

W. J. KRAMER, JR.
COUPLING DEVICE FOR VEHICLES.
APPLICATION FILED JULY 21, 1908.

944,333.

Patented Dec. 28, 1909.

2 SHEETS—SHEET 1.

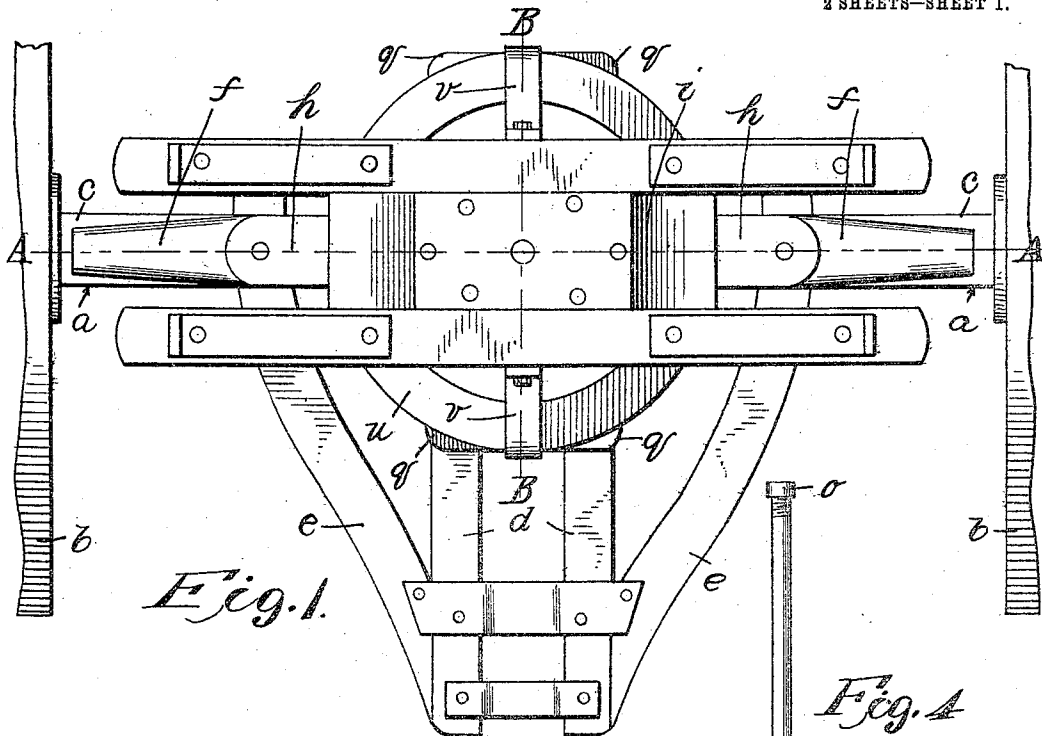


Fig. 1.

Fig. 4.

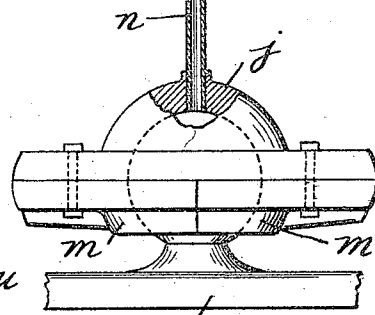


Fig. 8.

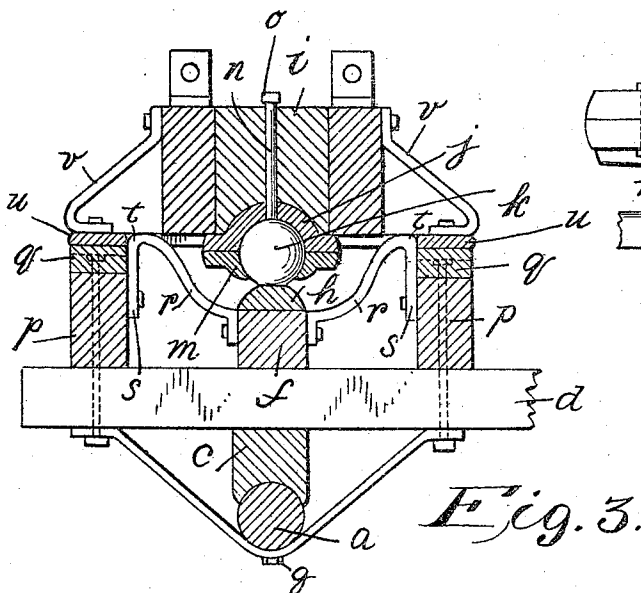


Fig. 3.

Witnesses:
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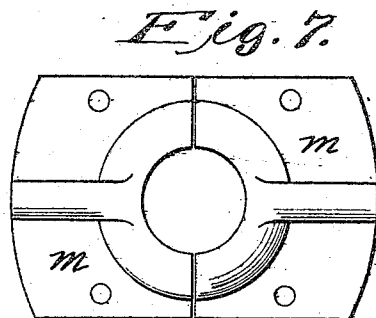
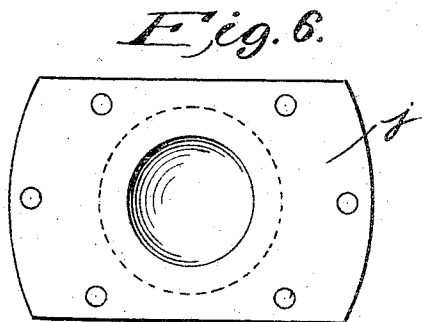
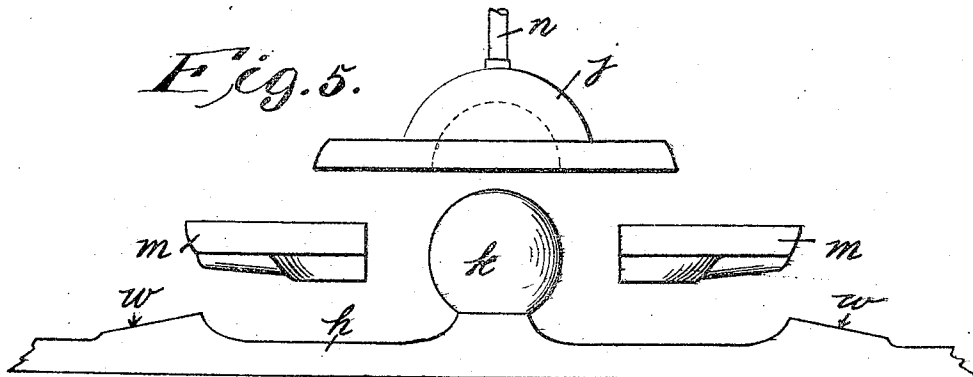
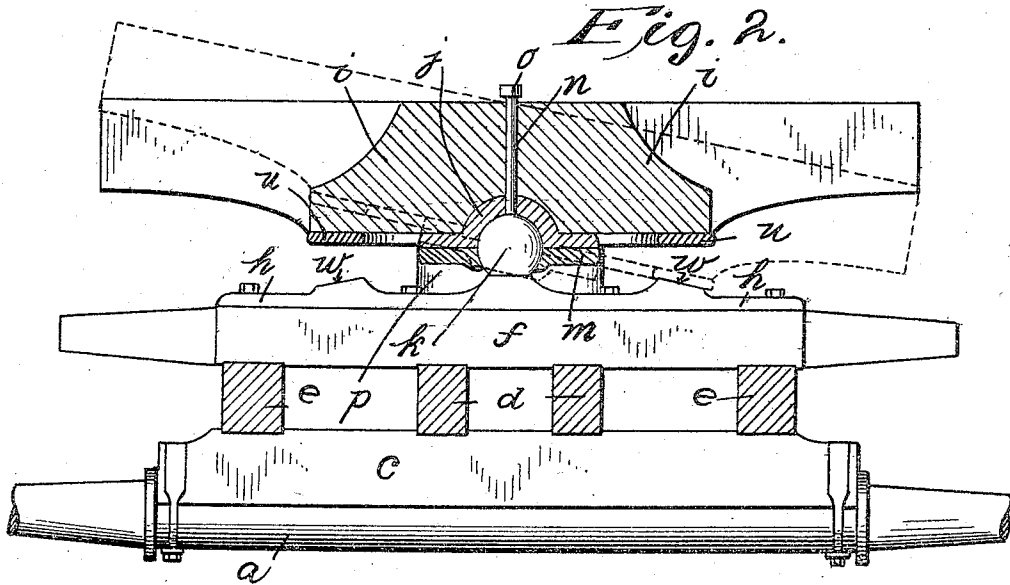
W. J. Kramer, Jr., Inventor
By his Attorney
James Hamilton

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UNITED STATES PATENT OFFICE.

WILLIAM J. KRAMER, JR., OF OIL CITY, PENNSYLVANIA.

COUPLING DEVICE FOR VEHICLES.

944,333.

Specification of Letters Patent.

Patented Dec. 28, 1909.

Application filed July 21, 1908. Serial No. 444,630.

To all whom it may concern:

Be it known that I, WILLIAM J. KRAMER, Jr., a citizen of the United States, residing at Oil City, in the county of Venango and State of Pennsylvania, have invented certain new and useful Improvements in Coupling Devices for Vehicles, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to improvements in couplings for wagons and particularly to couplings for use in connecting the front running-gear of a dump-wagon with the wagon bed or wagon body.

An object of my invention is to provide a coupling which will be simple in construction, comparatively cheap in manufacture and strong, durable and efficient in use.

In the drawings illustrating the principle of my invention, Figure 1 is a plan of so much of a vehicle as is necessary to illustrate my invention; Fig. 2 is a section on the line A—A of Fig. 1; Fig. 3 is a section on the line B—B of Fig. 1; Fig. 4 is a detail in front elevation of the ball-plate, the two-part lock-plate and the socket-plate assembled; Fig. 5 shows the same parts dismantled or separate from each other; Fig. 6 is a bottom view of the socket-plate; Fig. 7 is a bottom view of the lock-plate; and Fig. 8 is a detail of one of the rocker-plates.

Upon the axle *a* are mounted the wheels *b*, and over the axle *a* extends the axle-cap *c* upon which rests the inner hounds *d* and the outer hounds *e*. Over the hounds *d*, *e* and above the axle-cap *c* extends the sand-bolster *f* through which and the axle *a* extend bolts *g*. The latter fasten the ball-plate *h* upon the top of the sand-bolster *f*. To the bottom of the bolster *i* is fastened a socket-plate *j* which is shaped to fit over the ball *h* of the ball-plate *h*. Below and to the socket-plate *j* is fastened the two-part lock-plate *m*, which fits snugly around the lower half of the ball *h*. By means of the socket-plate *j* and the two-part lock-plate *m* the bolster *i* is coupled to the ball-plate *h* and, through the latter, to the front running-gear. Into the socket-plate *j* (Fig. 4) is screwed the lower end of an oil pipe *n*, the upper end of which is provided with a screw-cap *o* as a closure. The oil-pipe *n* extends above the top of the bolster *i*, so that the screw-cap *o* is accessible for removal to permit oil to be poured into the pipe *n* for lubricating the ball-and-socket coupling.

Upon the inner hounds *d* are supported a pair of blocks *p*, one in rear and one in front of the sand-bolster *f*. Upon each of the blocks *p* is mounted a rocker-plate *q* (Fig. 8) and between the blocks *p* and the sand-bolster *f* are interposed braces *r*. Each of the latter is bent downwardly at its outer end, which is fastened to one of the blocks *p*. The bend between the end *s* and the inner or body-portion of the brace *r* lies above the adjacent rocker-plate *q*, whereby a shoulder *t* is formed. Resting upon the mid-portions of the rocker-plates *q* is the circle-iron *u*, within which lie the shoulders *t* of the braces *r*. These shoulders relieve the circle *u* of much of the pulling strain. By means of braces *v* the circle is fastened to the bolster *i*.

It will be obvious that the circle rests at all times upon the elevated mid-portions of the rocker-plates *q* and that the front running-gear (the front wheels, the front axle and parts immediately connected with them) may rock or be tilted without moving the wagon body. However, when the rocking or tilting has attained its permissible maximum, the circle *u* will rest upon one of the inclined faces *w* of the ball-plate, as will be readily understood from an inspection of the dotted lines in Fig. 2.

The construction of dump-wagons with a rigid frame makes it necessary that the front running-gear be coupled to the wagon body in such manner that the wagon may be hauled over rough ground without straining the bed or body of the wagon, the effect of the inequalities of the ground being overcome by the coupling of the front gear to the bed. In the construction described in the foregoing, a ball-and-socket coupling is used instead of the king bolt, the lower circle is dispensed with and the size of the upper circle is reduced. The ball-and-socket coupling permits the front running-gear to stand at an angle without affecting the bed or body of the wagon. The amount of tilting is restricted only by the circle-iron's coming into contact with one of the inclined faces *w* of the ball-plate *h*, which is fastened to the sand-bolster of the front running-gear.

I claim:

1. The combination with an axle, of a plate formed with a ball-shaped member and fastened to said axle; a bolster; a socket-plate shaped to fit over said ball-

shaped member and forming therewith a ball-and-socket joint; a circle fastened to said bolster; a pair of rocker-plates having inclined faces; and means for supporting
5 said rocker-plates upon said axle; said circle resting upon said rocker-plates and being free to rock from side to side relatively thereto.

2. The combination with an axle and a
10 bar supported thereby, of a bolster; mechanism for coupling said bolster to said bar; a circle fastened to said bolster; means for supporting said circle, the latter being free to rock thereon; and braces interposed be-
15 tween said means and bar, said braces being each formed with a shoulder which extends within said circle to take the pulling strain.

3. The combination of an axle and a bar supported thereby, of a bolster; a circle car-
20 ried by said bolster; a pair of rocker-plates having inclined faces, said circle resting free to rock upon said rocker-plates; means for coupling said bolster to said bar; means for supporting said rocker-plates upon said
25 axle; and braces interposed between said bar and the last-named means, said braces being formed each with a shoulder which extends within said circle to take the pulling strain.

4. The combination of a plate formed 30 with a ball-shaped member and with contact faces on each side of said member; a bolster; a socket-plate fastened to said bolster and shaped to fit over said ball-shaped member, forming therewith a ball-and-
35 socket joint; a circle fastened to said bolster; a pair of rocker-plates upon which said circle rests and is free to rock; and devices connecting the first-named plate and said
40 rocker-plates, said devices extending within said circle to take the pulling strain.

5. The combination with an axle, of a bolster; a ball-and-socket coupling which connects said bolster and axle; a circle car-
45 ried by said bolster; rocker-plates free from connection with said circle and upon which the latter is free to rock about said ball-and-socket coupling; and means supported by
50 said axle for supporting said rocker-plates.

In witness whereof I have hereunto set
my hand at said Oil City in the presence of
the two undersigned witnesses this 18th day
of July, 1908.

W. J. KRAMER, Jr.

Witnesses:

DAN B. GOODWIN,
WM. H. WEIGLE.