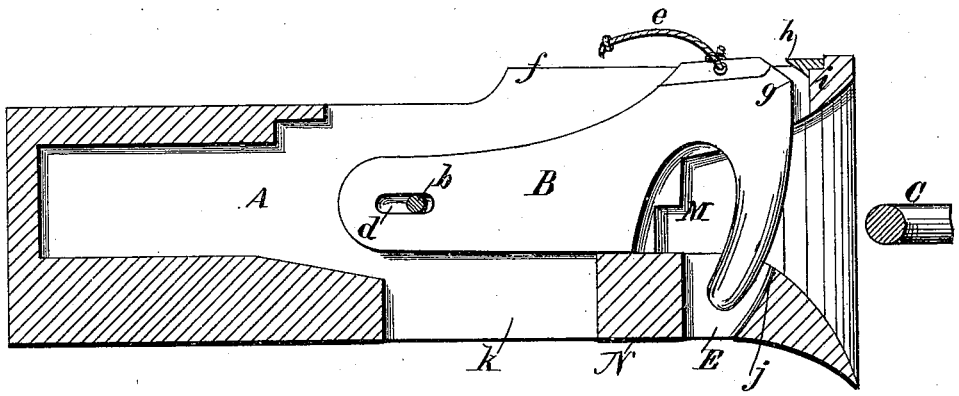
C. H. KNOWLTON.

CAR-COUPLING.

No. 186,682. Patented Jan. 30, 1877.



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UNITED STATES PATENT OFFICE.

CHARLES H. KNOWLTON, OF ROCKLAND, MAINE.

IMPROVEMENT IN CAR-COUPLINGS.

Specification forming part of Letters Patent No. **186,682**, dated January 30, 1877; application filed November 10, 1875.

To all whom it may concern:

Be it known that I, CHARLES H. KNOWLTON, of Rockland, in the county of Knox and State of Maine, have invented certain new and useful Improvements in Car-Couplings; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming part of this specification, in which my improvement is represented by a longitudinal vertical section.

Similar letters of reference in the accompanying drawing denote the same parts.

My invention relates to that class of automatic car-couplers in which the coupling is effected by means of a hook, which is lifted by the entrance of the incoming link in the draw-head of the car which is to be connected. It consists in certain details of construction in the hook and draw-head, which I proceed to set forth.

The draw-head has the ordinary shape and flaring mouth, and is provided with a hook, the general construction and function of which are the same as has been heretofore known. In the use of a hook, however, especially in the colder climates, in a draw-head of ordinary construction, there is this disadvantage: it must be located in a recess in the draw-head with a slotted opening above, which allows the entrance of snow or rain, and by freezing the hook would be clogged and its free action prevented. Further, the hook, when free, must be secured against any tendency to fly up and uncouple the cars while on the road, and, in addition to this, strength and cheapness of construction must be sought. To attain all these objects I construct the draw-head with an open space through the center for the hook B, which is pivoted upon a bolt passing through the sides of the draw-head, and through a slot in the rear extension of the hook. This space must be open above to allow the hook to be lifted freely and thrown back, if desired.

In order to prevent the accumulation of any snow, ice, or other thing which might fall from the cars from lodging in the cavity, the draw-head is formed open below; but the same care must be taken in respect to the finger of the hook which passes through the link. In order that it may have a lower as well as an upper bearing, which is necessary to prevent it from breaking in the draft to which it is subjected, there must be a cavity below, into which the lower end passes, and against the side of which it rests when drawn upon. This cavity (shown at E) is put through, for the same purpose as the slot *k*, to prevent the cavity from being filled and the entrance of the hook obstructed. At the same time, in order to afford a bearing for the hook to rest and slide upon, a bar is left between the slot *k* and hole E for that purpose. The draw-head is also provided with a recess, M, of height and breadth sufficient to receive and hold the rear end of the link, and sustain it in a horizontal position, for coupling with the opposite car. The upper part of the draw-head is formed with a shoulder, *i*, against which the forward end of the hook rests when the car is drawn. Above this is a beveled flange, under which the hook, made with corresponding bevel, fits securely. The hook is made, as shown, with a straight bottom part, and rests partly on the pin *b* and partly on the cross-bar N. It has sufficient motion to allow the beveled shoulder to slide back and free itself from the flange *h* in uncoupling the cars. The finger of the hook is slightly inclined backward, for two purposes—first, to allow the link to lift the hook upon entering, and, second, in order that the draft upon the link acting on the other side of the finger may tend to hold it down, though the latter is the less necessary by reason of the flange on the draw-head above. The space between the finger and the shank of the hook is made large enough to allow free play for the link on down grades, so that the link, when pushed back, shall enter the recess, but not push back the hook, so as to free it from the flange which holds it down. As the hook slides freely on such down grades, when the link does not draw, the weight of the hook itself will keep it forward under the shoulder, so that in no case is there any danger of accidental uncoupling.

The hook may be lifted by a cord or chain, or in any of the ordinary ways. It bears, when under strain, above and below, and is there-

fore not likely to break. From careful construction of these details it has been made of tried practical utility.

The flange *h* may be formed on the draw-head, or may be made of a bar fixed across the end of the slot.

Having thus described my invention, what I claim as new is—

The car-coupling described, consisting of the draw-head having the slots above and below, the hole E, the bearing for the hook-fingers above and below, the bearing N for the support of the hook, in combination with the hook, slotted at *d*, formed to fit under the shoulder *h*, and adapted to operate with respect to the link, all as and for the purposes set forth.

CHARLES H. KNOWLTON.

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