(No Model.)

H. M. KEITH.

CAR COUPLING.

No. 284,436. Patented Sept. 4, 1883.

Fig 1

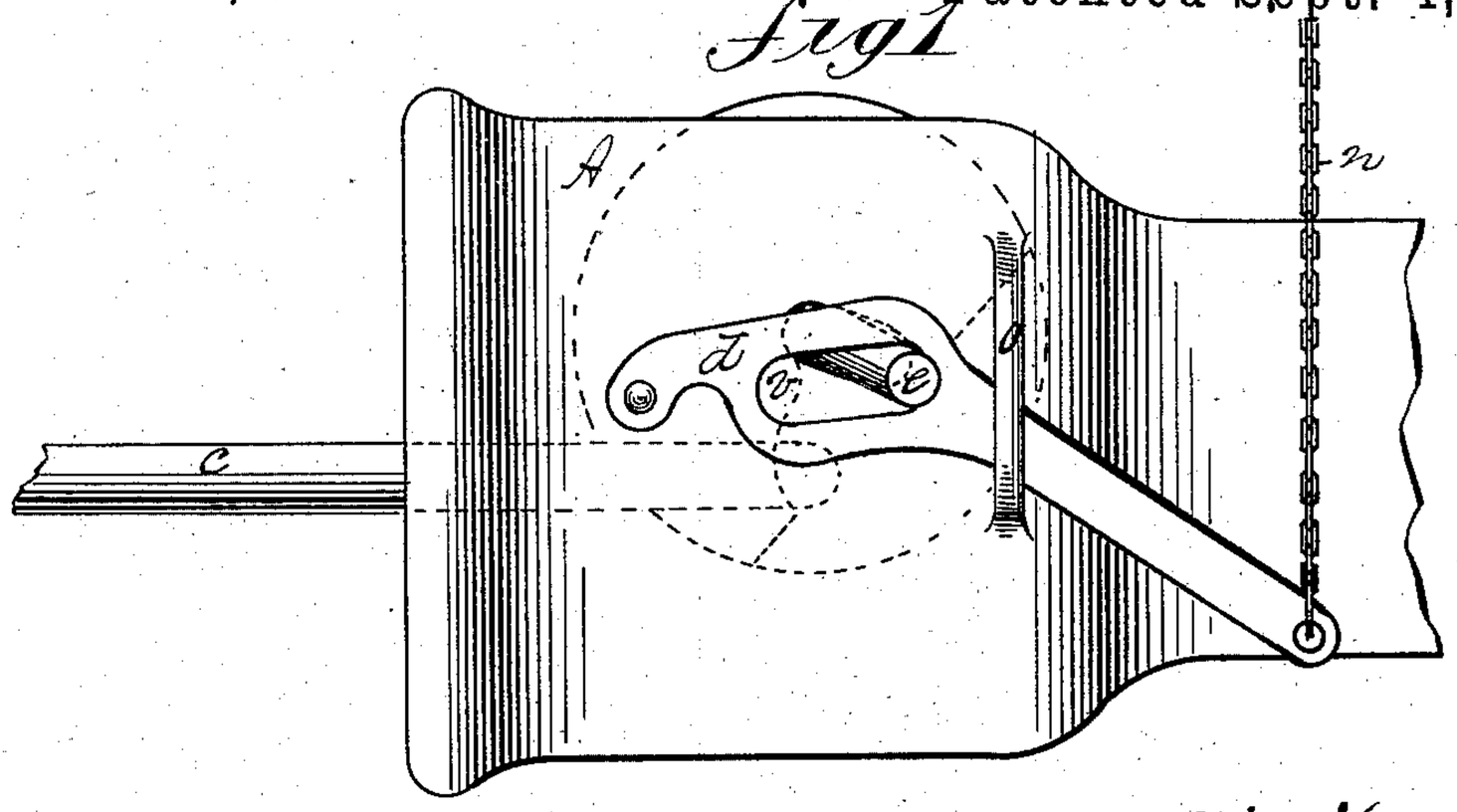


Fig 2

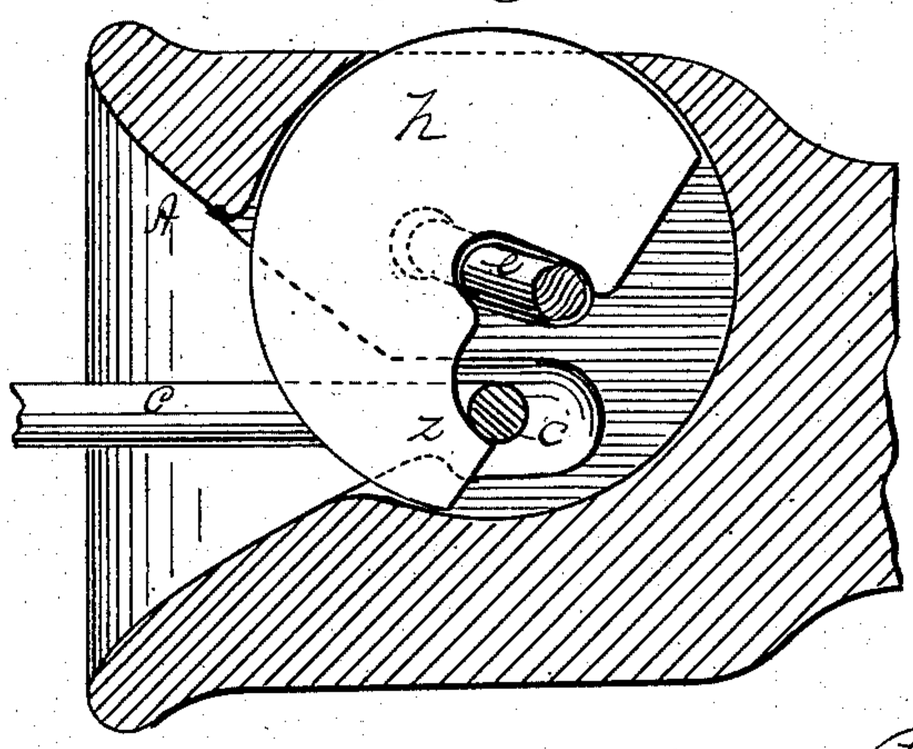


Fig 3

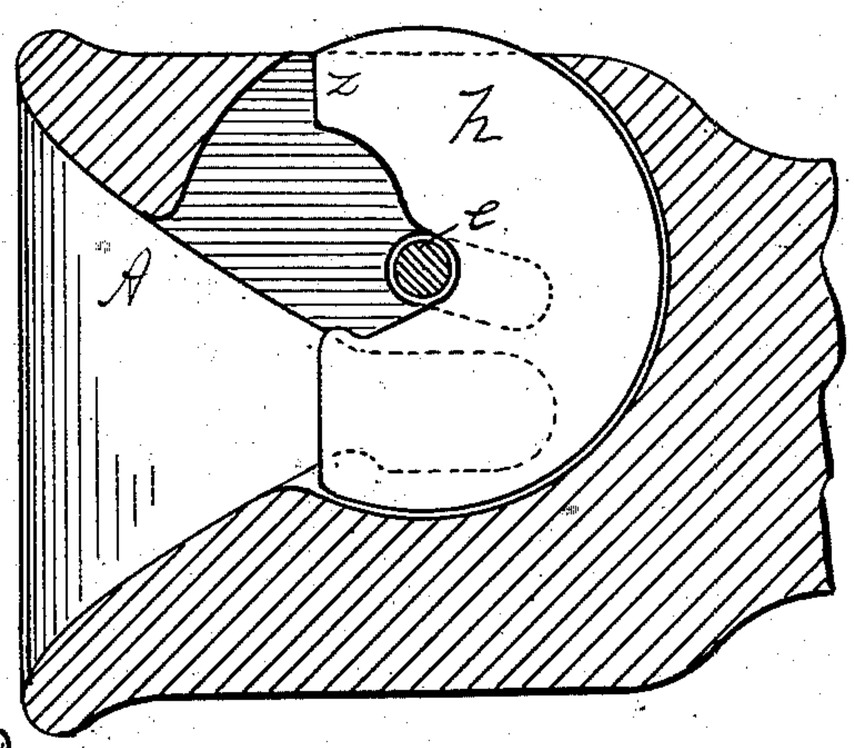
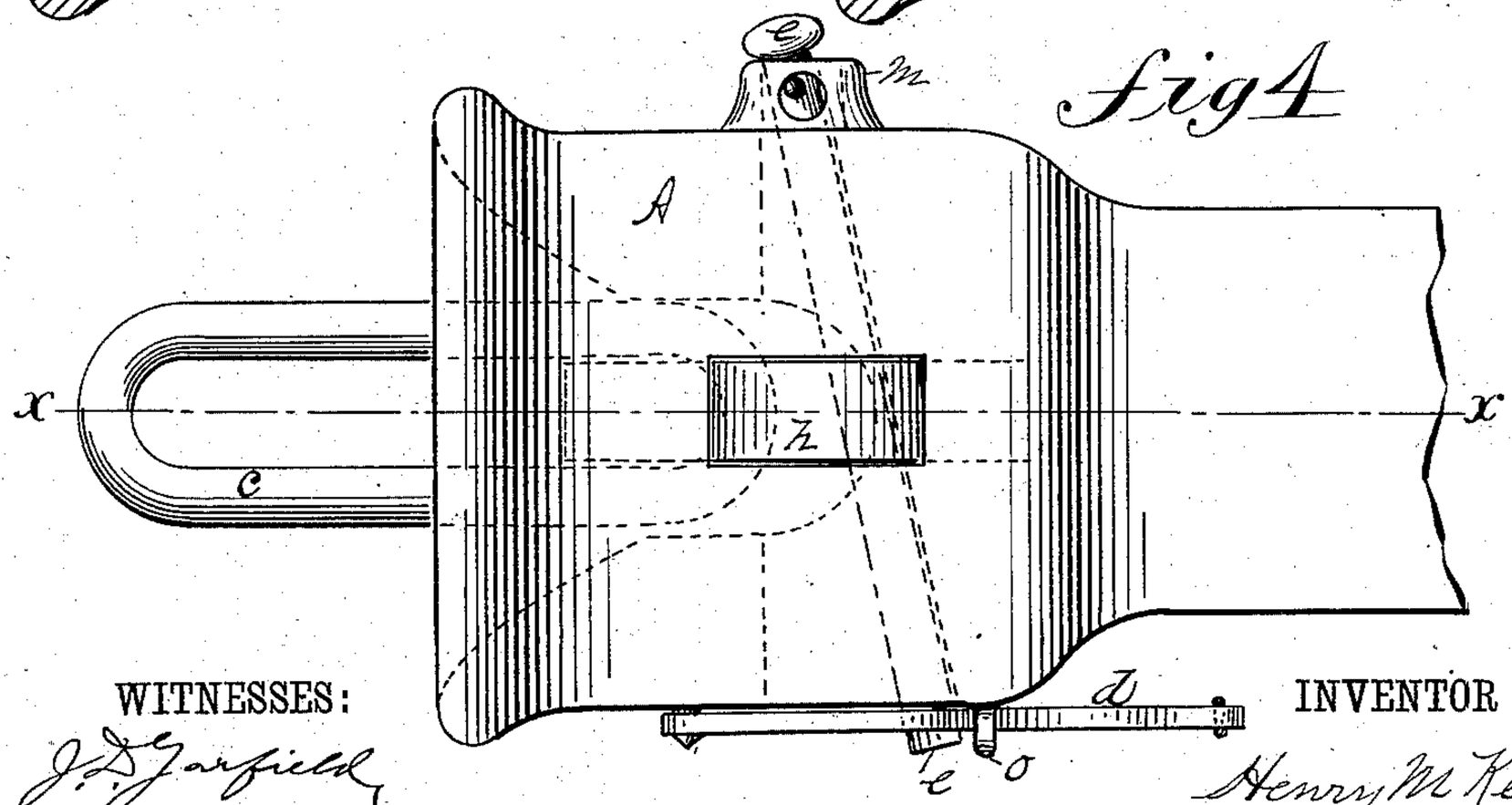


Fig 4



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HENRY M. KEITH, OF ERVING, MASSACHUSETTS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 284,436, dated September 4, 1883.

Application filed June 7, 1883. (No model.)

To all whom it may concern:

Be it known that I, HENRY M. KEITH, a citizen of the United States, residing at Erving, in the county of Franklin and State of Massachusetts, have invented new and useful Improvements in Car-Couplings, of which the following is a specification.

This invention relates to improvements in car-couplings; and it consists in the combination, with the draw-bar head thereof, of a circular link-lock adapted to rotate therein in a vertical plane in the rear of its mouth, and of a horizontally-vibrating bolt for said lock, constituting both a pivot for the latter and a locking-bar therefor, and means for swinging said bolt to leave the link-lock free to rotate, and to prevent it from turning under traction-strain.

In the drawings forming part of this specification, Figure 1 is a side elevation of a draw-bar head, and Fig. 4 a plan view thereof, constructed with link-locking devices according to my invention. Fig. 2 is a sectional view, as is also Fig. 3, on the line *x x*, Fig. 4.

In the drawings, A is the draw-bar head, constructed with a circular chamber at the rear of its mouth for the reception of the circular link-lock *h*, a portion of whose periphery is cut away, as shown. The mouth of the draw-bar head is chambered at its rear side to allow the end of the coupling-link *c* to penetrate under said link-lock. A bolt, *e*, is secured by one end to the head A by a pin which passes through a boss, *m*, on one side of the said head. The bolt *e* passes transversely through the head A from side to side in a wide bolt-hole, the form of which is shown in full and in dotted lines in several of the figures, and is capable of vibratory movements therein, said hole being arranged at an incline, as shown. A slotted lever, *d*, is pivoted on one side of head A, and the free end of bolt *e* projects through the slot *v* thereof. A strap, *o*, on the side of head A, behind which lever *d* passes, assists in keeping the latter in position. A chain, *n*, is attached to the free end of lever *d*, which may be extended to the roof or sides of a car over suitable rollers, whereby lever *d* may be operated without going between cars to which the coupling is applied. The link-lock *h* is adapted to rotate on the bolt *e* when the latter lies in a position directly across the head A, thus bringing the bolt to a position through the center of the link-lock, as shown in Fig. 3. One side of the link-lock is made of a suitable form to constitute an arm, *z*, which swings into the link *c* and engages therewith, as shown in Fig. 2. The side of the lock *h* opposite to the arm *z* is enough heavier than its arm side to overbalance the latter when it hangs on the bolt *e*, as in Fig. 3, and cause it to automatically take the position there shown; but when the link-lock has been rotated to the position shown in Fig. 2, and the free end of bolt *e* is moved rearwardly to swing the bolt to the position shown in the latter figure and by the dotted lines in Fig. 4, that part of the bolt which is in contact with the link-lock is moved to one side of its center, and the latter cannot be rotated by the tractional strain of the link *c*. The opening from the rear of the mouth of the head A into the link-lock chamber is of such form as to permit of introducing the lock *h* into said chamber by holding it with its cut-away edge down. Bolt *e* is then passed through the head and secured by pinning it, as aforesaid.

The operation of my improvements is as follows: The position of the link-lock *h* when ready to act and automatically hook into a coupling is that shown in Fig. 3. To permit the lock to assume said position, the bolt *e*, by lifting up the end of lever *d*, or by other suitable means, is swung to a central position, as in Fig. 3, when the lock will rotate to the position there shown, to act as aforesaid. The link *c*, being connected to the draw-bar of another car, and by the latter driven into the head A, against the lower side or end of the lock *h*, causes the latter to rotate on the bolt *e* and the arm *z* to engage in the link, as shown in Fig. 2; and when the link-lock has taken said position and the link is drawn against arm *z*, the lock is slightly lifted against the upper front end of the head A and off from the bolt *e*, which, being freed from the weight of the link-lock, slides down the inclined bolt-hole and beyond the center of the lock, as shown in Figs. 1, 2, and 4, so that the latter

cannot turn upon it. The traction-strain of the link then being exerted against the inner edge of the arm *z*, the lock is drawn forcibly against the upper front end or side of its chamber, and the bolt *e*, being tightly clamped between the edge of the lock, with which it is in contact, and the lower side of the inclined bolt-hole, serves to hold the lock rigidly against any tractional strain.

To uncouple cars or disconnect the link from the lock *h*, the free end of lever *d* is swung upward, carrying the lower edge of its slot *v* against the end of bolt *e*, and swinging the latter to a central position, when the link-lock will rotate to the position shown in Fig. 3, first being started by the movement of the link as it goes out of the head A.

Any suitable means, if desired, may be adopted in connection with this coupling for raising the end of the link as it is about to enter the draw-bar mouth when cars are approaching each other.

What I claim as my invention is—

1. In combination with the draw-bar head A, having a circular chamber back of its mouth, the circular link-lock *h* and the bolt *e*, pivoted to one side of said head and passing transversely through said chamber, and adapted to have a vibratory motion in said head in a direction at an incline to a horizontal plane, substantially as set forth.

2. In combination with the draw-bar head A, having a circular chamber back of its mouth, the circular link-lock *h*, the bolt *e*, pivoted to one side of said head, and adapted to have a vibratory motion therein in a direction at an incline to a horizontal plane, and the lever *d*, adapted to engage with the free end of said bolt, substantially as set forth.

HENRY M. KEITH.

Witnesses:

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