

No. 664,447,

Patented Dec. 25, 1900.

J. H. TAYLOR.

AXLE.

(Application filed May 26, 1900.)

(No Model.)

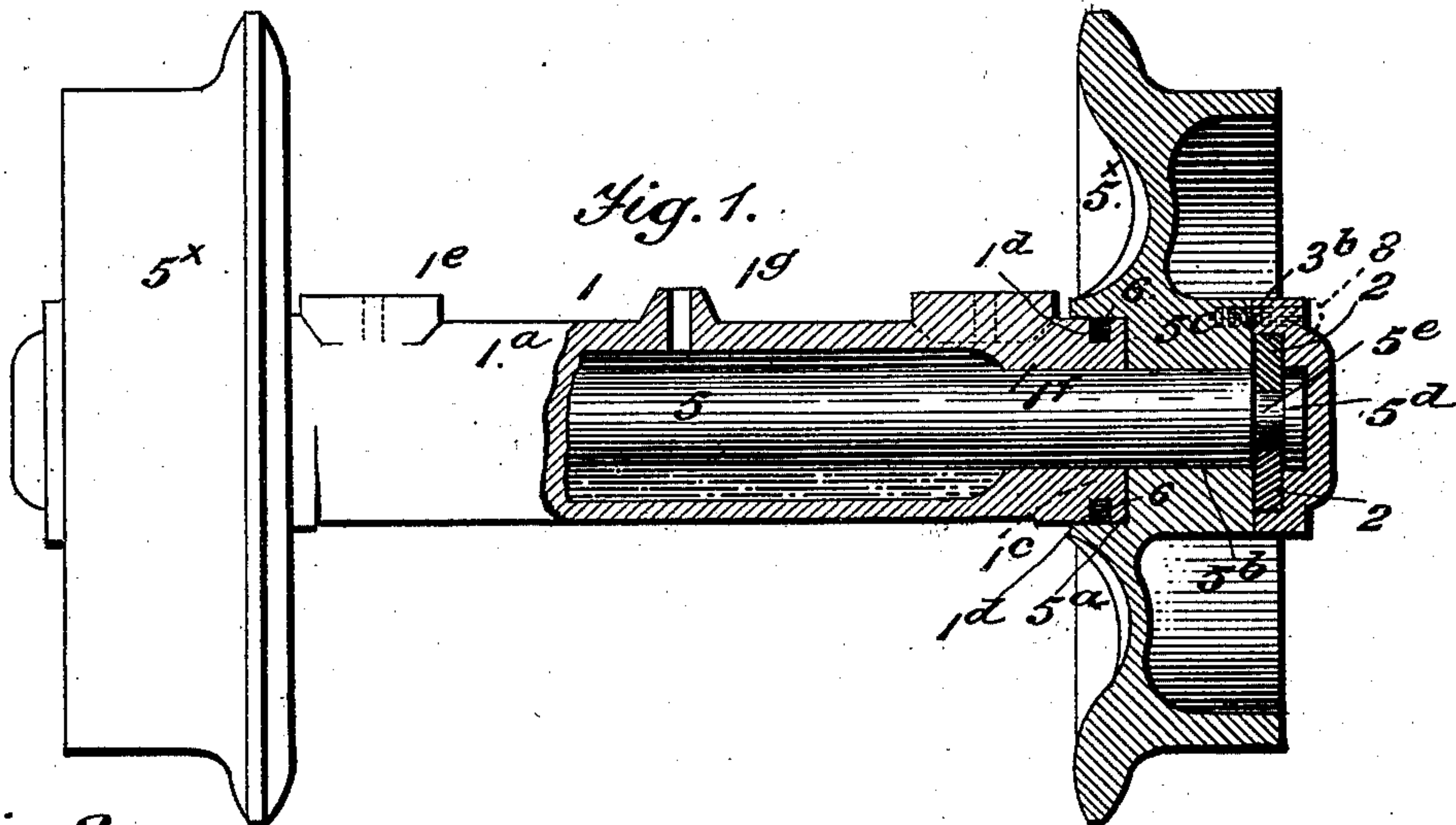


Fig. 2.

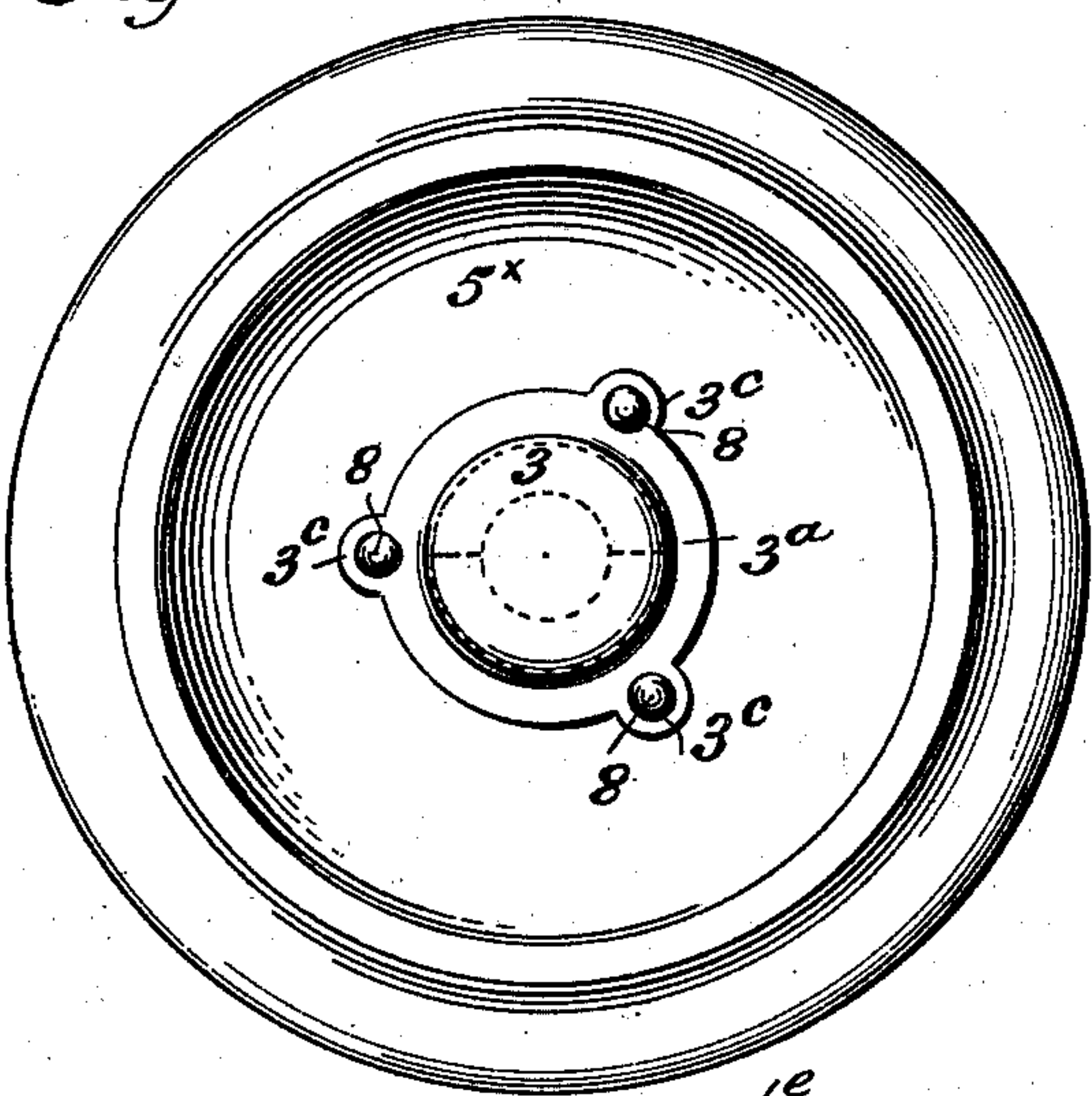


Fig. 4.

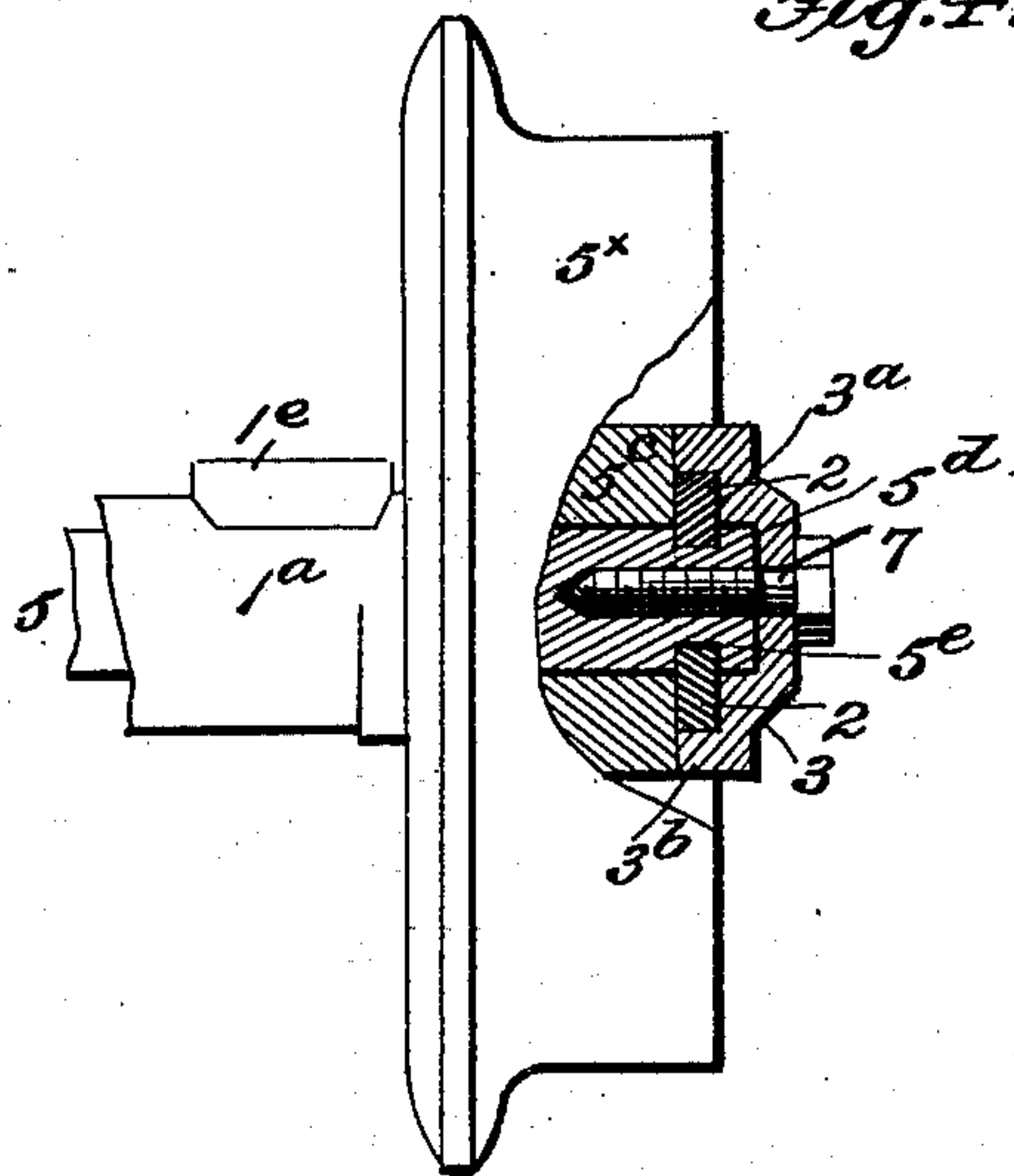


Fig. 3.

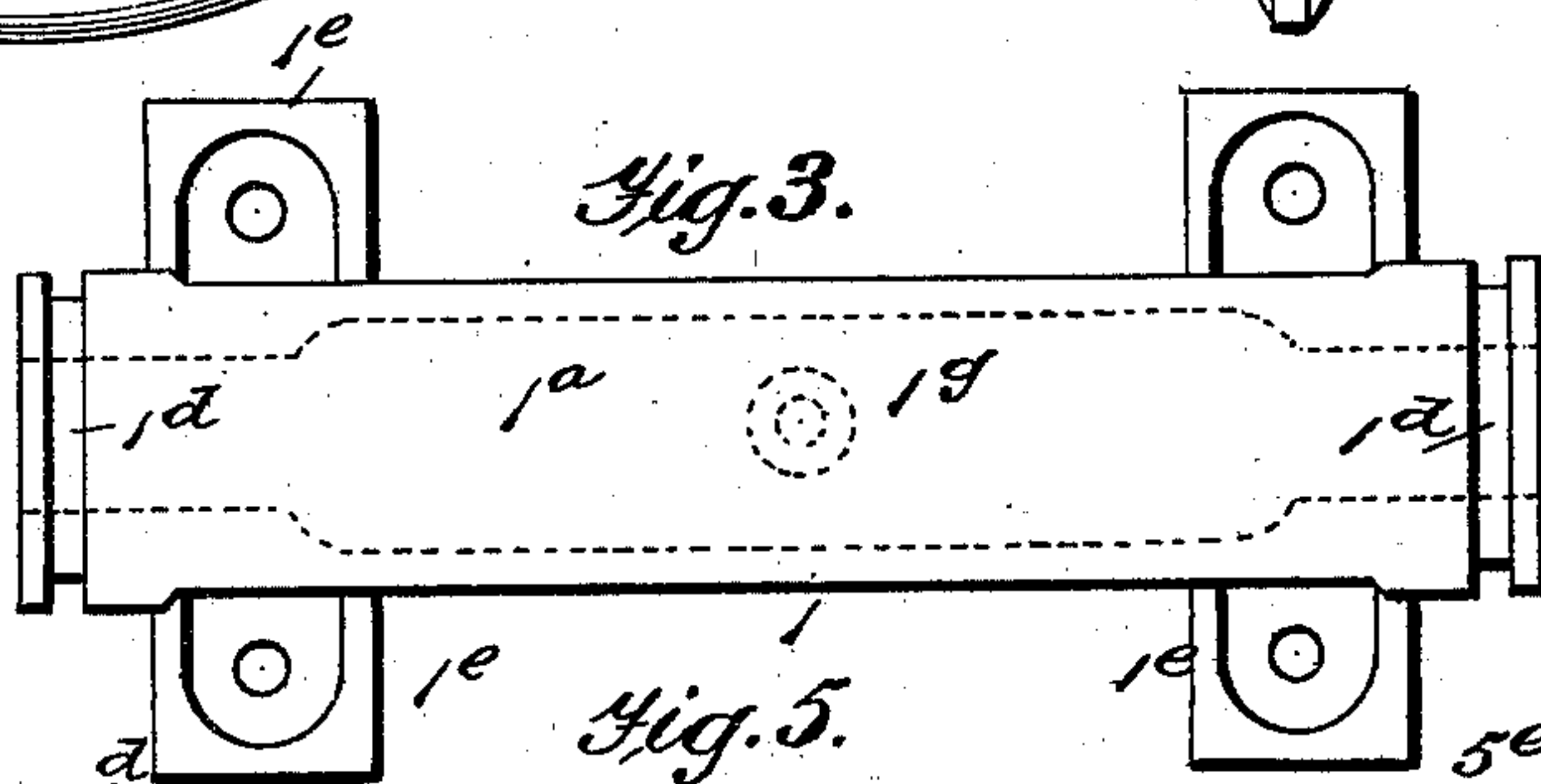
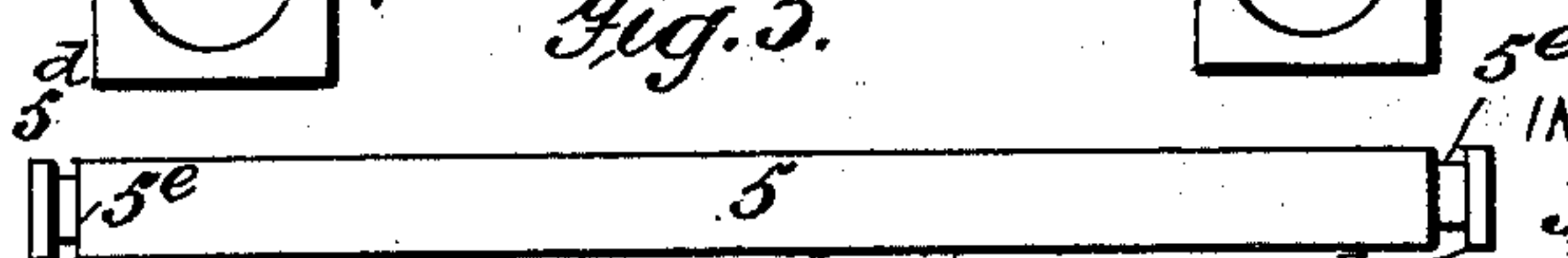


Fig. 5.



WITNESSES:

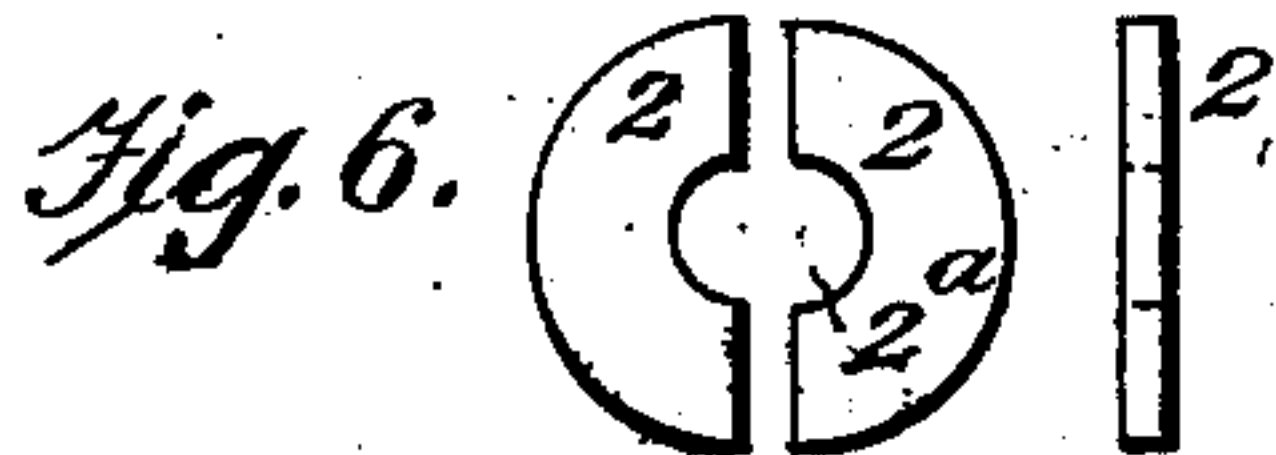
E. McCormac
Louis Dieterich

INVENTOR

J. H. Taylor

BY

Fred G. Dieterich
ATTORNEYS



UNITED STATES PATENT OFFICE.

JAMES H. TAYLOR, OF WALLACE, IDAHO.

AXLE.

SPECIFICATION forming part of Letters Patent No. 664,447, dated December 25, 1900.

Application filed May 26, 1900. Serial No. 18,130. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. TAYLOR, residing at Wallace, in the county of Shoshone and State of Idaho, have invented certain new and useful Improvements in Axles, of which the following is a specification.

This invention relates to improvements in that type of wheel-axes in which the wheel is capable of being quickly and conveniently locked upon the axle to turn therewith or thereon; and it has for its purpose to provide a simplified construction of axle whereby the same is adapted to receive the ordinary type of car-wheel and in which the parts thereof and the cooperating wheel-holding devices are so arranged that the same can be expeditiously and economically manufactured and assembled for use in connection with the wheel and in such way that the wheel and axle may be readily adjusted by ordinary unskilled labor.

In its complete make-up my invention includes, in connection with a peculiarly-formed axle, a sectional locking-collar and a detachable cap-plate for securing the collar in place, adapted to be made fast either to the wheel to cause it to rotate with the axle or to the axle to leave the wheel free to rotate loosely upon the axle.

In its more specific nature my invention consists in certain details of construction and combination of parts, all of which will hereinafter be fully described, and pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is an elevation of a pair of truck-wheels with my axle, one end of the axle and one wheel being shown in section. Fig. 2 is an end view of the same looking in the direction of the arrow in Fig. 1. Fig. 3 is a perspective view of the oil-well or axle-housing hereinafter referred to. Fig. 4 is a section of one end of the axle, the coincident wheel, and the axle-holding devices, the cap being shown made fast to the axle to allow the wheel to run loosely thereon. Fig. 5 is a perspective view of the axle detached. Fig. 6 is a detail view of the sectional collar.

Referring now to the accompanying drawings, in which like numerals indicate like parts in all the figures, 5 designates the wheels, which may be of the ordinary construction,

but preferably formed with an annular bearing-socket 5^a on the inner face, which surrounds the axle-receiving aperture 5^b, said aperture 5^b being of uniform diameter and extending the full length of the hub portion 5^c of the wheel.

1 designates what I term the "axle-housing," and which in my construction also acts as the oil-well, the construction of the said housing being best illustrated in Fig. 3, and consists of the tubular body portion 1^a, having a length equal that of the space between the bases of the sockets 5^a in the two wheels 5, such length of housing being provided to cause the extremities 1^c thereof to enter the socket 5^a and form bearing portions for the inner hub ends of the wheels, the external diameter of the said housing being such that the ends thereof will snugly fit the socket 5^a, and to make the joint between the housing and the wheel-socket dust-tight to keep out the dirt, sand, &c., from the journals of the shaft the extremities 1^c of the housing each have an annular groove 1^d, in which is fitted a rubber or other suitable packing-ring 6, as shown, and to form a solid bearing-surface for the axle the housing at the extremities is made with elongated bearing-surfaces 1^f to snugly engage the axle 5, as clearly illustrated in the drawings.

The housing 1 at the ends has laterally-projecting apertured flanges 1^e for securing the same to the truck-frame, which may be done in any approved manner, and centrally the housing has a lubricant-receiving aperture 1^g.

The axle 5 is made of a length slightly greater than that of the distance between the outer hub-face of the wheels 5 when they are fitted in place, whereby a projection 5^d is produced at each end of the axle. The projecting portions of the axle are each formed with a deep annular groove 5^e, the inner vertical surface of which lies flush with the outer wheel-hub face, as clearly shown in Fig. 1, by reference to which it will be readily seen that in the construction shown the same is held to turn with the axle and is secured upon the said axle by a washer or collar 2, which is formed in two half-sections, each section having a semicircular concavity 2^a, whereby the two sections can be conveniently and quickly fitted edgewise on the top groove 5^e,

formed in the end of the axle, and said sections in practice are also of sufficient diameter to cause their outer annular portions to lie flat against the outer hub portion of the wheel, as shown.

So far as described it will be readily seen that to hold the wheel secure upon the axle after it is fitted thereon it is only necessary to place the divided collar 2 in position upon the outer end of the axle, which will hold the wheel from endwise movement outward, while the abutting end of the housing keeps the wheel from moving inward.

To hold the collar-sections 2 in a proper position, I employ a cap-plate formed of metal and of a single piece. This cap-plate (indicated by 3) has a peripheral flange 3^a, the inner face of which forms the portion that extends over the peripheral edge of the collar 2, while the portion 3^b of the member 3 acts as a bearing-surface to engage the outer face of the collar and hold it solid against the hub-face of the wheel. The collar 3 is also provided with laterally-projecting apertured ears 3^c. When it is intended that the wheel move freely upon the axle—that is, when the axle is held stationary—the said cap 3 is made fast to the wheel-hub by screw-bolts 8, that pass through the said ears 3^c and enter screw-sockets in the wheel-hub, as illustrated in Fig. 1. When, however, the axle and wheel are intended to turn together, the wheel can be readily locked to the axle by passing a stud-bolt 7, having a non-circular portion 7^a, through the center of the cap-plate into the end of the axle, as shown in Fig. 4, or the said cap and the axle may be otherwise fixedly held to move together.

From the foregoing description, taken in connection with the accompanying drawings, it is thought the advantages of my invention will be readily apparent.

It will be noticed that the wheels act independently of each other, and one can be removed and replaced without affecting the other. Again, another desirable advantage in a wheel and axle constructed as shown and described is that the axle can be made stationary and the wheels caused to revolve, or the reverse movement of the two parts can be effected, or both parts—that is, the axle and

the wheels—may turn independent of each other, the axle freely on the housing and the wheel freely upon the axle.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination with the wheel, the housing 1 having a bearing portion for the inner hub ends of the wheels, the axle 5, held to rotate within the housing and the wheels, said axle having its end projecting beyond the wheel, said end having an annular groove, the divided collar 2, fitting the groove, said collar having a portion adapted to lie flat against the outer hub-face of the wheel, the cap 3, having a portion to bear against the outer end of the axle, a portion adapted to engage the hub-face of the wheel, and an annular seat for engaging the divided collar, and means for securing the cap to the axle or wheel, or both, for the purposes specified.

2. The combination with the wheel 5, said wheel having an annular socket in its inner hub-face, the housing 1, having a portion adapted to fit the said socket end of the wheel and having a bearing portion 1^f whose diameter is the same as that of the wheel-hub aperture, of the axle, said axle having a portion fitting the bearing-aperture of the housing and the wheel and having a portion projecting beyond the outer hub-face of the wheel, said portion having an annular groove, the inner wall of which lies in a plane with the outer hub-surface of the wheel, a collar formed of semicircular sections adapted to seat within the groove and to lie flat against the outer hub-face of the wheel, and a cap-plate 3, said cap-plate having a center portion adapted to bear against the outer end of the axle, an annular rim portion adapted to bear against the outer hub-face of the wheel, said rim portion having an annular seat for engaging the divided collar-sections and locking them in position, and means for securing the cap-plate to the wheel or to the axle, all being arranged substantially as shown and for the purposes described.

JAMES H. TAYLOR.

Witnesses:

M. J. FLOHR,
L. N. SWIFT.