

Nov. 11, 1930.

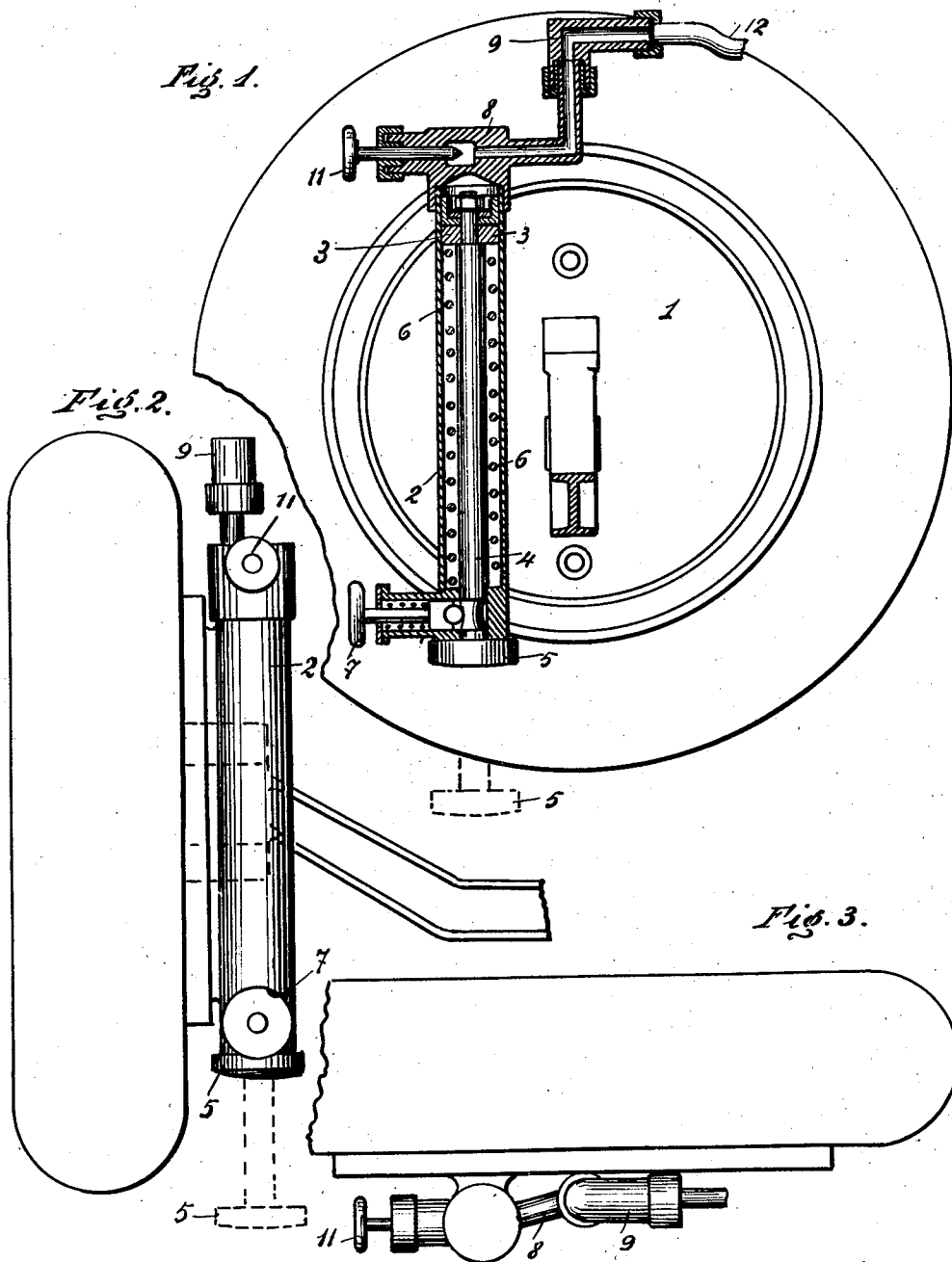
F. B. DI NEUBERG

1,780,972

FLUID OPERATED APPARATUS FOR LIFTING AUTOMOBILE WHEELS

Filed Feb. 13, 1929

2 Sheets-Sheet 1



F.B. Di Neuberg
INVENTOR

By: Marks & Clark
ATTY'S.

Nov. 11, 1930.

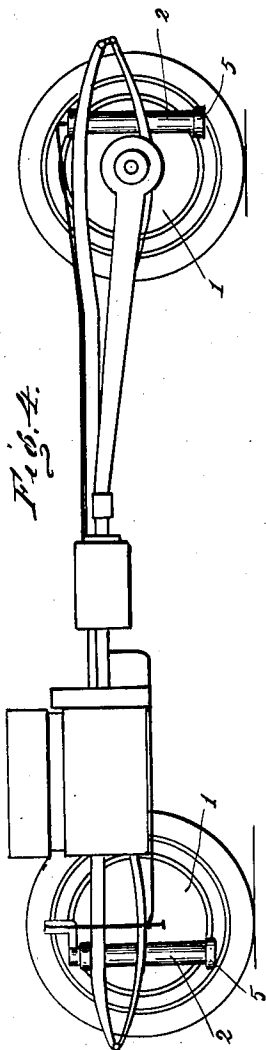
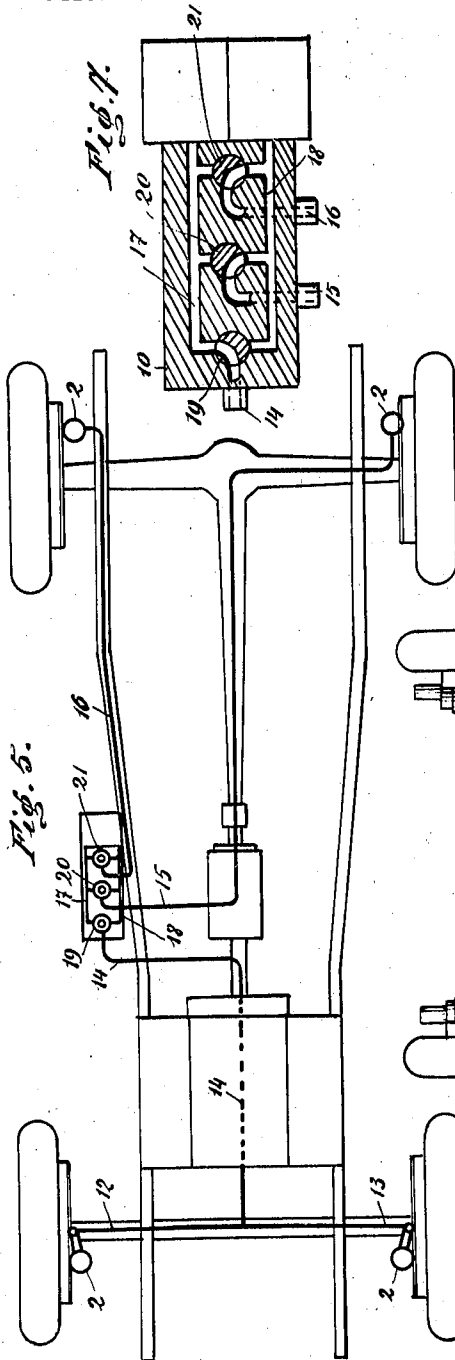
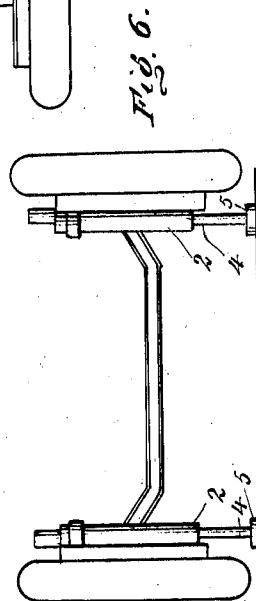
F. B. DI NEUBERG

1,780,972

FLUID OPERATED APPARATUS FOR LIFTING AUTOMOBILE WHEELS

Filed Feb. 13, 1929

2 Sheets-Sheet 2



F. B. Di Neuberger
INVENTOR

By: Marks & Clerk
ATTORNEYS

UNITED STATES PATENT OFFICE

FERDINANDO BRUSCH DI NEUBERG, OF TREVISO, ITALY

FLUID-OPERATED APPARATUS FOR LIFTING AUTOMOBILE WHEELS

Application filed February 13, 1929, Serial No. 339,726, and in Italy July 27, 1928.

The object of the present invention is to provide for motorcars four apparatus permanently and conveniently arranged nearly to the road wheels for the purpose of lifting the said wheels through the action of a pressure fluid, the apparatus being susceptible of being brought into action at any time by simply manipulating convenient fluid distribution devices. The pressure fluid can be supplied by any ordinary pump driven from the motorcar engine, or it may be kept in store in containers carried on the motorcar.

The apparatus is illustrated in one of its execution forms by the accompanying drawing. Figs. 1, 2, 3 show one of the four apparatus to a larger scale, while Figs. 4, 5, 6 schematically show to a smaller scale the general arrangement of the four apparatus as fitted up in the automobile, and more precisely in rest position in Figs. 4 and 5, and in working position (raised wheels) in Fig. 6. Figure 7 schematically shows in an enlarged scale the pressure fluid distributing box in one of its embodiments.

The apparatus comprises a cylinder 2 secured to the brake disc so as to ensure the cylinder to maintain a rigid position. In particular, Figs. 1, 2, 3 show the apparatus as applied to the front road wheels, the cylinder 2, in the case shown, being made in one with the brake disc.

In the cylinder 2 reciprocates the piston 3, which is adapted to be forced downwardly by the pressure fluid and has a rod 4 fixed to it. When pressure is put on, a footplate 5 provided at the bottom end of the rod 4 outside of the cylinder 2, is forced against the ground, and then raises the road wheel by its reaction. The pressure fluid may be led to the cylinder 2 through flexible pipes; in the particular case of the front wheel shown, in order not to subject the pipe to unduly frequent and sharp bendings, the first stretch of the pipe, up to the steering rod, is replaced by a small rigid pipe 8 pivotally connected to the pipe 9, the pivoting axis coinciding with the axis of the steering rod, and the pipe 9 being connected to the hose 12. A helical spring 6, the bottom end of which bears against the cylinder bottom, tends to force

the piston upwardly so that, when no pressure fluid is present, the piston is raised up to its highest or rest position. Though not necessary, a special stop 7 is provided which by the action of a spring and of special notch formed in the rod 4, better secures the stable position of the piston at the top end of the cylinder.

The pipes 12 and 13 are branched off from the pipe 14 leading to the cock 19 of the distributing box 10; the pipe 15 leads from the cock 20 of the distributing box to the left hand rear road wheel, and the pipe 16 leads from the cock 21 to the right hand rear road wheel. The cocks 19, 20, 21 are ordinary three-way cocks, but it is obvious that they may be replaced by any other type of distributing members. Their only object is to enable the pipes 14, 15, 16 to be connected up at will either to the pipe 17 supplying the pressure fluid, or to the pipe 18 discharging the exhaust fluid from the cylinder.

The distributing box might as well be fitted with four instead of with three cocks, a cock being thus allotted for each front road wheel. It is only with the object of simplifying the plant that the arrangement shown on the drawing has been provided; in this arrangement, in order to allow insulation either of the two front road wheels at will, two cocks 11 have been fitted, one for each of the said wheels.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. Automobile wheel lifting apparatus of the type operated by liquid or gas under pressure, including in combination, a chassis, brake shoe carrying discs on the chassis near the wheels, and lifting cylinders rigidly fixed on the brake shoe carrying discs, substantially as and for the purposes set forth.

2. Apparatus of the character described, including in combination, a chassis, front and rear wheels connected with the chassis, brake shoe carrying discs on the chassis adjacent the front and rear wheels, steering mechanism for the front wheels, pressure operable lifting devices including cylinders

rigidly fixed to the brake shoe carrying discs,
and pressure medium conducting pipes lead-
ing to each of the cylinders, the pipes leading
to the steering wheels being composed of two
5 sections, one section of which is rigid with
respect to the chassis and the other with re-
spect to the adjacent brake shoe carrying
discs, said sections having their axes coin-
ciding with the steering wheel knuckles and
10 capable of rotation with respect to each
other.

Signed at Venice, Italy, this 31st day of
January, 1929.

FERDINANDO BRUSCH di NEUBERG.

15

20

25

30

35

40

45

50

55

60

65