

H. E. VICK.  
Improvement in Hubs for Carriage Wheels.  
No. 121,025.  
Patented Nov. 14, 1871.

Fig.1.

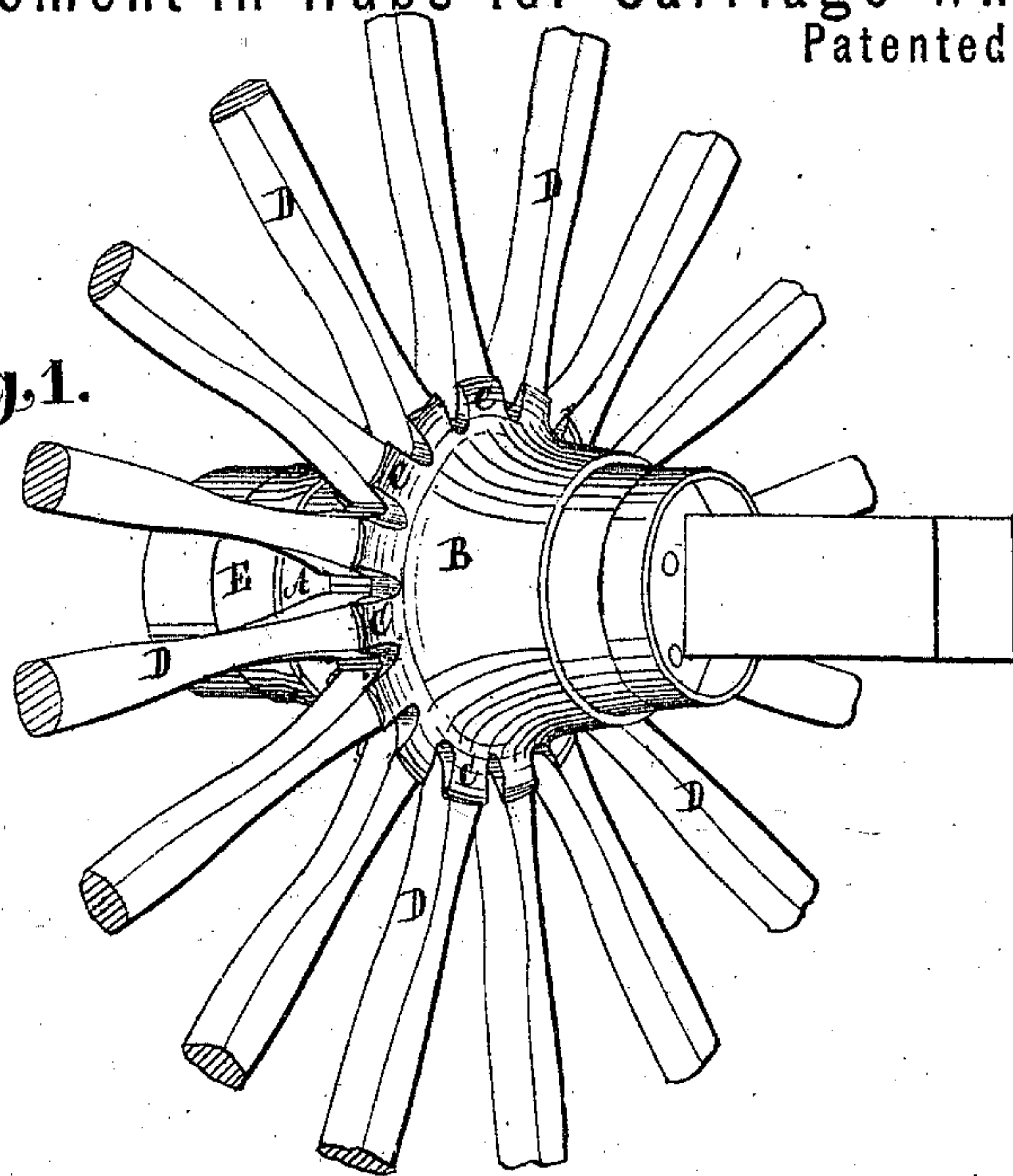


Fig.2.

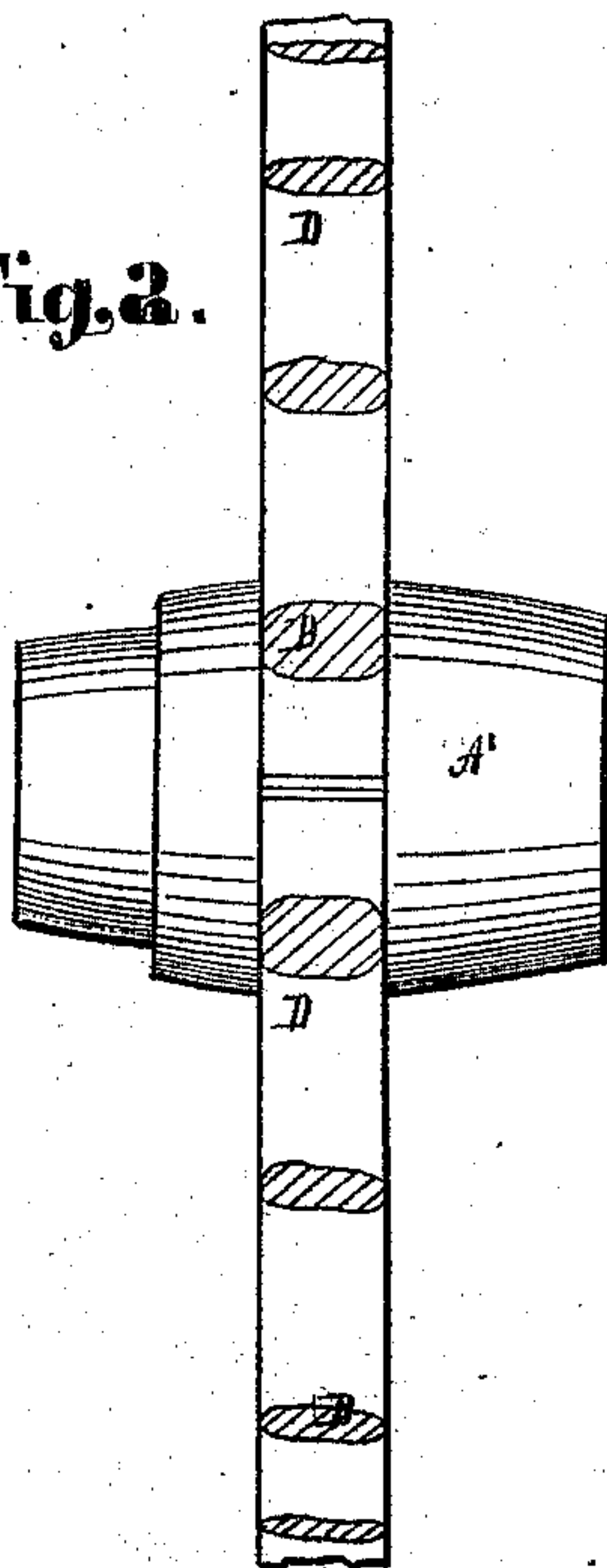
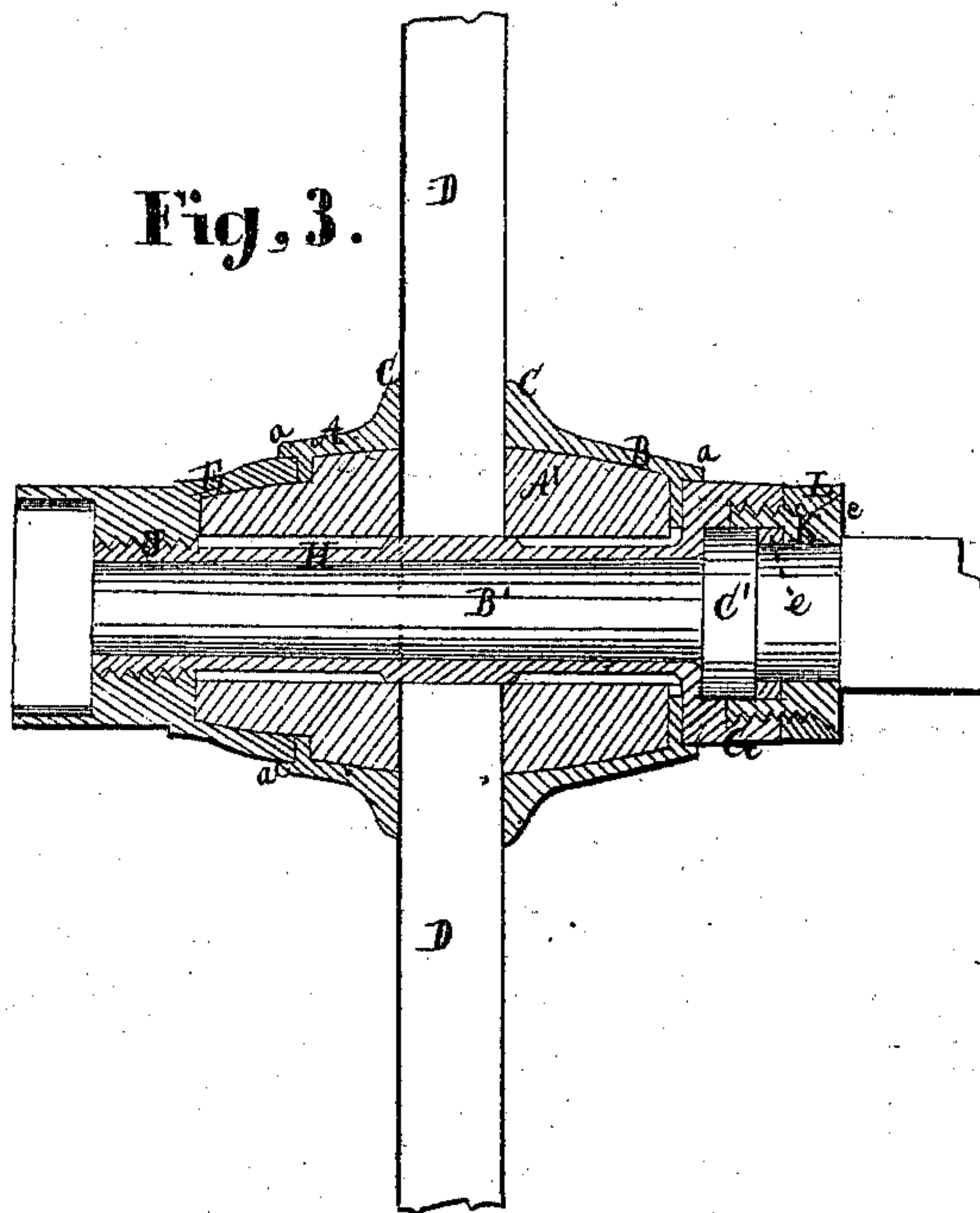


Fig.3.



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Fig. 4.

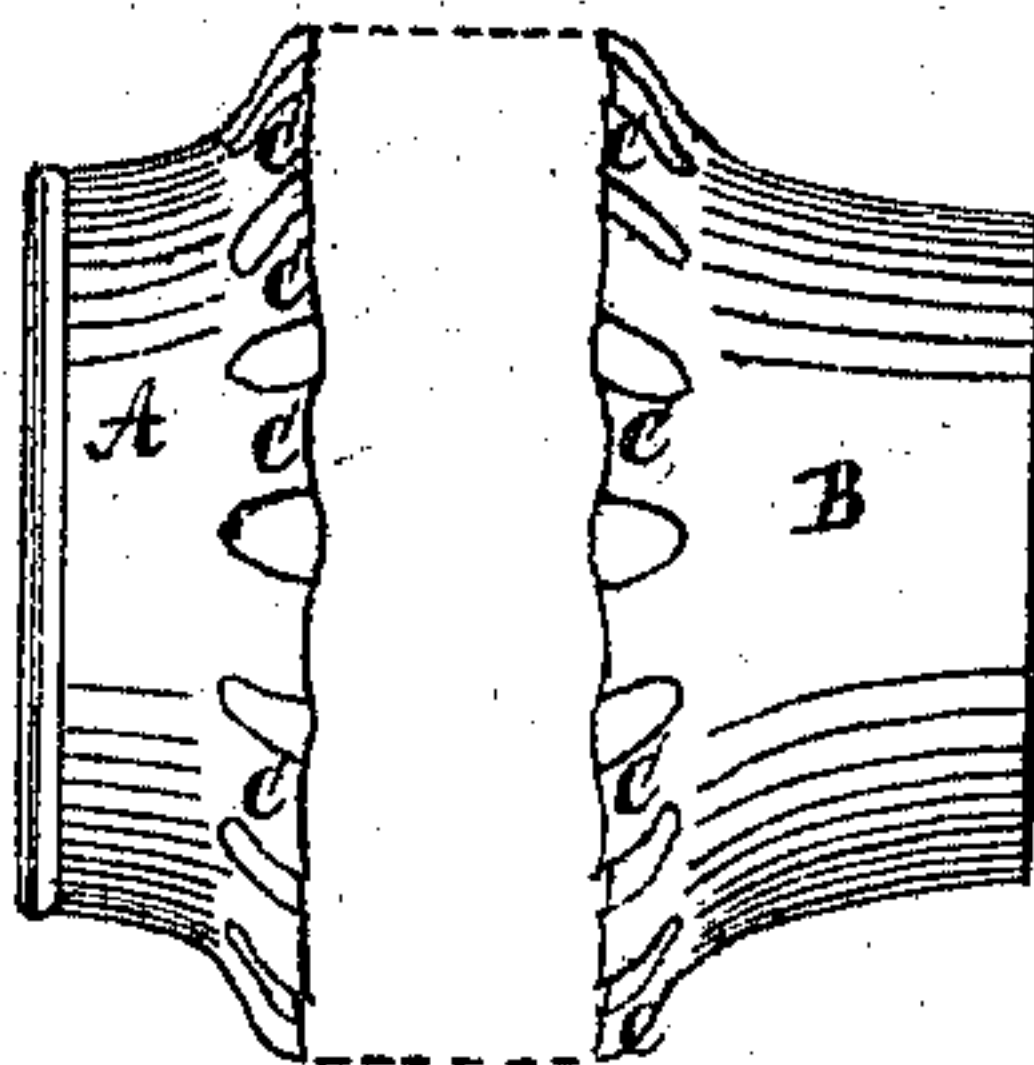


Fig. 5.

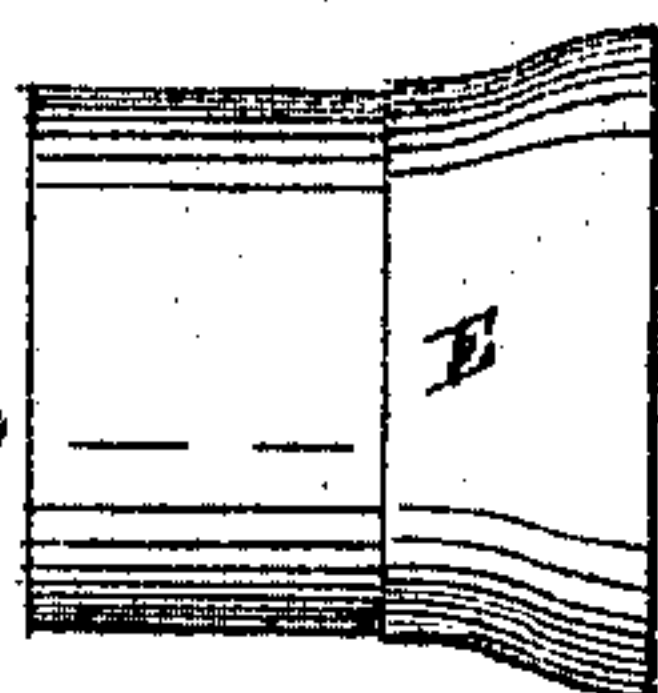


Fig. 6.

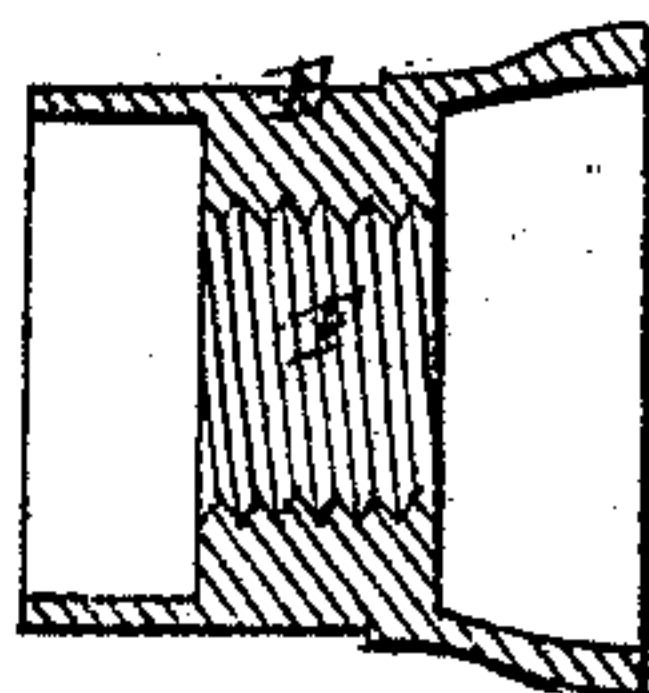


Fig. 7.

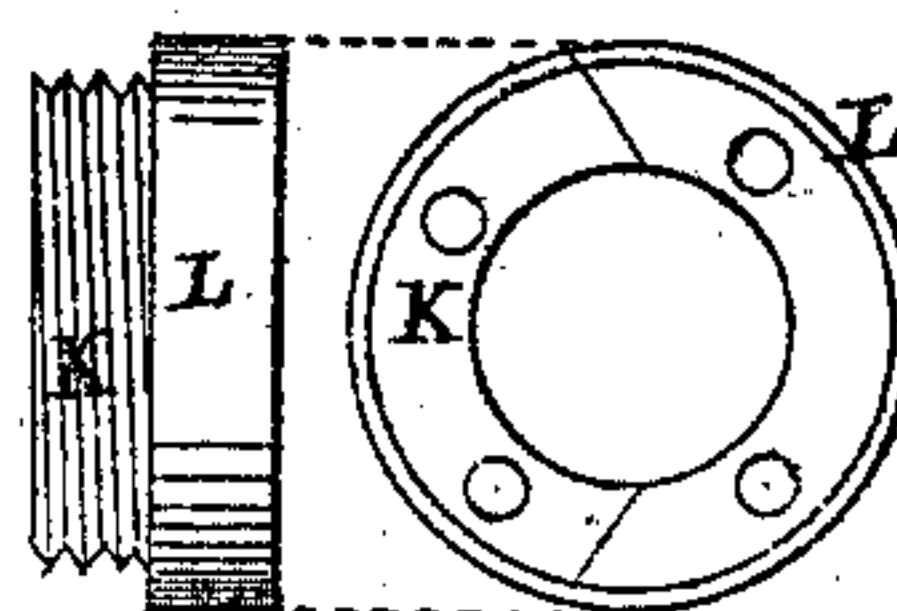


Fig. 8.

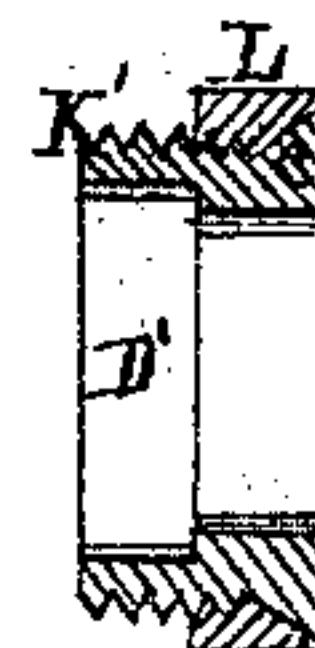


Fig. 9.

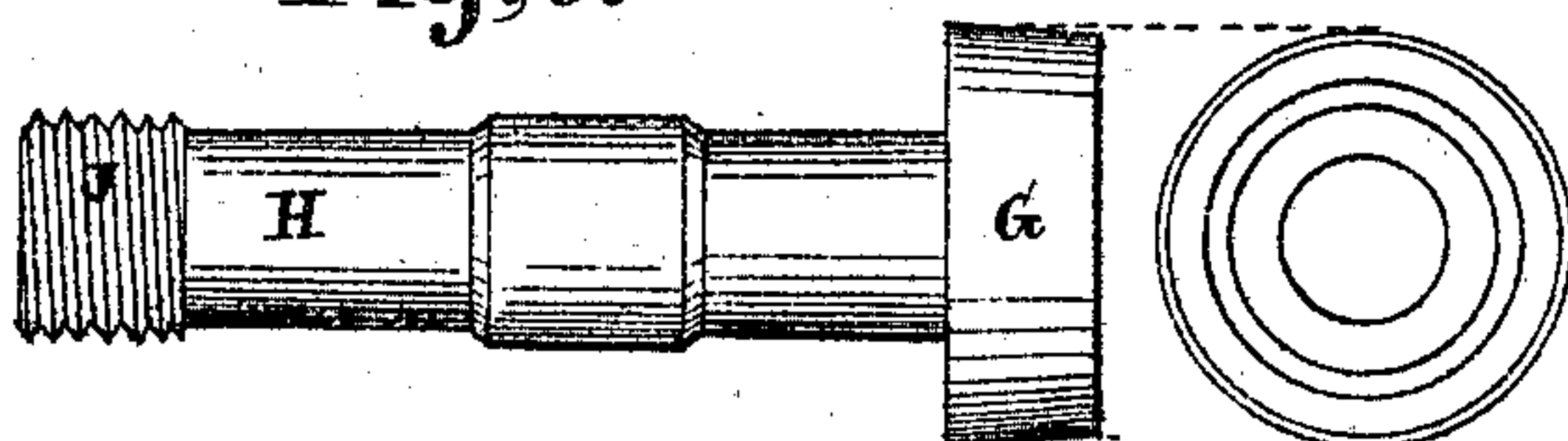
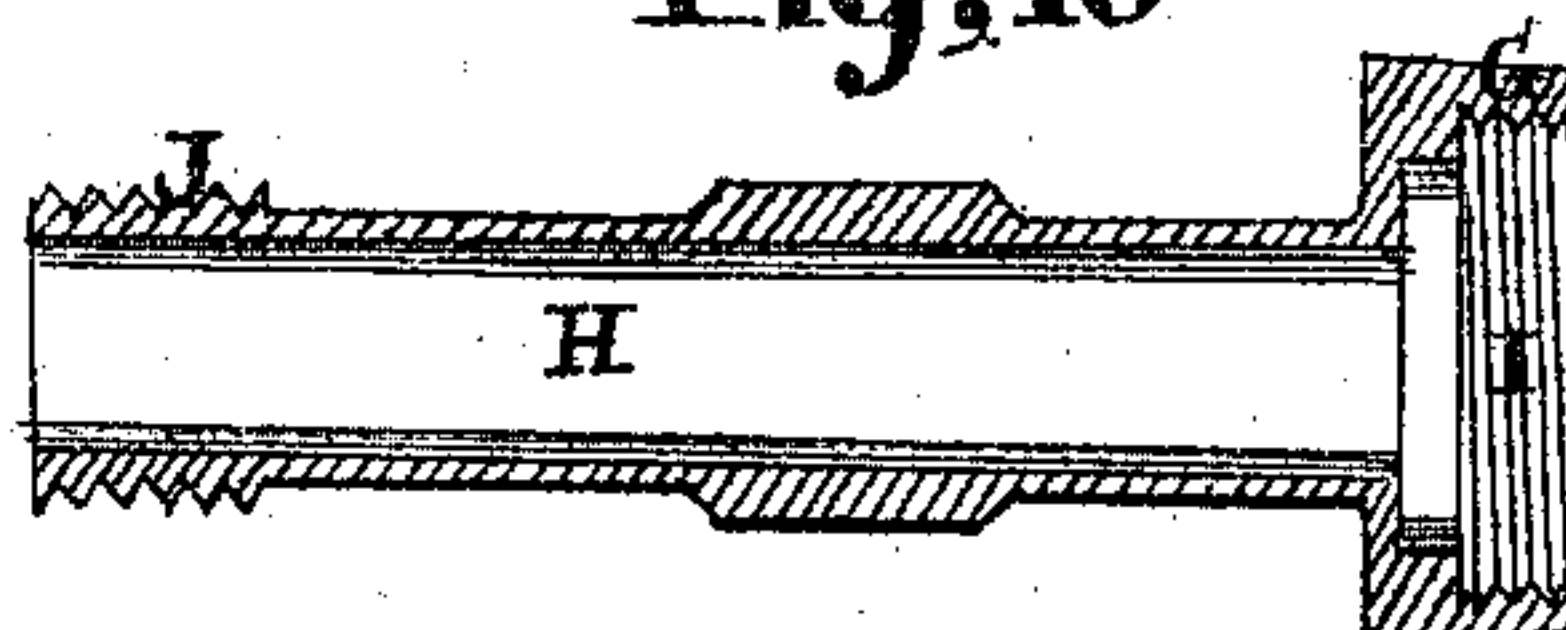


Fig. 10.



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# UNITED STATES PATENT OFFICE.

HOLLAND E. VICK, OF ALLIANCE, OHIO.

## IMPROVEMENT IN HUBS FOR CARRIAGE-WHEELS.

Specification forming part of Letters Patent No. 121,025, dated November 14, 1871.

*To all whom it may concern:*

Be it known that I, HOLLAND E. VICK, of Alliance, in the county of Stark and State of Ohio, have invented a certain new and Improved Carriage-Hub; and I do hereby declare that the following is a full, clear, and complete description thereof, reference being had to the accompanying drawing making part of the same.

Figure 1 is a perspective view of the wheel or hub. Fig. 2 is a detached section. Fig. 3 is a transverse longitudinal section. The figures on Plate 2 are detached sections to which reference will be had.

Like letters of reference denote like parts in the different views.

This invention relates to the hub of a carriage-wheel; and the object sought to be obtained is to so construct the hub that it can be secured to the axle at the posterior end by means of the axle-collar and a two-part nut on the axle behind the collar, and which two-part nut is screwed into the shell of the hub. The invention also relates to the manner of securing the axle-box in the hub, so that it shall be true therewith, and also of a pair of collars or thimbles, whereby the spokes are clamped and thereby laterally braced. A more particular description of the hub is as follows:

In the drawing, Fig. 3, A B represent a pair of thimbles or collars, detached views of which are shown in Fig. 4, in which it will be seen that said thimbles are each provided with a series of radial lugs, C, Fig. 1, corresponding in number to the numbers of spokes D, and between which lugs the base of the spokes are clamped, as shown in said Fig. 1.

It will be observed, on examination of Fig. 3, that the outer end of each thimble is alike provided with a slightly-projecting flange, *a*, thereby forming a kind of shallow recess. Into A of the thimbles is fitted the broad end of the screw-collar or thimble E, a detached view of which is shown in Fig. 5, of which Fig. 6 is a transverse longitudinal section. In said Fig. 6 it will be observed that the thimble is provided with a female screw, F, the purpose of which will presently be shown.

In the recess of collar or thimble B is fitted the head G of the axle-box H, Fig. 3, a detached view of which is shown in Fig. 9, and of which Fig. 10 is a transverse longitudinal section. It will be observed that in the head of the axle-box is cut a female screw, I, and that on the end of the box

is cut a male screw, J, corresponding in size to the screw F cut in the thimble E, and into which it is screwed, as shown in Fig. 3. In the female screw I of the head of the axle is fitted a two-part nut, K, Fig. 3, a detached view of which is shown in Fig. 7, and of which Fig. 8 is a transverse section. The two parts of the nut are held together by means of a ring, L, Figs. 7 and 8, screwed on over the nut until it reaches the back end or shoulder thereof, against which it is screwed hard, thereby clamping the two parts of the nut firmly together, as shown in Figs. 7 and 8, in which it will be seen that a section of the nut projects beyond the side of the ring L, and which nut corresponds in size to the female screw I, into which it is screwed, as shown in Fig. 3. To the inside of the thimbles or collars A B is fitted a wooden hub or core, A', Fig. 3, a detached view of which is shown in Fig. 2. In said core is fitted, in the usual way, the tenons of the spokes D, referred to, and which are braced laterally by the lugs C of the collars A B, which are placed on each end of the core and so adjusted in their relation to the spokes that they embrace the sides thereof, as shown in Figs. 1 and 3. The two collars are clamped to the spokes and to the core by means of the axle-box, Fig. 9, which, on being inserted in the core covered by the two collars, the thimble E is then screwed onto the end J, thereby drawing the two collars A B toward each other and clamping the base of the spokes between them, as shown in Fig. 3. By this means the core, collars, thimble, and axle-box are firmly secured together and the spokes strongly braced laterally by the lugs C of the collars, and also circumferentially by them, as each lug is slightly concave transversely, as shown in Fig. 1.

The wheel is secured to the axle in the following manner: B', Fig. 3, is the axle, and C' the collar thereon. On that part of the spindle or axle behind the collar the sections of the two-part nut are placed and screwed thereon by the ring L, screwed on over the nut to the shoulder *c*, and which is sufficiently large to pass over the collar C' of the axle. A recess, D', Fig. 8, in the nut receives about one-half the thickness of the axle-collar C', Fig. 3, whereas the other half is received in the head G of the axle-box below the screw with the anterior side of the collar fitting close to the end of the box which forms the bottom or shoulder on the inside of the head, as shown in Fig. 3. A leather washer may be interposed between the side of the collar



and the shoulder of the head of the axle-box, to prevent frictional wearing, and the collar may be wholly within the head G. On the posterior side of the collar C' is also a leather washer, e, the purpose of which is to prevent frictional wearing of the collar.

It will be obvious, in view of the two-part nut being on the posterior side of the collar C' and the hub on the anterior side thereof, that on screwing said nut in the head G of the axle-box forming a part of the hub the wheel cannot come off, it being held on the axle by the axle-collar and the nut on the posterior side, and which is screwed, as aforesaid, into the hub. It will be observed, on examination of Fig. 3, that the collar of the axle is wholly inclosed by the nut and head of the axle-box; hence dirt and dust are excluded therefrom, so that frictional wearing of the axle in consequence of the presence of dust is avoided.

A wheel thus constructed and secured to the axle is neat in appearance and is strong and durable, having the advantage of the elasticity of the wooden hub, combined with the strength of the iron one. It also has the advantage of being small in diameter and possessing the strength of one of larger diameter, as the radial lugs C brace and support the spokes as effectually as a hub of large size. When necessary, the wheel is easily removed from the axle by screwing out the two-part nut K, and

the nut can be taken from the posterior side of the collar by screwing off the ring L, and the ring in turn be slipped from the axle by passing it over the collar, thus leaving the axle free of the wheel and of any part of the coupling.

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

1. The collars or thimbles A B provided with radial lugs C and flanges a, forming recesses in the ends thereof, into which are received the head G of the axle-box and screw, collar, or thimble E, in combination with the wooden core A', axle-box H, and screw, collar, or thimble E, substantially in the manner as described, and for the purpose set forth.

2. The axle-box H having a screw-end, J, head G provided with a female-screw, I, in combination with the collars or thimbles A B of the hub and screw-thimble E, in the manner substantially as and for the purpose specified.

3. The two-part nut K provided with an external or male screw, K', recess D', and ring L, as arranged in relation to and in combination with the collar C' of the axle B' and head G of the axle-box H, in the manner substantially as described, and for the purpose set forth.

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Witnesses:

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(31)