

No. 666,606.

Patented Jan. 22, 1901.

E. F. HOLMES.
SHAFT COUPLING FOR VEHICLES.

(Application filed May 3, 1900.)

(No Model.)

Fig. 1.

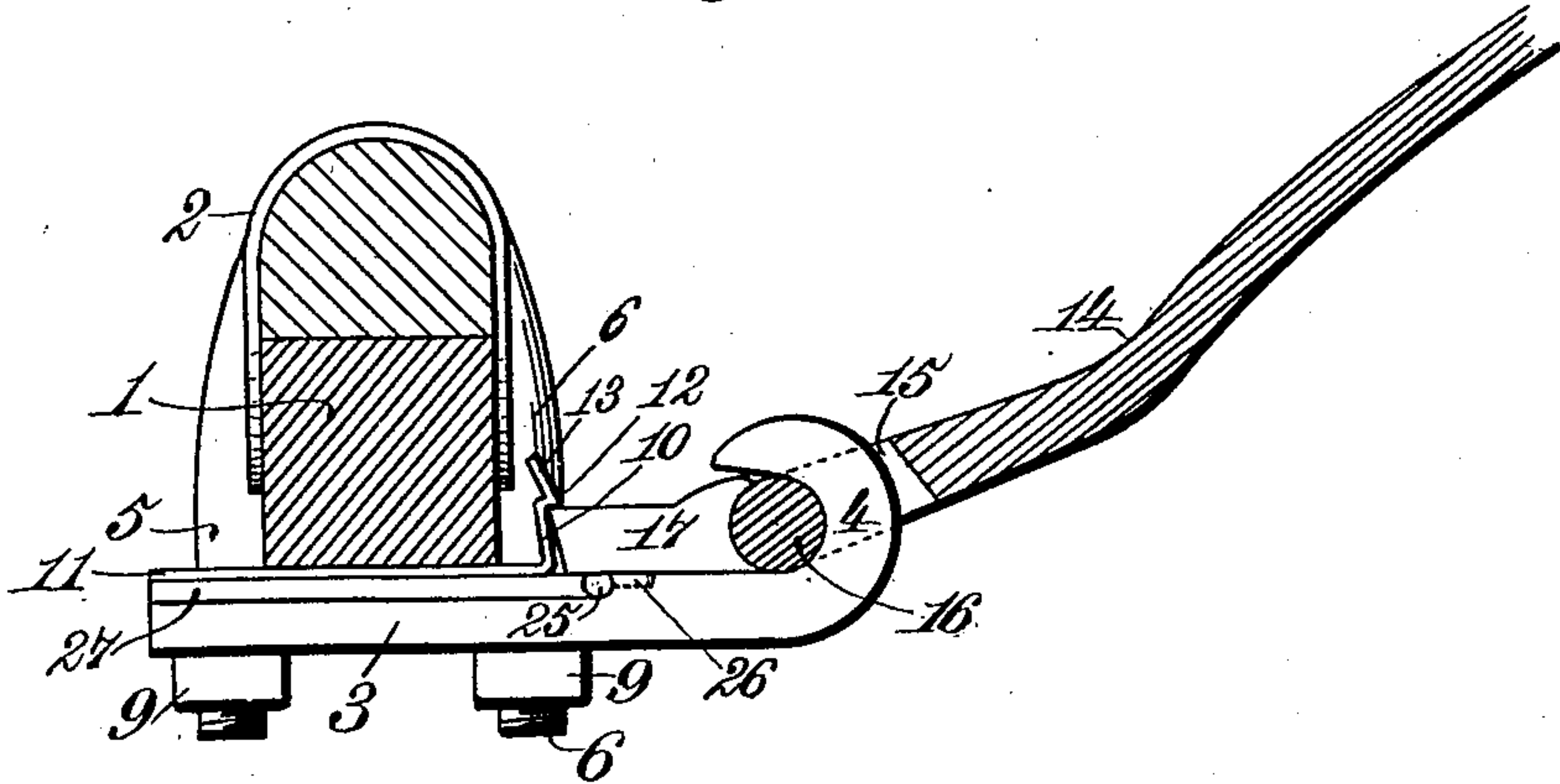


Fig. 2.

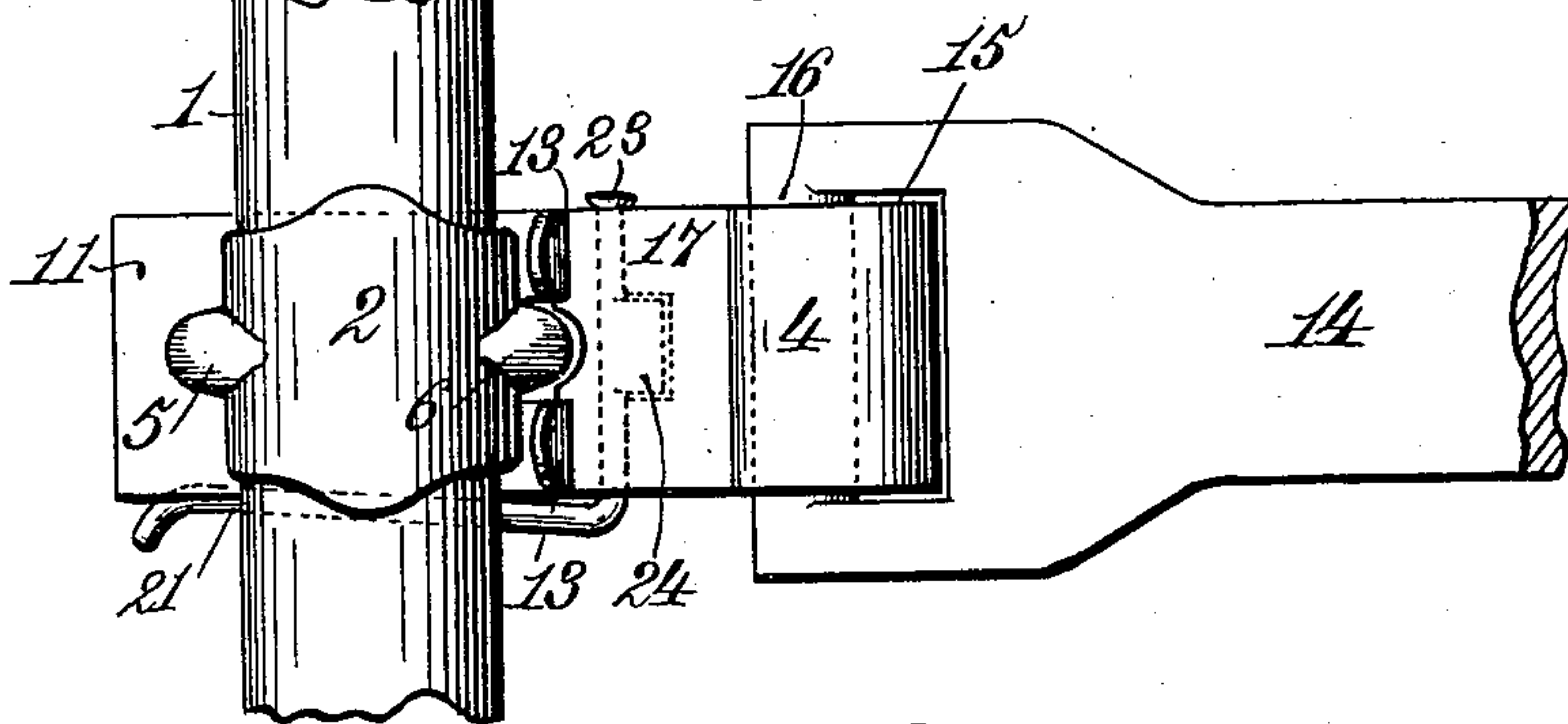


Fig. 3.



Fig. 5.

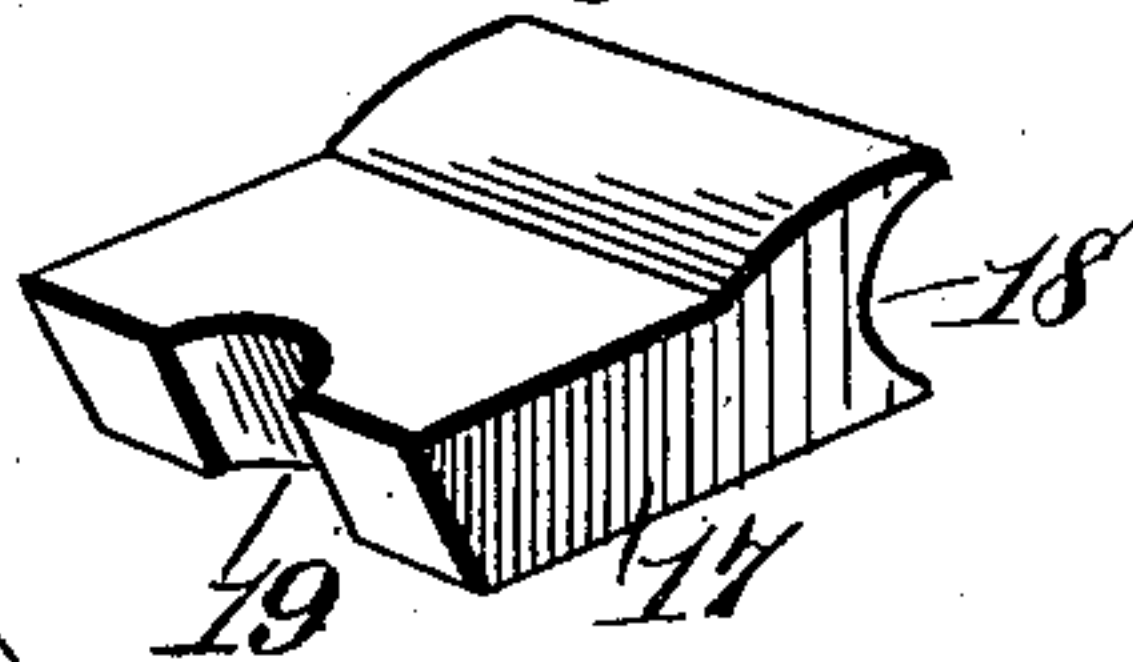
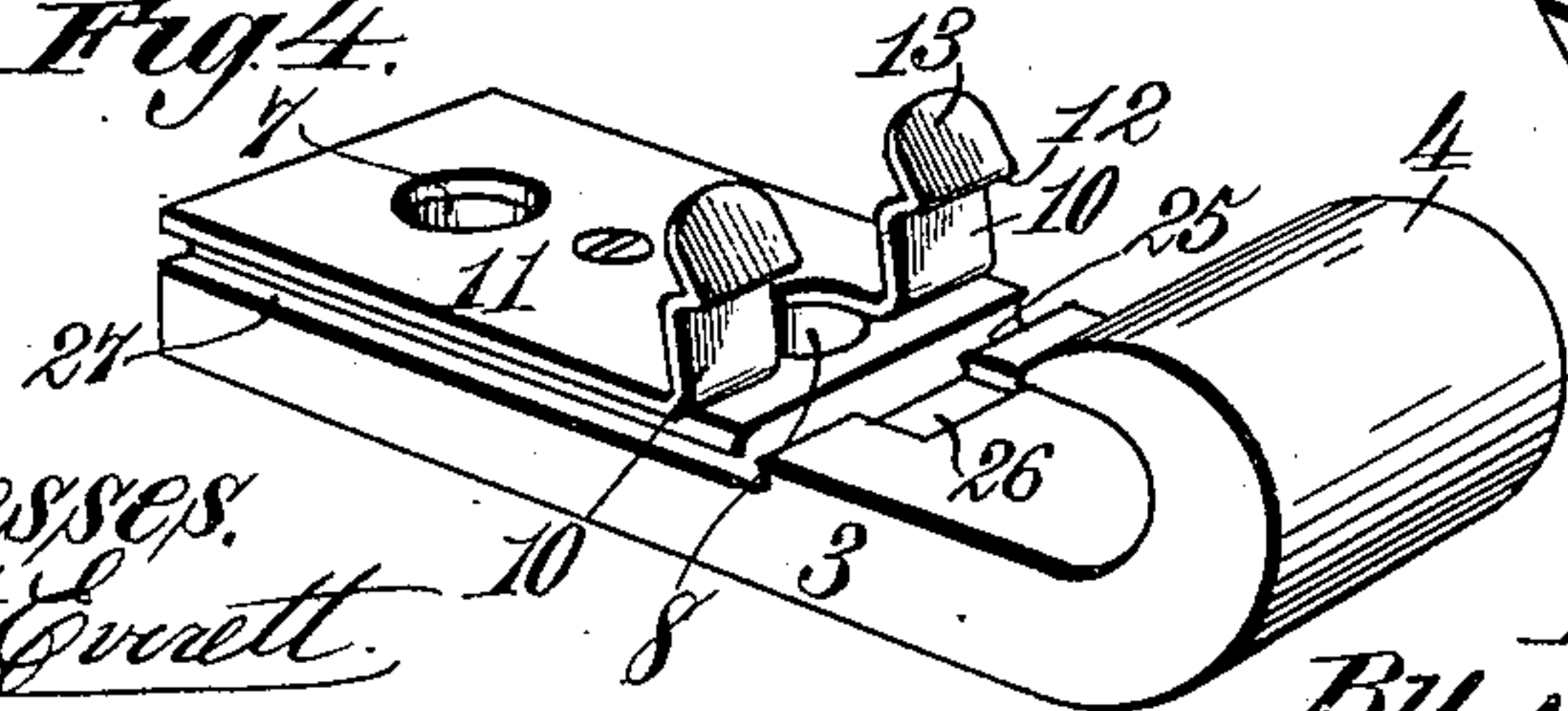


Fig. 4.



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UNITED STATES PATENT OFFICE.

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SHAFT-COUPLING FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 666,606, dated January 22, 1901.

Application filed May 3, 1900. Serial No. 15,398. (No model.)

To all whom it may concern:

Be it known that I, EMORY F. HOLMES, a citizen of the United States, residing at Columbus, in the county of Muscogee and State of Georgia, have invented new and useful Improvements in Shaft-Couplings, of which the following is a specification.

In United States Patent No. 637,610, granted to me November 21, 1899, I have shown and described certain improvements in shaft-couplings in which are employed a base-plate secured by a clip to the underside of the axle and having an upwardly-extending hook at its forward end, a shaft-iron having a slot or loop at its rear end embracing said hook and having a cross-bar which fits within said hook, a locking-plate resting upon the upper side of said base-plate, engaging the cross-bar of said shaft-iron within said hook, and a set-screw for adjusting the position of said locking-plate.

My present invention is designed as an improvement upon that shown and described in the patent referred to, in that it dispenses with the particular means for adjusting the locking-plate and holding the same in place and employs instead a spring for maintaining said locking-plate in close frictional contact with the cross-bar on said shaft-iron, and for preventing the accidental displacement of said locking-plate, and a lever for moving said locking-plate against the action of said spring for the purpose of removing the same from said base-plate and disengaging said shaft-iron.

The details of my invention will be set forth hereinafter and the novel features thereof will be defined in the claims.

In the drawings forming part of this specification, Figure 1 is a sectional side elevation of my improved coupling. Fig. 2 is a plan view of the same. Fig. 3 is a detail perspective view of the releasing-lever for the locking-plate. Fig. 4 is a similar view of the base-plate and the spring thereon. Fig. 5 is a similar view of the locking plate or dog.

Like reference-numerals indicate like parts in the different views.

To the under side of the axle 1 is secured, by means of the clip 2, a base-plate 3, having an upwardly and rearwardly extending hook 4 at its front end. The arms 5 6 of the

clip 2 extend through corresponding openings 7 8 in the base-plate 3, and upon the lower ends of said arms are the securing-nuts 9. Secured to the upper side of the base-plate 3 are the springs 10 10, the same being formed integral with a plate 11, having an opening at its rear end registering with the opening 7 in said base-plate. The front arm 6 of the clip 2 extends through a cut-away portion of the plate 11 between the springs 10. By this construction it will be observed that said springs 10 are located on opposite sides of the arm 6 of the clip 2. Each of the springs 10 is bent forwardly to form a shoulder 12 and thence upwardly and rearwardly to form the inclined or beveled engaging portions 13. The shaft-iron 14 is formed with a slot or opening 15 at its rear end, which embraces the hook 4 and forms a cross-bar 16, which lies within said hook. The said cross-bar 16 is maintained in position in the hook 4 and prevented from rattling by means of the locking plate or dog 17, having its forward end concaved, as shown at 18, to conform to the contour of the cross-bar 16 and having a vertical groove or slot 19 in its rear edge, which receives the front arm 6 of the clip 2. By the engagement of said arm 6 with said locking-plate in the manner described lateral displacement of said locking-plate is prevented. The said locking-plate is also engaged at its rear end by the springs 10, the same serving to urge said locking-plate forwardly to hold the concaved face 18 thereof in constant contact with the cross-bar 16 of the shaft-iron 14. The upper rear edge of said locking-plate when the parts are in their operative positions, as shown in Fig. 1 of the drawings, lies beneath and is engaged by the shoulders 12 on the springs 10. Upward movement of said locking-plate, therefore, is prevented and the same is maintained in proper position.

In order to disconnect the locking-plate 17 and remove the shaft-iron 14 from the hook 4, I provide what I term a "releasing-lever" 20. (Shown in detail in Fig. 3 of the drawings.) This lever is formed with a spring-arm or gripping portion 21, a stem 22 at right angles thereto, a knob 23 on the end of said stem, and a lateral lip or lug 24. To receive said lever, the upper surface of the base-plate 3 is formed just in advance of the springs 10

with a transversely-extending groove 25 and with a lateral recess 26, communicating with said groove. When the parts are in position, the stem 22 fits within the groove 25, the lip or lug 24 lies within the recess 26, and the knob 23 engages the side of said base-plate at the end of the groove 25. The said stem is prevented from being moved longitudinally in said groove by the engagement of the knob 23 thereon with the side edge of the base-plate. The said base-plate 3 is further provided on one side adjacent to its upper edge with a longitudinally-extending groove 27, communicating at its forward end with the groove 25 and partly inclosed by the projecting side edge of the plate 11. In this groove 27 the spring-arm 21 is adapted to lie when the device is in its normal operative position.

With the parts in the positions shown in Figs. 1 and 2 of the drawings it will be observed that the locking-plate 17 is held by the springs 10 in frictional engagement with the cross-bar 16 on the shaft-iron 14 and that said shaft-iron is thereby held in engagement with the hook 4 without danger of accidental displacement. At the same time said shaft-iron 14 is free to be rocked up and down and rattling of the parts is effectually prevented. The locking-plate 17 is, moreover, prevented from displacement by the engagement of the shoulders 12 on the springs 10 with the upper rear edge thereof. It will be noted that the shoulders 12, however, are somewhat inclined or beveled. When, therefore, it is desired to remove the shaft-iron 14 from the hook 4 for any purpose, the arm or gripping portion 21 of the releasing-lever 20 is drawn out of the groove 27, in which it normally lies, and moved downwardly and forwardly, which action rotates the stem 22 and brings the lip or lug 24 thereon into engagement with the under side of the locking-plate 17. By applying sufficient pressure to the arm 21 said locking-plate 17 will be raised against the action of the springs 10 and the shoulders 12 on said springs. The result is that as soon as the locking-plate 17 passes the shoulders 12 the rear end thereof may be lifted, withdrawing the forward end thereof from the hook 4. When thus removed, the cross-bar 16 on the shaft-iron 14 is free to be slipped out of said hook 4. In reapplying the parts the releasing-lever 20 is first returned to its normal position, with the spring-arm 21 thereon lying within the groove 27 and the lip or lug 24 in a horizontal position in the recess 26. The cross-bar 16 of the shaft-iron 14 is then introduced into the hook 4 and the locking-plate 17 applied by first inserting the concaved forward end thereof into said hook and slipping the rear end thereof down upon the inclined engaging portions 13 of the springs 10. By reason of these inclined engaging portions the springs 10 will be caused to recede, allowing the locking-plate 17 to pass beneath the shoulders 12 thereon.

Having now described my invention, what

I claim as new, and desire to secure by Letters Patent, is—

1. In a shaft-coupling, the combination with a base-plate having a hook thereon, and a shaft-iron having a cross-bar thereon lying within said hook, of a locking-plate whose forward end lies within said hook and engages said cross-bar, and a spring for holding said locking-plate in constant engagement with said cross-bar, the said spring also acting on said locking-plate for preventing its upward movement.

2. In a shaft-coupling, the combination with a base-plate having a hook at its forward end, and a shaft-iron having a cross-bar thereon lying within said hook, of a locking-plate whose forward end lies within said hook and engages said cross-bar, and a spring secured to said base-plate for maintaining said locking-plate in constant engagement with said cross-bar and having a shoulder thereon for preventing the accidental upward movement of said locking-plate.

3. In a shaft-coupling, the combination with a base-plate secured to the under side of a vehicle-axle and having a hook upon its forward end, and a shaft-iron having a cross-bar thereon lying within said hook, of a locking-plate having a concaved forward end lying within said hook and engaging said cross-bar, and a plurality of springs secured to the upper side of said base-plate, located on opposite sides of the securing means for said base-plate and having forwardly-extending shoulders thereon, the said springs engaging the rear end of said locking-plate for maintaining the latter in constant engagement with said cross-bar and the said shoulders engaging the upper rear edge of said locking-plate for preventing accidental displacement thereof.

4. In a shaft-coupling, the combination with an axle, a base-plate upon the under side thereof having a hook at its forward end, and a clip for securing said base-plate to said axle, the said clip embracing said axle and the arms thereof extending through openings in said base-plate and having nuts upon the projecting ends thereof, of a shaft-iron having a cross-bar thereon lying within said hook, a locking-plate having a concaved forward end lying within said hook and engaging said cross-bar and having a vertical groove or slot at its rear end for receiving one of the arms of said clip, a plate located between said base-plate and said axle, and a plurality of springs extending upwardly from the forward end thereof, the said springs being located on opposite sides of the arm of said clip which is received by the groove in said locking-plate, having forwardly-extending shoulders thereon and having inclined engaging portions extending upwardly from said shoulders, the said springs acting upon the rear end of said locking-plate to maintain the latter in constant engagement with said cross-bar, the said shoulders engaging the upper rear edge of said locking-plate for preventing the accidental

upward movement thereof, and the said inclined engaging portions being adapted to be engaged by the rear end of said locking-plate for the purpose of retracting said springs when said locking-plate is being applied.

5 5. In a shaft-coupling, the combination with a base-plate having a hook at its forward end, and having a transverse groove in its upper surface with a lateral recess communicating
10 with said groove, and a shaft-iron having a cross-bar thereon lying within said hook, of a locking-plate whose forward end lies within said hook, a spring for maintaining said locking-plate in constant engagement with said
15 cross-bar and for resisting the upward movement thereof, and a releasing-lever whose stem fits within said groove and is provided with a laterally-extending lip or lug which normally lies within said recess but which
20 when said lever is actuated is adapted to engage the under side of said locking-plate, as and for the purpose set forth.

25 6. In a shaft-coupling, the combination with a base-plate having a hook at its forward end, a transverse groove in its upper surface, a recess in its upper surface communicating with

said groove, and a longitudinally-extending groove in one side thereof, communicating with said transverse groove, and a shaft-iron having a cross-bar thereon lying within said
30 hook, of a locking-plate whose forward end lies within said hook, a spring for maintaining said locking-plate in constant engagement with said cross-bar and for resisting the upward movement of said locking-plate, and a releas-
35 ing-lever having an integral stem and gripping-arm thereon, the said stem fitting within said transverse groove and provided with a laterally-extending lip or lug which normally lies within said recess, the said gripping-arm
40 being adapted to be seated when the parts are in their normal positions in said longitudinally-extending groove, as and for the purpose set forth.

In testimony whereof I have hereunto set
45 my hand in presence of two subscribing witnesses.

EMORY F. HOLMES.

Witnesses:

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EWELL A. DICK.