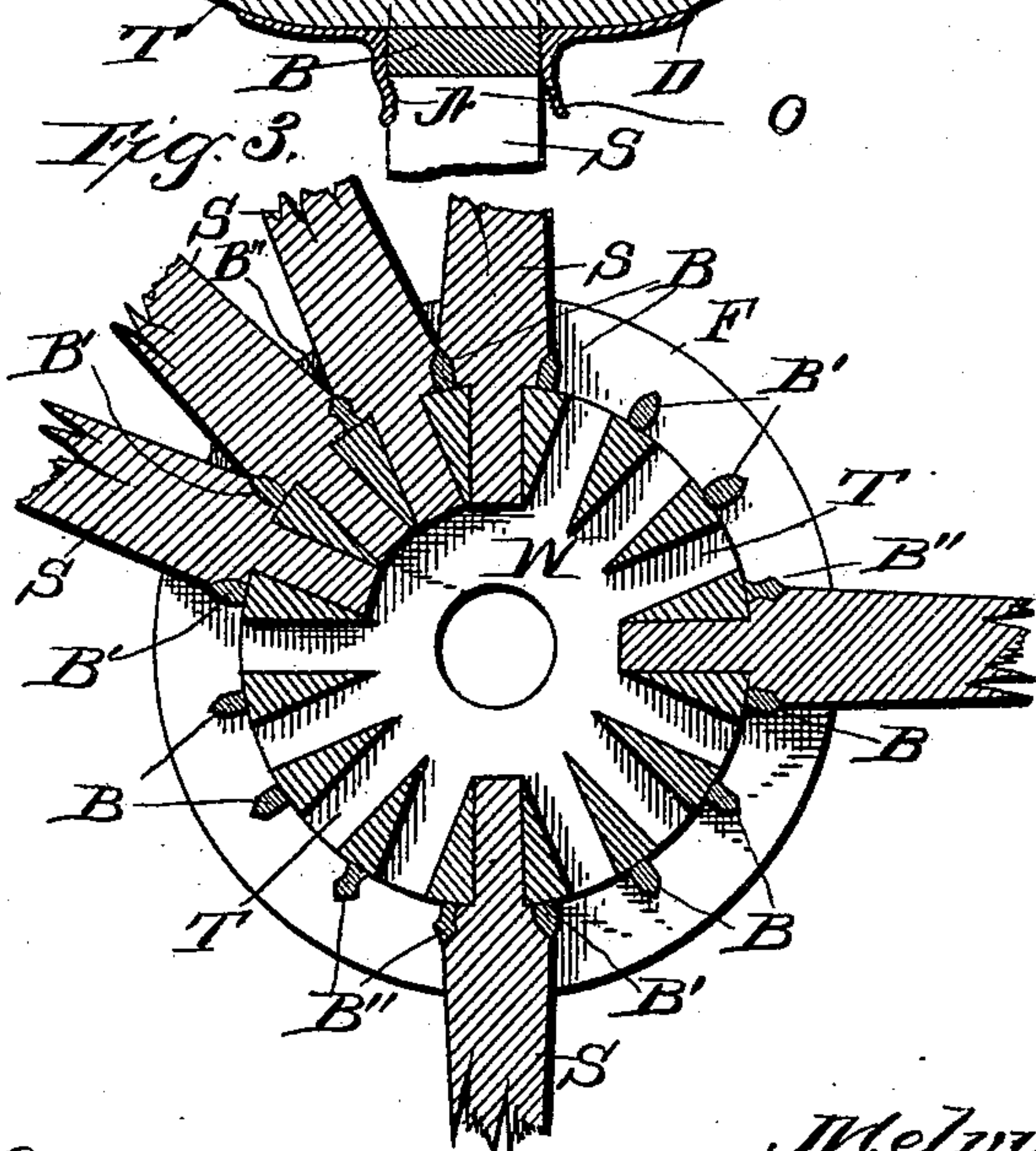
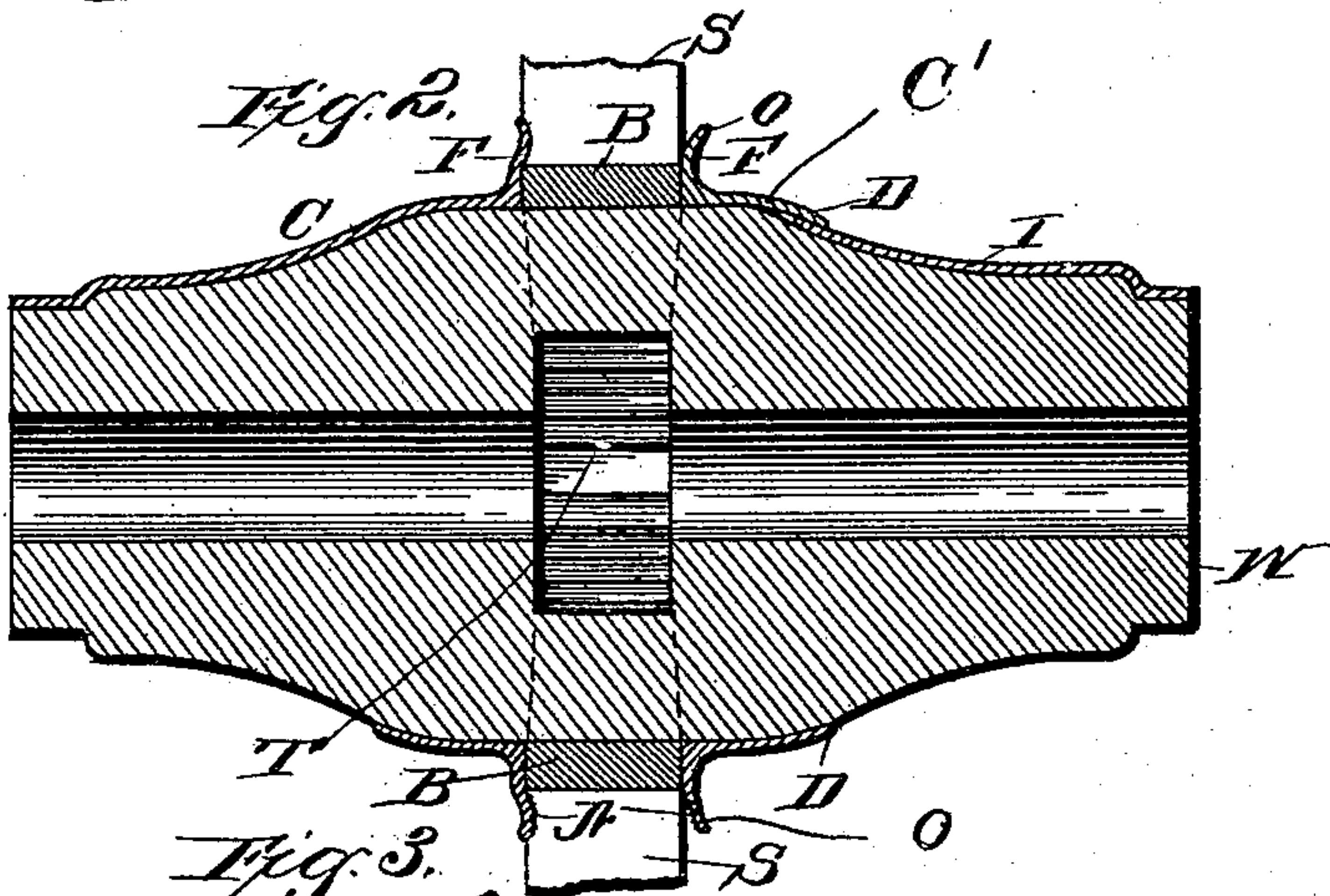
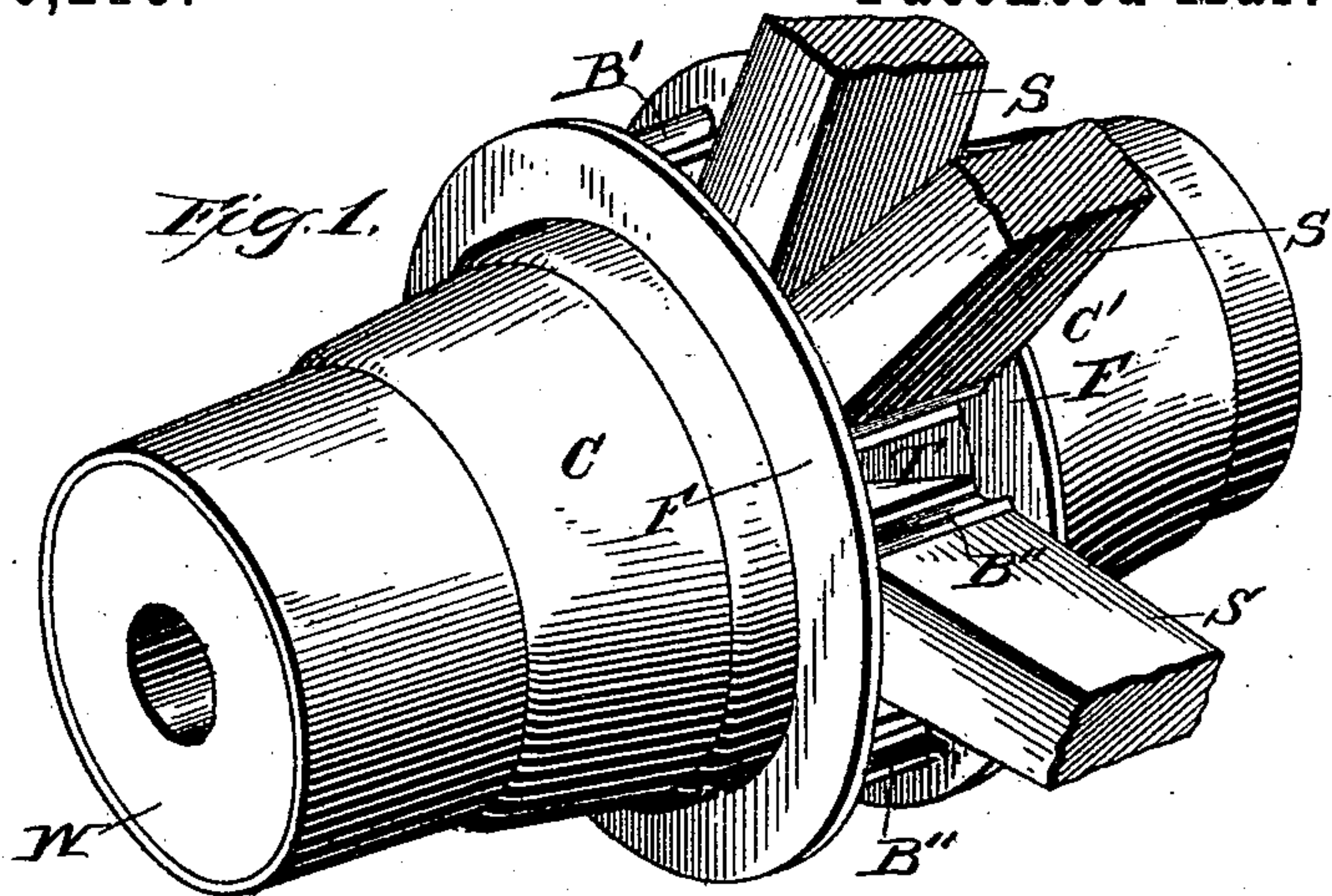


(No Model.)

M. L. SMITH.
WHEEL HUB.

No. 470,216.

Patented Mar. 8, 1892.



Witnesses

E. C. Kullman

N. J. Collamer

Inventor

Melvin L. Smith

By his Attorneys,

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

MELVIN L. SMITH, OF COLUMBUS, OHIO.

WHEEL-HUB.

SPECIFICATION forming part of Letters Patent No. 470,216, dated March 8, 1892.

Application filed September 30, 1891. Serial No. 407,320. (No model.)

To all whom it may concern:

Be it known that I, MELVIN L. SMITH, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented a new and useful Wheel-Hub, of which the following is a specification.

This invention relates to carriages and wagons, and more especially to the wheel-hubs thereof; and the object of the same is to improve the construction thereof.

To this end the invention consists in the hub hereinafter more fully described and claimed, and as illustrated on the sheet of drawings, wherein—

Figure 1 is a perspective view of this improved hub. Fig. 2 is a longitudinal section thereof, showing the upper and lower halves slightly different in construction. Fig. 3 is an enlarged cross-section through the center of the hub, showing bars of various shapes, with and without the spokes.

Referring to the said drawings, the letter W designates the wooden body of the hub, in radial holes or mortises T in which are seated the inner ends of the spokes S.

C C' are malleable-iron collars, forming parts of a single casting, which is pressed onto the body of the hub by means well known in the art, and these collars have at their inner edges parallel flanges F, standing opposite the longitudinal ends of the spoke-tenons, and are connected between the spokes by integral malleable-iron bars B; which may be of various shapes in cross-section, as shown in Fig. 3—that is to say, the bars marked B have straight parallel sides and are beveled on their outer corners to a sharp angle. The bars marked B' are oval in cross-section, the oval being preferably slightly elongated at the outer edges of the bars, and the bars marked B'' are similar to those marked B, except that their sides are dished or grooved slightly; but I prefer the first construction described.

After the collars C are put onto the hub-body and the spokes are inserted between the bars B great pressure is brought to bear to force the collars slightly toward each other, whereby the spokes are firmly clamped between them; but in order that the finish of the spokes will not be scratched or marred I preferably bend the outer edges of the flanges F of the collars outwardly slightly above

the outer edges of the bars, as seen at O at the right of Fig. 2, and I sometimes provide the inner faces of the outwardly-bent portions of the flanges with serrations or notches N, as shown at the bottom of this figure. After the spokes are driven in place, (which driving can be done without scratching them,) the pressure that is brought to bear bends the outer portions of the flanges inward, as seen at the left side of this figure, and embeds them into the wood of the spokes, so that the latter are held very firmly in place. During this pressure the bars B necessarily expand slightly as their length decreases, and hence they also slightly embed the spokes.

It will be observed that this hub requires no bolts, such as are usually employed to connect the flanges of two separate members, either between or through the inner ends of the spokes, yet the latter are tightly clamped between and embedded by the flanges and the bars and without scratching or marring their finish.

At the top of Fig. 2 I have shown a cast-iron sleeve I applied to the outer end of the hub, as is sometimes desired, and in this case the outer end of the collar C' is pressed down onto the sleeve, as at D', to hold said sleeve tightly in position. At the lower side of this figure the sleeve I is omitted, and here is illustrated, as at D, the manner in which the outer end of the sleeve is then pressed down directly onto the wooden body of the hub. However, these details will readily suggest themselves to the skilled manufacturer, although they cannot be taken advantage of unless the casting, including the collar members C C', as well as the bars B, is of soft metal throughout, aside from which limitation I do not wish to be confined to the specific construction set forth, as considerable change can be made therein without departing from the spirit of my invention.

What is claimed as new is—

1. In a wheel, the combination, with the mortised hub and the spokes radiating from the same, of the malleable casting pressed upon the hub and comprising a pair of annular collars located at opposite sides of the spokes, said collars being pressed into the spokes, and a series of collar-connecting bars spread by the compression of the collars into

the inner sides of the spokes, substantially as specified.

2. In a wheel, the combination, with the radially-mortised wooden hub and the spokes
5 having their tenons fitted therein, of a malleable-iron cylindrical casting pressed upon the hub and comprising opposite collars, spaced apart and provided at their inner edges with annular flanges and flange-connecting
10 bars elliptical in cross-section, the inner portions of their ellipse being more abrupt than their outer portions, said flanges being pressed into the outer edges of the spokes, and the bars, which are normally
15 longer than the width of the spokes, being thereby compressed longitudinally and spread laterally into the spokes, substantially as specified.

3. As an article of manufacture, a cylindrical malleable-iron casting for wooden hubs
20 of wheels, the same consisting of opposite collars spaced apart and provided at their inner edges with annular flanges, the outer peripheries of which are flared and the inner faces of which are roughened, and the transverse
25 connecting-bars for the flanges greater in length than the width of a spoke, substantially as specified.

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

MELVIN L. SMITH.

Witnesses:

FRANK HILTON.

F. L. SMITH.