

986,888.

2 SHEETS—SHEET 1.

WITNESSES

WITNESSES
Samuel Payne
K. S. Butler ⁴⁰

INVENTOR

F. M. Zimmerman,
H. C. Swett
Attorneys.

986,888.

Patented Mar. 14, 1911.

2 SHEETS--SHEET 2.



WITNESSES
Samuel Payne.
R. H. Butler

INVENTOR

INVENTOR
F. M. Zimmerman,
Attorneys.

UNITED STATES PATENT OFFICE.

FRANKLYN M. ZIMMERMAN, OF PITTSBURG, PENNSYLVANIA.

ELEVATING AND LOWERING DEVICE.

986,888.

Specification of Letters Patent.

Patented Mar. 14, 1911.

Application filed September 7, 1910. Serial No. 580,800.

To all whom it may concern:

Be it known that I, FRANKLYN M. ZIMMERMAN, a citizen of the United States of America, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Elevating and Lowering Devices, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to an elevating and lowering device particularly designed for use for elevating and lowering motor vehicles for exhibiting purposes or to enable convenient access to be had to the lower portion of the vehicle for repair or other purposes.

Although the device is particularly designed for use in connection with motor vehicles, yet it is to be understood that it is adapted for any purpose wherein it is found applicable.

Further objects of the invention are to provide an elevating and lowering device for the purpose set forth which shall be comparatively simple in its construction and arrangement, operated by a fluid pressure, strong, durable, efficient in its use, conveniently operated, readily set up with respect to a flooring or base and inexpensive to manufacture.

With the foregoing and other objects in view, the invention consists of the novel construction, combination and arrangement of parts as hereinafter more specifically described and illustrated in the accompanying drawing, wherein is shown an embodiment of the invention, but it is to be understood that changes, variations and modifications can be resorted to which come within the scope of the claims hereunto appended.

In describing the invention in detail, reference is had to the accompanying drawing, wherein like reference characters denote corresponding parts throughout the several views, and in which:—

Figure 1 is a front elevation of an elevating and lowering device in accordance with this invention showing a motor vehicle in full lines positioned thereon and in a lowered position and further showing in dotted lines the motor vehicle elevated. Fig. 2 is a cross sectional view, and Fig. 3 is a top plan showing the adaptation of the elevating and lowering device in connection with the floor of a building or a platform.

An elevating and lowering device in ac-

cordance with this invention is suspended from below the floor of a building or a platform and which is indicated by the reference character 1 and is provided with a pair of longitudinally extending openings 2.

The device comprises two pairs of fluid pressure cylinders, the cylinders of each pair opposing the other and the cylinders of one pair opposing the cylinders of the other pair. As the construction of each cylinder is the same but one will be described, the description of one applying to the others. Each of the cylinders is indicated by the reference character 3 and is somewhat elongated and is provided at its top with a laterally extending flange 4. Extending at right angles with respect to the longitudinal openings 2 is a pair of beams 5 which are secured to the joists 6 of a floor and each of which is bent to provide a depending yoke 7 to which the flanged end 4 of the cylinder 3 is secured. Each of the yokes 7 is apertured, as at 8 for the passage of a piston rod 9 and each of the yokes is furthermore provided with a stuffing box 10 through which extends the piston rod 9. The lower end of the piston rod 9 is provided with a piston 11 adapted when at the limit of its downward movement to engage the lower end 12 of the cylinder 3, the said lower end being provided with an inlet nipple 13 for the supplying of fluid pressure to the cylinder 3 against the piston 11, whereby the latter will be elevated and carry the piston rod 9 therewith. The cylinder 3 is seated against a plate 14 provided with a plurality of apertured ears 15 to which are connected the lower ends of sectional hangers 16. The upper ends of the hangers 16 are attached to the eyes 17 which depend from the beams 5. The sections of each of the hangers are adjustably connected together by turn-buckles 18. By this arrangement the cylinders 3 are supported. Each of the plates 14 is formed with an opening 19 through which extends the nipple 13. The plates 14 are connected together by brace members 20 which engage with the ears 15 and are adjustably connected together by turn-buckles 21.

Connected to each of the nipples 13 by the couples 22 is a fluid supply pipe 23 which is connected to a valve feed pipe 24 opening into a reservoir 25, the latter having a valve connection 26 with a collecting chamber 27 formed with an inlet pipe 28 provided with a valve 29. The pipe 28 communicates with

the feed pipe 24. The valve of the feed pipe 24 is indicated by the reference character 30 and is interposed between the point of communication between the pipe 28 and the reservoir 25.

The reference characters 31, 32 denote a pair of supporting shoes which are disposed in the openings 2 and are connected together at each end by the brace members 33. The shoe 31 is secured to one pair of piston rods 9, while the shoe 32 is secured to the other pair of piston rods 9, and the said shoes 31, 32 are adapted to be elevated when the fluid pressure is applied to the cylinders 3. Each of the shoes 31, 32 at each end is formed with a series of openings 34 for receiving a stud 35 depending from a removable choke block 36. The blocks 36 can be adjustably mounted in position depending upon the length of the machine which is mounted upon the supporting shoes 31, 32. As shown in Fig. 1 the choke blocks 36 are arranged against the front and rear wheels 37 of a motor vehicle 38. Each of the supporting shoes is furthermore provided at each end with a pair of openings 39 for receiving a pair of studs 40, carried by a plate 41 secured to the upper end of a supporting rod 42 having its lower portion formed with a series of openings 43. Through each of the openings 43 is adapted to extend a pin for maintaining the supporting rod 42 in an upright position. The openings 43 are provided to enable the rod 42 to be supported by the pins when the shoes are arranged at different heights.

Connected to the stem 29 is a lever arm 44 to which is attached an actuating rod 45 for the purpose of opening the valve 29 when occasion so requires. The actuating rod 45 extends above the beams 5. The valve 29 is normally closed and is opened when it is desired to lower the supporting shoes.

It will be assumed that the device is in the position as shown in full lines in Fig. 1, the valve 30 is opened and motive fluid supplied to the cylinders 3, thereby elevating the shoes 31, 32 and carrying the vehicle 38 therewith, when the vehicle has been elevated to the desired height the supply of motive fluid is cut off and the wheels choked or blocked by the elements 36. The supporting bars 42 are then placed in position, the vehicle then being in the position as shown in dotted lines in Fig. 1. If it be desired to lower the vehicle, the choke blocks 36 are removed as well as the supporting bars 42 and the valve 29 opened, and the motive fluid will exhaust into the collecting chamber 27 and from there pass through the valve connection 26 into the reservoir 25.

What I claim is:—

1. An elevating and lowering device comprising the combination with a fixed support provided with a pair of longitudinally-

extending openings, and a pair of beams disposed at right angles with respect to the openings and fixed to the support, each of said beams bent to provide a pair of depending yokes, the base of each of said yokes formed with an opening, of motive fluid operated elements depending below the support and secured to the bases of the yokes, and each including a piston and a piston rod, a stuffing box carried by each of the yokes, said rods extending through the openings in the bases of the yokes and through said stuffing box, a supporting shoe mounted in each of said openings and secured to a pair of piston rods, and means for supplying an exhaust motive fluid to said elements for elevating and lowering the shoes.

2. An elevating and lowering device comprising the combination with a fixed support provided with a pair of longitudinally-extending openings, and a pair of beams disposed at right angles with respect to the openings and fixed to the support, each of said beams bent to provide a pair of depending yokes, the base of each of said yokes formed with an opening, of motive fluid operated elements depending below the support and secured to the bases of the yokes, and each including a piston and a piston rod, a stuffing box carried by each of the yokes, said rods extending through the openings in the bases of the yokes and through said stuffing box, a supporting shoe mounted in each of said openings and secured to a pair of piston rods, plates abutting against the lower ends of said elements, adjustable braces connected at their upper ends to said beams and at their lower ends to said plates, and adjustable braces connecting said plates together.

3. An elevating and lowering device comprising the combination with a fixed support provided with a pair of longitudinally-extending openings, and a pair of beams disposed at right angles with respect to the openings and fixed to the support, each of said beams bent to provide a pair of depending yokes, the base of each of said yokes formed with an opening, of motive fluid operated elements depending below the support and secured to the bases of the yokes, and each including a piston and a piston rod, a stuffing box carried by each of the yokes, said rods extending through the openings in the bases of the yokes and through said stuffing box, a supporting shoe mounted in each of said openings and secured to a pair of piston rods, plates arranged at and abutting against the lower ends of said elements and provided with apertured ears, inclined adjustable braces connected at their upper ends to said beams, and their lower ends to said apertured ears, and adjustable braces connecting said plates together.

4. An elevating and lowering device com-

prising the combination with a fixed support provided with a pair of longitudinally-extending openings, and a pair of beams disposed at right angles with respect to the
5 openings and fixed to the support, each of said beams bent to provide a pair of depending yokes, the base of each of said yokes formed with an opening, of motive fluid operated elements depending below the support and secured to the bases of the yokes,
10 and each including a piston and a piston rod, a stuffing box carried by each of the yokes, said rods extending through the openings in the bases of the yokes and through
15 said stuffing box, a supporting shoe mounted in each of said openings and secured to a pair of piston rods, means for supplying an exhaust motive fluid to said elements for elevating and lowering the shoes, each of said
20 shoes provided at each end with a series of

openings whereby choke blocks can be secured to the shoes for maintaining an object upon the shoes, when these latter are elevated and lowered, and adjustable rods engaging at their upper ends in certain of the
25 openings of the shoes whereby the rods are detachably connected with the shoes, said rods further provided with means whereby they are capable of being adjustably connected to said support, said rods constituting
30 means for supporting said shoes when elevated, and means arranged above said support for connecting said shoes together.

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

FRANKLYN M. ZIMMERMAN.

Witnesses:

MAX H. SROLOVITZ,
KARL H. BUTLER.