(No Model.) 2 Sheets—Sheet 1.

H. SAAMKOPF.

CAR COUPLING.

No. 515,251. Patented Feb. 20, 1894.

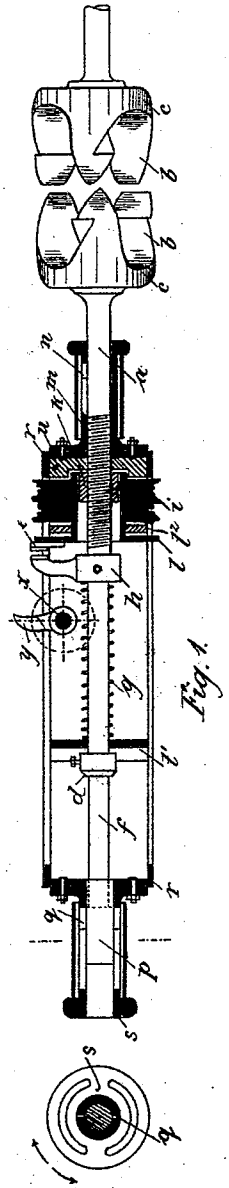


Fig. 1.

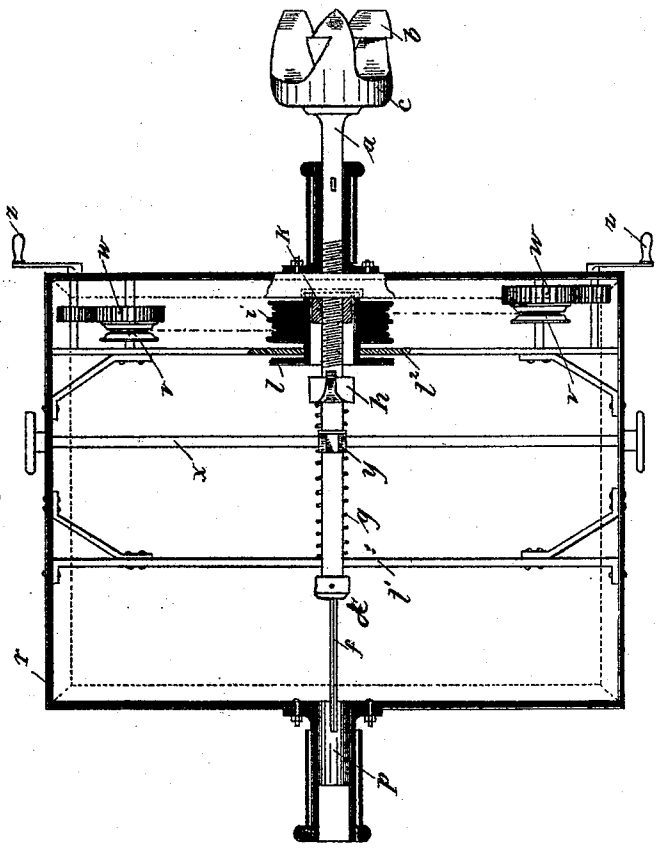


Fig. 2.

Witnesses
J. A. Saul.
G. W. Rea.

Inventor
Hermann Saamkopf
by James L. Norris.
Atty.

THE NATIONAL LITHOGRAPHING COMPANY,
WASHINGTON, D. C.

(No Model.)

2 Sheets—Sheet 2.

H. SAAMKOPF.

CAR COUPLING.

No. 515,251.

Patented Feb. 20, 1894.

Fig. 5.

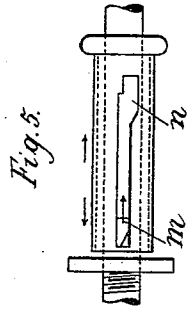


Fig. 4.

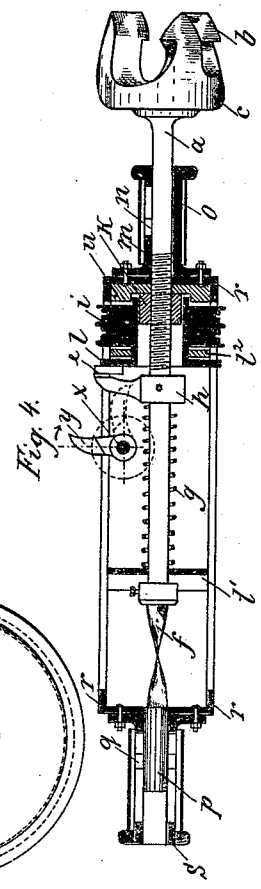


Fig. 3.

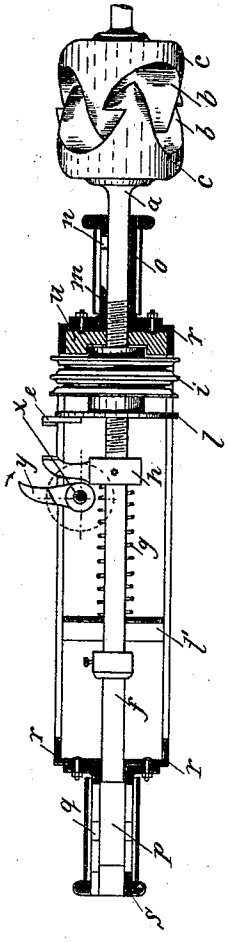


Fig. 7.

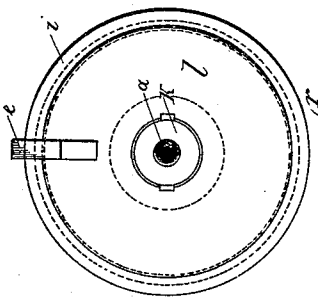
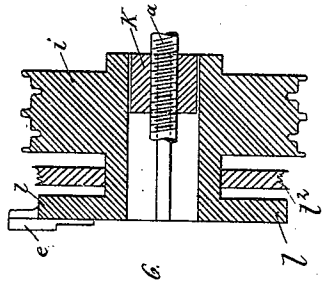


Fig. 6.



Witnesses
J. A. Saul.
G. W. Rea.

Inventor
Hermann Saamkopf
by James L. Norris.
Atty.

THE NATIONAL LITHOGRAPHING COMPANY,
WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

HERMANN SAAMKOPF, OF BRUNSWICK, GERMANY.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 515,251, dated February 20, 1894.

Application filed June 22, 1893. Serial No. 478,478. (No model.)

To all whom it may concern:

Be it known that I, HERMANN SAAMKOPF, a subject of the King of Prussia, German Emperor, and a resident of Brunswick, in the Kingdom of Prussia, German Empire, have invented certain new and useful Improvements in Automatic Couplings for Vehicles of All Kinds, of which the following is a true specification.

The present invention relates to a coupling which works automatically on the carriages being drawn together. The coupling is tightened or released from the side of the carriage, and therefore renders it unnecessary for the shunter to go between the buffers. The coupling can further be arranged so as not to operate when the carriages are being shunted and pushed off.

Figure 1 shows the coupling ready for operation. Fig. 2 shows a plan of the coupling. Fig. 3 shows the coupling tightened up. Fig. 4 shows the coupling arranged for shunting-work. Fig. 5 shows the guides for the coupling claws. Figs. 6 and 7 are details showing the operating devices.

In attaching these couplings to existing carriages a wrought-iron framing is used on which the coupling is mounted the framing being affixed to the body of the carriage. With new carriages, however, the coupling is made in one piece with the body of the carriage, obviating the use of a special framing.

To the spindle *a*, which is made of suitable strength and is provided up to a certain length with a screw thread, is attached the head *c* furnished with peculiarly shaped claws *b*, the spaces between the latter being hollowed out in special curves. At the other end the spindle is provided with an incision in which a flat steel spring *f* is firmly fixed. A cup-ring *d*, secured and adjusted by a screw, is brought over the point of attachment of spring and spindle, and serves to hold the same firmly together. The spring is thus in one complete piece with the spindle and must follow the backward and forward motion of the latter. The spindle is mounted in the framing *r*, composed of U-shaped irons and is traversed by cross-bars *t' t''*. A spiral spring *g* is seated on spindle *a* abutting at one end against the transverse *t'* and at the other end against the thumb-piece *h*. The spring *g* tends to keep the spindle *a* at its forward position. Seated on the spindle are, further, two chain wheels *i*, of equal size and bored so as to allow of a nut *k*, provided with slide cheeks and working on the thread of the spindle *a* moving freely in grooves cut in the bores of said wheels. A disk *l* is attached to the extended hub of the wheels *i*, and carries a cam *e*. Nut *k* and chain wheels *i* rest against a packing *u* in the framing, said packing acting as a fulcrum for the movement of the spindle. Spindle *a* is further provided with a slide cheek *m* of prismatic form, working in a slit *n* of a guiding tube *o*. A short length of tubing is drawn over the guiding tube to prevent injury to the cheek *m* and its guide. The flat spring *f* at the other end of the spindle terminates in a round piece *p*, which also carries guide blocks *q*, working in a guiding tube *s*. A separate chain passes round each wheel and over a chain roller *v*. With this roller *v* gear spur wheels *w*, which latter are actuated by the handle *z* and rotate the chain rollers *v* and consequently the chain wheels *i*, either to the right or left as may be required. Nut *k*, being inclosed by wheels *i*, must necessarily make the same movement, causing the spindle, consequent on its being provided with a screw thread to travel either forward or backward. All parts connected to the spindle participate in the movements of the same.

Fig. 1 shows the coupling with the spindle in its most forward position, and Fig. 3 the spindle in its most backward position. The forward movement of the spindle causes the gradual approach of the thumb piece *h* toward the cam *e* on disk *l* until at last they come into contact. On still further rotating the chain wheels *i* the cam *e* lifts the thumb piece *h*, which till then has been lying slightly toward the side, and causes thereby a certain angular rotation of the spindle, bringing the head of the same into the position shown in Fig. 4. The couplings are thus released from one another. Spring *f* is also twisted during this movement. The angular rotation of the spindle is limited by the slide block *n* in the guide *m*.

In the position shown in Fig. 4, the coup-

ling is arranged for shunting purposes. In order to maintain this position a shaft *x*, lying at right angles to the spindle, and provided at both ends at the sides of the wagon with a hand-wheel, is attached to a two-armed catch *y* set over the spindle. This catch is set back when the coupling is in operation, while, when the coupling is brought into position for shunting, the catch is dropped over the thumb-piece *h* and holds it in its upright position, thus preventing the spindle *a* from turning. If the catch is thrown back and the chain-wheels rotated in a contrary direction, the thumb-piece *h* loses its hold on the cam *e* of disk *l*, and consequently relieves the tension on spring *f* which draws the spindle *a* and head *c* into their first position ready for recoupling. Upon two wagons being drawn together for coupling, the couplers are pushed in as far as the buffers yield. For this purpose and to avoid fracture, the couplers are made movable in the direction of their axes, and the nut *k* can also slide freely in the grooves of the chain-wheel bores. This play of the spindle allows of their being used also as buffers. Naturally the size and strength of the couplers vary with the size of the wagon. When the couplers are in operation the claws have sufficient play-room to move freely when passing round curves.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. In automatic couplings for vehicles, the combination of a spindle provided with a screw-thread, along part of its length, of a three-claw head attached to said spindle, a nut working on the screw thread of the same, chain-wheels, in the bore of which the guide-pieces of the nut can move freely, a disk and thumb-piece attached to and rotating with said chain-wheels, a thumb-piece rigidly attached to the spindle, a spiral spring seated on spindle and a flat spring rigidly attached to the end of said spindle, guide-cheeks attached to spindle and to the end of the flat spring, chain-rollers and cog-wheel gearing for actuating the same, chains connecting said chain-wheels and rollers, a catch controlled from the sides of the wagon and means for operating the whole substantially as and for the purpose herein described with reference to the accompanying drawings.

2. In automatic couplings for vehicles, the combination with a spindle provided with a claw-head, of a nut seated on the screw-thread cut in said spindle and moving freely in grooves cut in the bores of two chain-wheels, thus allowing of the double-motion of the coupling-spindle, substantially as and for the purpose herein described with reference to the accompanying drawings.

3. In an automatic coupling for vehicles, the combination with an axially rotatable spindle *a* provided with a claw-head and an attached thumb-piece *h*, of a transverse rotary shaft *x* having a catch *y* for engaging the thumb-piece to prevent axial rotation of the spindle and its claw-head, substantially as and for the purposes described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

HERMANN SAAMKOPF.

Witnesses:
PAUL JOLMLN,
AUL. LIPPERT.