

(No Model.)

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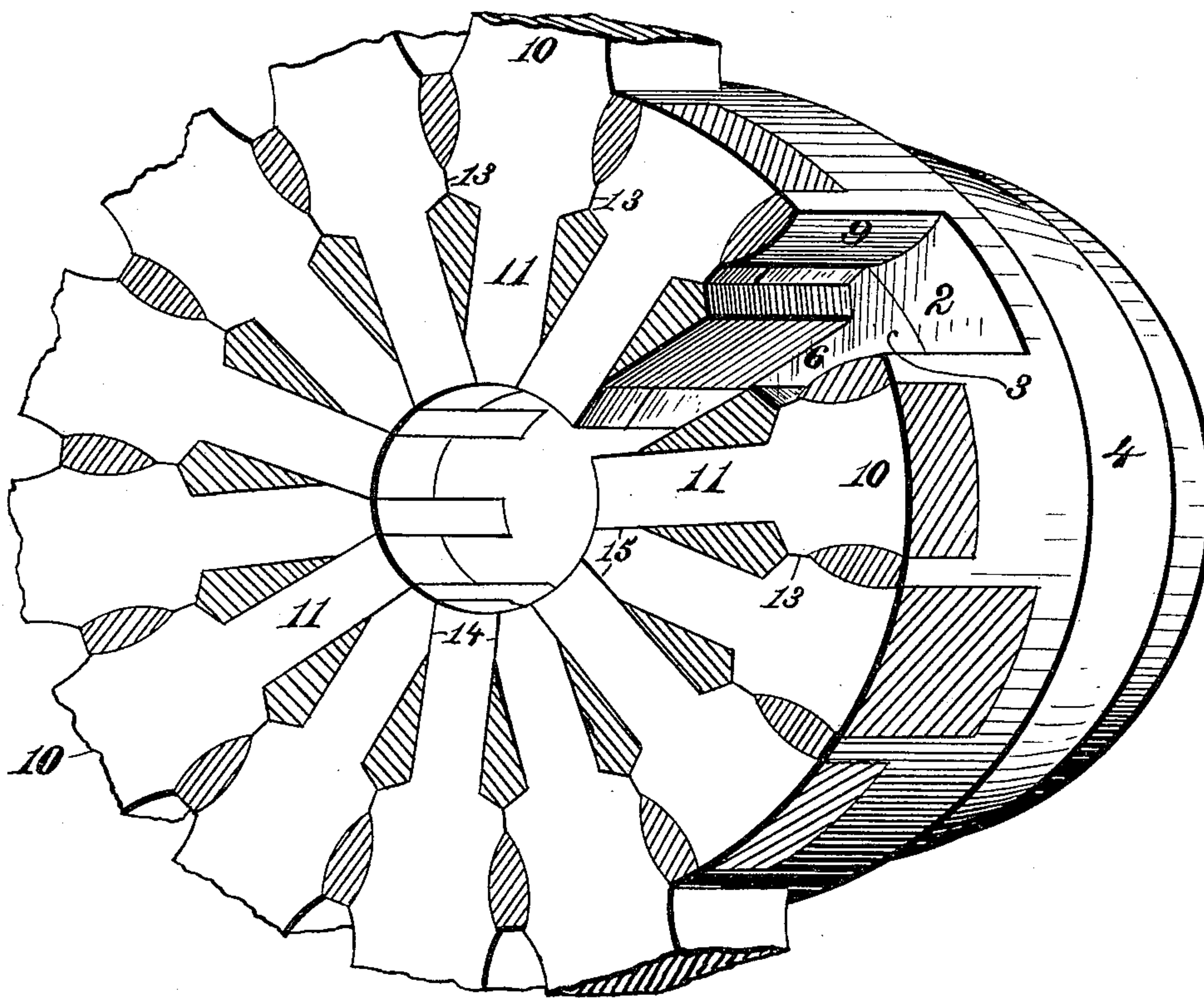
J. M. SWEET.

WHEEL HUB.

No. 365,106.

Patented June 21, 1887.

*Fig. 1.*



*Witnesses.*

Robert Everett.

J. A. Rutherford

*Inventor:*

*John M. Sweet.*

By 

By James L. Norris.

Atty.

(No Model.)

2 Sheets—Sheet 2.

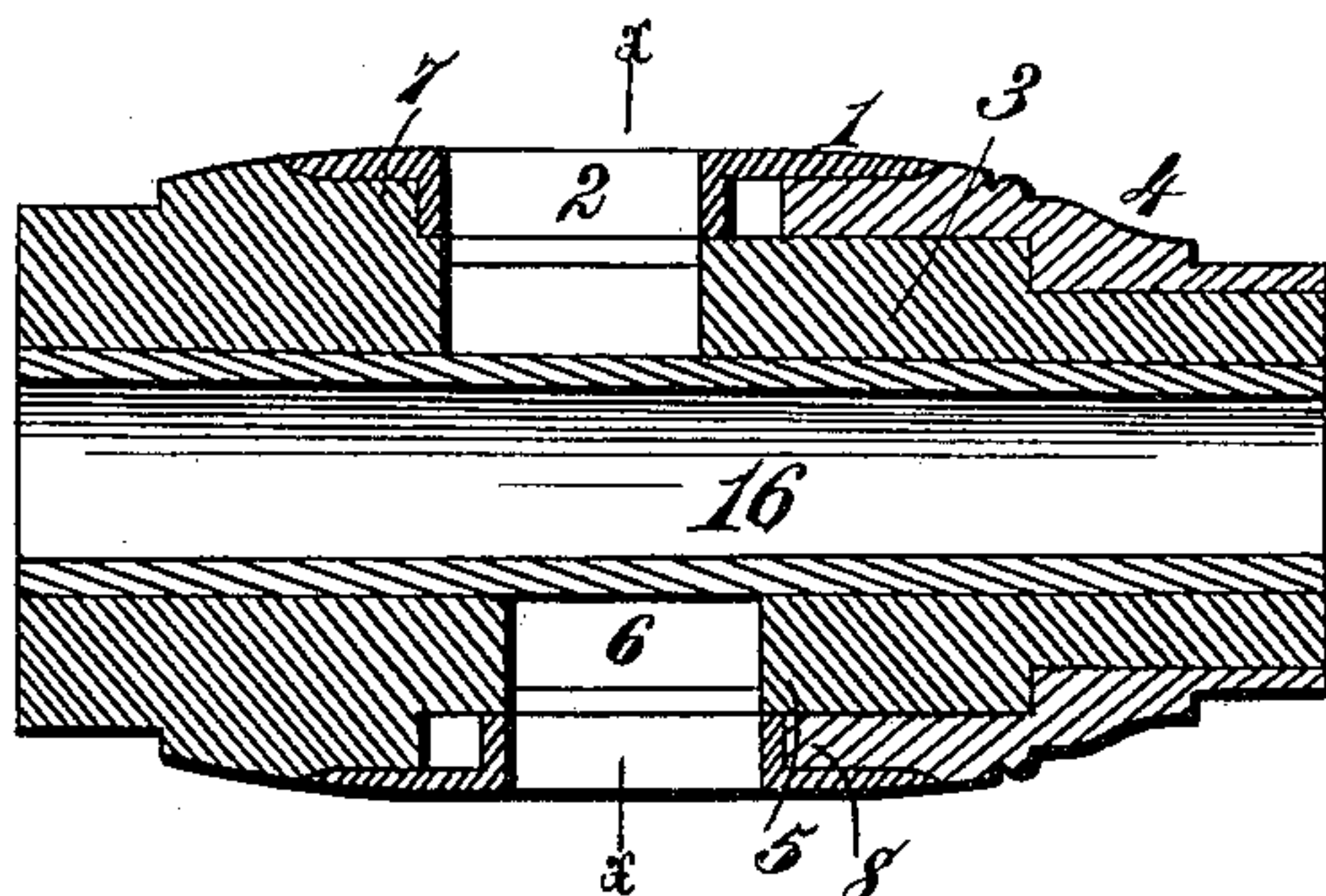
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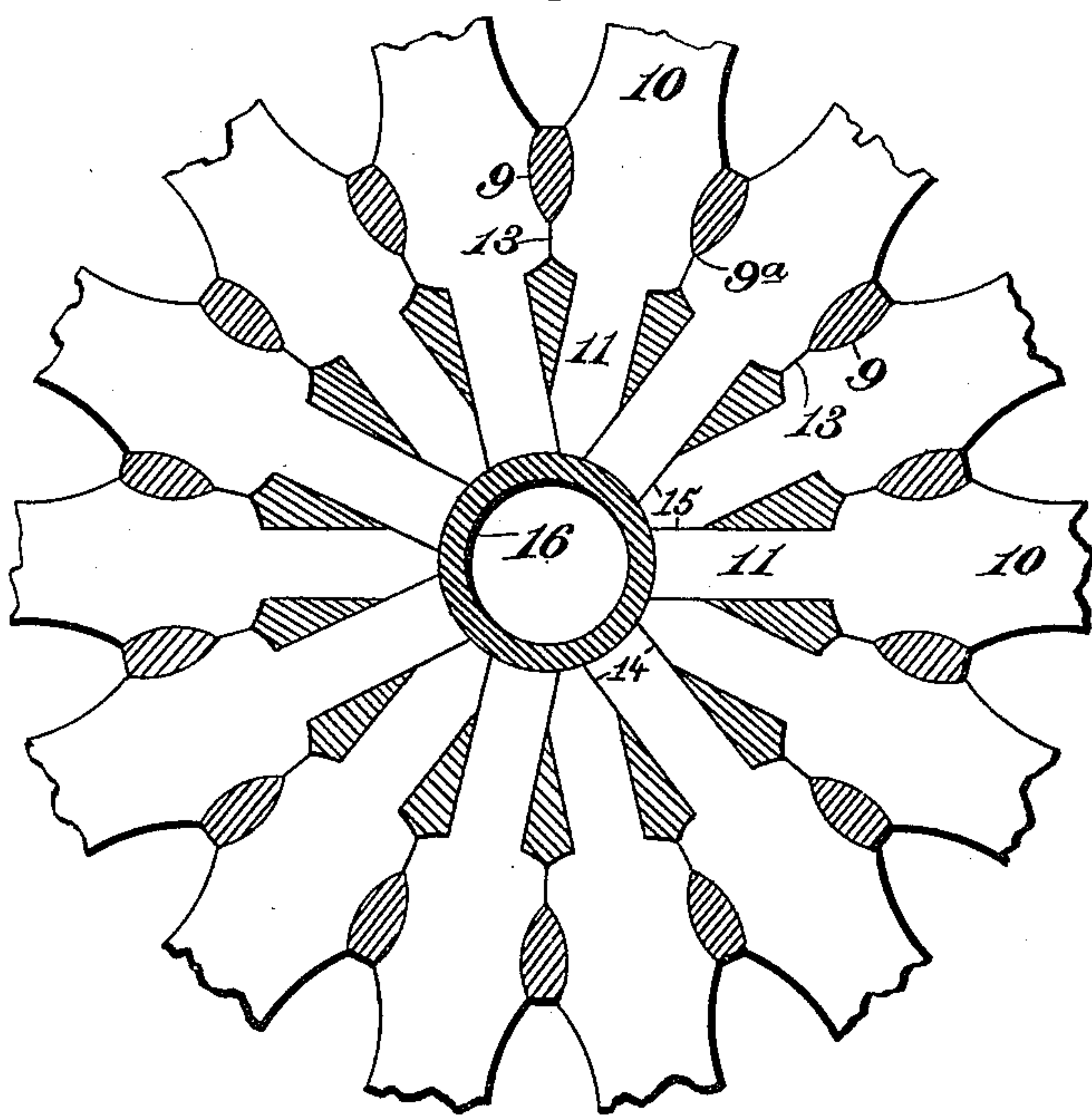
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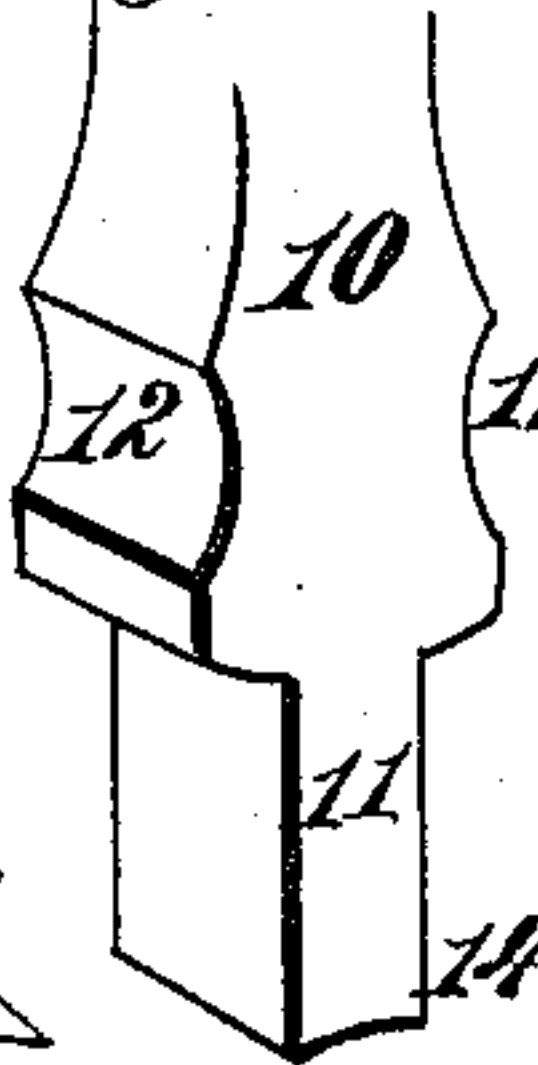
*Fig. 2.*



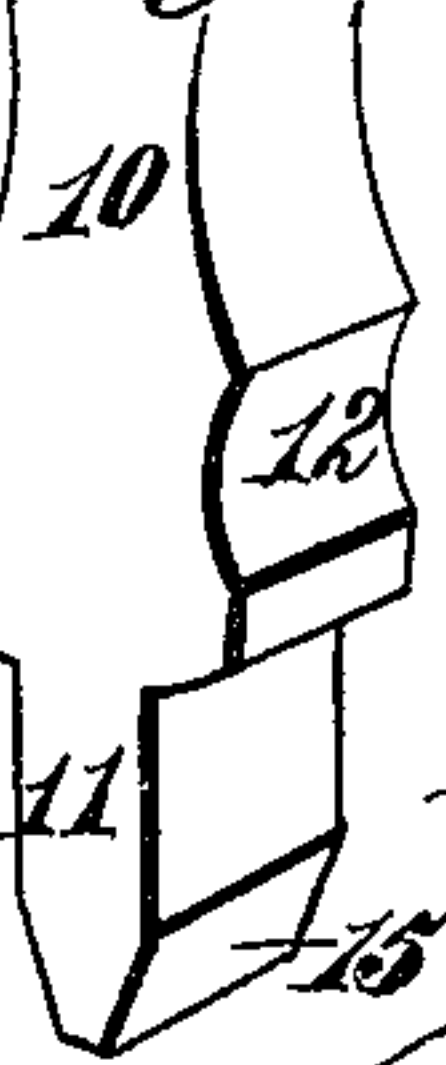
*Fig. 3.*



*Fig. 4.*



*Fig. 5.*



*Witnesses.*  
*John M. Sweet.*  
*J. A. Rutherford*

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*By James L. Norris.*  
*Atty.*



# UNITED STATES PATENT OFFICE.

JOHN M. SWEET, OF BATAVIA, NEW YORK.

## WHEEL-HUB.

SPECIFICATION forming part of Letters Patent No. 365,106, dated June 21, 1887.

Application filed December 28, 1886. Serial No. 222,833. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN M. SWEET, a citizen of the United States, residing at Batavia, in the county of Genesee and State of New York, have invented new and useful Improvements in Wheel-Hubs, of which the following is a specification.

My invention relates to improvements on the wheel-hubs for which Letters Patent No. 341,861 were issued to me May 11, 1886; and the object of my present invention is to provide a novel construction which shall not only increase the strength of the spokes, but provide greater solidity and holding power in the hub and impart graceful proportions to the parts composing the hub.

The object of my invention I accomplish by the features of construction and combination of parts, hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 is a sectional perspective view of a hub embodying my invention, one of the spokes being omitted. Fig. 2 is a longitudinal central section of a hub embodying my invention. Fig. 3 is a transverse section in the plane  $xx$ , Fig. 1; and Figs. 4 and 5, broken detail views of two of the wooden spokes detached from the hub, showing the square and the beveled end tenons.

In order to enable those skilled in the art to make and use my invention, I will now describe the same in detail, referring to the drawings, where—

The numeral 1 designates a metallic band or annulus of such width as to encompass that portion of the wooden hub which receives the spokes and project upon both sides thereof. In this band are formed sockets 2, which I term "inverted sockets," in view of the fact that they are projected inwardly instead of radiating from the outer surface of the band. These sockets are open at both ends, and are formed as shown in the drawings—viz., with an alternated or "staggered" arrangement. The band 1 is supported upon a wooden core, 3, and face-pieces 4, comprising the wooden hub proper. The core 3 is constructed with a collar or large portion, 5. In the collar are formed mortises 6, which register with the inverted sockets and are adapted to receive the tenons of the spokes. An annular shoulder, 7, is also

formed upon the core, which underlies the end or edge of the metallic band and abuts against the ends of the sockets on that side, and the other end of the core is turned off to a smaller diameter to receive the face-piece 4, which is an annulus having a collar, 8, similar to the shoulder 7, and underlying the opposite edge of the metallic band in the manner described. The face-piece is formed to closely embrace the diminished portion of the core and wholly surround the same. The opposite side faces of the sockets 2 in the metallic hub-band 1 are convexed, as at 9, and the inner ends of the walls of the sockets terminate at a short distance from the outer ends of the mortises in the wooden hub or core 3, as at 9<sup>a</sup>. The spokes 10 are provided at their inner ends with tenons 11 fitting the mortises 6 in the wooden hub, and the opposite sides of the spokes adjacent to the tenons 11 are concaved at 12 to fit the convex sides of the sockets 2. The sides of the spokes are in contact directly beneath the inner ends of the sockets, as at 13—that is, between the sockets and the outer end of the mortises in the wooden core or hub 3. By this means the spokes can be driven in full size at the concave portions, and the latter will assume the form necessary to fit the convex sides of the sockets, and as the spokes come in contact between the wooden core and the inner ends of the sockets 2 the strength of the structure is largely increased.

Some of the tenons 11 of the spokes have their sides parallel and full width for their full length, as at 14, while others have their inner extremities beveled at opposite sides, as at 15, and these beveled-end tenons alternate with the tenons having parallel sides, which greatly facilitates the construction of the hub, while the several tenons coact to brace all in position and render the hub solid, compact, durable, and strong.

The inner ends of the mortises in the wooden hub terminate at a distance from the axle-skein, so that the alternating square and beveled ends of the tenons all bear directly in contact with each, making a solid structure.

The inner ends of all the tenons bear directly upon the periphery of the metallic skein 16, which serves as an abutment to sustain the tenons and resist their inward thrust. The



square shoulders 13 of the spokes abutting directly and squarely against each other between the inner ends of the metallic sockets 2, provides for increased strength in the hub, the  
5 several features of construction each contributing to the desired end to produce a wooden hub which is very strong, solid, and durable.

The construction and arrangement of the parts give greater strength, solidity, and holding power, with a comparatively light structure, than the construction shown in my Letters Patent hereinbefore alluded to, which patented construction I hereby disclaim.

Having thus described my invention, what I  
15 claim is—

1. The combination, with a wooden hub having mortises, of a metallic hub-band formed of a single piece with sockets having convex side faces and terminating at their inner edges between their end walls at a distance from the  
20 outer ends of the mortises in the wooden hub, and spokes having tenons fitted in the hub-mortises, with their inner extremities bearing against the axle-skein, and provided with concave sides, said spokes having square shoulders 13, squarely abutting each other in the

space between the inner ends of the sockets in the hub-band and the outer ends of the hub-mortises, substantially as described.

2. The combination, with a wooden hub having mortises, of a metallic hub-band formed of a single piece with inwardly-projecting sockets having convex side faces and terminating at their inner edges between their end walls at a distance from the outer ends of the hub-mortises, and spokes having tenons, some of which have parallel sides their full length and the others beveled inner ends, said spokes having squared shoulders 13, squarely abutting each other in the space between the inner ends  
30 of the sockets in the hub-band and the outer ends of the hub-mortises, and said parallel-sided and beveled-end tenons alternating with each other and bearing at their inner extremities against the axle-skeins, substantially as  
35 described.  
40

In testimony whereof I affix my signature in presence of two witnesses.

JOHN M. SWEET.

Witnesses:

MOSES E. TRUE,  
JAMES R. COLT.