(No Model.)

C. H. SMITH.

CAR COUPLING.

No. 604,505. Patented May 24, 1898.

Fig. 1.

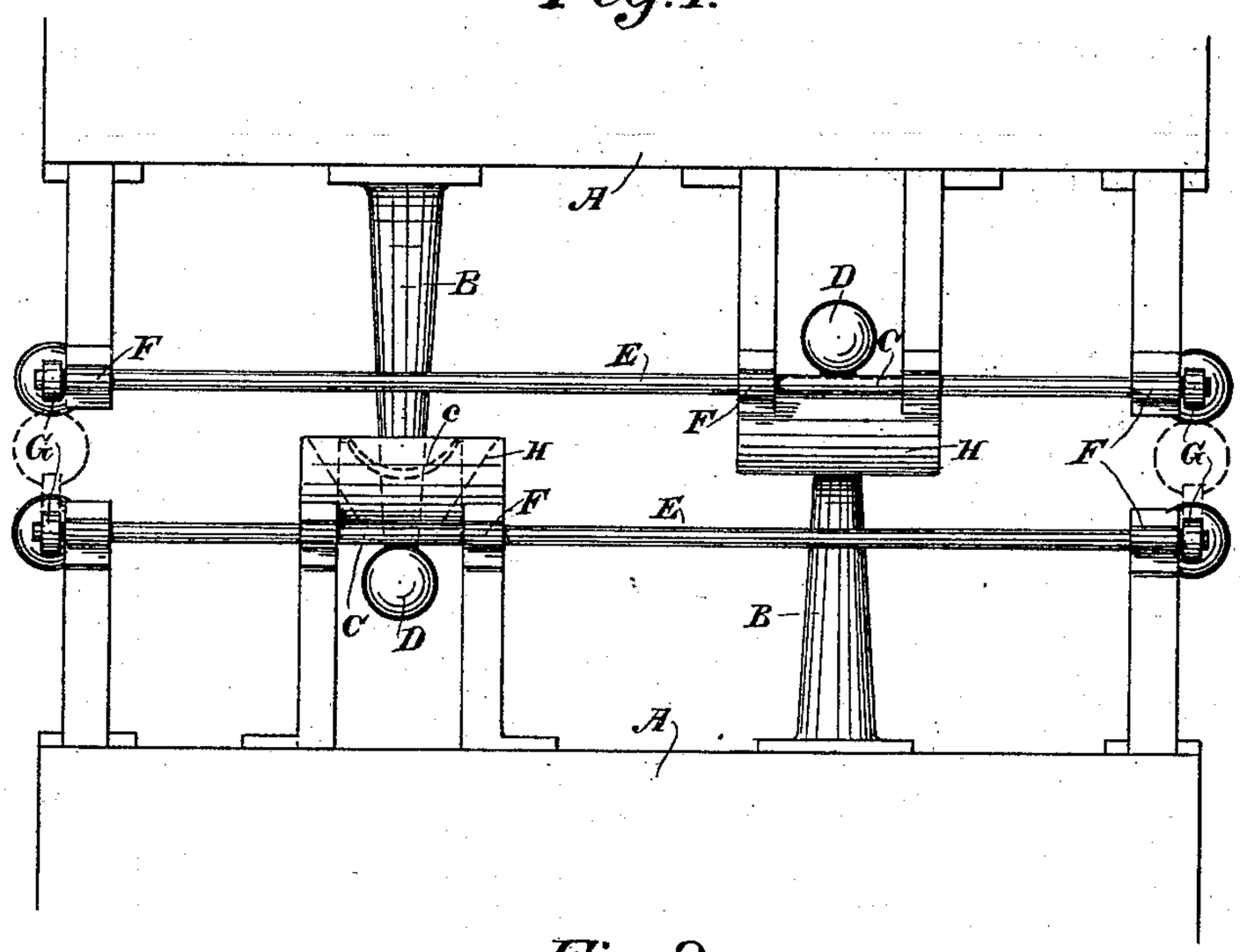


Fig. 2.

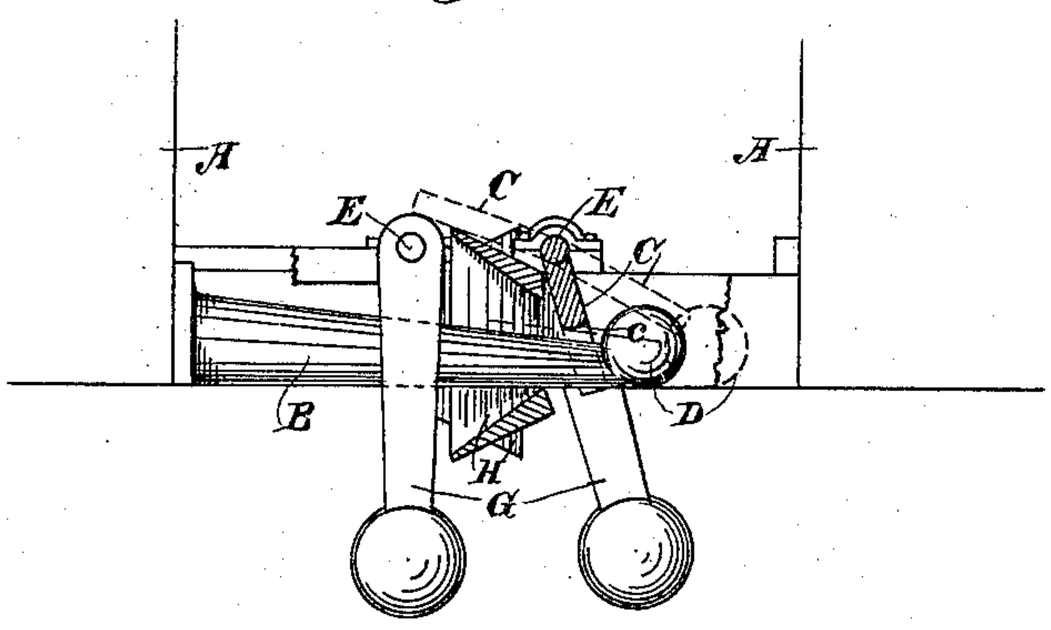
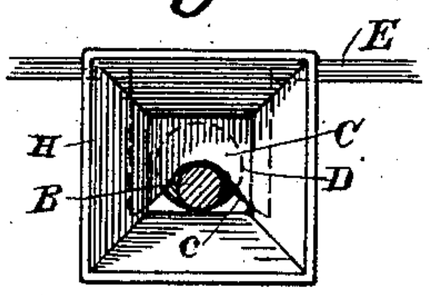


Fig. 3.



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UNITED STATES PATENT OFFICE.

CHARLES H. SMITH, OF COULTERVILLE, CALIFORNIA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 604,505, dated May 24, 1898.

Application filed October 1, 1897. Serial No. 653,673. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. SMITH, a citizen of the United States, residing at Coulterville, county of Mariposa, State of California, have invented an Improvement in Car-Couplings; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to a device for the automatic coupling of cars and a means for disengaging the couplings without the necessity of the operator passing between the cars.

It consists in details of construction which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a plan view. Fig. 2 is a side elevation showing one of the guides in section. Fig. 3 is a face view of the latter.

A A are the trucks or frame-timbers of two cars which are to be coupled together. From one side of each of these cars projects an arm B, which extends far enough from its point of attachment to engage with the corresponding latch C of the opposing car. Upon the end of the arm B is the enlarged head or knob D, which in the present case is shown as globular in form, and the arm B is tapered from its point of attachment to the point where the enlarged head D is formed upon it.

Each car is provided with one of the projecting arms B and knob D upon one side and the latching-plate C upon the other side of a longitudinally-central line, so that the coupling is in duplicate.

The latching-plates C are fixed to a rotary shaft E, which extends across the front of the car and is suitably journaled in boxes, as shown at F, so that it is turnable in these boxes. This shaft E is provided with weighted arms G at the outer ends, and they stand in the plane of the latch-plates C, so that when turned downward the weight of the arms G and the plates C will cause them to drop into a perpendicular position.

The lower edges of the latch-plates C have curved concave depressions or notches *c* formed in them, so that as the latch-plates hang downward below the shaft E they are in line with the locking or engaging heads D of the arms B.

In front of each of the latch-plates C is formed the diverging coupling or guide opening H, which serves to direct the heads D and cause them to pass inwardly and engage the latch-plates C.

The latch-plates lie in contact with the rear ends of the guide H when in a vertically-dependent position, and the pull of the draft-bars is thus resisted.

The operation will then be as follows: When the cars come together, the heads D on the arms B of each of the cars enter the guides H of the opposing cars and striking the swinging plates C the latter are caused to swing backwardly until the heads D have passed through the concavity *c*, when the weight of the plate C and the arms G will cause the plate to swing back to its normal essentially vertical position, and in this position the plates C lie against the inner part of the guides H, which thus prevent them from swinging in that direction. Whenever the pull upon the cars takes place, the heads D are drawn against the plates C, and as the latter rest against the inner faces of the guides H they cannot swing in that direction, and power is thus applied to pull each car by the action of the heads upon the plates.

When it is desired to uncouple the cars, it is only necessary to turn the shafts E by means of the weighted arms G at either end and swing the plates C upwardly until they are disengaged from the heads D. This can be accomplished when the cars are pushed close together, so that space enough will be left for the plates to swing and clear the heads D. When thus turned over, the plates C will rest upon the upper sides of the guides H and there remain when it is not desired to have the cars coupled. If the cars are to be coupled, it is only necessary to swing them into their normal hanging position, so that whenever the heads D enter the guides H they will swing the plates C until the heads pass and are again engaged.

It will be seen that by means of the double coupling I have a more complete and safe connection than if only a single coupling device was employed.

As the coupling is what is termed a "loose coupling," the cars will be slightly separated when the pull is upon them, and the heads D will be drawn into contact with the plates C; but in making turns in either direction it will

be seen that the pull will temporarily come upon the head and plate which are on the outside of the curve, while the other head D will be temporarily pushed away from its plate until such time as the cars are again in line.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a car-coupling, the combination of a bar rigid with and projecting from one car in the line of travel thereof, and having a knob upon its outer end, an outwardly-diverging guide fixed to the opposing car and having a passage or opening made entirely through it, and a shaft exterior to and journaled behind the inner end of the guide, having a plate depending from it and adapted to seat itself against the rear exterior surface of the guide, so as to partially close the opening in the inner end thereof, said plate having its under surface grooved and said shaft having weighted arms upon its outer ends.

2. An improved car-coupling consisting of bars rigid with and projecting from opposite cars, said bars being on opposite sides of the longitudinal central line of the cars, diverging guides projecting from said cars one in line with each of the said bars, said guides having openings made entirely through them and said bars having knobs to pass through said openings to a point exterior to the inner ends of the guides, shafts journaled on each car at a point behind the inner end of each guide, weighted arms on the ends of said shafts and plates on said shafts and lying just behind the vertical plane of the inner ends of the guides, whereby the passage of the knobs beyond the inner ends of the guides lifts the plates until the grooved portions thereof pass the knobs when the plates seat themselves against the open inner ends of the guides and partially close the same, and secure the knobs.

In witness whereof I have hereunto set my hand.

CHARLES H. SMITH.

Witnesses:
S. H. NOURSE,
J. C. BRODIE.