

(No Model.)

E. DANFORD
FELLY FOR VEHICLE WHEELS.

No. 262,650.

Patented Aug. 15, 1882.

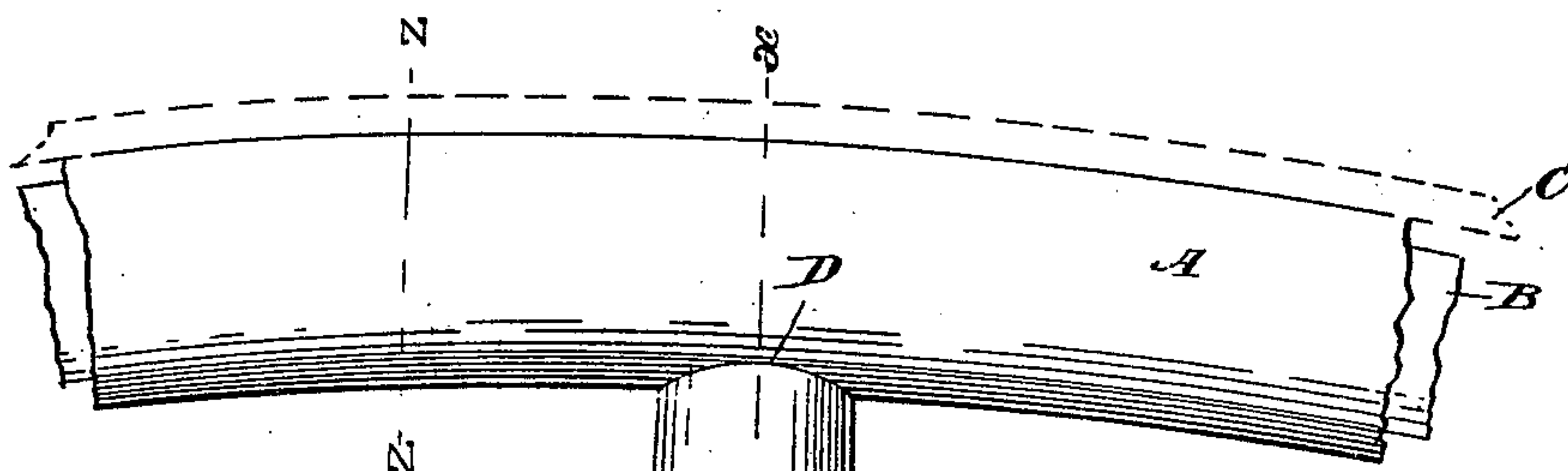


Fig. 1

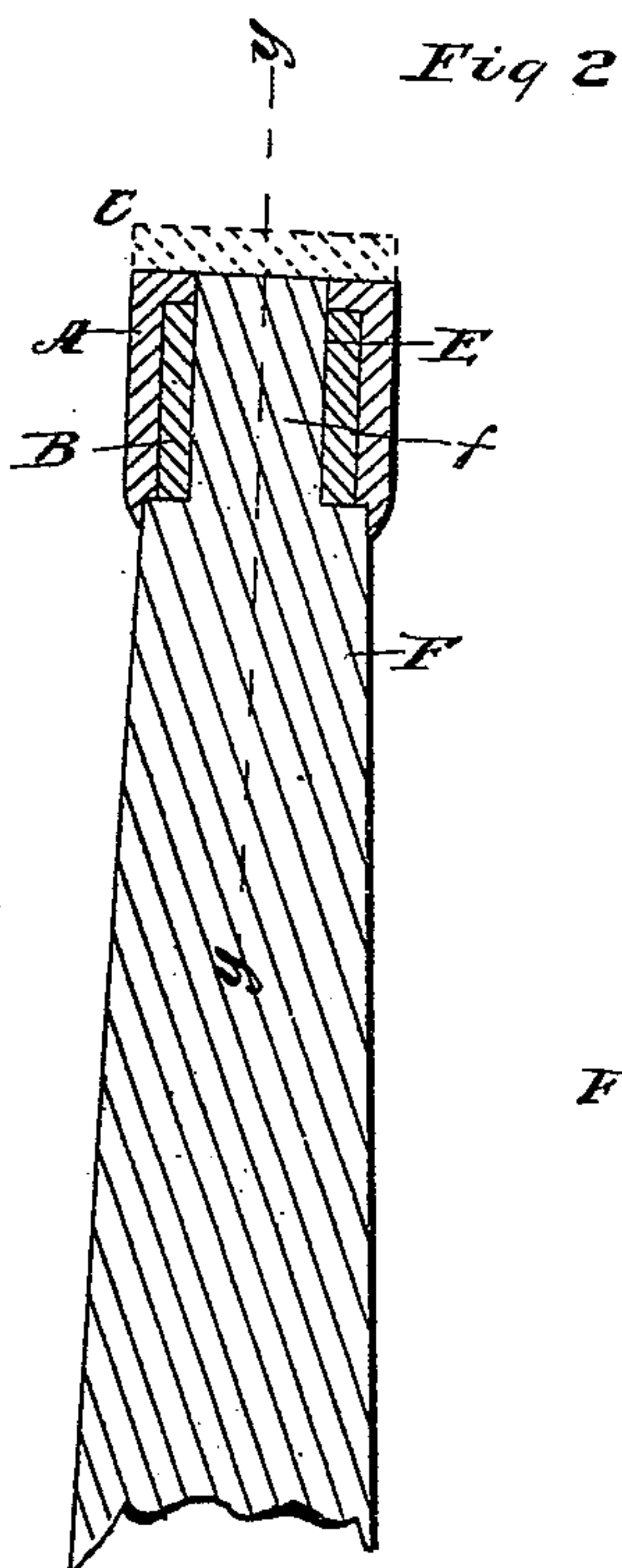


Fig. 2

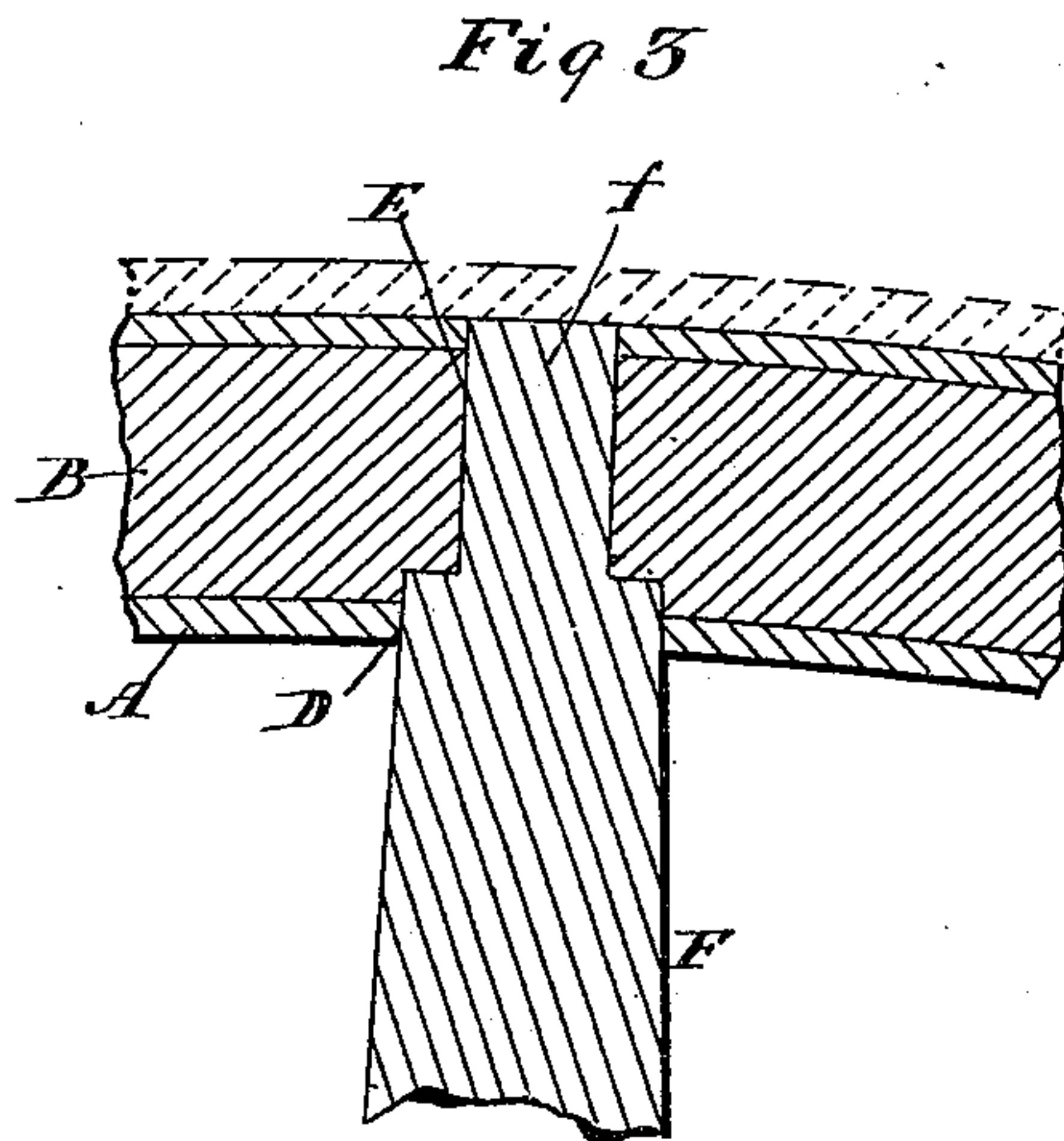


Fig. 3

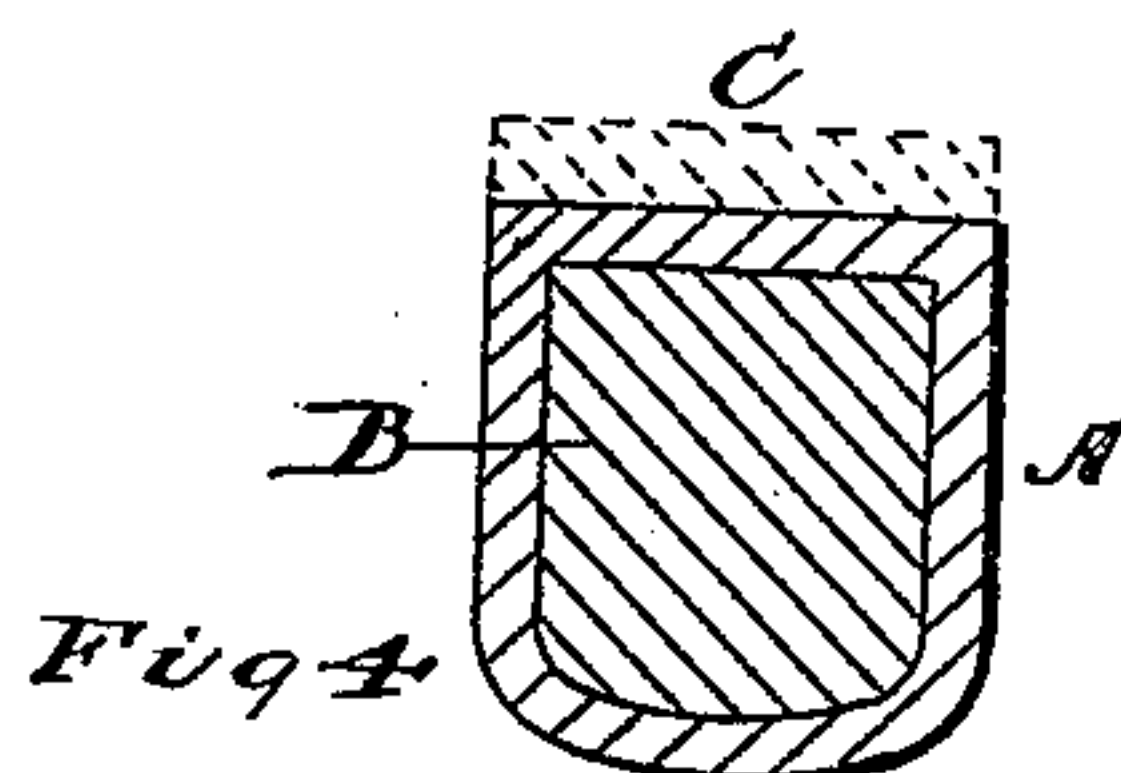


Fig. 4

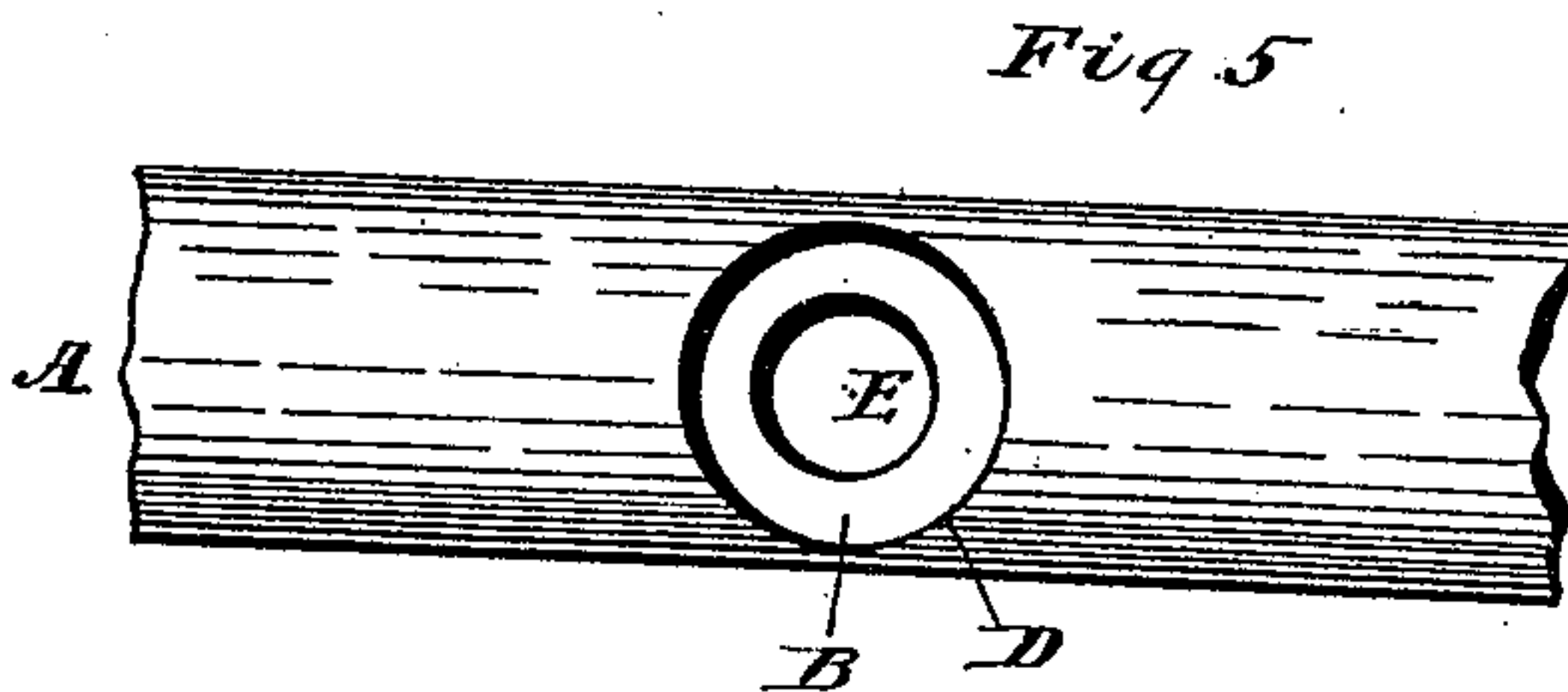


Fig. 5

Witnesses
W. C. Corlies
Geo. H. Butler.

Inventor
Ebenezer Danford
By Coburn & Thayer
Attorneys

UNITED STATES PATENT OFFICE.

EBENEZER DANFORD, OF GENEVA, ILLINOIS.

FELLY FOR VEHICLE-WHEELS.

SPECIFICATION forming part of Letters Patent No. 262,650, dated August 15, 1882.

Application filed April 15, 1882. (No model.)

To all whom it may concern:

Be it known that I, EBENEZER DANFORD, a citizen of the United States, residing at Geneva, in the county of Kane and State of Illinois, have invented certain new and useful Improvements in Fellies, which are fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of a felly and spoke constructed in accordance with my invention, each being broken away for the greater part of its length. Fig. 2 is a section on the line $x x$ in Fig. 1. Fig. 3 is a section on the line $y y$ in Fig. 2. Fig. 4 is a section on the line $z z$ in Fig. 1. Fig. 5 is a plan view of the felly (for a part of its length) from the inner side.

The same letters denote the same parts in all the figures.

My invention relates to wheels for vehicles. I have already obtained a patent (No. 183,647, dated October 24, 1876) for a hollow metal felly for such wheels. Such a felly is greatly preferable to one of wood, in that it is not affected by moisture, expands and contracts equally with the tire, and is not materially weakened, as a wooden felly is, by the holes which are necessary for the insertion of the spokes. It is, however, found to be more stiff and (unless the tube be inconveniently thick) less solid than is desirable.

The object of the present invention is to remedy these defects without foregoing any of the advantages which have been stated, and also to give a firmer connection between the felly and a wooden spoke than is practicable with either a wooden or hollow metal felly.

To this end it consists in a continuous-walled tubular metal felly with a filling of wood or equivalent material, in the method of fitting the tube and filling to each other, and in the peculiar conformation of the socket for the reception of the spoke, which will be hereinafter described and claimed.

In the drawings, A denotes a metal tube without longitudinal opening, which may be advantageously made of iron of the same thickness as gas-pipe.

B denotes a strip of wood or solidified paper or other equivalent material, of suitable dimensions to fill the tube.

C denotes the tire of the wheel. The tube being made of length sufficient for a felly, the

strip of wood or other equivalent filling, preferably after being prepared with a light coating of oil or white-lead, is driven into the tube while the latter is straight. The filled tube is then bent between rollers into the requisite circular form, and the rollers may be so adjusted by means already known as to compress the tube slightly in the process of bending, and so fit it more tightly on the filling, to the increased solidity of the whole felly. The ends may be joined either in the way set forth in my patent already referred to or by other convenient means. The felly thus formed has all the advantages of the metal tubular felly, while the weight of metal can be greatly diminished, and it combines lightness, spring, and strength in a greater degree than can be attained by any other construction of which I have any knowledge. The wood being closely surrounded by the metal and there being only a single joint in the tube, the wood is practically inaccessible to moisture, and therefore no swelling or shrinkage is to be apprehended. The tube having its periphery continuous not only excludes moisture and dust, but also preserves its shape and its grasp of the filling much more perfectly than if made of a plate of metal bent to embrace the filling and simply brought into contact at the edges. Of course, if desired, the felly may be constructed of sections joined end to end, each consisting of a tube and filling, without departing from the principle of my invention.

D denotes the aperture in the inner wall of the tube A for the reception of the spoke. This aperture is made large enough to receive the body or full thickness of the spoke F. The corresponding aperture, E, in the wood filling is also for a short distance broad enough to receive the whole spoke; but for the rest of its depth it is only large enough to receive the tenons f . The felly is thus countersunk in such a way that the shoulder of the spoke at the base of the tenon rests against a corresponding shoulder in the felly, and the spoke is tightly embedded in a surrounding surface of wood, and is thus much more firmly held than it could be if inserted transversely in a metal tube. At the same time, the spoke, being closely surrounded by metal at its entrance into the felly, is protected against the influence of moisture, the whole forming a connec-

tion superior to any other with which I am acquainted. The tenon is preferably made long enough to pass quite through the felly (a perforation being in that case made in the outer wall of the tube for that purpose) and rests at its end against the tire, as shown in the drawings. This gives the spoke a still firmer seat.

What I claim as my invention, and desire to secure by Letters Patent, is—

10 1. A felly composed of a metal tube continuous in periphery and a filling of wood or equivalent material, substantially as and for the purposes described.

15 2. A felly composed of a metal tube and a filling of wood or equivalent material, and provided with a spoke-socket of a diameter in its outer part sufficient to receive the whole thickness of the spoke, and abruptly diminishing to a diameter in its inner part sufficient only to receive the tenon, substantially as and for the purposes described.

3. A felly composed of the metal tube A, provided with apertures D in its inner wall and opposite smaller apertures in its outer wall, and of the wood or equivalent filling B, provided with corresponding apertures, E, passing quite through it, substantially as and for the purpose described.

4. The herinbefore-described method of constructing a felly, consisting in forcing a filling of wood or equivalent material into a metal tube, and then bending and at the same time compressing the tube thus filled between rollers, for the purpose of making the tube and filling fit each other tightly.

EBENEZER DANFORD.

Witnesses:

JNO. C. MACGREGOR,
M. B. GAGE.