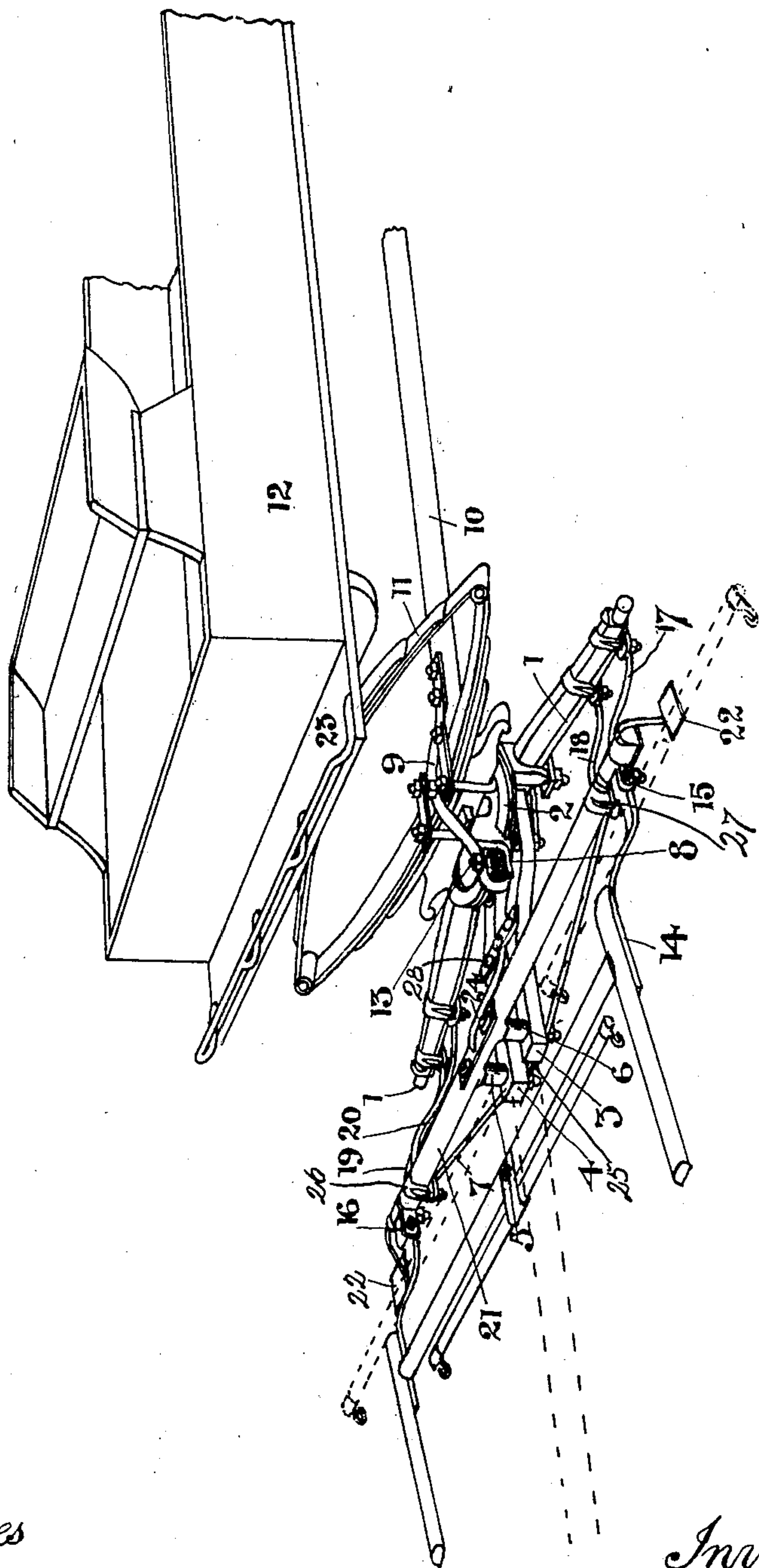


No. 810,641.

PATENTED JAN. 23, 1906.

R. GRUNER.
SHAFT AND POLE COUPLING FOR WAGONS.
APPLICATION FILED AUG. 14, 1905.



Witnesses
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UNITED STATES PATENT OFFICE.

ROBERT GRUNER, OF LOUISVILLE, KENTUCKY.

SHAFT AND POLE COUPLING FOR WAGONS.

No. 810,641.

Specification of Letters Patent.

Patented Jan. 23, 1906.

Application filed August 14, 1905. Serial No. 274,053.

To all whom it may concern:

Be it known that I, ROBERT GRUNER, a citizen of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented a new and useful Shaft and Pole Coupling for Wagons, of which the following is a specification.

My invention relates to draft-gear for wagons and carriages; and the objects of my improvement are to provide a permanent draft-bar supported from the front axle and raised above it, so as to avoid the usual downward-curved portion of the shaft; to reduce the weight on the horse; to prevent the usual strain on the front axle and the king-bolt; to provide means for attaching a shaft, a pole, and swingletrees, firmness, strength, and durability. These objects I attain by means of the mechanism illustrated in the accompanying drawing, which is a perspective view.

The fore hounds 3 4, the transverse draft-bar 21, the supporting-hook 8, the truss-rod 7, and the brace 24 constitute the principal features of the invention. Draft-rod 21 is supported on the front ends of hounds 3 4, a short distance above said hounds, by means of pillars 5 6, and the hounds and draft-rod are securely fastened in permanent relation by means of vertical bolts, which pass through a plate on the upper surface of the draft-rod and the plate 25 in the middle of truss-rod 7. The ends of truss-rod 7 are secured to draft-rod 21 near the shaft-clips 15, 16 by means of a plate underneath the draft-bar and clips 26, 27 passing about the draft-bar. At either end of the draft-bar 21 is secured the shaft-clips 15 and 16. The ends of the draft-bar 21 are joined to the ends of the axle 1 by means of curved braces 17 and 19. Intermediate braces 18 and 20 may be used for additional security. A step 22 may be placed at each end of draft-bar 21. The hounds 3 4 are bent intermediate their ends, so that the front ends are higher than the rear ends. The rear ends are fastened underneath the fifth-wheel 2 and firmly secured thereto. A spring-stay 9 is secured at its rear end to the perch 10 and extends over the spring and down to the fifth-wheel, having a vertical extension downward in front of the fifth-wheel. The upper plate of the fifth-wheel has a rear extension from the central front part pierced with a hole to accommodate a bolt 13. By means of bolt 13 a plate or hook 8 is firmly secured to stay 9 underneath and is made to extend forward

and bear underneath the lower plate of fifth-wheel 2. By this means the front part of the fifth-wheel is connected with the perch and thoroughly braced to prevent its sagging from the weight of the draft-bar 21, the shaft, and the accessory gear. The ends of draft-bar 21 are braced against vertical motion relative to its middle portion by truss-rod 7 and against forward movement relative to hounds 3 4, by means of brace 24, which is at the rear, to said hounds and at its front end to the top of the draft-bar. By this means all parts are thoroughly braced and firmly secured in their proper operative relation. A space is provided between the front ends of hounds 3 4 to accommodate the pole, shown by dotted lines, which when in place rests upon the plate 25 in the middle of truss-rod 7, which is secured to the under surface of the fore hounds, 3, 4 and its end under the rear transverse plate 28 of brace 24. Through said rear plate 28 of brace 24 is a hole to receive a bolt or pin for securing the pole in place against longitudinal movement. When the pole is used, swingle-trees (represented by dotted lines) are provided, which are adapted to fasten in shaft-clips 15 16, it therefore being unnecessary to provide doubletrees for the pole. It is obvious that with this arrangement the shaft is considerably shortened at the rear end; the weight is less upon the horse; the shaft may be turned upward to a vertical position or lean backward without interfering with the foot-board 23, the wagon-bed, or any other portion of the wagon, and may therefore be set up out of the way when the wagon is not in use; the pole may be easily removed from its socket, so that the wagon may be placed in a small space; the driver may mount the wagon by means of steps 22; his weight does not endanger the front axle or king-bolt by reason of the torsional stress thus produced, and the entire gear may be depended upon for strength and durability.

I am aware that a transverse bar similar to my draft-bar 21 has been used and do not claim this feature broadly; but,

Having thus described my invention, so that any one skilled in the art pertaining thereto may make it, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In draft-gear for wagons, the combination of the front axle, fore hounds curved upward, a transverse draft-bar secured above the front ends of said fore hounds, pillars be-

tween said fore hounds and said draft-bar, a
truss-rod connecting said fore hounds with
the outer ends of said draft-bar, braces con-
necting the outer ends of said draft-bar with
5 the front axle, a brace connecting said draft-
bar with said fore hounds, a spring-stay se-
cured at its rear end to the perch of the
wagon and at its forward end to the front
part of the fifth-wheel, and a supporting-
10 hook secured to the forward end of said
spring-stay and extending under and bearing
on the under surface of the lower portion of
the fifth-wheel, substantially as specified.

2. In a draft-gear for wagons, the combi-
15 nation of a front axle, fore hounds secured to

said front axle and to the fifth-wheel, a trans-
verse draft-bar, means for securing said draft-
bar to said fore hounds in elevated relation
thereto, means for supporting the outer ends
of said draft-bar relative to said fore hounds, 20
means for rigidly connecting the outer ends
of said draft-bar with said front axle, and
means for bracing the forward part of the
fifth-wheel, said fore hounds and said draft-
bar from the perch and preventing torsional 25
strain on the axle, substantially as specified.

ROBERT GRUNER.

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