

(No Model.)

J. F. PFETCH.
COGGED WHEEL.

No. 462,994.

Patented Nov. 10, 1891.

Fig. 1.

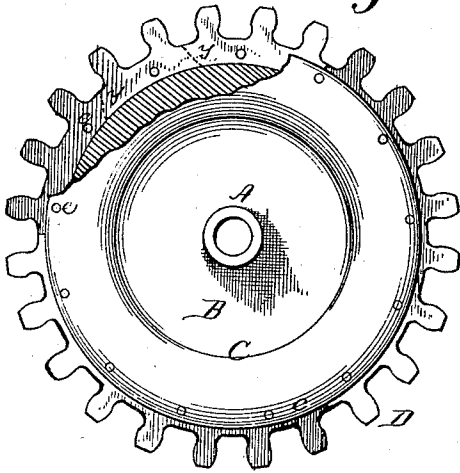


Fig. 2.

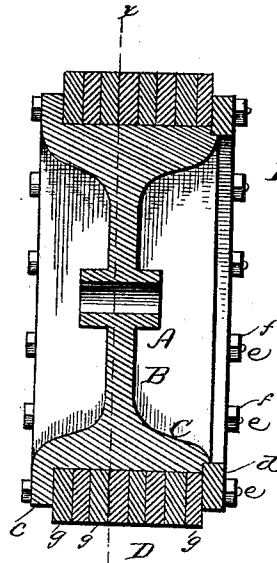
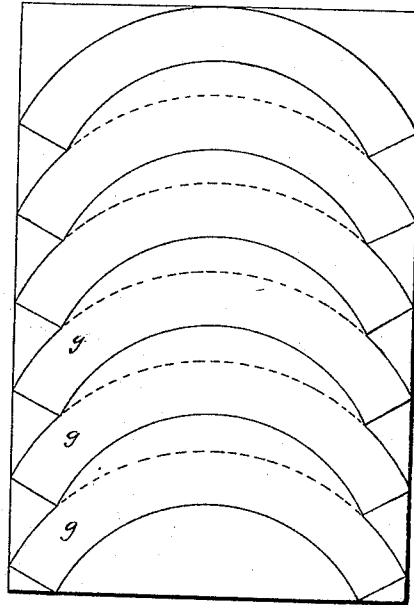
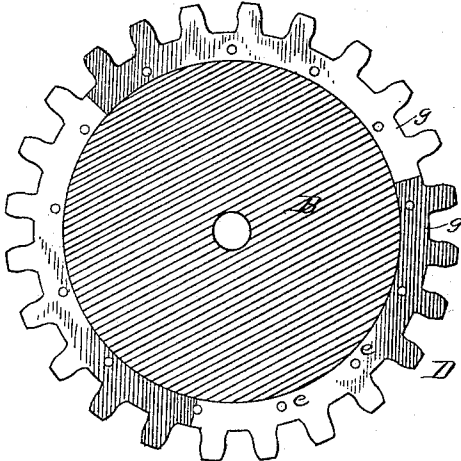


Fig. 4.

Fig. 3.



Witnesses:
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UNITED STATES PATENT OFFICE.

JACOB F. PFETCH, OF ERIE, PENNSYLVANIA.

COGGED WHEEL.

SPECIFICATION forming part of Letters Patent No. 462,994, dated November 10, 1891.

Application filed April 16, 1891. Serial No. 389,147. (No model.)

To all whom it may concern:

Be it known that I, JACOB F. PFETCH, a citizen of the United States, residing at Erie, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Cogged Wheels; and I do hereby declare the following to be a full, clear, and exact description of the invention, reference being had to the accompanying drawings, which form part of this specification.

My invention has relation to cogged wheels, and relates more particularly to that class of cogged wheels which have the cogs or teeth made of some other and less resonant material than metal for the purpose of rendering the wheels noiseless.

My invention consists in the novel construction, combinations, and arrangements of parts hereinafter described and claimed.

Referring to the accompanying drawings, illustrating my invention, Figure 1 is a side elevation of a cogged wheel constructed according to my improvements, a portion of the metallic body being broken away. Fig. 2 is a transverse sectional view; Fig. 3, a sectional view on the dotted line *xx* of Fig. 2, and Fig. 4 a diagram illustrating the manner of cutting the arc-shaped segments from the raw material.

A designates the hub of the wheel, B the web, and C the rim, all made preferably and as shown of a single casting. The rim C is formed with a straight flange *c* on one edge, and a flat ring *d* is fitted to the other edge and is held in position by bolts *e*, having nuts *f* on their ends, said bolts passing through the flange *c*, the ring *d*, and the interposed non-metallic portion D. This non-metallic portion, which forms a supplementary ring and in which the teeth are cut, is composed of a number of arc-shaped or segmental sections *g g*, placed end to end, so as to encircle the rim C, and laid side by side to make up the required width between the flange *c* and the ring *d*. The joint formed by the juncture of two of the sections or segments is arranged so as not to coincide with the joint of the two segments alongside, and all the joints are, so far as possible, made to break throughout the entire wheel. The manner in which the segments *g g* are cut from the raw material will be readily understood from the diagram, Fig.

4, the full lines indicating the lines on which the material is cut and the dotted lines the contour of the completed sections previous to cutting the teeth. It will be seen that there is but very little waste material, the only pieces being the small triangular sections at the ends of the segments and the infinitesimal portion which is cut from the outside edges of the segments in truing up the wheel previous to cutting the teeth. Any desired number of segments may be used to complete the circle which forms the circumference of the wheel. In the drawings three segments are shown; but more or less than three can sometimes be employed with advantage, and sometimes it may be found advantageous to cut out and use complete rings or washers. When the segments are cut from the raw material, as described, they are cemented together, end to end and side by side, and submitted to a very heavy pressure and dried, care being taken to break joints, as before mentioned. The segments being now joined and cemented together in the form of a flat thick ring, this ring is driven on over the rim C. Holes are bored for the reception of the bolts *e e*, and the metallic ring *d* being placed in position, the nuts *f* are tightened up and the wheel finished by truing up the outside of the segments and cutting the teeth.

In addition to the great saving of material effected by building up the toothed portion of the wheel of a number of segments joined end to end and side by side, and which may be cut from the raw material with but little waste, a very great increase of strength is effected where the segments are of wood by reason of the fact that each segment can be made to cross grains with the segments next adjoining.

In case any tooth or several teeth should break off, the wheel can be readily repaired by cutting out the damaged portion and dovetailing in a section, as indicated by the dotted lines *y y* in Fig. 1.

Having fully described my invention, I claim—

In a cogged or toothed wheel, the combination of the hub A, the web B, and the rim C, made integral with said hub and web, extending laterally on each side of the web, and provided on one edge with a flange *c*, with the

non-metallic supplemental toothed rim D, composed of the segmental sections *g g*, fitted on the rim C and cemented together, the ring *d*, fitted to the edge of the said rim C, and the
5 bolts *e e*, passing through the said ring *d*, the supplemental rim D, and the flange *c*, all constructed and arranged substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 31st day of 10 March, 1891.

JACOB F. PFETCH.

Witnesses:

JOHN S. RILLING,
JOS. B. CONNOLLY.