M. BURPEE.
Car-Coupling.

No. 210,597. Patented Dec. 10, 1878.

Fig 2

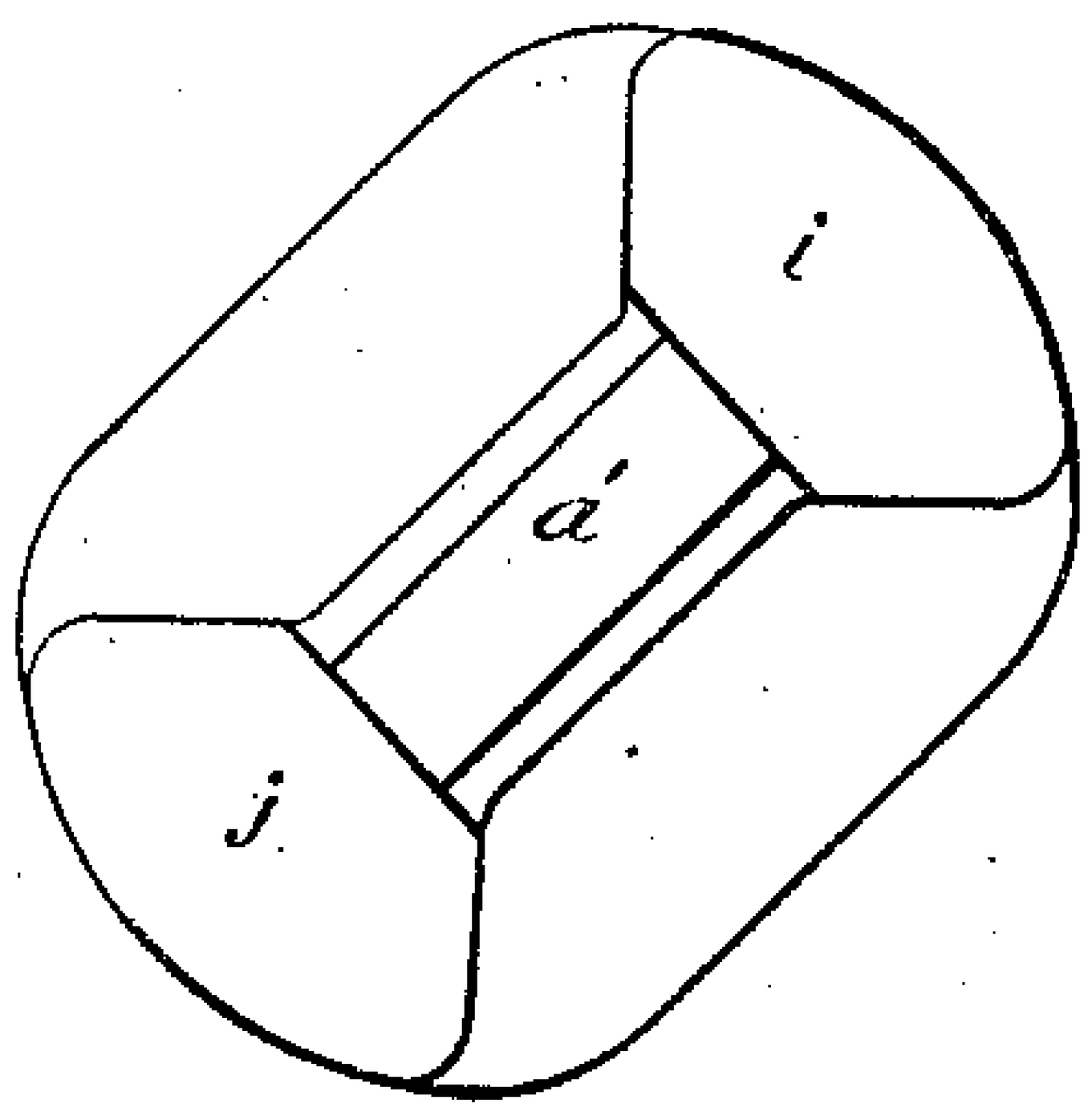


Fig. 1

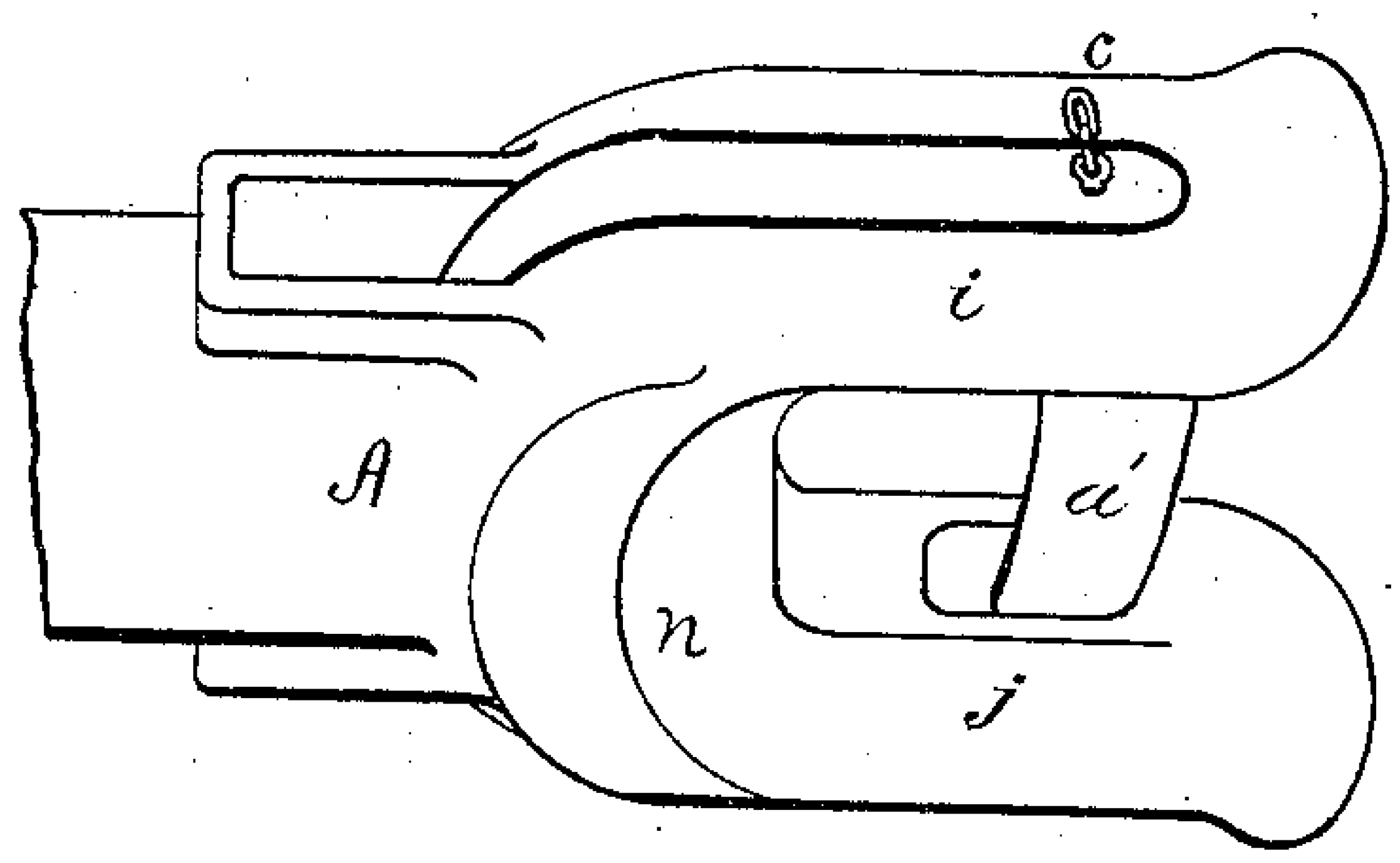
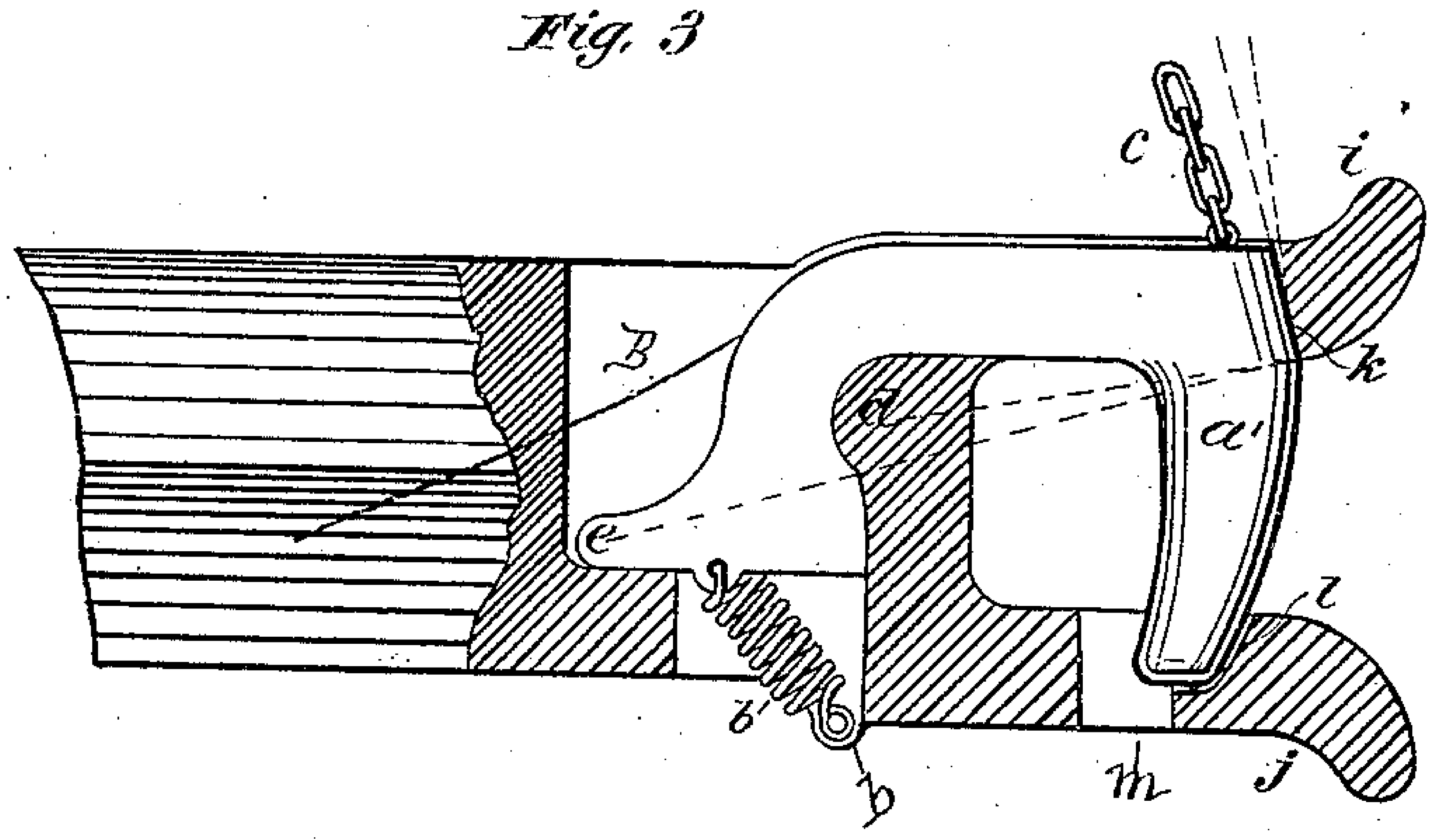


Fig. 3



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UNITED STATES PATENT OFFICE.

MOSES BURPEE, OF UPPER SHEFFIELD, CANADA.

IMPROVEMENT IN CAR-COUPLINGS.

Specification forming part of Letters Patent No. **210,597,** dated December 10, 1878; application filed October 5, 1878.

To all whom it may concern:

Be it known that I, MOSES BURPEE, of Upper Sheffield, in the county of Sunbury and Dominion of Canada, 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 thereof, 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, and to letters of reference marked thereon, which form a part of this specification.

My invention relates to automatic car-couplers which abut as they engage.

My improvement relates to the construction of the hook and draw-head, whereby the cars may be readily coupled and uncoupled, and a coupling provided which shall be thoroughly effective, as will be hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 is a side elevation of one of my improved couplers. Fig. 2 is an end elevation of the same, and illustrates the plane in which the hook moves when the coupler is set in position for actual use. Fig. 3 is a central longitudinal section taken through one of the couplers, and on a plane of forty-five degrees from the horizon, the said coupler being set in the position hereinbefore mentioned.

A represents a draw-head, provided with the two projecting jaws *i j* and the hook *a'*, which, as shown in its normal position in Fig. 3, has its forward end resting within a recess, *m*, in one of the jaws, and its rear enlarged end seated within a recess, B, which is formed in the draw-head, and which is somewhat larger than said enlarged end, for the purposes presently specified.

Secured to the draw-head, by means of a transversely-located bolt, *b*, or by other suitable device, is a spring, *b'*, arranged so as to connect with the rear end of the hook. This spring acts as an adjunct to the natural gravitation of the hook in bringing it into and keeping it within and on its seat. The projecting jaws of the draw-heads are correspondingly recessed, as at *n*, Fig. 1, so that when the two draw-heads have been brought together and coupled they will have the necessary play for compensating the lateral swaying of the cars.

When the draw-heads are secured to the cars in any suitable manner, Fig. 2 shows, in end elevation, the position of the same; hence the hooks will each have its movement in a plane at an angle of forty-five degrees from the horizon, and when the two adjacent couplers are being coupled they will be in planes at right angles to each other.

When the two hooks abut and are pressed together, both will rise from their seats until the point of either hook is high enough to slip over the other. After passing, they immediately fall into their seats, and thus couple the cars together.

As shown in Fig. 3, the hook is formed with a forward curved, a rear enlarged, and an intermediate straight portion, the said hook being loosely seated within the several recesses of the draw-head and projecting jaws. It will also be noticed that the recess B is somewhat larger than the rear end of the hooks, whereby the hooks, when abutting, will be pushed back, and their fulcral points be at the end *e* of the said rear end, and the hook thus be readily raised. Under draft, however, the hook will have its bearing as a fulcral point on the part of the draw-head marked *d*, and the forward portion of the hook will bear against the jaws at the points indicated by *k* and *l* in the drawing.

In Fig. 3 I have shown a radial dotted line drawn from *d*, and from its extremity a tangential dotted line. The angle between these two tangential dotted lines shows that any upward motion of the hook under draft would be impossible, by reason of the contact of the hook with the interior front end of the opening in which it is caught. The bearing of the hook under draft will thus be distributed between the points *d*, *k*, and *l*. The openings in the draw-head should be continued clear through, so as to prevent the accumulation of dust or snow.

For purposes of uncoupling either hook may be raised by means of a chain, *c*, attached thereto. The ordinary link-coupling is readily attached to the hook, which in such case acts as the pin would.

I claim—

1. In a car-coupler, the hook *a'*, having the enlarged base of its rear end loosely set with-

in the recess B, in combination with the draw-head formed with a bearing, *d*, for the hook when under draft, and with the recess B sufficiently large to admit of a back play of the hook and its clearing the bearing *d*, the said hook being unpivoted, and having its fulcral point at the end *e* when it is raised, substantially as herein shown and described, and for the purposes set forth.

2. The draw-head A, formed with recesses which constitute bearings for the forward portion of the hook, and with an enlarged recess, B, and bearing *d* for the rear portion of the hook when under draft, in combination with the hook *a'* and spring *b'*, substantially as specified.

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

MOSES BURPEE.

Witnesses:
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