(No Model.) 2 Sheets—Sheet 1.

T. L. McKEEN.

CAR COUPLING.

No. 492,610. Patented Feb. 28, 1893.

Fig. 1.

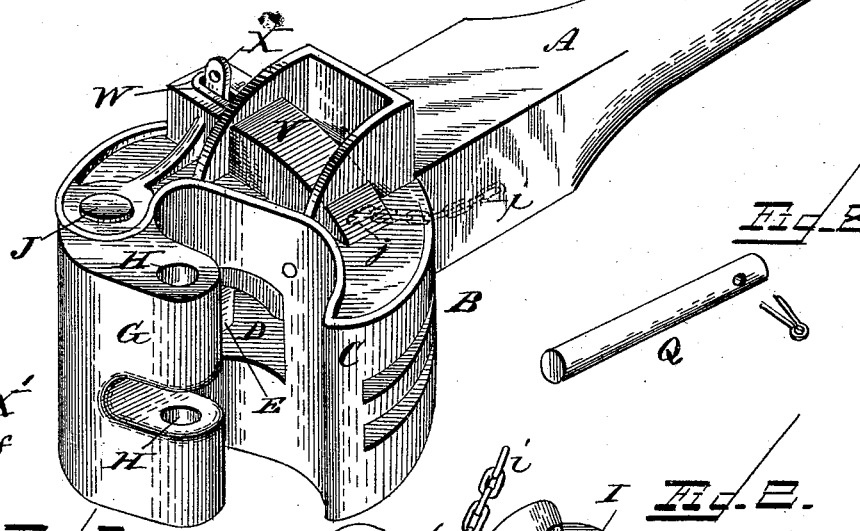

Fig. 2.

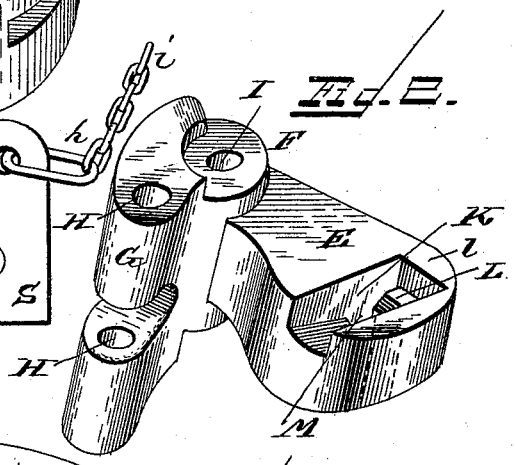

Fig. 7.

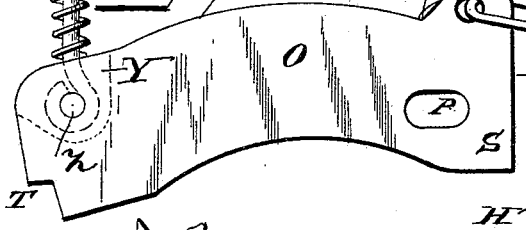

Fig. 5.

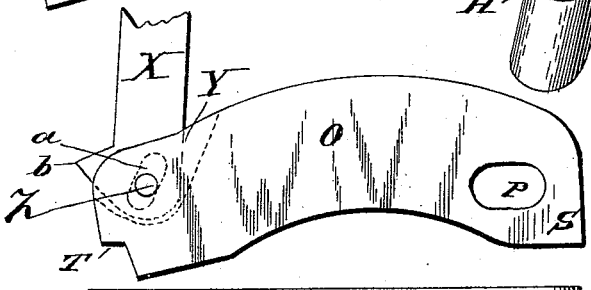

Fig. 6.

WITNESSES:

F. L. Ourand.

Emmet A. Jones.

INVENTOR:

Thomas L. McKeen.

by James Bagger & Co.

Attorneys.

(No Model.) 2 Sheets—Sheet 2.

T. L. McKEEN.

CAR COUPLING.

No. 492,610. Patented Feb. 28, 1893.

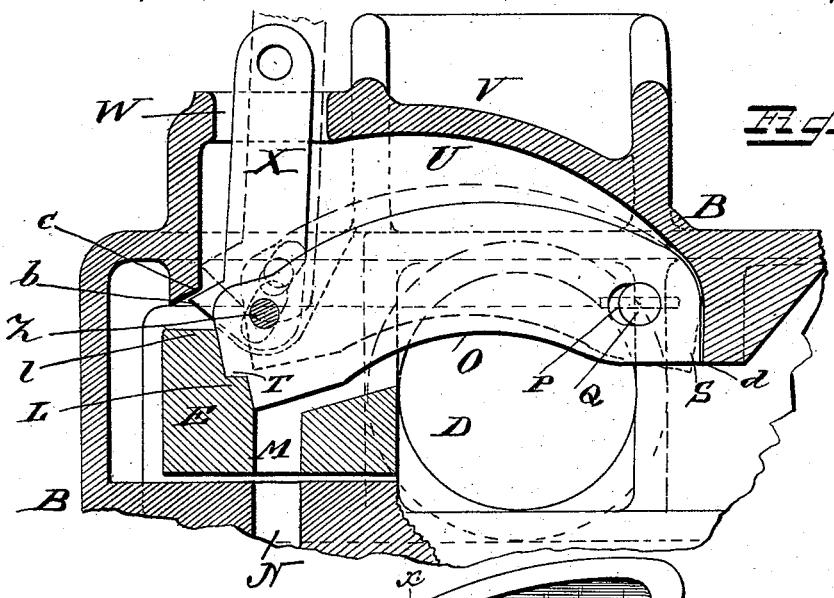

Fig. 4.

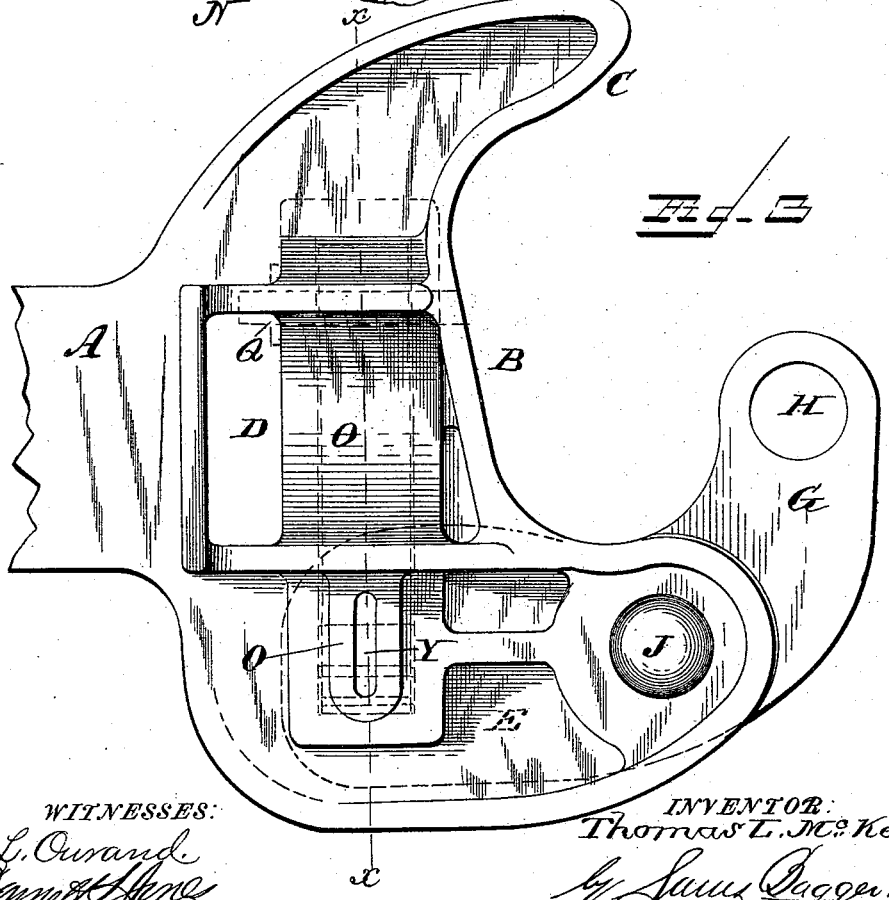

Fig. 3.

WITNESSES:
F. L. Ourand
Emmett Jones

INVENTOR:
Thomas L. McKeen.
by Lamb Dagger & Co
Attorneys.

UNITED STATES PATENT OFFICE.

THOMAS L. McKEEN, OF NEW YORK, N. Y., ASSIGNOR TO ISAAC G. JOHNSON & CO., OF SAME PLACE.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 492,610, dated February 28, 1893.

Application filed September 26, 1892. Serial No. 446,984. (No model.)

To all whom it may concern:

Be it known that I, THOMAS L. McKEEN, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Car-Couplings; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a perspective view of my improved coupler. Fig. 2 is a perspective detail view of the knuckle, removed from the drawhead. Fig. 3 is a plan or top view of the coupler, the hood or top part having been removed. Fig. 4 is a sectional view on the vertical plane denoted by the broken line marked *x*—*x* in Fig. 3, showing the location and arrangement of the pivoted locking-latch in relation to the drawhead and knuckle. Fig. 5 is a side view of the pivoted locking-latch, removed from the drawhead and as arranged for freight couplers. Fig. 6 is a top view of the same. Fig. 7 is a side view of the pivoted locking-latch, removed from the drawhead and as arranged for passenger couplers; and Fig. 8 is a detail view of the locking-latch pin and its cotter.

Like letters of reference denote corresponding parts in all the figures.

This invention relates to car couplings of the type known as "twin-jaw" couplers, and has for its object to render more certain the instantaneous and automatic operation of couplers of that class.

Another object accomplished by my improved construction is the simplification of the coupler as a whole, resulting in increased strength and durability, as well as decreased cost of manufacture.

With these objects in view, my invention consists in the improved construction and arrangement of the knuckle and the device for locking and unlocking the same, as will be hereinafter more fully described and particularly pointed out in the claims.

Referring to the drawings, the letter A designates the shank and B the drawhead of a "standard" twin-jaw coupler, the latter having the usual rigid jaw or guard-arm C. The metal body of the drawhead B is cast with a chamber or recess, D, for the insertion of the inner arm or tail E of the knuckle F, the curved and projecting outer end of which forms the movable coupling jaw G, which is preferably bifurcated and provided with two vertical holes, H H, in alignment with each other, so that it may be used with an ordinary pin-and-link coupling in a manner well understood. The knuckle F also has a vertical hole, I, for the insertion of the knuckle-pin J, whereby it is pivoted in the drawhead, so as to have a free swinging motion.

By reference to the detail view Fig. 2, it will be seen that the tail E of the knuckle is provided at its inner end with a recess, K, having an interior step or offset, L, and also an aperture, M, in its bottom, which said aperture, when the knuckle is in its closed or locked position, will coincide with an aperture N in the bottom or underside of the knuckle-chamber D in the drawhead (see Fig. 4). If any dirt, snow or water should find its way into the knuckle recess K, it will escape through the registering openings M and N, so as not to choke up the recess and thereby interfere with the operation of the locking-latch, shown at O. This latch is a curved bar or arm of metal, having at its inner end, where it is pivoted in chamber D, an oblong hole, P, for the insertion of the pin Q upon which the latch is hinged. The inner end of the latch has also a squared shoulder, S, which, by abutting against the squared inner corner *d*, of the recess D, (Fig. 4) will form a bearing or support for the latch when the knuckle is swung open, and thus support the latch in an approximately horizontal position and prevent its free end from dropping down against the bottom of the recess. This inner shoulder *d*, in conjunction with the shoulder or abutment S of the latch, also, by taking up lateral strain or pressure on the latch, relieves the pivot pin Q of all strain; this being the object in making the latch-aperture P, through which pin Q is inserted, oval or elongated instead of round. The free end of

the latch is recessed on its under side so as to form a nose, T, of such a size and shape that it will fit upon shoulder L within the knuckle-recess K. The width of the latch at that end is also such that it will fit into and impinge against the sides of the knuckle-recess K when dropped into it for the purpose of locking the latch after the coupling has been effected. The latch may be lifted, to release the knuckle and uncouple the cars, by means of a rod attached to its free end and passing up through an aperture in the top of the draw-head, where it is connected to a chain (not shown) passing to the platform or roof of the car, as usual.

In order to accommodate the latch and give it sufficient vertical room to play in, I provide a chamber, U, in the top of the drawhead, which is covered by a hood or housing, V, through which the aperture W is made for the insertion of the coupling-rod X. In drawheads intended for use on freight cars, this rod X consists of a flat plate, the lower end of which is inserted into a recess Y in the free end of latch O, and pivoted therein by a pin Z, the ends of which play loosely in oblong and rearwardly inclined slots, *a*, in the bifurcated end of the latch, as shown in Fig. 5. The lower end of this plate X has a nose *b*, which, when the latch is locked, as indicated in full-lines in Fig. 4, will bear against the underside of a beveled drop or projection, *c* within the latch-recess, D, on the side opposite to the squared shoulder *d* of said recess. By the latch-nose *b* thus engaging the pendant or projection *c*, it, and with it the free end of the latch, is effectually locked in place, so that the latch cannot be jarred out of the recess K in the knuckle; while, at the same time, if the rod or plate X is lifted, when it is desired to unlock the latch and uncouple the cars, the incline of the oblong slot *d* will cause plate X, at the same time that it is being lifted by the brakeman, to slide back, in the direction of its length, a sufficient distance to withdraw the nose *b* from under its overlapping catch or projection *c*, thus releasing it therefrom, so that it, with the free end of the latch, may be lifted up high enough to disengage it from its locking-recess K in the knuckle and thereby unlock the latter so that its jaw G may swing open and the cars become uncoupled. This backward motion of the latch is permitted by the oblong shape of the hole P through which the latch-pin is inserted, for if it were round, fitting pin Q closely, it is obvious that it would not be possible to move the latch in the direction of its length upon the pin.

While the same construction and arrangement may, of course, be applied to couplers for passenger cars, I prefer to slightly modify the arrangement for that purpose, as illustrated in Fig. 7.

Instead of using a flat plate with a locking nose or catch at its lower end, I use a round rod X′, the lower end of which is bent to form an eye around the pin Z, which, in this case, is made rigid within the recess Y. In order to keep the free end of the latch normally in its "down" or locked position, I employ a spring, *e*, coiled around the lower end of rod X′ and bearing with its upper end against a stop or button, *f*, upon said rod, and with its lower end against the latch. Thus it will be seen that the spring *e* will operate to depress the free end of the latch so as to keep it within the locking-recess, K, in the knuckle, and prevent it from jarring out accidentally. I may also provide either one or both forms of latches with a projection, *g*, at its inner (pivoted) end and above the hinge-pin Q, to which said projection a link, *h*, may be attached. A short rod or chain *i*, fastened to the free end of this link, passes out through an aperture, *j* (Fig. 4) in the hood or housing V, and extends to the side of the car, so that the latch may be lifted, to uncouple the cars, by pulling on this rod or chain from the side of the car, as well as by lifting rod X (or X′) from the roof or platform of the car. If it is desired to so adjust the knuckle that its jaw G shall be partially open, to facilitate ingress of the coupling-jaw appertaining to the coupler of an adjacent car (as for example, when cars are to be coupled on sharp curves), this may be effected by dropping the latch O into the recess K so that its nose T will rest upon the top of the recess, or at the point marked *l* in Figs. 2 and 4, instead of upon the shoulder L within the recess. When cars with "twin-jaw" couplers are to be coupled on sharp curves, it will be advisable to adjust the latch and knuckle relatively in this position, and the moment the twin-jaw of the adjacent car has entered the drawhead, the tail of the knuckle will be pushed back so as to allow the latch to drop into the bottom of the recess, thus interlocking with the knuckle and completing the coupling.

From the foregoing specification, taken in connection with the drawings, it will be observed that the latch O operates by gravity; the spring *e*, when used, being simply to prevent it from accidentally jarring out.

The lock formed by the recessed free end of the latch and the shouldered recess K in the knuckle is direct and positive, and by providing the knuckle recess with an outlet M, coinciding, as we have seen, with a corresponding aperture in the bottom of the drawhead, I provide against the accumulation of matter in the locking recess, so that the latch will always drop clear to the bottom and thus make a complete and effective lock.

By the construction of the latch with its shoulder S, operating in conjunction with the inside shoulder or abutment *d*, the latch-pin or pivot Q is relieved of all strain, all lateral strain in turning curves coming upon the solid metal of the drawhead which forms this shoulder *d*. Thus it will be seen that all the parts of my improved coupler are strong and simple, so that the liability of breakage is re-

duced to a minimum and the operation of coupling and uncoupling rendered positive, certain, and expeditious.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a "twin-jaw" car-coupler, the combination of the recessed drawhead, the pivoted knuckle having a shouldered recess at its inner end, and the hinged latch shaped at its free end to fit into and interlock with the shouldered recess in the knuckle, substantially as and for the purpose set forth.

2. In a "twin-jaw" car-coupler, the combination of the recessed drawhead having an opening in the bottom of its recess, and the pivoted knuckle provided with a shouldered locking recess at its inner end, having an aperture coinciding with the opening in the bottom of the drawhead recess when the knuckle is closed or locked; substantially as and for the purpose set forth.

3. In a "twin-jaw" car-coupler, the combination of the recessed drawhead, the pivoted knuckle having a shouldered locking recess at its inner end, and the latch hinged loosely at one end upon a pin so as to give it free play in the direction of its length, and having a nose or offset at its free end adapted to fit into and interlock with the shouldered recess in the knuckle; substantially as and for the purpose set forth.

4. In a "twin-jaw" car-coupler, the combination of the recessed drawhead having beveled projection *c*, the pivoted and recessed knuckle, the hinged latch working loosely on its hinge-pin, and the lifting-plate having a projecting nose impinging against the underside of the projection *c;* substantially as and for the purpose shown and set forth.

5. In a "twin-jaw" car-coupler, the combination of the recessed drawhead provided with the housing V having apertures W and *j*, the pivoted knuckle having a shouldered locking recess at its inner end, the hinged latch having projection *g*, the lifting plate or rod hinged to the free end of the latch and passing up through the top aperture W, and the link *h* and chain *i* fastened in the latch projection *g* and inserted through the aperture *j* in the housing, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

THOMAS L. McKEEN.

Witnesses:
W. C. JOHNSON,
J. FREDERICK KAPP.