No. 610,976. Patented Sept. 20, 1898.

J. SCHIÖNNING & M. B. HANSEN.

AIR VALVE FOR PNEUMATIC TIRES.

(Application filed Mar. 15, 1897.)

(No Model.)

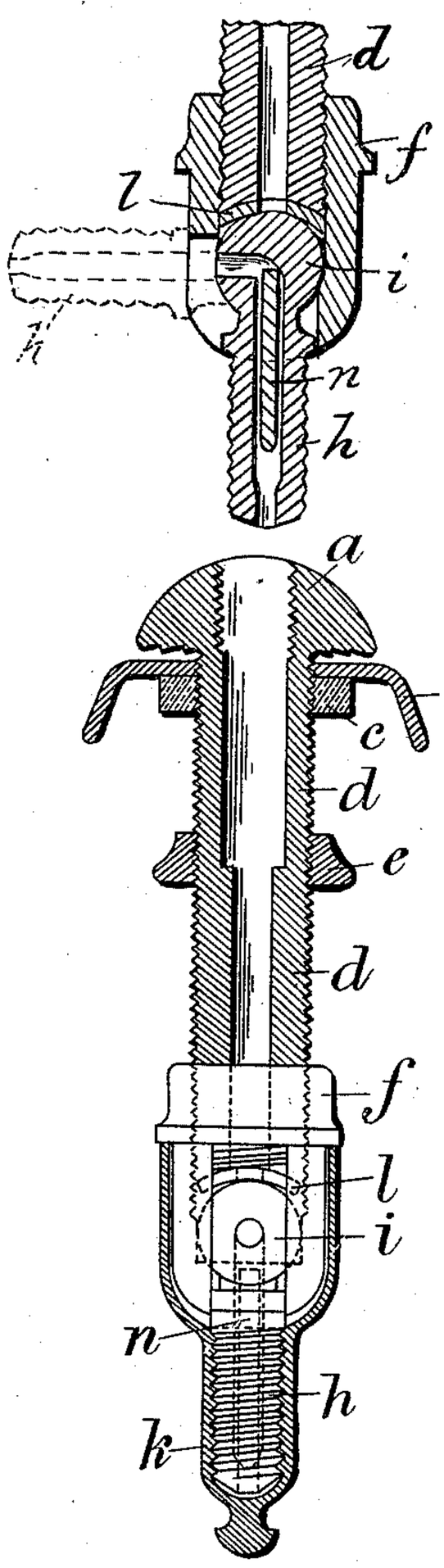

Fig. 1.

Fig. 3.

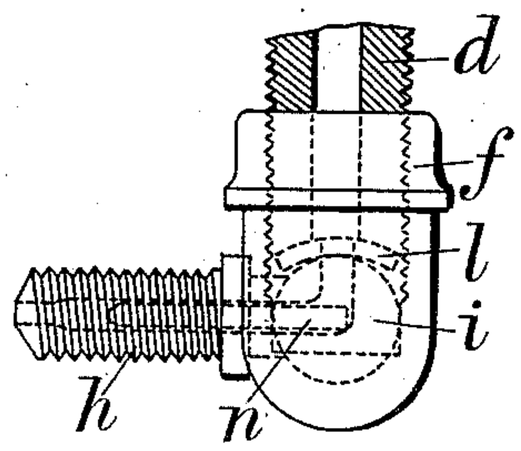

Fig. 2.

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UNITED STATES PATENT OFFICE.

JULIUS SCHIÖNNING AND MORTEN B. HANSEN, OF COPENHAGEN, DENMARK.

AIR-VALVE FOR PNEUMATIC TIRES.

SPECIFICATION forming part of Letters Patent No. 610,976, dated September 20, 1898.

Application filed March 15, 1897. Serial No. 627,712. (No model.) Patented in England July 16, 1895, No. 13,640; in Denmark February 27, 1896, No. 423; in Germany February 28, 1896, No. 86,439; in Sweden April 9, 1896, No. 6,771; in Norway October 16, 1896, No. 4,433; in Belgium February 27, 1897, No. 126,451, and in France May 31, 1897, No. 264,277.

To all whom it may concern:

Be it known that we, JULIUS SCHIÖNNING and MORTEN B. HANSEN, subjects of the King of Denmark, residing at Copenhagen, Denmark, have invented certain new and useful Improvements in Air-Valves for Pneumatic Tires, (for which Letters Patent have been obtained in Denmark, No. 423, dated February 27, 1896; in Norway, No. 4,433, dated October 16, 1896; in Sweden, No. 6,771, dated April 9, 1896; in Germany, No. 86,439, dated February 28, 1896; in Great Britain, No. 13,640, dated July 16, 1895; in France, No. 264,277, dated May 31, 1897, and in Belgium, No. 126,451, dated February 27, 1897,) of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The air-valves hitherto employed for pneumatic tires all suffer from a defect in as far as being difficult to get at, the end with which the tube of the air-pump is to be connected being placed between and in the same direction as the spokes of the wheel and the valve-seat itself being, furthermore, so constructed that it is difficult to clean, which, especially as far as these valves are concerned, must be considered a great drawback. These two inconveniences, as well as several others, are avoided in the present invention, the tube with which the air-pump is to be connected extending out sidewise between and clear of the spokes and the valve-seat and its leather packing being easily accessible for inspection.

The invention is shown on the accompanying drawings, wherein—

Figure 1 shows by a vertical section the valve closed. Fig. 2 shows part of the same during the pumping process. Fig. 3 is a broken sectional view at right angles to the view in Fig. 1.

Like letters designate like parts in all the figures.

a is the head inside the air-tube, kept fast between the head and piece *b*, which is screwed tightly against the air-tube, by means of the nut *c*. The fluted nut *e* serves to fasten the valve to the felly or rim. The tube *d* of the valve is screw-threaded on the outside, yet having a smooth surface on the one side to prevent it from turning in the piece *b* and in the felly. At the other end the tube *d* is hollowed out to a ball-shaped plane, on which the leather packing-ring *l* lies. Over this end of the tube *d* the piece *f* is screwed, the latter being bored out longitudinally, the boring being at the upper end supplied with screw-threads that fit those of the tube *d*, the boring, however, tapering somewhat at the lower end. The narrowing forms part of a ball-surface embracing the ball or cylinder *i*, bored through at a right angle, which extends downward into the equally-outbored and exteriorly-screw-threaded tap *h*, that is connected with the air-pump when air is to be pumped into the tire and which also serves to hold the dust-cap *k* screwed on. Inside the tap *h* a pin *n* lies, the lower end of which is conical and fits into the conically-shaped contraction of the boring of the tap *h*, so that it serves as a check-valve during the pumping process and prevents the injected air from returning to the pump. The main valve, however, consists of the ball *i*, which only allows passage between the channel in the tap *h* and the main channel in *d* when the tap (through a cutting in the piece *f*) is turned outward at right angles, as shown in Fig. 2, where the piece *f*, with the ball *i*, and the tap *h* are shown, while the dust-cap and part of the piece *d*, with appurtenances, are left out. In this position, where the tap *h* projects sidewise between the spokes of the wheel, the pumping process may be carried out comfortably. When finished, the tap *h* is straightened, and the surface of the ball *i* will at once (together with the packing-disk *l*) completely close the valve-opening, the tap *h* being kept in position by the screwing on of the dust-cap *k*, which by being screwed securely against another packing-ring will increase the air-tightness, this being, however, not necessary, as the packing-ring *l*, as well as the ball *i*, with its tap *h*, may at any time be easily removed

from the piece *f* for inspection and cleansing by unscrewing piece *f* from the tube *d*, while the force with which the ball *i* presses against the packing-ring *l* with the valve-seat may be easily regulated by screwing the piece *f* more or less tightly against *d* and absolute air-tightness thereby obtained.

We claim—

An air-valve for pneumatic tires having a closing element formed by a ball bored out at a right angle, placed directly outside the main piece *d* of the valve and having a tap *h* also bored out and exteriorly threaded, said tap being provided with a loose check-valve adapted to be closed by the pressure of air within the tire and to be opened by the pressure of air in the pump when the latter pressure exceeds the counter-pressure of the air in the tire.

In testimony that we claim the foregoing as our invention we have signed our names in presence of two subscribing witnesses.

JULIUS SCHIÖNNING.
M. B. HANSEN.

Witnesses:
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