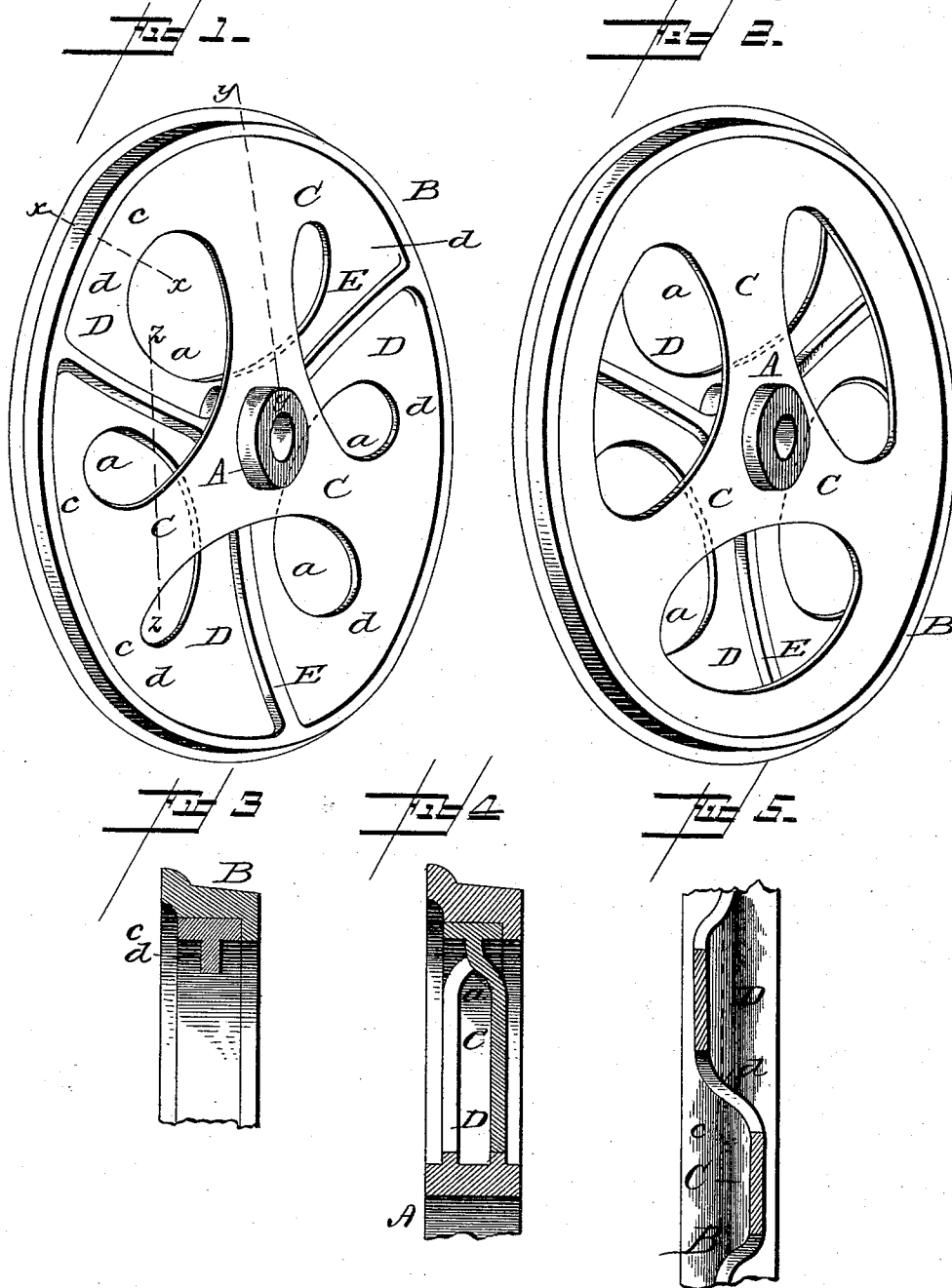


(No Model.)

F. H. RUNDQUIST-WANNER.
WHEEL.

No. 479,722.

Patented July 26, 1892.



WITNESSES:
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UNITED STATES PATENT OFFICE.

FRANS HJALMAR RUNDQUIST-WANNER, OF STOCKHOLM, SWEDEN.

WHEEL.

SPECIFICATION forming part of Letters Patent No. 479,722, dated July 26, 1892.

Application filed January 15, 1892. Serial No. 418,215. (No model.)

To all whom it may concern:

Be it known that I, FRANS HJALMAR RUNDQUIST-WANNER, a subject of the King of Sweden, and a resident of Liljeholmen, Stockholm, Sweden, have invented certain new and useful Improvements in the Construction of Wheels; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a perspective view of a car-wheel of my improved construction. Fig. 2 represents a slightly modified construction of the same. Fig. 3 is a cross-section on the broken line marked *x x* in Fig. 1. Fig. 4 is a radial sectional view on the line marked *y y*, and Fig. 5 is a cross-section through the curved spoke-webs on line *z z*.

Like letters of reference denote corresponding parts in all the figures.

This invention has relation to wheels made of metal, and is more particularly intended as an improvement on car-wheels, having for its object to reduce the weight of such wheels without unduly sacrificing their strength and at the same time give them a certain amount of elasticity.

With these objects in view my invention consists in the novel construction of the central portion or web of the wheel-body, as will be hereinafter more fully described and claimed.

Referring to the drawings, the letter A designates the hub, B the rim, and C D the intermediate body of the wheel. This central part or body consists of two webs C and D, connecting in the nature of spokes the rim with the hub. The inner ends of these spoke-webs, where they are connected to the hub, are straight and approximately parallel to each other, as shown more clearly in Fig. 4; but as they approach the rim they are curved toward each other, as shown at *c* and *d*, so as practically to merge into each other on the inner side of the rim, forming a continuous web or flange *c d*, connecting obliquely the spoke-webs C and D with the rim B. The

edges of said webs C and D are curved hypercycloidally, as shown at *a*, forming open spaces or sections alternating with the solid webs. To give these spoke-webs sufficient strength and stiffness in wheels for the trucks of railway-cars, I prefer to cast them with radial reinforcing-ribs E on their inner sides facing each other; but these ribs may be omitted, if desired, and are not necessary in wheels intended for street-cars. In some cases where exceptional strength is desirable—as, for example, the wheels of locomotives or heavy passenger-coaches—the rim B and rim-webs *c d* may be reinforced by an annular rib or flange F on the inside of the rim, as illustrated in Fig. 2, said rim overlapping the webs and the outer ends of their radial reinforcing-ribs E. This additional feature does not, however, change or affect the construction and arrangement of the webs C D.

This wheel is not only very strong and durable, but possesses a certain amount of elasticity, which is very desirable to insure the smooth and even running of the cars on the track. It may be cast or forged of malleable or wrought iron or steel or any other suitable metal or combination of metals, as may be found desirable.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The combination, in a wheel, of the hub A, rim B, and spoke-webs C and D, alternately merging into one another in hypercycloidal curves *a* between the hub and the rim, substantially as set forth.

2. As an improved article of manufacture, a metallic wheel having the hub and rim connected by a central part or body comprising the alternating spoke-webs C and D and their connecting oblique rim-webs *c* and *d*, constructed and arranged substantially as and for the purpose shown and set forth.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

FRANS HJALMAR RUNDQUIST-WANNER.

Witnesses:

AUG. JONSSON,
ELBER SJUNGBERG.