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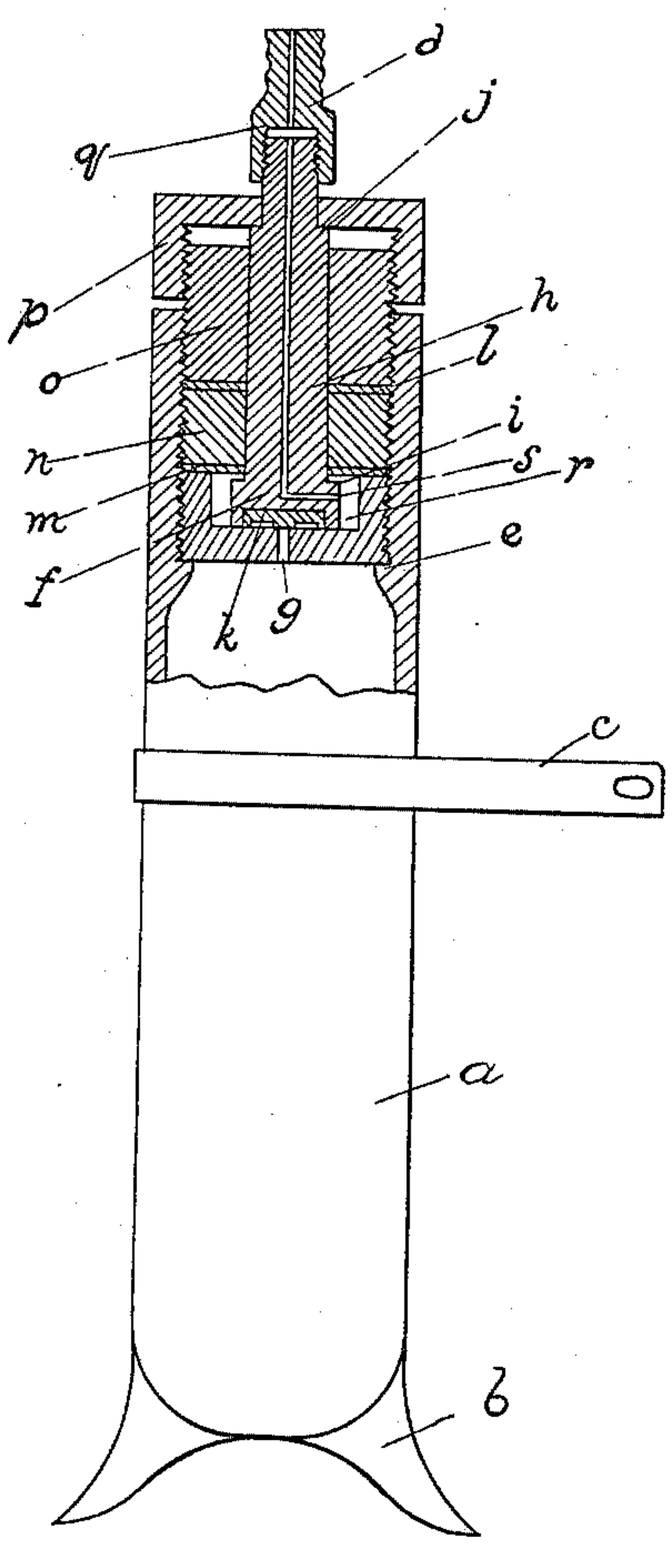
J. EMRINGER & P. E. MARCHAND.

APPARATUS FOR INFLATING PNEUMATIC TIRES.

(Application filed Mar. 10, 1899.)

(No Model.)



WITNESSES:

Alfred E. Hutchinson

E. Edwards

INVENTORS

Jules Emringer

Prosper Emile Marchand.

BY Briesen & Knauth

ATTORNEYS

UNITED STATES PATENT OFFICE.

JULES EMRINGER AND PROSPER EMILE MARCHAND, OF PARIS, FRANCE.

APPARATUS FOR INFLATING PNEUMATIC TIRES.

SPECIFICATION forming part of Letters Patent No. 661,399, dated November 6, 1900.

Application filed March 10, 1899. Serial No. 708,499. (No model.)

To all whom it may concern:

Be it known that we, JULES EMRINGER and PROSPER EMILE MARCHAND, engineers, of 101 Rue du Faubourg, St. Denis, Paris, France, have invented an Apparatus for Inflating Pneumatic Tires, of which the following is a full, clear, and exact description.

Our invention relates to apparatus for the inflation, by means of liquefied carbonic acid, of the pneumatic tires of velocipede and other vehicle wheels.

The apparatus is designed with a view of permitting of an easy and rapid inflation of the tire with only the necessary volume of gas.

The accompanying drawing illustrates an apparatus in which our invention is shown.

Referring to the drawing, the apparatus comprises a tube or cylinder *a*, made, preferably, of mild steel, in which the carbonic acid is stored. The lower end *b* of the cylinder is hollowed, so as to straddle the lower tube of the cycle-frame, by which the cylinder is supported, the cylinder being also provided with a strap *c*, which embraces the down-tube that carries the saddle-pillar. It is only necessary to remove the cylinder for refilling a rubber tube attached to the orifice *d* in the head of the cylinder conveying the carbonic acid to the valve-inlet of the tire. The carbonic acid being stored at a high pressure in the cylinder, it is necessary to provide a safety-valve, which will enable both a tight closure to be made and the easy inflation of the tire without risk of bursting it.

The upper end of the cylinder *a* is reinforced and screw-threaded and has an internal shoulder *e*, upon which is supported the base *f* of the valve-seat, which is screwed into cylinder *a* and has a central orifice *g*. The valve-stem *h* has two shoulders *i j*, and the valve contains a washer *k*—of ebonite, for example—for insuring the perfect closure of orifice *g*. The washers cover a plug of india-rubber or other material *n*, forming a gas-tight joint with the walls of cylinder *a* and valve-stem *h*, and a screw-plug *o* screws into cylinder *a* and compresses the rubber plug *n*. A cap *p* screws on plug *o* and engages with the shoulder *j* on stem *h*, to the outer end of which is screwed a coupling *q*, to which is connected the pipe for conducting the carbonic acid to the tire. This connecting-pipe will burst at a certain pressure, and thus serves as a safety-valve for preventing excess of pressure in the tire.

The action of the valve is as follows: The valve is opened by unscrewing cap *p*, which on being raised off shoulder *j* allows the valve and its stem *h* to rise either of itself or by screwing down the coupling *q*, the movement being limited by shoulder *j*. The carbonic acid then passes from cylinder *a* through bore *g* into chamber *r* and thence through the bore *s* of stem *h* to the orifice *d*. To close the valve, the cap *p* is screwed down and by bearing upon shoulder *j* of stem *h* shuts the valve over orifice *g*.

We claim—

1. In a device for filling pneumatic tires, &c., the combination of a receptacle *a* adapted to contain gas in a liquefied or compressed condition, a valve-seat therein, a valve adapted to coöperate with the said valve-seat and provided with a freely-oscillating stem, a cap adapted to hold the said valve down to its seat, the said cap being in screw-threaded connection with the receptacle *a* and coöperating with the shoulder on the valve-stem and a suitable packing surrounding the valve-stem, whereby upon screwing the cap off the shoulder the valve-stem will be permitted to have a longitudinal movement to lift the valve clear of its seat.

2. In a device of the character described, the combination of a gas-receptacle *a* provided with a valve-seat, a valve seated on the said valve-seat and provided with a valve-stem *h*, a series of rings or washers *o*, *n* surrounding the said valve-stem and adapted to act as a packing, the said valve-stem being adapted for free longitudinal movement in the said washers, shoulders *i j* on the valve-stem and a cap in screw-threaded connection with the washer *o* and adapted to rest upon the shoulder *j* substantially as described, whereby the said cap will hold the said valve on its seat until released and the shoulder *i* will serve as a stop for limiting the movement of the valve-stem.

The foregoing specification of our apparatus for inflating pneumatic tires signed by us this 28th day of February, 1899.

JULES EMRINGER.
PROSPER EMILE MARCHAND.

Witnesses:
EDWARD P. MACLEAN,
MAURICE H. PIGNET.