

No. 792,465.

PATENTED JUNE 13, 1905.

C. T. SCHOEN.

CAR WHEEL.

APPLICATION FILED FEB. 28, 1905.

Fig. 1.



Fig. 2.

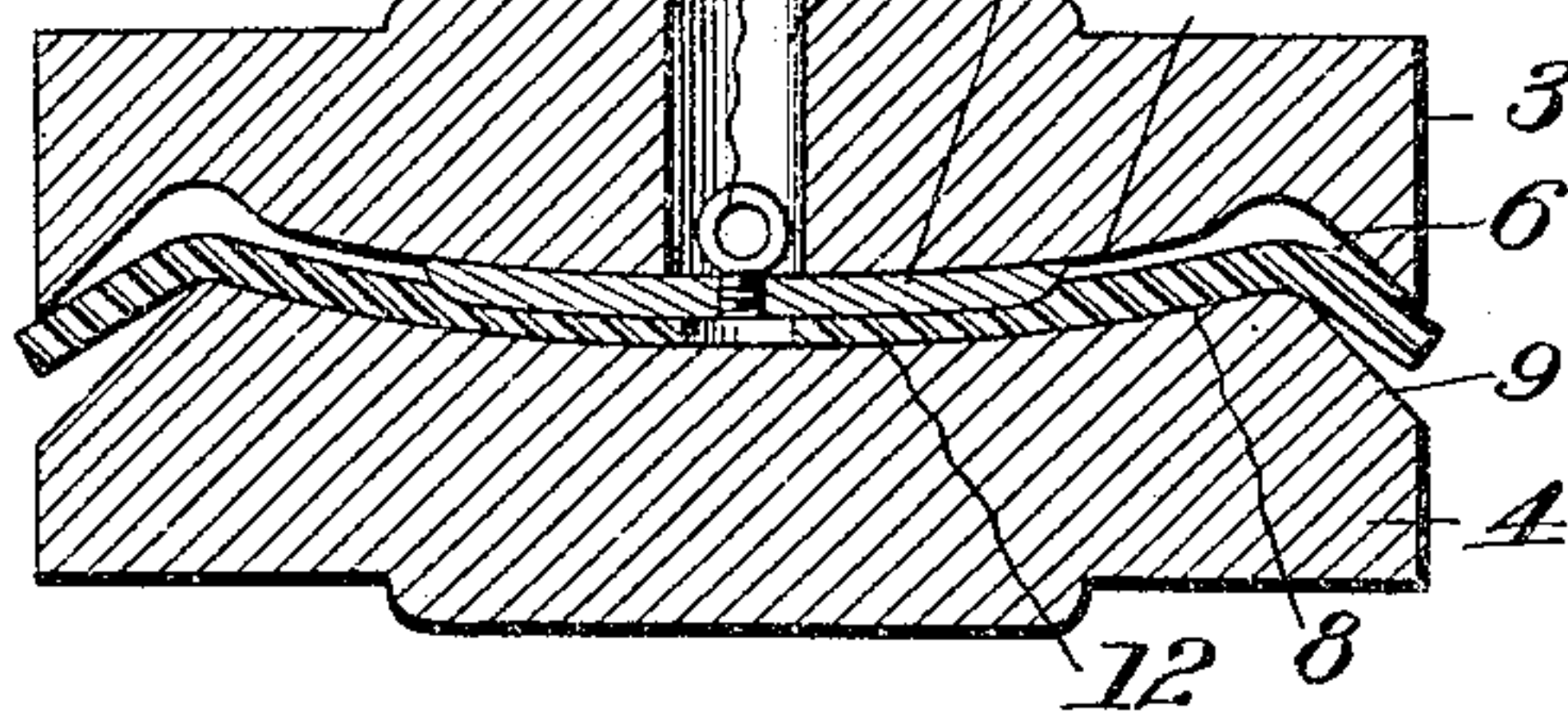


Fig. 3.

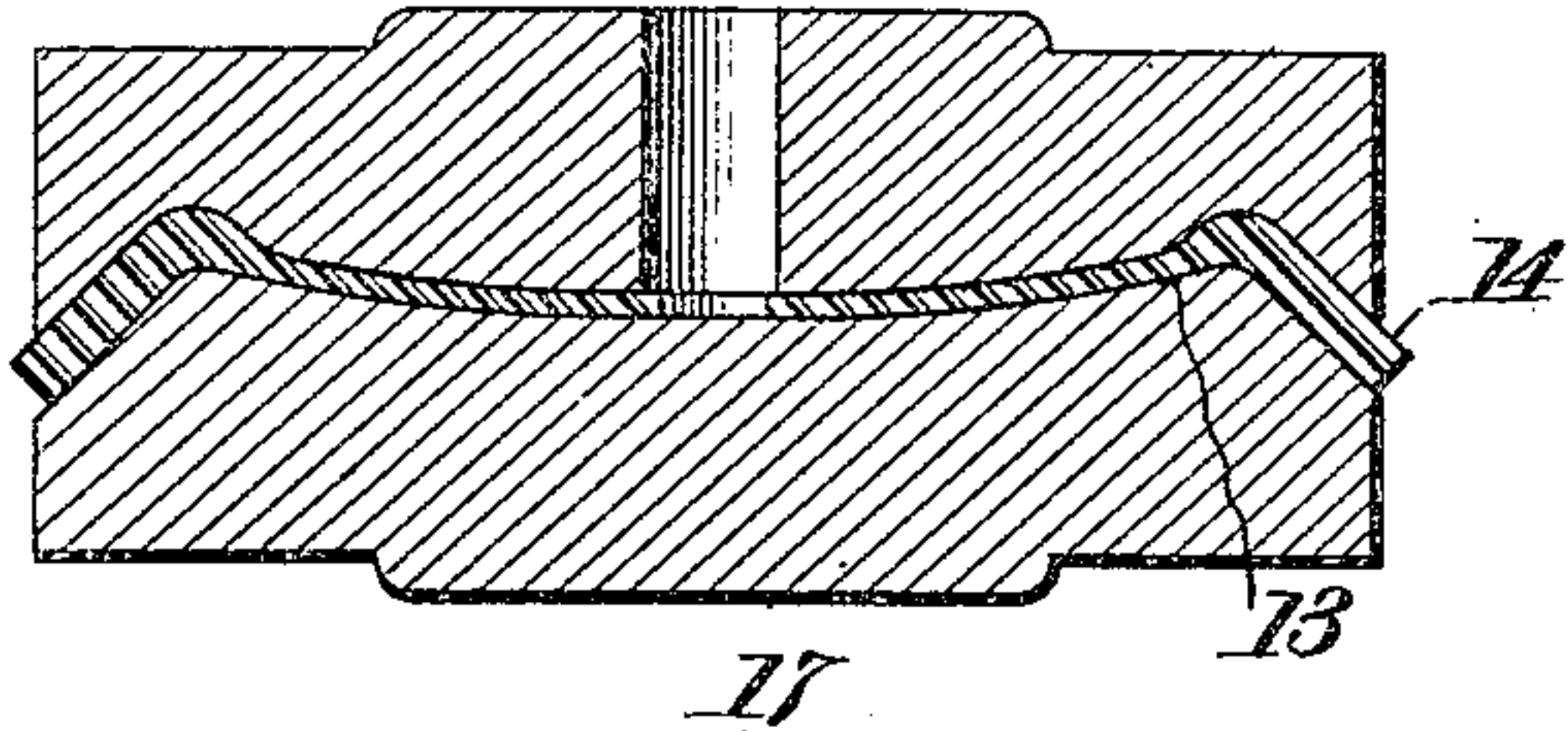


Fig. 4.

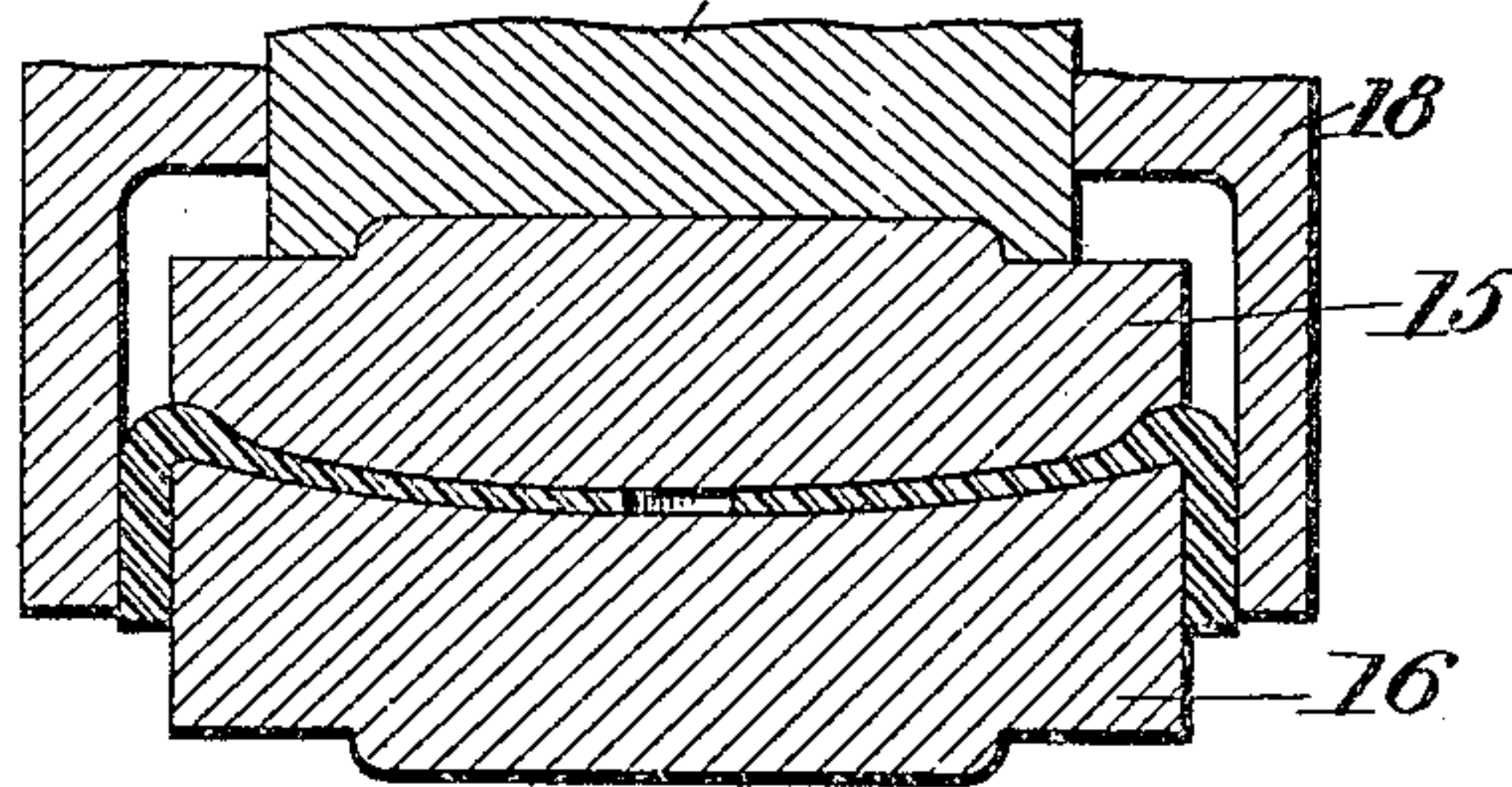


Fig. 5.

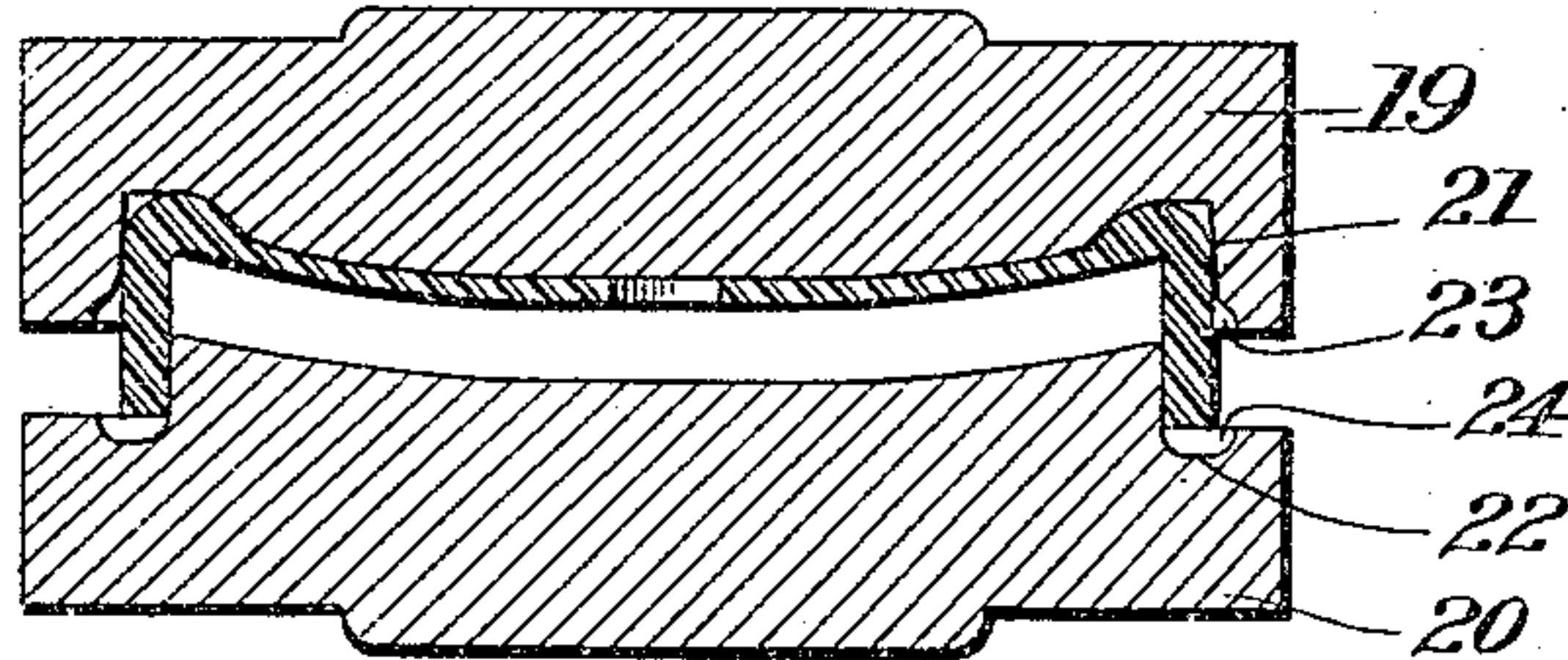
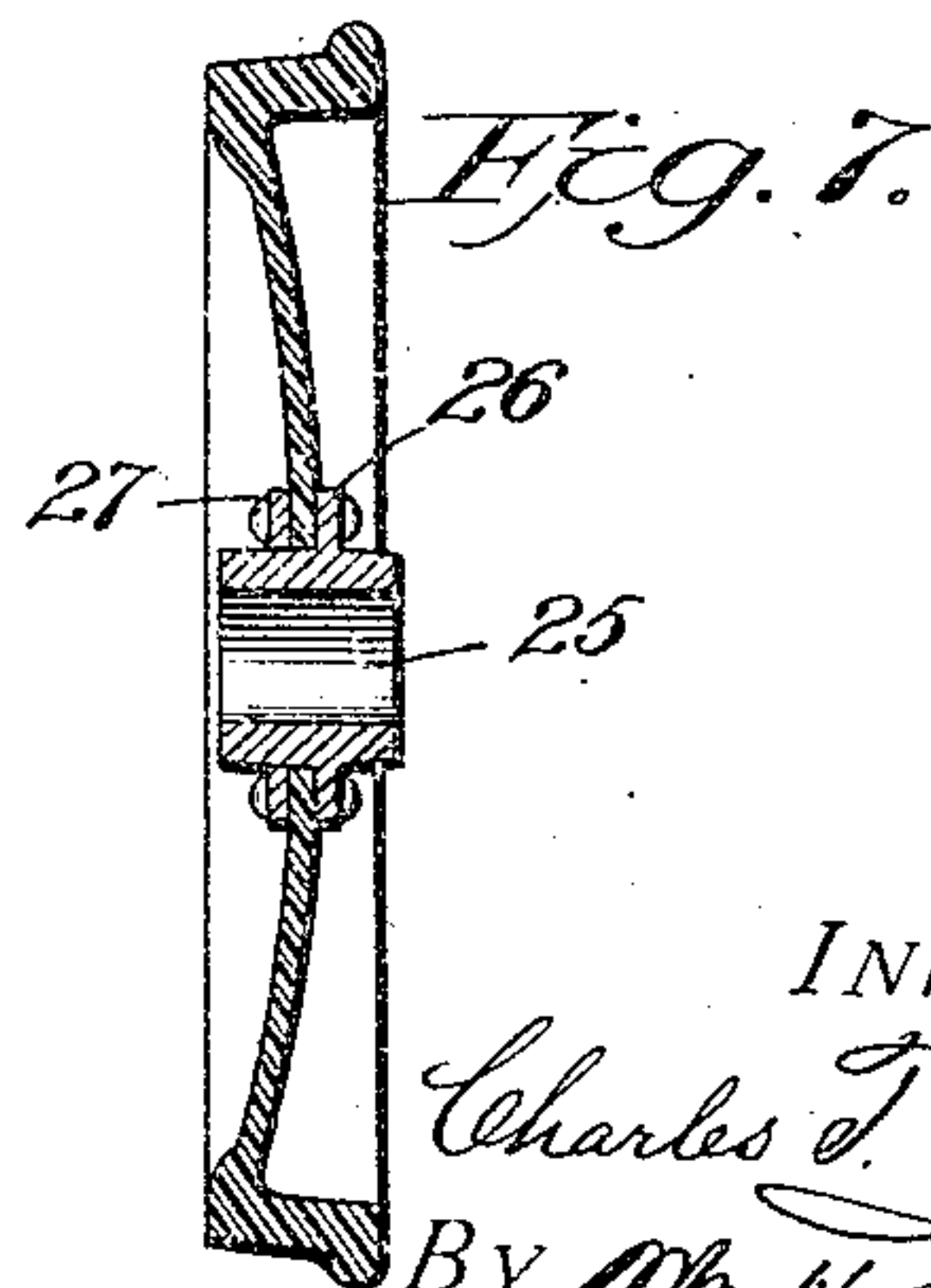
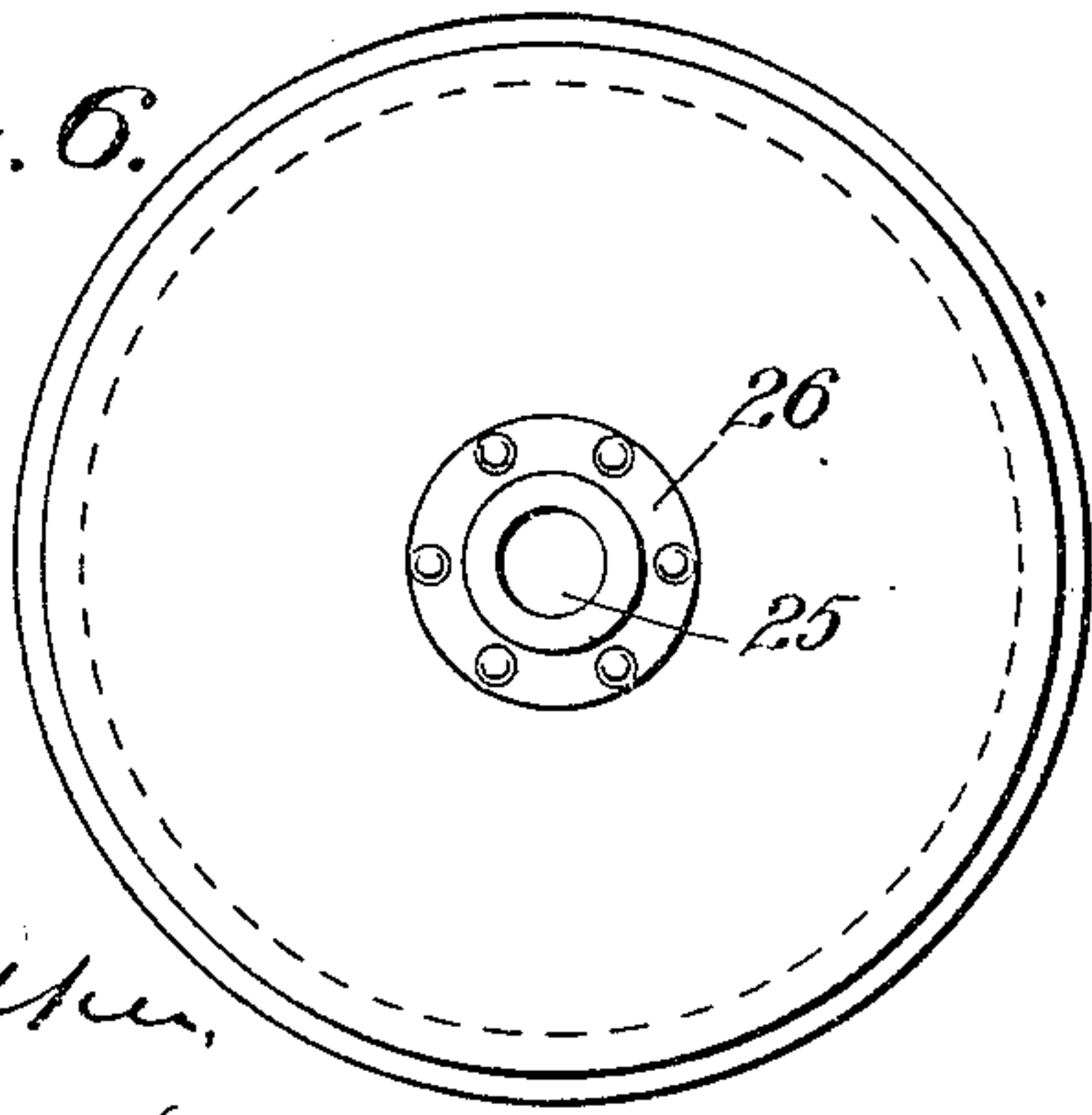


Fig. 6.



WITNESSES:

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CHARLES T. SCHOEN, OF PHILADELPHIA, PENNSYLVANIA.

CAR-WHEEL.

SPECIFICATION forming part of Letters Patent No. 792,465, dated June 13, 1905.

Original application filed June 22, 1904, Serial No. 213,726. Divided and this application filed February 28, 1905. Serial No. 247,685.

To all whom it may concern:

Be it known that I, CHARLES T. SCHOEN, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a certain new and useful Improvement in Car-Wheels, of which the following is a full, clear, and exact description.

The main purpose of the invention is to produce a car-wheel from a disk of wrought metal by reducing and bending the same to shape by means of dies. A disk of metal with a central perforation is first reduced in thickness adjacent to the perforation and a preliminary bend given to its other portion, and then a further and more extensive reduction is effected, and then the edge is bent down substantially at right angles to the reduced body, and, finally, the bent-down rim is flanged to form the flanged tread of the wheel. The hub of such a wheel is an independent structure suitably secured within the hole previously mentioned after the same has been suitably enlarged for the purpose.

In the accompanying drawings, illustrating the invention, in the several figures of which like parts are similarly designated, Figure 1 is a cross-section of the disk of metal. Fig. 2 is a vertical cross-section of a pair of first-operation dies. Fig. 3 is a vertical cross-section of the same dies as those shown in Fig. 2 arranged for performing the second operation. Fig. 4 is a vertical section of the third-operation dies, whereby the rim is bent down. Fig. 5 is a vertical section of the final-operation dies, whereby the flanged tread is formed out of the previously-bent rim. Fig. 6 is an elevation of the finished wheel with the hub applied. Fig. 7 is a vertical section of the finished wheel.

1 is a disk of suitable wrought metal, preferably steel, having a central perforation 2. This disk is subjected to the action of a pair of dies 3 4, the upper die having the web-forming projection 5, the flanging-lip 6, and a perforation 7, and the lower die having a matrix 8 and complemental flanging-lip 9.

In performing the first operation a movable die auxiliary 10, having an eye 11, is placed upon the blank centrally thereof, so that when the dies are brought together the die auxiliary 10 reduces the metal blank centrally around its perforation, as at 12. After this is done the dies are parted and the die auxiliary removed, and then the same dies are brought together and a further reduction of the body of the blank is effected, as shown at 13, Fig. 3, to constitute the web of the wheel, and the rim 14 of the blank is bent down obliquely to the body. In performing the foregoing operations a marginal portion of the blank is left of its original thickness, and this thick portion is utilized, as will presently appear, to form the relatively thick tread, flange, and angle between the tread and web, thereby gaining at the most vulnerable portions of the wheel a thickness of metal that will resist the strains put upon the tread and flange without added parts. Next the blank is subjected to the action of the dies 15 16, the plunger 17 descending to put the pressure upon the dies, after which the annular plunger 18 descends around the plunger 17 and over the dies and bends down the rim at right angles to the body of the wheel. Next the thus bent blank is subjected to the action of the dies 19 20, Fig. 5, which are provided, respectively, with the tread-forming cavities 21 and 22 and the flange-forming cavities 23 24, so that when these dies are brought together the bent-down rim is reduced in width and increased somewhat in thickness or upset and the flange formed substantially as shown in Fig. 7. The perforation in the blank, which has been reduced in diameter by the successive operations of the dies, is then enlarged in any suitable way to receive the hub 25, Figs. 6 and 7, said hub having a flange 26 placed against the web and a washer 27 placed upon the opposite side and all riveted together. The blank is subjected to the action of the dies while in a heated condition.

The process herein described forms the subject of the original case filed June 22, 1904,

Serial No. 213,726, from which this case is divided in accordance with the requirement of the Patent Office.

What I claim is—

- 5 1. A wrought car-wheel, having a reduced web, and a bent tread and an upset flange of relatively greater thickness than the web, constructed as an integer.
- 10 2. A wrought car-wheel, having a reduced web, a bent tread and an upset flange of rela-

tively greater thickness than the web, the web, tread and flange being integral, and an attached hub.

In testimony whereof I have hereunto set my hand this 27th day of February, A. D. 15 1905.

CHARLES T. SCHOEN.

Witnesses:

WM. L. ACHILLES,
THOMAS GEO. SELL.