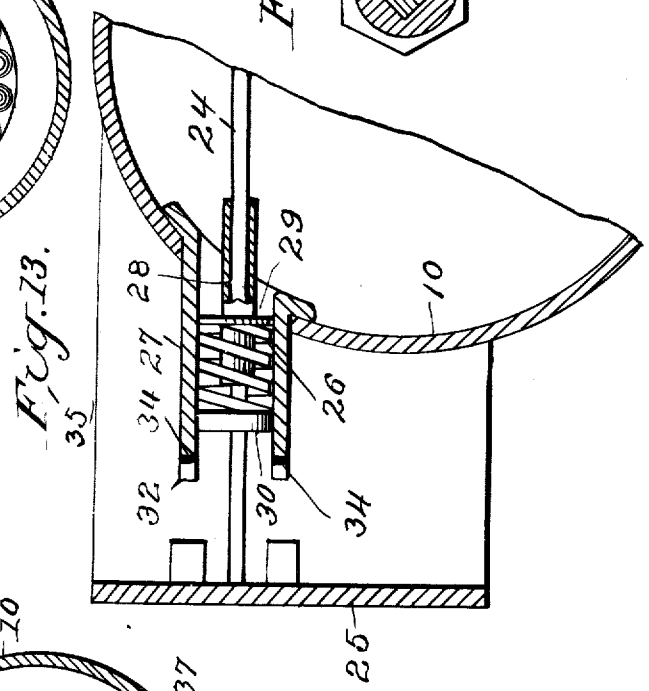


Fig. 13.

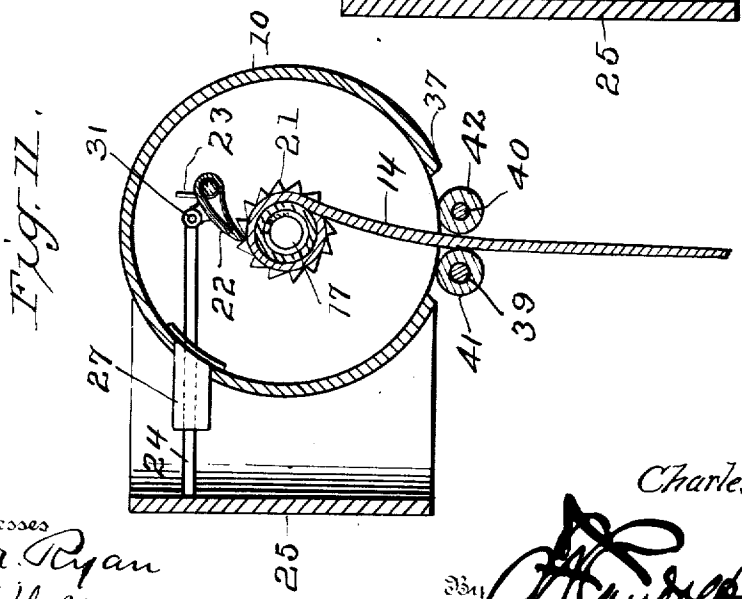


Fig. 11.

Witnesses
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FENDER ATTACHMENT FOR AUTOMOBILES.

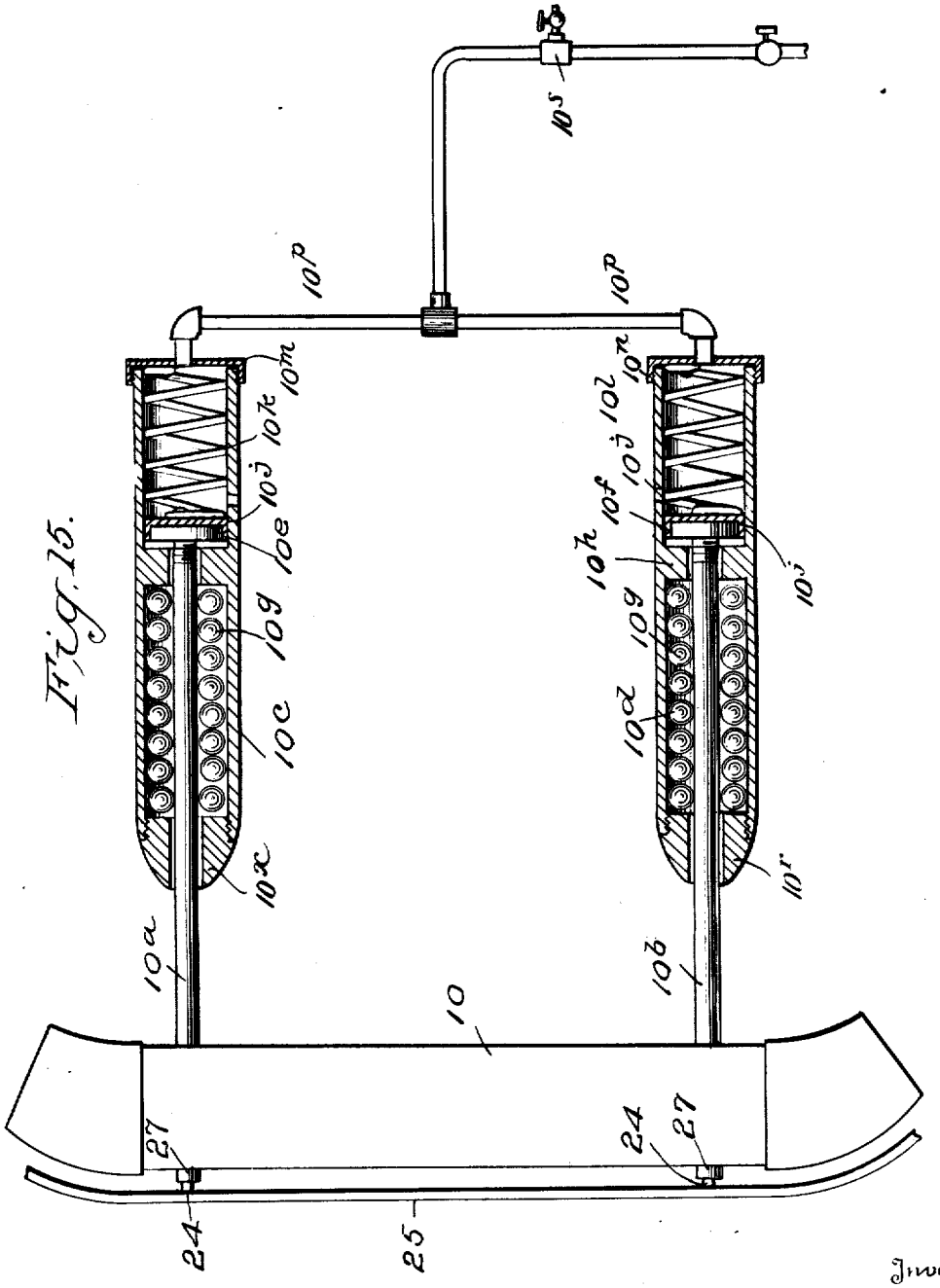
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1,256,497.

Patented Feb. 12, 1918.

8 SHEETS—SHEET 7.

Fig. 15.



Witnesses

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FENDER ATTACHMENT FOR AUTOMOBILES.

APPLICATION FILED APR. 9, 1915.

1,256,497.

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8 SHEETS—SHEET 8.

Fig. 16.

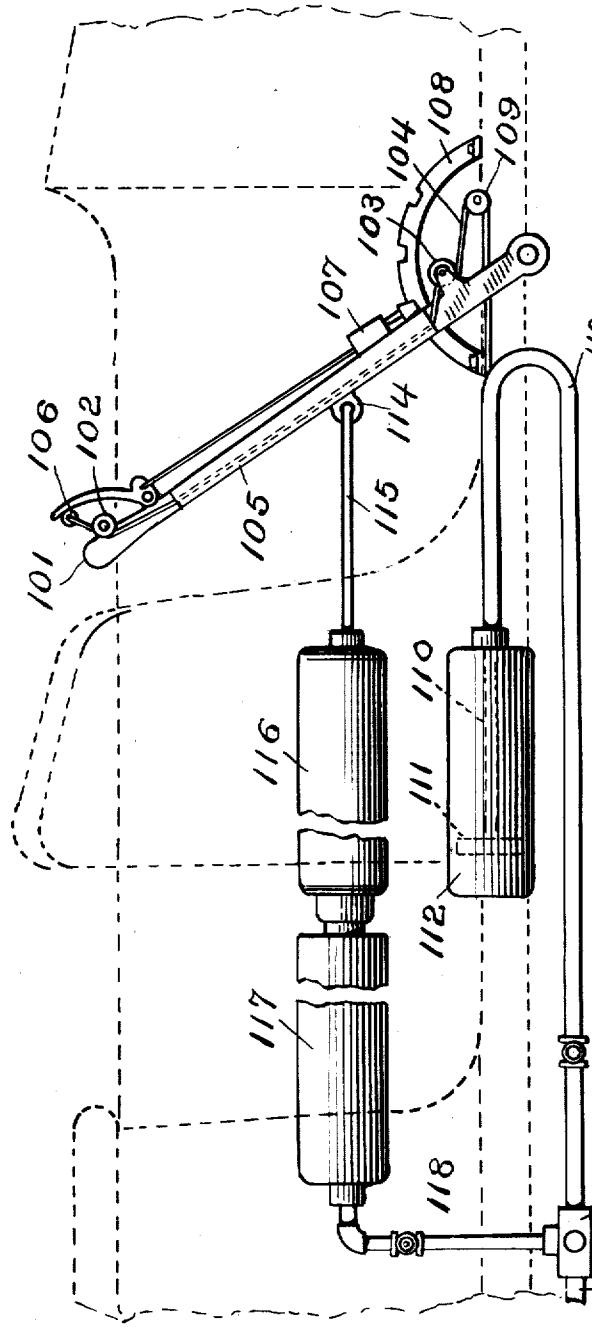
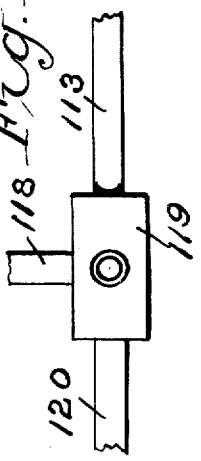


Fig. 17.



Witnesses

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UNITED STATES PATENT OFFICE.

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FENDER ATTACHMENT FOR AUTOMOBILES.

1,256,497. Specification of Letters Patent. Patented Feb. 12, 1918.

Application filed April 9, 1915. Serial No. 20,319.

To all whom it may concern:

Be it known that I, CHARLES SADLO, a citizen of the United States, residing at Astoria, L. I., in the county of Queens and State of New York, have invented certain new and useful Improvements in Fender Attachments for Automobiles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a fender attachment for automobiles, and the primary object of the invention is to provide an accident preventing fender, which is normally held in an inoperative and unobstructive position partially in front of and partially beneath the automobile, which fender is automatically operated when the automobile strikes a person, for receiving the person on the fender and stopping the travel of the automobile synchronously therewith.

Another object of this invention is to provide a novel form of mechanism as specified which utilizes in combination, electricity and compressed air for operating the improved fender for catching a person and preventing injury thereof.

Another object of this invention is to provide a plurality of air operated pistons, for successively operating the dog mechanism on the various clutch, brake and speed levers, and operating the levers themselves immediately thereafter for moving them into various positions, for stopping the travel of the car immediately when the same strikes an object or person.

A still further object of this invention is to provide a pneumatically operable fender for automobiles which embodies a casing having rolled therein a flexible support, and positioned forwardly of the same, a guard for releasing said support for outward movement when the automobile strikes an obstruction or person, and which closes an electrical circuit for opening an air valve for automatically forcing outwardly and forwardly of the automobile, said flexible support for receiving the person struck, and further to provide pneumatic means for supporting the casing and moving it outwardly a limited distance prior to the outward movement of the flexible support.

With the foregoing and other objects in view this invention consists in such novel features of construction, combination and arrangement of parts as will be hereinafter more fully described, illustrated in the accompanying drawings and claimed.

In describing the invention in detail reference will be had to the accompanying drawings wherein like characters designate like or corresponding parts throughout the several views, and in which:—

Figure 1 is a fragmentary side elevation partially in section of an automobile, showing the forward part of the improved fender attached thereto.

Fig. 2 is a fragmentary side elevation of an automobile, showing the mechanism for operating the gear shifting lever.

Fig. 3 is a top plan view of the improved fender,

Fig. 4 is a plan view partially in section of the mechanism for operating the clutch and brake pedals,

Fig. 5 is a longitudinal sectional view through air cylinders employed for operating the gear shifting lever,

Fig. 6 is a sectional view through one of the flexible fender supports, showing the same in an extended position,

Fig. 7 is a cross sectional view on the line 7—7 of Fig. 6,

Fig. 8 is a cross sectional view on the line 8—8 of Fig. 5,

Fig. 9 is a fragmentary view partially in side elevation and partially in section of the connections between the electric motor and the air valve,

Fig. 10 is a longitudinal sectional view through the flexible fender retaining casing.

Fig. 11 is a cross sectional view on the line 11—11 of Fig. 10,

Fig. 12 is a cross sectional view on the line 12—12 of Fig. 10,

Fig. 13 is an enlarged fragmentary sectional view of part of the fender.

Fig. 14 is a cross sectional view on the line 14—14 of Fig. 9.

Fig. 15 is a plan view partially in section of the pneumatic means for moving the flexible fender for holding or retaining casing outwardly into an operative position, or inwardly out of an operative position, diagrammatically.

Fig. 16 is a fragmentary side elevation of an automobile, showing the mechanism for operating the clutch lever, and

Fig. 17 is a detail view of a pipe connection employed in the invention.

Referring more particularly to the drawings, 1 designates an automobile of any ordinary type of construction now commonly in use upon the market which has a chassis 2 and a gear operating lever 3 carried thereby.

The side rails 4 of the chassis 2 have secured to their forward ends forwardly of the hood 5 of the automobile a substantially cylindrical casing 10, which has arcuate sleeves 11 and 12 detachably connected to its outer ends. The casing 10 has rotatably mounted therein a shaft 13 to which is connected, for rolling upon the shaft, a flexible fabric curtain or support 14. The shaft 13 is rotatably carried by the ends 15 and 16 of the casing, which are detachably mounted therein, and it has a spiral spring 17 mounted internally thereof, which spring acts identically with the action of the spring in an ordinary spring curtain or shade roller.

The casing 10 has rods 10^a and 10^b secured to the rear side thereof, which rods extend into cylinders 10^c and 10^d, and have piston heads 10^e and 10^f mounted upon their ends which are positioned within the respective cylinders. The cylinders 10^c and 10^d have a plurality of ball bearings 10^g positioned therein, and engaging the outer surface of the piston rods 10^a and 10^b to support the rods. The ball bearings 10^g are held in place by transversely extending partitions 10^h which are formed within the cylinders 10^c and 10^d intermediate of their ends. The piston rods pass freely through the openings formed in the partitions 10^h and the caps 10^r which are removably mounted upon the outer ends of the cylinders. The pistons 10^e and 10^f have gaskets 10^j mounted thereon for providing a substantially air-tight connection between the peripheries of the pistons and the interior of the cylinders. The pistons 10^e and 10^f have spiral springs 10^k and 10^l secured thereto, which springs extend rearwardly from the pistons in the cylinders 10^c and 10^d and engage the inner surface of the removable caps 10^m and 10^n which are mounted upon the rear ends of the cylinders 10^c and 10^d.

The cylinders 10^c and 10^d have communication with a compressed air storage tank 56 through pipe connections 10^p. The passage of air through the pipe connections 10^p is controlled by the operation of the valve 55, which will be hereinafter more fully described.

The cylinders 10^c and 10^d are bled of air by a bleed valve 10^s which is positioned in the air feed pipe of the cylinders. The valve 10^s is arranged so that when it is closed, it will allow air to pass therethrough into the cylinders, but when opened to bleed the cylinders, will cut off the passage of air from the feed pipe into the cylinders and allow the air to pass or bleed out of the cylinders. The bleed valve 10^s is manually operated.

The shaft 13 projects out of the arcuate sleeve 12 through an opening 18 formed therein and has its outer end substantially rectangular in cross section, as is shown at 19, to permit of the winding of the curtain or fabric support 14 upon the shaft 13 and also to permit of the winding and tensioning of the spring 17.

The shaft 13 has ratchet wheels 20 and 21 mounted thereon upon opposite sides of the curtain 14, the teeth of which are engaged by pawls 22. The pawls 22 are pivotally carried in any suitable manner by the cylindrical casing 10, and they have projections 23 formed thereon, which are positioned in the inner ends of the rods 24. The rods 24 project forwardly through the casing 10 and have their outer ends connected to a guard 25. The guard 25 extends along the entire length of the casing 10 and has its ends slightly curved and projecting partially over the length of the arcuate sleeves 11 and 12, as is clearly shown in Figs. 3 and 10 of the drawings. The guard 25 is normally spaced from the casing 10 by spiral springs 26 which are mounted in sleeves 27, which are carried by the forward side or portion of the casing 10. The spiral springs 26 are coiled about sleeves 28, which are carried by the inner transversely extending partitions 29, which form closures for the inner ends of the tubes 27. One end of each of the springs 26 abuts against the partitions 29, while the other ends abut against partitions 30 which are positioned a short distance inwardly of the outer end of the sleeves 27. The rods 24 are rigidly connected to the plungers 30 and slidable in the sleeves 28. The inner ends of the rods 24 have rollers 31 mounted thereon for engagement with the lugs 23 for moving the pawls 22 out of engagement with the peripheral ratchet teeth formed upon the ratchet 20, so as to permit of the unwinding of the curtain 14 from about the shaft 13.

The sleeves 27 have contacts 32 and 33 carried by their outer ends, which are insulated from the body portion of the sleeve by suitable insulating plates 34. The contacts 32 and 33 have communication through electrical conductors 35 with a motor 36, which is carried by the automobile construction, and the purpose of which will be hereinafter more fully described.

The end of the curtain 14, passes through a slit or opening 37, which is formed in the sleeve 10. The sleeve 10 has rearwardly extending ears 38 formed thereon to which are connected rods 39 and 40. The rods 39 and 40 are positioned upon opposite sides of the slot or opening 37 and they have rollers

41 and 42 mounted thereupon, which are engaged by the curtain 14 as it passes outwardly from the casing, so as to prevent abrasion of the curtain by the metallic side of the opening 37.

The end of the curtain 14 which is free from connection to the shaft 13 is connected to rods 44 and 45, which rods extend into cylinders 46 and have pistons 47 mounted upon their inner ends.

The rods 44 and 45 are identical in construction and have a plurality of ball bearings 50 mounted about their circumference, and positioned within the cylinders 46 for supporting the piston rods to relieve friction during the movement of the rods. The ball bearings 50 are positioned between a partition 51 which is formed in the cylinder and the cap 46′ which is detachably connected to the cylinder as is clearly shown by reference to Fig. 6 of the drawings. The openings in the cap and partition through which the piston rod extends are larger in diameter than the rod so that the rod will not engage either the cap or the partition during its movement, thereby relieving friction.

The pistons 47 which are carried by the rods 44 and 45 are positioned upon the opposite sides of the partitions 51 from the ball bearings 50, and they have connected thereto contracting spiral springs 52, which are mounted within the cylinders and are also connected to the rear ends thereof, for normally holding the pistons 47 in a position adjacent to the rear ends of the cylinders, and holding the rods 44 and 45 inserted in the cylinders, at which time the curtain 14 is wound upon the shaft 13 prior to the striking of a person by the automobile. A bleed valve 50′ is mounted in the pipe 54 so that it may be manually operated for bleeding the air from the cylinders to allow the springs to return the pistons to their normal positions when desired. The valve 50′ is constructed to obstruct the passage of air into the cylinders when it is open for bleeding the cylinders, so as to prevent the bleeding of the tank 56.

The cylinders 46 have ears 46^a formed upon their forward ends, to which ears are pivotally connected pawls 46^b. The pawls 46^b have lugs 46^c formed upon their outer ends which are provided for seating in recesses 44^a formed in the rods 44 and 45, as is clearly shown in Fig. 6 of the drawings. The pawls 46^b are hollow, and they have springs 46^d positioned within the hollow space formed therein, which springs are coiled about the pins 46^e which pivotally support the pawls 46^b, for holding the lugs 46^c downwardly in a position for movement into the openings or cut-out portions 44^a, at all times.

The cylinders 46 have bracket arms 46^f secured to the upper surfaces thereof, which bracket arms extend forwardly over the rear end 46^g of the pawls 46^b. Set screws 46^h are adjustably carried by the bracket arms 46^f and secured to the end 46^g in any suitable manner, for holding the pawls 46^b out of a position for engagement with and seating in the openings or cut-out portions 44^a.

The cylinders 46 have pipes 53 and 54 connected thereto. The pipe 53 is a branch pipe and is connected to the pipe 54 a short distance rearwardly of the rear end of one of the cylinders 46. The pipe 54 extends rearwardly along beneath the chassis of the automobile and is in turn connected to a valve casing 55. The valve casing 55 is connected to a compressed air retaining cylinder 56 which is supported at any desired position upon the automobile 1, preferably beneath the chassis 2 thereof by suitable supporting brackets 57. The valve 55 has the stem 58 thereof, projecting upwardly therefrom. The upper end of the valve stem 58 is provided with facial serrations 59, which form longitudinally extending teeth which are provided for engagement with the longitudinally extending teeth 60 which are formed upon the end of the connection 61. The valve stem 58 has a lug 62 formed upon its upper end centrally thereof, which lug is seated in an opening 63 formed in the connection 61, for guiding the movement of the connection so as to insure the proper engagement of the teeth 59 and 60.

The connection 61 has its upper end rectangular in cross section, as is shown at 64, and seated in a depending collar 65, which is formed upon the central shaft 66 of the motor 36. The shaft 66 is provided with a recess 67 formed therein, in which is seated a spiral spring 68. The spring 68 engages the upper end of the connection 61, as is shown in Fig. 8 of the drawings.

The pipe 69 is connected to the valve casing 55 and extends forwardly therefrom, having an elbow 70 connected thereto, to which is connected a pipe 71.

The pipe 69 extends forwardly to the pivotal point 72 of the gear shift operating lever 3 from whence it is curved and extends rearwardly, as is shown at 74, having communication with a cylinder 75, in which is mounted a piston 76. The piston 76 has a rod 77 connected thereto, which extends forwardly therefrom and has connected to its outer end a flexible member 78. The flexible member 78, which may be any suitable type of cord or flexible wire passes about a pulley 79, which is carried by the lever 3, and upwardly along the length of the pulley and about a second pulley 80, which is carried by the upper end of the lever. The flexible cord or member 78 extends across or about the pulley 80 and is

connected at 81 to the hand lever 82, which is employed for operating the dog mechanism 83, which coacts with the quadrant 84 for holding the gear shift lever 3 in various positions, such as a forward position, a neutral position and a reverse position, as is indicated by the notches 85 shown in the quadrant 84.

The lever 3 has an eye 86 secured to its rear edge, to which eye is connected a rod 87. The rod 87 extends rearwardly therefrom, and is slidably seated in a cylinder 88 and connected to a piston 89. The piston 89 is slidably mounted within a cylinder 88 and has a plurality of ball bearings 90 spaced about its circumference, for decreasing the friction of the travel of the piston within the cylinder and to allow the passage of air about the piston during its movements. The cylinder 88 has a collar 91 formed upon its rear end, which is detachably connected to a longitudinally extending lug 92, which is formed upon the detachable head 93 of a cylinder 94. The cylinder 94 is positioned in alinement with the cylinder 88, and has its rear end communicating with the pipe 71 to permit of the passage of air into the cylinder 94 rearwardly of the piston 95 which is slidably mounted therein. The piston 95 has a rod 97 connected thereto which extends forwardly through the bore formed in the removable piston head 93. The piston rod 97 has its forward end 98 seated within the cylinder 89, and normally held spaced from the piston 89, as is clearly shown in Fig. 5 of the drawings. The space between the end of the piston rod 97 and the piston 89 is provided for permitting of the independent movement of the lever 3 without in any way interfering with the operation of the piston 95 or the mechanism heretofore described, and furthermore to permit of the forward movement of the piston 76 for operating the hand lever 82 for operating the dog mechanism 83 prior to the actuation of the lever 3 by the rod 87, this time being absorbed by the passage of the piston rod 97 through the space between its outer end and the piston 89. A spiral spring 99 is mounted within the cylinder 95, and is connected to this piston for automatically retracting the piston within the cylinder 94, or moving it into its inward position immediately after the cessation of the passage of air into the cylinder from the pipe 71 and the compressed air cylinder 56. A suitable bleed valve 71′ is provided for draining the air from the cylinder 94.

The valve stem 58 has a rectangular section 100 formed thereon which is provided for manually rotating the valve stem for closing the valve and cutting off passage of air through the various pipes 53, 54, 69 and 71 after the device has been operated.

The emergency lever 101, which is ordinary in the construction of automobiles now upon the market, has pulleys 102 and 103 carried thereby, over which pulleys travels a trip cord 104. The cord 104 extends through a guideway 105 which is secured to the side of the lever 101 and has its upper end connected to the hand grip or actuating lever 106 of the dog mechanism 107 which is carried by the lever 101 for coaction with the quadrant 108, for holding the lever in various adjusted positions. The cord 104 passes about a pulley 109, which is supported in any suitable manner, and is connected to a piston rod 110. The piston rod 110 is connected to a piston 111 which is slidably mounted in a cylinder 112. The cylinder 112 is identical in construction to the cylinder 75, so that upon the inlet of air into the cylinder through the pipe 113, the piston 111 will be forced rearwardly within the cylinder for operating the cord 104 for operating the belt mechanism for releasing the lever for pivotal movement.

The lever 101 has rearwardly extending ears 114 secured thereto, to which ears is loosely connected a piston rod 115. The piston rod 115 extends into a cylinder 116, which is connected to a second cylinder 117. The cylinders 116 and 117 are identical in construction to the cylinders 88 and 94, and the operation of the piston rod 115 is identical with the operation of the piston rod 87. The cylinder 117 has communication with the air supply through a pipe 118 and a T-joint 119, which is in turn connected to the valve 55 and through the pipe 120. Suitable bleed valves 113′ and 118′ are provided for bleeding the air from the cylinders 110 and 117 respectively, when it is desired to return the lever 105 to its normal position.

The ordinary clutch pedal 121 is also operated by the air from the air chamber 56, when the automobile strikes a person. The foot pedal 121, used for operating the clutch, has a rod 122 connected thereto in any suitable manner, such as by pivotal connection to an ear 123 which extends outwardly from the lever. The rod 122 extends into a cylinder 124, which cylinder has its forward end rounded and is provided with a bore 125 extending therethrough, through which the rod 122 passes. The bore 125 has a plurality of anti-friction ball bearings 126 positioned about the same, which support the rod 122 for preventing friction during their sliding movement of the rod. The rod 122 has a piston 127 mounted upon its inner end. A spiral spring 129 is positioned within the cylinder 124 and is connected to the piston 127 and the inner surface of the rear end of the cylinder 124, for automatically moving the piston 127 toward the rear end of the cylinder, after it

has been forced outwardly by a charge of compressed air which enters the cylinder 124 through the pipe connection 130.

The brake lever 131, which is also a foot lever having a tread 132 mounted thereon which is identical to the tread 133 of the clutch lever 121, also has a rod 134 connected thereto. The rod 134 extends into a cylinder 135, and has a piston 136 mounted upon its inner end. The piston 136 has a spiral spring 138 connected thereto, which is also connected to the rear end of the cylinder 135 for drawing the piston 136 toward the rear end of the cylinder after the air supply to the cylinder through the pipe 139 has been cut off and the air bled from the cylinder by the valve 141'. Anti-friction ball bearings 140 are positioned within the forward end of the cylinder 135 and engage the rod 134 as it extends through the forward end of the cylinder, as is clearly shown in Fig. 4 of the drawings.

The pipes 130 and 139 are connected to each other and to a lead pipe 141 by means of a pipe T-joint 142. The pipe 141 is connected to the compressed air retaining cylinder 56 through the valve 55.

In the operation of the improved fender and actuating mechanism therefor as heretofore described: During the normal travel of the automobile to which the invention is attached, the curtain or fabric support 14 is normally rolled upon the shaft 13, and the piston rods 44 and 45 are in an inward position, having the piston 47 positioned at inner terminals within the cylinders 46, and the lever 3 is positioned for having the gears properly positioned for forward movement of the vehicle or automobile, as is clearly shown in Figs. 1 and 2 of the drawings.

When the automobile strikes a person, the force of impact with the person, which will be struck by the guard 25, owing to the fact that this guard is positioned forwardly of all other parts of the machine, will force the guard 25 inwardly toward the cylinder or casing 10, forcing the rods 24 inwardly and rocking the pawls 22, releasing them from engagement with the peripheral ratchet teeth of the ratchet 20, so as to permit of the unwinding rotation of the shaft 13 for unwinding the fabric or flexible receiving curtain 14 therefrom. The inward movement of the fender 25, which fender is constructed of electrical conductive material, will cause sections of the fender to contact with the electrical contacts 32 and 33, closing a circuit therebetween and between the opposite poles of the motor 36, starting the motor for rotation of the motor shaft 66. The rotation of the shaft 66, will rotate the valve stem 58 through the connection between the shaft 66 and the valve stem 58 by the connection 61 which has the serrations formed upon its lower end as heretofore described. The rotation of the valve stem 58 will open the valve 55, permitting the passage of air from the compressed air retaining cylinder 56 into and through the various parts 53, 54, 69 and 71.

The air passing through the pipes 54 and 53 will enter the cylinders 46 and force the pistons 47 outwardly therein, to the limit of their movement, which is caused by the partitions 51 mounted in the cylinder. The forward movement of the pistons 47 will consequently carry the piston rods 44 and 45 forwardly and owing to the fact that the flexible receiving curtain 14 is secured to the forward ends of the piston rods 44, it will unwind this curtain from the shaft 13 and force it outwardly for receiving the person or object struck, thereupon. The piston rods 44 and 45 are positioned so that the forward movement of the curtain 14 will engage the person struck at such a part of their body as to upset them and deposit them upon the flexible curtain as it passes outwardly, for preventing injury thereto. When the rods 44 and 45 are moved outwardly, the pawls 46^b will operate for moving the pawl 46^b into the cut-out portions 44^a, for holding the rods extended against the action of the springs 52. The passage of the air from the cylinder 56 through the pipe 69 will force the piston 76 rearwardly within the cylinder 75, moving the piston rod 77 rearwardly, and operating the flexible cord 78, causing the same to pass over the pulleys 79 and 80 and draw the hand lever 82 inwardly for moving the clutch of the dog mechanism 83 out of the notch 85 in which it is seated. The passage of the air through the pipe 71 will enter the cylinder 94, and force the piston 95 forwardly therein. The forward motion of the piston 95 and the rod 97 will be lost, until the end of the piston rod 97 engages the piston 89 which is carried by the cylinder 88. The lost motion of the piston 95 and the piston rod 97 will permit of the operation of the dog mechanism 83 by the movement of the piston 76 and the rod 77, prior to the operation of the lever 3 by the forward movement of the piston 89 and the piston rod 87. When the piston rod 97 engages the piston 89, it will force the same forwardly within the cylinder 88, upon further force being administered to the piston 95, which will force the lever 3 forwardly, until the dog mechanism seats itself in the notch 85 formed in the quadrant 84 which positions the lever at a neutral position, at which point the dog mechanism will automatically act, as is ordinary in the constructions of this nature, for retarding further movement of the lever 3, and will consequently stop the travel of the automobile.

When the impact of the person with the guard 25, is released, this guard will automatically spring outwardly to its normal spaced position with respect to the cylinder 10, by the actuation of the spiral springs 26, which will break the contact or circuit between the contacts 32 and 33 and consequently stop the motor 36. After the automobile has stopped, the driver thereof may alight and move the valve stem 58 by engaging the rectangular portion 100 upon the valve stem 58, by manual power, or by the use of a wrench or other similar tool, which will place the device in a position for reoperation, after the person has been removed from the curtain 14 and the latter wound upon the shaft 13, by rotating the shaft through the medium of a crank handle or wrench, which may be applied to the rectangular projecting end 19 of the shaft.

The opening of the valve 56 will permit air to pass into the cylinders 10^c and 10^d which will move the casing 10 outwardly, and release the tension of the flexible curtain 14, forming a pocket for receiving and retaining the person which is deposited thereon, in a manner heretofore described.

The opening of the valve 56, will also operate the speed lever 3, and the foot pedals 132 and 121, by the inlet of air into the various cylinders for controlling the operation of these various levers, which will cause the levers to perform their ordinary functions identical with those performed when they are manually operated.

The operation of the lever 101, will operate the emergency brake, and immediately stop the automobile. This lever is operated, in the manner identical with the operation of the lever 3, as heretofore described.

From the foregoing description taken in connection with the accompanying drawings the advantages of construction and of the method of operation of the improved fender attachment for automobiles will be readily apparent to those skilled in the art to which this invention appertains and, while in the foregoing description, the principle of the operation of this invention has been described together with various features of construction, it is to be understood that certain minor features of construction, combination and arrangement of parts may be altered to suit practical conditions provided such alterations are comprehended within the scope of what is claimed.

What is claimed is:—

1. The combination with an ordinary automobile having a chassis and a lever for controlling the movement of the automobile, of a cylindrical casing carried by the forward end of said chassis, an object receiving curtain normally rolled within said cylindrical casing, a compressed air cylinder carried by said chassis, means carried by said chassis for automatically releasing the air from said compressed air cylinder upon the striking of an object by the automobile for unwinding said article receiving curtain and forcing it forwardly of the front end of said chassis, a dog mechanism carried by said lever for holding it against accidental movement, a flexible member connected to said dog mechanism, a piston rod connected to said flexible member, a compressed air controlled piston operatively connected to said piston rod, means connected to said first named means for operating said piston for releasing said dog mechanism upon the actuation of said article receiving curtain, and compressed air controlled means connected to said lever for automatically operating the lever immediately after release of said dog mechanism for arresting travel of the automobile.

2. The combination with an automobile construction embodying a chassis, and a lever for controlling the movement of said automobile, of a cylindrical casing carried by the forward end of said chassis, a shaft rotatably journaled within said casing, an article receiving curtain normally rolled upon said shaft, a ratchet carried by said shaft, a pawl pivotally connected to said casing and engaging said ratchet to prevent unrolling rotation of said shaft, a plurality of rods slidably carried by said chassis and connected to said curtain, a guard yieldably supported forwardly of said casing, means connected to said guard and said pawl for moving the pawl out of engagement with said ratchet when said guard strikes an article for permitting of unwinding rotation of said shaft, and means carried by said chassis for automatically moving said first named rods forwardly for unrolling said article receiving curtain from said shaft and positioning it forwardly of said automobile chassis.

3. The combination with an automobile construction embodying a chassis and a lever for controlling the movement of the automobile, of a cylindrical casing carried by the forward end of said chassis, a shaft rotatably journaled in said casing, an article receiving curtain normally rolled upon said shaft, a ratchet carried by said shaft, a pawl pivotally connected to said casing and engaging said ratchet for preventing unwinding rotation of said shaft, a guard yieldably supported forwardly of said casing, means connected to said guard and said pawl for moving said pawl out of engagement with said rod upon rearward movement of said guard for permitting of an unwinding rotation of said shaft, a plurality of rods slidably carried by said casing and connected to said curtain, and means carried by said chassis for automatically moving said rods forwardly for unrolling said article receiving curtain from said shaft and positioning

it forwardly of said automobile chassis, a dog mechanism carried by said lever for holding it against accidental movement, a flexible member connected to said dog mechanism, a piston rod connected to said flexible member, a compressed air controlled piston operatively connected to said piston rod, means connected to said first named means for operating said piston for releasing said dog mechanism upon actuation of said article receiving curtain, and compressed air controlled means connected to said lever for automatically operating said lever immediately after release of said dog mechanism for arresting travel of the automobile.

4. The combination with an automobile construction embodying a chassis and a lever for controlling the movement of said automobile, of a cylindrical casing carried by the forward end of said chassis, a shaft rotatably journaled within said casing, an article receiving curtain normally rolled upon said shaft, a ratchet carried by said shaft, a pawl pivotally mounted within said casing and engaging said ratchet for preventing unwinding rotation of said shaft, a guard yieldably supported forwardly of said casing, means connecting said guard and pawl for moving said pawl out of engagement with said ratchet upon rearward movement of said guard for permitting of an unwinding rotation of said shaft, a plurality of rods slidably carried by said chassis and connected to said curtain, means carried by said chassis for automatically moving said rods forwardly for unrolling said article receiving curtain from said shaft and positioning it forwardly of said automobile chassis, and means carried by said chassis for operating said lever synchronously with the forward movement of said rods for arresting the travel of the automobile.

5. The combination with an automobile of ordinary construction embodying a chassis and a lever for controlling the movement of said automobile, of a cylindrical casing carried by the forward end of said chassis, a shaft rotatably journaled within said casing, an article receiving curtain connected to said shaft and normally wound thereupon, a ratchet mounted upon said shaft, a pawl pivotally carried by said casing and engaging said ratchet for preventing unwinding rotation of said shaft, said casing being provided with an opening to permit of the passage of said article receiving curtain therefrom, a pair of rollers supported outwardly of said opening and spaced for guiding the travel of said curtain, a guard yieldably supported forwardly of said cylindrical casing, a rod connected to said guard and pivotally connected to said pawl for moving said pawl out of engagement with said ratchet upon rearward movement of said guard under pressure, means for automatically returning said guard and said pawl to their normal positions upon the release of pressure from said guard, a plurality of rods slidably carried by said chassis and connected to said article receiving curtain, a compressed air retaining cylinder carried by said chassis and having operative connection with said slidable rods for forcing said rods forwardly for unwinding said article receiving curtain from said shaft upon release of air from said cylinder, means for normally restraining the release of air from said cylinder, and means operable by the inward movement of said guard for automatically operating said air restraining means for permitting of the escape of air for moving said rods forwardly and unrolling said article receiving curtain from said shaft.

6. The combination with an automobile of ordinary construction embodying a chassis and a lever for controlling the movement of said automobile, of a cylindrical casing carried by the forward end of said chassis, a shaft rotatably journaled within said casing, an article receiving curtain connected to said shaft and normally wound thereupon, a ratchet mounted upon said shaft, a pawl pivotally carried by said casing and engaging said ratchet for preventing unwinding rotation of said shaft, said casing being provided with an opening to permit of the passage of said article receiving curtain therefrom, a pair of rollers supported outwardly of said opening and spaced for guiding the travel of said curtain, a guard yieldably supported forwardly of said cylindrical casing, a rod connected to said guard and pivotally connected to said pawl for moving said pawl out of engagement with said ratchet upon rearward movement of said guard under pressure, means for automatically returning said guard and said pawl to their normal positions upon the release of pressure from said guard, a plurality of rods slidably carried by said chassis and connected to said article receiving curtain, a compressed air retaining cylinder carried by said chassis and having operative connection with said slidable rods for forcing said rods forwardly for unwinding said article receiving curtain from said shaft upon release of air from said cylinder, means for normally restraining the release of air from said cylinder, and means operable by the inward movement of said guard for automatically operating said air restraining means for permitting of the escape of air for moving said rods forwardly and unrolling said article receiving curtain from said shaft, a dog mechanism carried by said lever for holding it against accidental movement, a flexible member connected to said dog mechanism, compressed air controlled means operatively connected to said flexible member

for operating said flexible member for releasing said dog mechanism upon the outward movement of said article receiving curtain, and compressed air controlled means connected to said lever for automatically operating the lever immediately after release of said dog mechanism for arresting the travel of said automobile.

7. The combination with an automobile of ordinary construction embodying a chassis and a lever for controlling the movement of said automobile, of a cylindrical casing carried by the forward end of said chassis, a shaft rotatably journaled within said casing, an article receiving curtain connected to said shaft and normally wound thereupon, a plurality of rods slidably carried by said chassis and connected to said article receiving curtain, a guard normally spaced forwardly of said cylindrical casing, a compressed air retaining receptacle carried by said chassis and having operative communication with said slidable rods for forcing said rods forwardly for unwinding said article receiving curtain from said shaft upon the release of air from said receptacle, means for normally restraining the release of air from said receptacle, and means operable by the inward pressing movement of said guard for automatically operating said air restraining means for permitting of the escape of air for moving said rods forwardly and unrolling said article receiving curtain from said shaft, means for normally preventing unrolling rotation of said shaft, means operable by the inward movement of said guard for releasing said shaft unrolling rotation restraining means, and means carried by said casing for automatically operating said lever upon the release of air from said air receptacle for moving said lever for stopping movement of said automobile.

8. The combination with an automobile of ordinary construction embodying a chassis and a lever for controlling the movement of said automobile, of a cylindrical casing carried by the forward end of said chassis, a shaft rotatably journaled within said casing, an article receiving curtain connected to said shaft and normally wound thereon, a plurality of rods slidably carried by said chassis and connected to said article receiving curtain, a guard normally spaced forwardly of said cylindrical casing, a compressed air retaining receptacle carried by said chassis and having operative communication with said slidable rods for forcing said rods forwardly for unwinding said article receiving curtain from said shaft upon the release of air from said receptacle, means for normally restraining the release of air from said receptacle, means operable by inward movement of said guard for automatically operating said air restraining means for permitting of the escape of air for moving said rods forwardly and unrolling said article receiving curtain from said shaft, means for normally preventing the unrolling rotation of said shaft, means operable by the inward movement of said guard under pressure for releasing said shaft unrolling rotation restraining means, and means carried by said casing for automatically operating said lever upon the release of air from said air cylinder for moving said lever for arresting movement of said automobile, an automatically acting locking means for engaging said rods when moved outwardly for holding the rods and curtain in an extended position.

9. The combination with an automobile of ordinary construction embodying a chassis and a lever for controlling the movement of said automobile, of a cylindrical casing carried by the forward end of said chassis, a shaft rotatably journaled within said casing, an article receiving curtain connected to said shaft and normally wound thereon, a plurality of rods slidably carried by said chassis and connected to said article receiving curtain, a guard normally spaced forwardly of said cylindrical casing, a compressed air retaining receptacle carried by said chassis and having operative communication with said slidable rods for forcing said rods forwardly for unwinding said article receiving curtain from said shaft upon the release of air from said receptacle, means for normally restraining the release of air from said receptacle, means operable by inward movement of said guard for automatically operating said air restraining means for permitting of the escape of air for moving said rods forwardly and unrolling said article receiving curtain from said shaft, means for normally preventing the unrolling rotation of said shaft, means operable by the inward movement of said guard under pressure for releasing said shaft unrolling rotation restraining means, and means carried by said casing for automatically operating said lever upon the release of air from said air cylinder for moving said lever for arresting movement of said automobile, an automatically acting locking means for engaging said rods when moved outwardly for holding the rods and curtain in an extended position, and means for automatically returning said guard to its normal position and moving said restraining means into an operative position upon the release of pressure from said guard.

10. The combination with an automobile of ordinary construction embodying a chassis and a lever for controlling the movement of said automobile, of a cylindrical casing carried by the forward end of said chassis, a shaft rotatably journaled within said casing, an article receiving cur-

tain connected to said shaft and normally wound thereon, a plurality of rods slidably carried by said chassis and connected to said article receiving curtain, a guard normally spaced forwardly of said cylindrical casing, a compressed air retaining receptacle carried by said chassis and having operative communication with said slidable rods for forcing said rods forwardly for unwinding said article receiving curtain from said shaft upon the release of air from said receptacle, means for normally restraining the release of air from said receptacle, means operable by inward movement of said guard for automatically operating said air restraining means for permitting of the escape of air for moving said rods forwardly and unrolling said article receiving curtain from said shaft, means for normally preventing the unrolling rotation of said shaft, means operable by the inward movement of said guard under pressure for releasing said shaft unrolling rotation restraining means, and means carried by said casing for automatically operating said lever upon the release of air from said air cylinder for moving said lever for arresting movement of said automobile, and automatically acting locking means for engaging said rods when moved outwardly for holding the rods and curtain in an extended position, and means for automatically returning said rod and curtain to their normal position upon release of said automatic acting locking means.

11. The combination with an automobile of ordinary construction embodying a chassis, a gear shifting lever, and an emergency brake lever, of a cylindrical casing yieldably carried by the forward end of said chassis, a shaft rotatably journaled within said casing, an article receiving curtain normally wound upon said shaft, one end of said curtain hanging free from said shaft, a plurality of rods connected to said free end, means for forcing said rods forwardly for unrolling said article receiving curtain from said shaft and positioning it forwardly of said chassis when the automobile strikes an object, pivoted pawls for engagement with said rods upon their forward movement for preventing accidental rearward movement of said rods, and means for automatically returning said rods to an inoperative position, and means operatively connected to said gear shifting lever and said emergency brake lever for moving said gear shifting lever into a neutral position and operating said emergency brake lever for stopping the travel of the automobile upon operation of said curtain.

In testimony whereof I have affixed hereto my signature in presence of two witnesses.

CHARLES SADLO.

Witnesses:

WILLIAM E. INIS,

EMIL G. SAUERMILCH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."