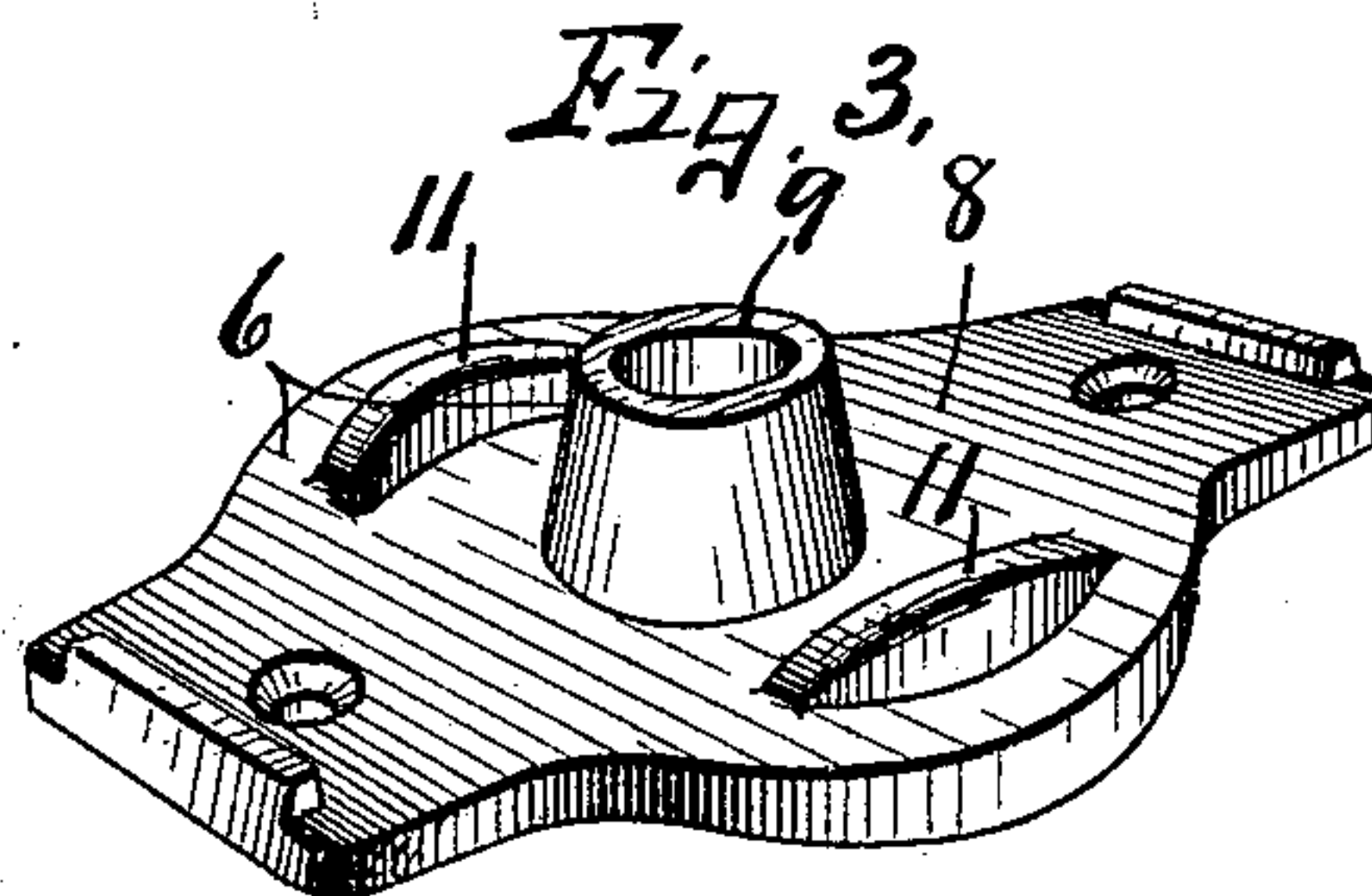
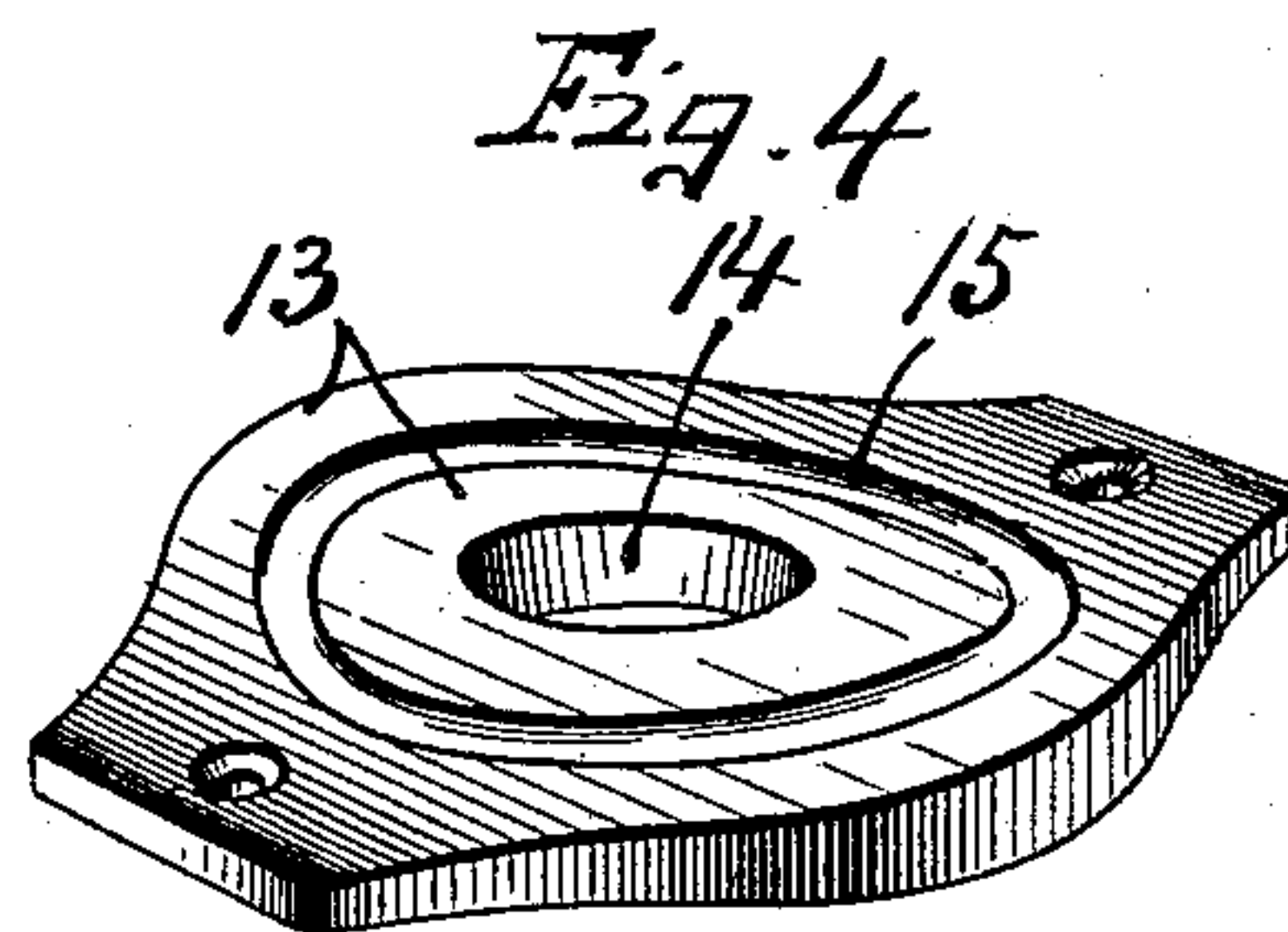
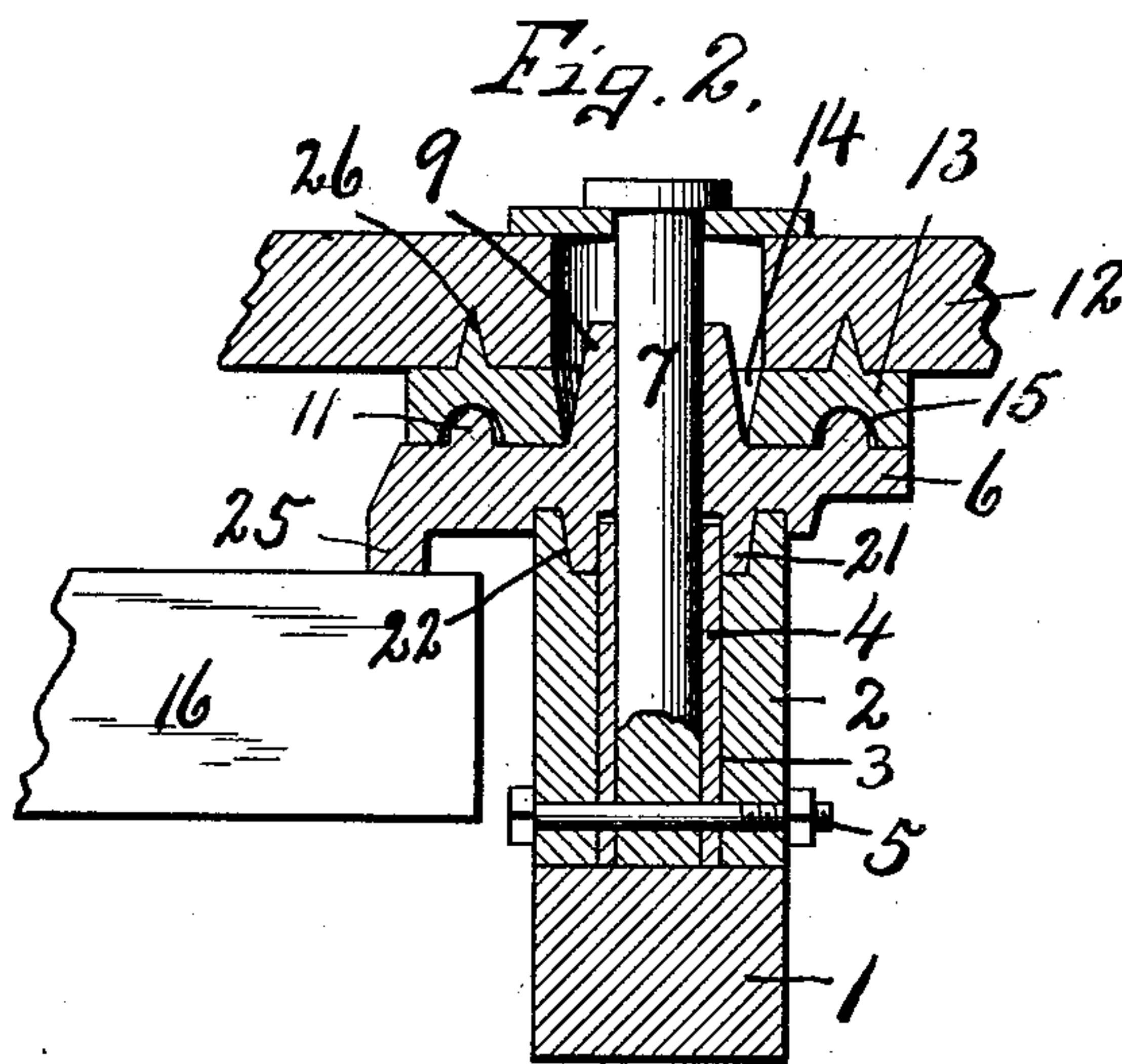
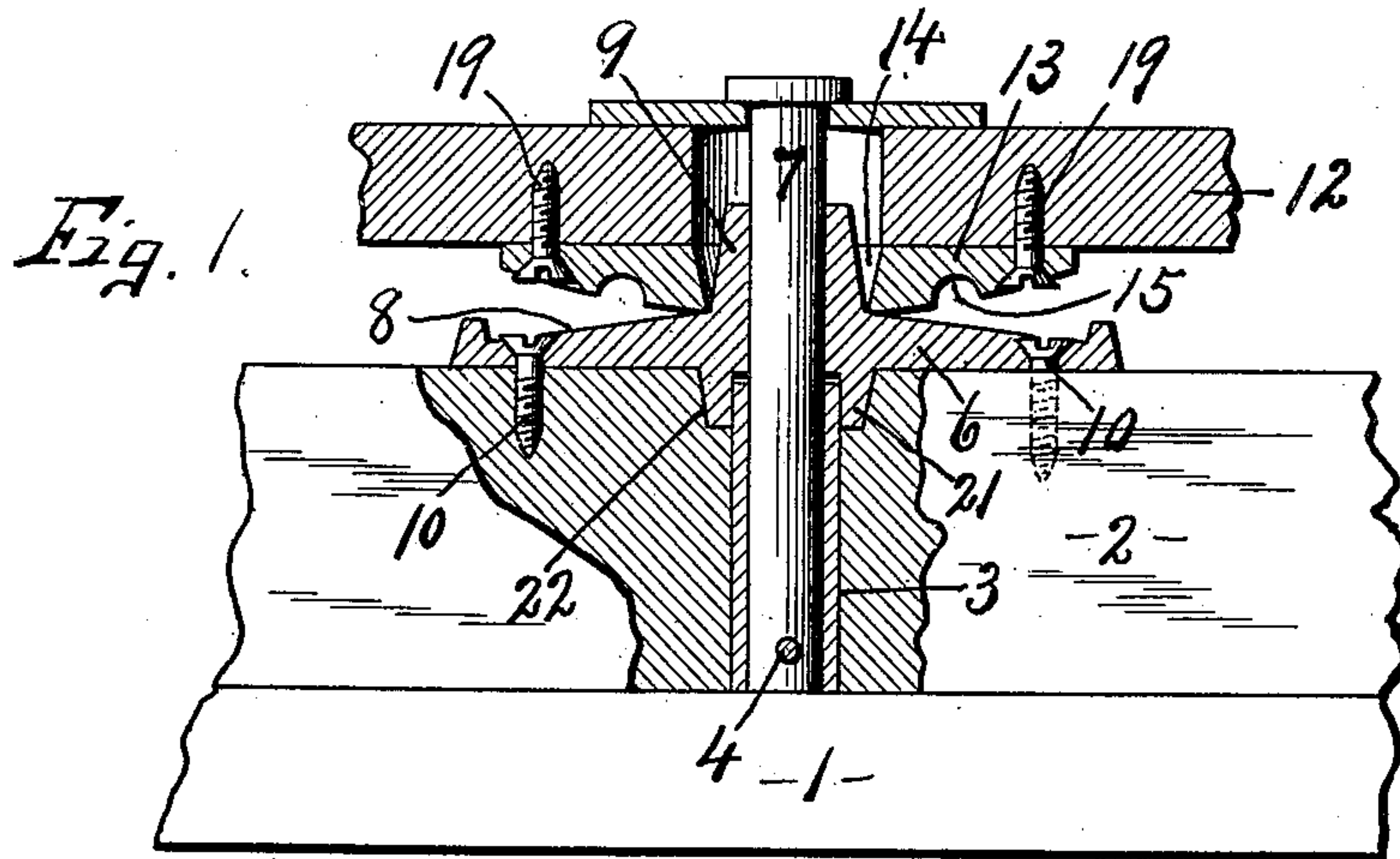


J. W. HAYWOOD.
FIFTH WHEEL FOR WAGONS.
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946,672.

Patented Jan. 18, 1910.



Witnesses.
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UNITED STATES PATENT OFFICE.

JOHN W. HAYWOOD, OF BALDWINVILLE, NEW YORK.

FIFTH-WHEEL FOR WAGONS.

946,672.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN W. HAYWOOD, of Baldwinsville, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Fifth-Wheels for Wagons, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to certain improvements in fifth wheels for wagons and is particularly useful in connection with dump wagons and other heavy vehicles in which the king-bolts and fifth-wheel sections are subjected to severe strains.

In this class of wagons it is customary to provide for a limited lateral movement of the king-bolt in the axle or in the hounds by elongating the upper or lower end of the opening through which the king-bolt passes and in a comparatively short time these openings, either in the hound or axle become worn and elongated to such an extent as to permit the axle and hound to rock forwardly and rearwardly relatively to each other and this action frequently causes the breaking of the connected parts or king-bolt.

The primary object of my present invention is to provide for the vertical rocking of the ends of the axle independently of the hounds or body of the vehicle and without liability of unduly straining the king-bolt and at the same time to obviate excessive wear of the parts which are coupled by said king-bolt, and prevent forward and rearward tilting. In other words, I have sought to prolong the life of this part of the vehicle by providing the wood portion of the axle with a tubular metal insert which is capped by a metal plate fitted upon the upper face of the wood portion of the axle and provided with a longitudinal convex bearing face and a central opening in line with the underlying sleeve for receiving the king-bolt, said plate forming one section of a fifth wheel and co-acting with a similar superposed plate having a longitudinally convex lower face bearing upon the upper convex face of the lower plate and itself forming the other section of the fifth wheel adapted to be secured to the underside of the hound, said upper plate being held against undue lateral movement by a cen-

tral boss projecting upwardly from the lower plate through a central aperture in the upper plate.

In the drawings—Figures 1 and 2 are sectional views taken at right angles to each other of a fifth wheel embodying the various features of my invention. Figs. 3 and 4 are perspective views respectively of the lower and upper fifth-wheel plates.

In order to fully demonstrate the practicability of my invention I have shown a portion of an ordinary axle consisting of a lower iron or steel bar —1— and superposed wood section —2—, the latter being provided with a central vertical aperture —3— therethrough in which is snugly fitted a tubular metal sleeve —4— extending from the top of the wood section —2— downwardly and terminating against the upper face of the steel axle section —1— and is held in place against turning or undue vertical movement by means of a bolt —5— which is passed transversely through suitable apertures in the tube and lower portion of the wood axle section —2—.

Secured to the top face of the wood axle section —2— is a cast metal plate —6— having a central aperture alined with the opening in the tube —3— for receiving a king-bolt —7—, said plate extending equidistant at opposite sides of the king-bolt and is provided with a convex upper face —8—, or rather, the upper face —8— is inclined longitudinally in opposite directions from a central boss —9— surrounding the central aperture therein. This plate is elongated in the direction of length of the axle to which it is secured by suitable clamping bolts —10— and the front and rear portions of its upper face at opposite sides of the boss —9— are formed with comparatively short ribs —11— for a purpose hereinafter described.

Secured to the under side of a bolster 12— directly over the plate —6— is a second cast metal plate 13— having a central aperture 14— through which the boss —9— projects, the lower face of said plate being convexed longitudinally of the shaft or axle and is provided with an annular groove 15— in which the ribs —11— are fitted and ride during the turning of the axle about the axis of the king-bolt. This upper plate 13—

is secured by suitable bolts 19— to the under side of the hound or bolster 12—, and together with the section —7— constitutes the main elements of the fifth wheel.

5 The boss —9— tapers upwardly and extends some distance through and beyond the central opening 14— in the plate 13—, the under side of the plate —6— being also provided with a downwardly projecting annular flange 21— which fits more or less
10 closely around and upon the upper end of the tube —4—, the upper side of the wood axle section —2— being provided with an annular recess —22— for receiving the flange —21—.

15 The tube —4— forms practically a continuation of the plate —6— extending downwardly to the upper face of the iron axle section —1— and forms a metal bearing throughout the lower portion of the length
20 of the king-bolt —7— to protect the wood through which the king-bolt passes from undue abrasion or wear by any vibrations to which the king-bolt may be subjected, said tube also serving to reinforce the wood-
25 axle section where the king-bolt passes through it and prevent splitting of this part of the axle by excessive strains upon the king-bolt. It will be observed, however, that the manner of assembling the fifth-
30 wheel sections 6— and —13— between the hounds and axle removes the greater portion of the strain upon the king-bolt owing to the fact that the upper plate is free to rock upon the upper rocker face of the lower
35 plate —6— and is held against lateral displacement by the boss —9— which receives the greater portion of the lateral thrust or relative lateral movement of the body and
40 axle, thereby taking such strains off from the king-bolt. The opening 14— is designed to fit closely at the base to the base of the upper boss —9—, but is sufficiently large at the upper end to permit a limited lateral
45 rocking movement of the fifth-wheel plates relatively to each other, particularly lengthwise of the axle. The fifth-wheel sections —6— and 13— may therefore be said to have contiguous rocker faces in rolling contact
50 with each other in one direction; that is, longitudinally of the shaft, but are held from relative forward and rearward rocking movement by the ribs 11— which ride in the annular groove 15— in the upper
55 plate 13—. This is an important feature of my invention in that it allows the opposite ends of the axle to rock vertically relatively to the box in passing over uneven obstructions and at the same time prevents forward
60 and rearward rocking movement of the axle. The object in making these ribs —11— comparatively short longitudinally of the axle is to permit the fifth-wheel plates to rock longitudinally relatively to each other
65 through a considerable arc and still prevent

forward and rearward rocking movement of such plates upon each other. The lower plate —6— is provided with a forward extension —25— forming a limiting stop for the rear end of a pole —16—, the upper
70 plate being formed with spurs —26— which enter the lower side of the bolster —12— to further lock the plate thereto.

What I claim is:

1. A fifth-wheel comprising two metal
75 plates having contiguous longitudinal rocker faces rolling one upon the other, one of the plates being provided with a central opening and the other plate provided with a hollow boss projecting into the opening to
80 hold the plates against relative movement, and a king-bolt passed through the central portions of the plates and hollow boss.

2. In combination with an axle having a wood section and a metal section, a tubular
85 sleeve passed through the wood section and abutting against the metal section, a king-bolt passed through the tubular sleeve, means for holding the sleeve against rotation, a fifth-wheel section secured to the top face
90 of the axle and provided with a central opening receiving the king-bolt, said fifth-wheel section being also provided with an upwardly projecting boss surrounding the king-bolt, a second fifth-wheel section hav-
95 ing a central opening receiving said boss, said fifth-wheel sections having their adjacent faces convexed longitudinally and adapted to rock one upon the other lengthwise of the axes. 100

3. In combination with an axle having a wood section and a metal section, a tubular
105 sleeve passed through the wood section, a king-bolt inserted into the tubular sleeve, a fifth-wheel section secured to the top face of the axle and provided with a central opening receiving the king-bolt, said fifth-wheel section being also provided with an upwardly projecting boss surrounding the
110 king-bolt, a second fifth-wheel section having a central opening receiving said boss, said fifth-wheel sections having their adjacent faces convexed longitudinally and adapted to rock one upon the other lengthwise of the axes, the lower side of the upper
115 fifth-wheel section being formed with an annular groove, and the upper side of the lower section having opposite comparatively short ribs riding in said groove.

4. In combination with a metal axle hav-
120 ing a wood section provided with a central vertical opening, a tubular metal sleeve inserted in said opening, a fifth-wheel plate secured to the upper face of the wood section and provided with a central aperture
125 in vertical alinement with the sleeve, the upper face of said plate being inclined longitudinally at opposite sides of the aperture and provided with comparatively short ribs located equidistant from and at the 130

front and rear of said aperture, a second fifth-wheel plate having a lower convex face resting upon the upper face of the first named plate and also provided with a
5 central aperture in vertical alinement with the tubular sleeve, the lower face of the second plate having an annular groove in which the ribs of the first named plate ride and a king-bolt passed through the aper-
10 tures in said plate and into the sleeve.

5. In combination with an axle having a wood section and a metal section, the wood section having a vertical opening there-
through, a tubular metal sleeve secured in
15 said opening and abutting against the metal axle section, a bolster, fifth wheel sections between the bolster and wood section of the axle, the lower fifth wheel section having a socket in its lower face receiving the upper
20 end of the sleeve, and a king bolt passed through the fifth wheel sections and bolster and also through the metal sleeve.

6. In combination with an axle having a wood section and a metal section, the wood
25 section having a vertical opening there- through, a tubular metal sleeve secured in said opening and abutting against the metal axle section, a bolster, fifth wheel sections between the bolster and wood sec-

tion of the axle, the lower fifth wheel sec- 30 tion having an annular flange telescoping with the upper end of the sleeve, a king bolt passed through the fifth wheel sections and bolster and also through the metal sleeve, and means passed through the wood 35 axle section, a tubular sleeve and king bolt for locking the tubular sleeve and king bolt to each other and to the wood axle section.

7. In combination with an axle having a wood section and a metal section, the wood 40 section being provided with a vertical opening therethrough, a metal sleeve secured in said opening and abutting against the metal axle section, a bolster, fifth wheel sections between the bolster and upper face of the 45 wood axle section, the lower fifth wheel section being provided with an annular flange surrounding the upper end of the metal sleeve, and a king bolt passed through the bolster and also through the fifth wheel 50 sections and into the metal sleeve.

In witness whereof I have hereunto set my hand this 21 day of October, 1907.

JOHN W. HAYWOOD.

Witnesses:

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MILDRED M. NOTT.