

No. 611,025.

Patented Sept. 20, 1898.

H. H. WARNER.
CAR COUPLING.

(Application filed Aug. 9, 1898.)

(No Model.)

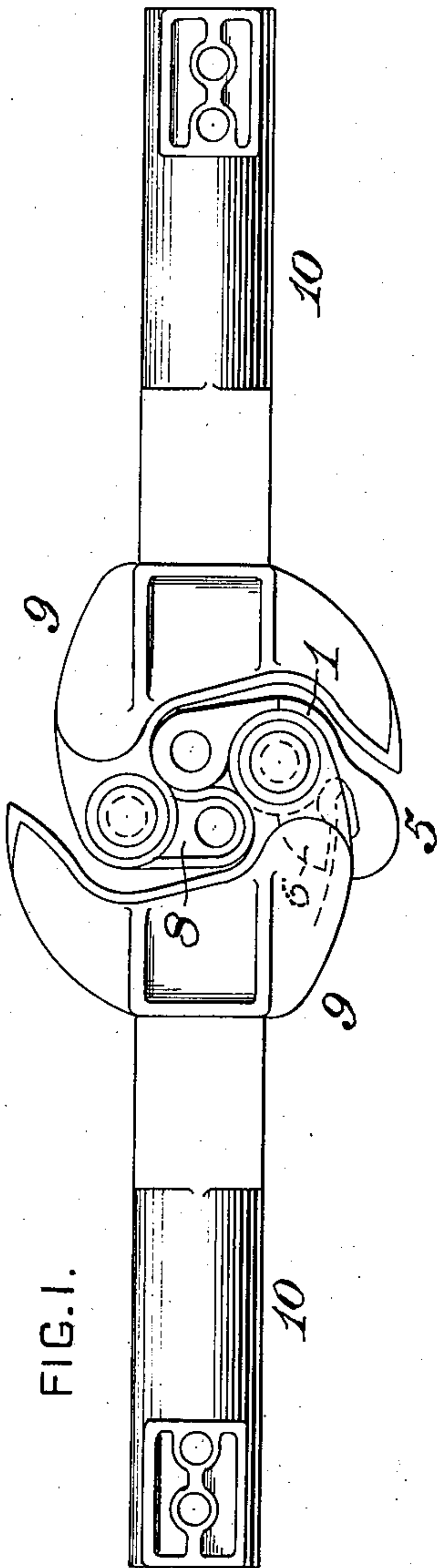


FIG. 3.

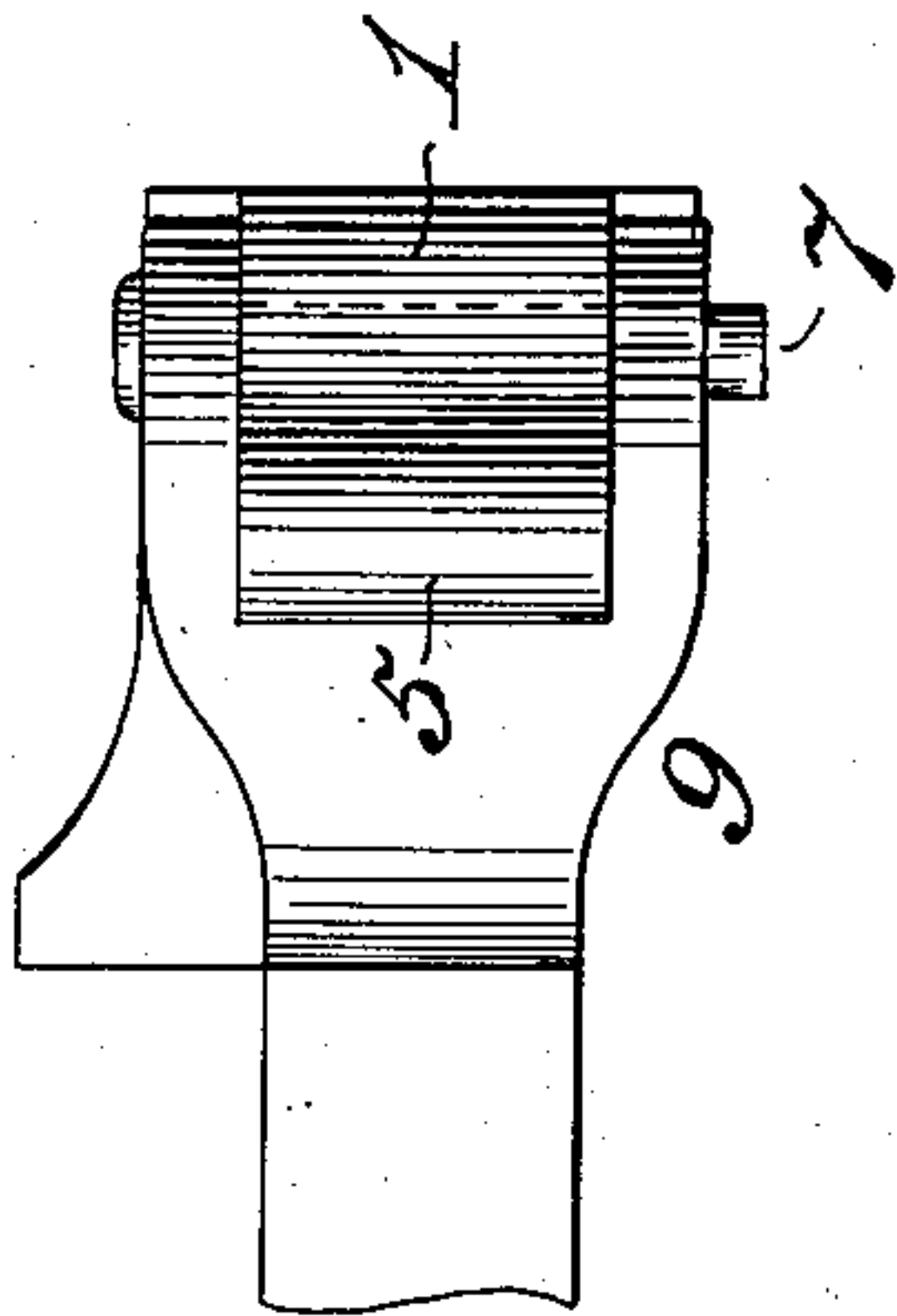


FIG. 5.

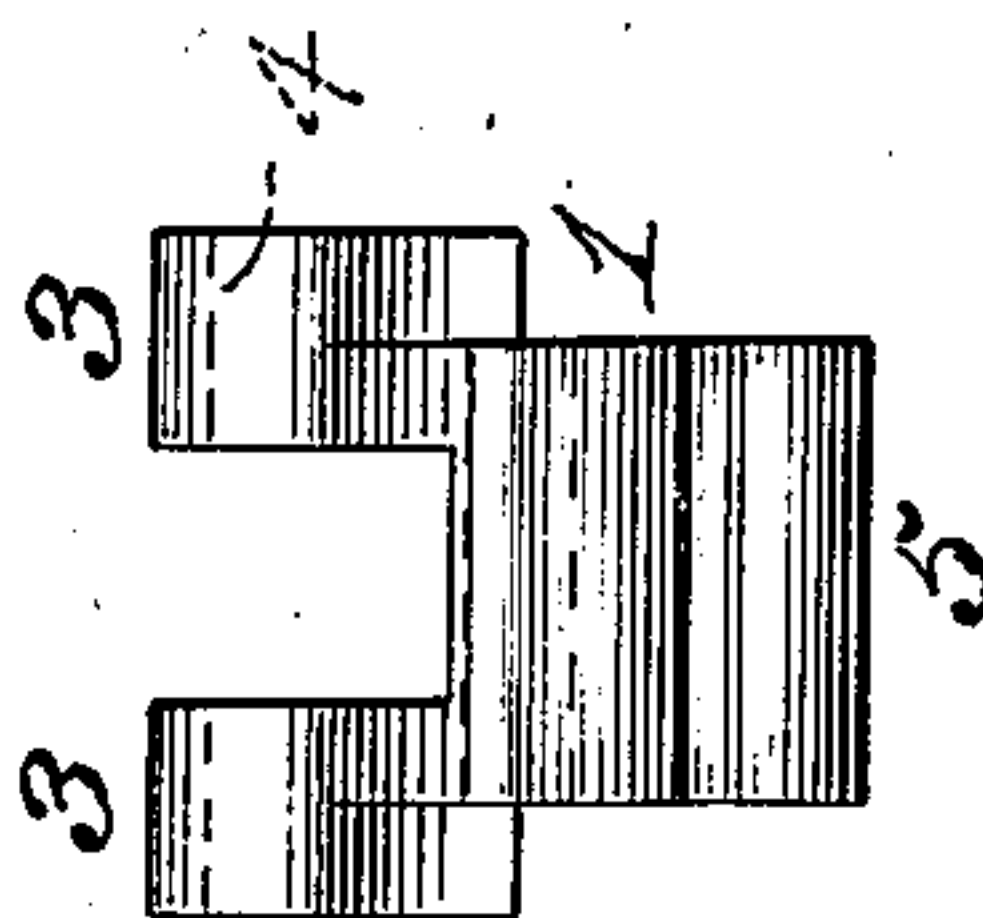


FIG. 4.

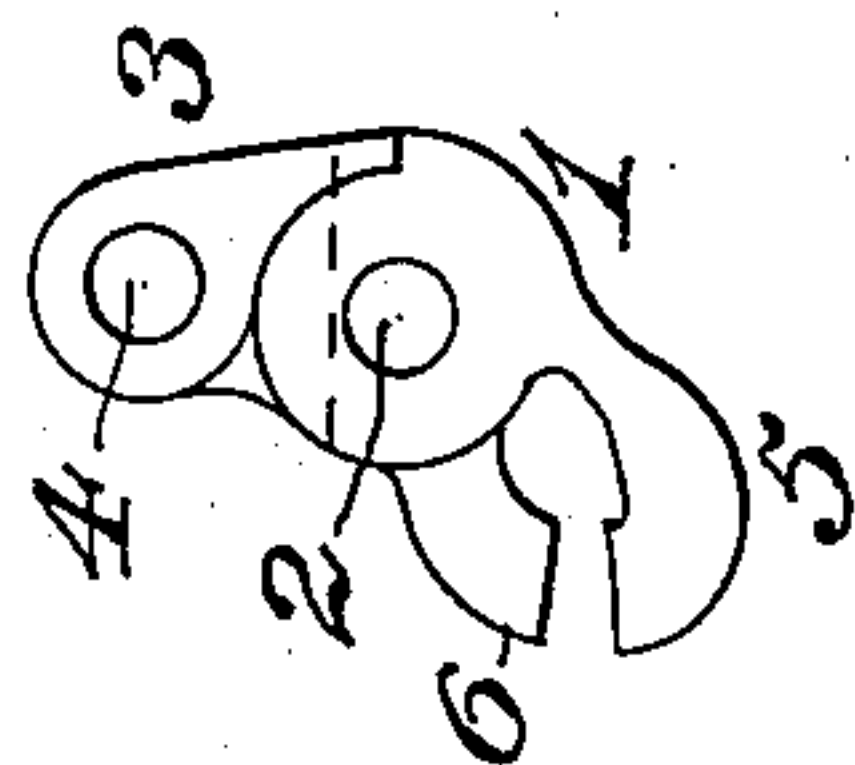
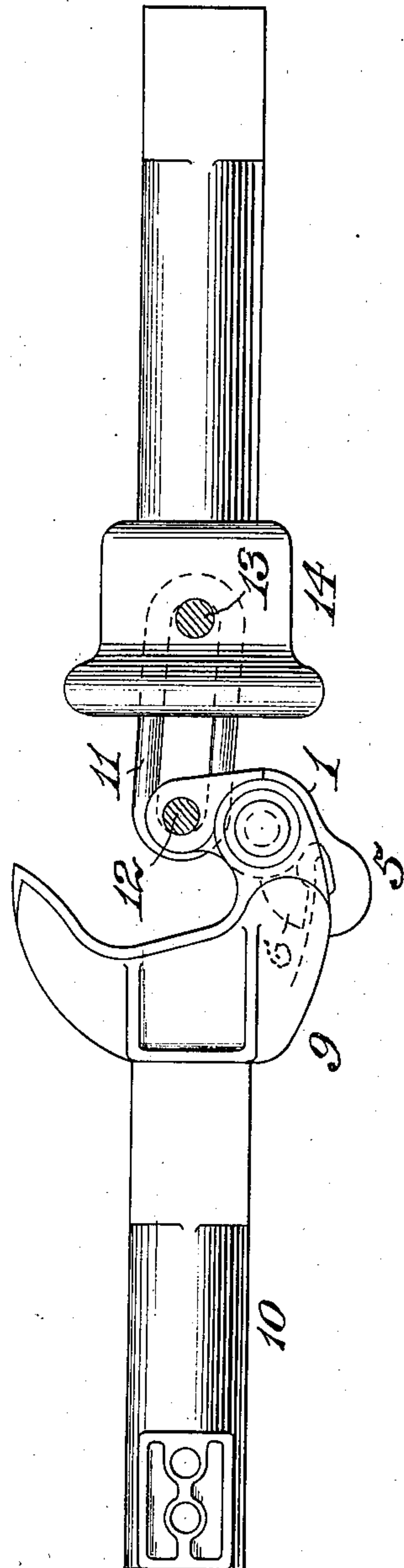


FIG. 2.



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HENRY H. WARNER, OF TACOMA, WASHINGTON.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 611,025, dated September 20, 1898.

Application filed August 9, 1898. Serial No. 688,195. (No model.)

To all whom it may concern:

Be it known that I, HENRY H. WARNER, of Tacoma, in the county of Pierce and State of Washington, have invented a certain new and useful Improvement in Car-Couplers, of which improvement the following is a specification.

My invention relates to car-couplers of the vertical-plane or Master Car-Builders' type, and its object is to enable the delays and inconvenience occasioned by the breakage of the knuckles of couplers on moving trains to be avoided by the provision of a temporary substitute for a broken knuckle, by the insertion of which the car on which the breakage occurs may without delay or liability to further accident to the coupler be hauled to the terminal or to a point where permanent repair may be conveniently made.

To this end my invention, generally stated, consists in a special or substitute knuckle adapted to be connected with a coupler-head of the Master Car-Builders' type and to couple either with an ordinary knuckle or with a link and pin, the substitute knuckle being held in operative position by clutching engagement with the outer surface of the wall of the coupler.

The improvement claimed is hereinafter fully set forth.

In the operation of freight-trains of the materially increased size and weight employed in approved standard practice delays are frequently occasioned in transit by damage to or breakage of the knuckles of car-couplers of the Master Car-Builders' type, which delays may to a large extent be avoided or reduced by the provision of a suitable temporary substitute for the broken knuckle which can be promptly fitted to its place, and by reason of the great variety of forms of knuckles now in use such substitute must be practically universal in application to the various construction of couplers of the type referred to which are now in use and must be applicable without any substantial degree of labor or loss of time.

In present practice it is usual in the event of the breakage of a knuckle to remove it and connect the coupler-head which carried it with the adjacent coupler-head by a link and pin. There are several objections to this practice, among which may be noted the liability of

bending the knuckle-pin of the disabled coupler, owing to the space between the lugs which hold it and to the fact that the knuckle-pin is usually inadequate to sustain the draft strain and in bending often damages or breaks the lugs. Again, the increased distance between couplers so connected creates considerable lost motion, and severe shocks to the draft attachments result by which they are frequently damaged. In case of breakage of the coupler-lugs, or if a link and pin is not available, the couplers are chained together, which operation delays the train and often has to be repeated before a terminal or repair station is reached. To avoid these objections, the caboose or tool cars of trains are often supplied with a spare knuckle of each of the various kinds in ordinary use. Each of these has its own special design of tail-locking mechanism, which necessitates keeping and carrying an inconveniently large stock of knuckles in each caboose-car and also that the train-crews be educated in the removal and replacement of knuckles on the road and be provided with the necessary tools for this work. Some of the knuckle attachments are difficult to change even by those having a fair knowledge of proper methods, and delays to trains necessarily result. Even where a fairly large stock of knuckles is kept in the caboose it will often happen that the proper one is not among them, and in order to avoid the use of a link and pin or the chaining up of the couplers the train-hands will remove a knuckle from a car which may be at hand on a siding and be provided with a coupler of the desired type. This operation involves delay in itself and additional delay and difficulty to those who must handle the standing car from which the knuckle has been taken.

The objectionable features of train-service above indicated are effectually avoided by the employment of my invention, which provides a substitute knuckle readily insertible by ordinary train-hands without special tools and by means of which the car having the disabled coupler can be safely and properly hauled to a point where proper knuckles and repairers are available to restore it to normal condition or be taken to the terminal station, if desired. The substitute knuckle is made adaptable to all car-couplers of the Master

Car-Builders' type and capable of engaging automatically with the knuckles of such couplers on their proper contour lines of draft when substituted for a broken or disabled 5 knuckle. It may also be used in connection with the ordinary coupling by the employment of a link and pin, as shown in Fig. 2. Its application is effected without removing any parts other than the broken knuckle 10 which it replaces, and when this is done upon the road in transit no special tools are required.

In the accompanying drawings, Figure 1 is a plan view of a Master Car-Builders' coupler 15 provided with my invention, coupled to a similar coupler in normal condition; Fig. 2, a similar view showing a coupler provided with my invention connected by a link and pin to a coupler of the ordinary type; Fig. 3, 20 a side view in elevation of the left-hand coupler of Figs. 1 and 2; Fig. 4, a plan or top view of the substitute knuckle detached, and Fig. 5 a front elevation of the same.

In the practice of my invention I provide 25 a substitute knuckle having a body 1 of substantially similar form to that of the ordinary knuckle, provided with a central passage 2 for the insertion of a knuckle-pin, and a coupling-arm 3 of standard contour in which 30 is formed a passage 4 for a link coupling-pin, these portions of the knuckle corresponding substantially with the ordinary constructions. A stop-arm 5, which is formed upon the body 1, projects therefrom on the opposite 35 side from the coupling-arm 3 and is adapted to bear on and engage in the manner of a clutch the body of the coupling when the coupling-arm is in operative position—that is to say, the position which it occupies 40 when coupled with the knuckle of the adjacent coupler. By such bearing or engagement it is held in this position during the exertion of draft strain with the same firmness as if the tailpiece and locking mechanism of the ordinary knuckle were employed. 45 The stop-arm 5, which may be made of the same depth as or of greater depth than the opening in the coupler-head, is in this instance shown as projecting outwardly, so 50 that its end bears on the outer wall of the coupler-head. It will be obvious that in the application of the substitute knuckle of the form shown and previously described only the broken knuckle need be removed and that 55 the other parts may remain undisturbed in position in readiness for use when the proper new knuckle is obtained.

It will be seen that the strain of draft will be exerted upon the knuckle-pin and upon 60 the body of the coupler through the stop-arm 5 and that the stop-arm by its clutch engagement with the body of the coupler limits the forward movement of the coupler-arm 3 and holds it in proper position for agreement with 65 the contour lines on the faces of the couplers. In order to prevent the coupler-arm from

rocking inward, a check-piece 6 may be formed upon the body 1, extending outwardly therefrom in proper position to abut against the inner wall of the coupler-head when the coupler-arm 3 is moved inwardly or toward the 70 face of the coupler-head.

The substitute knuckles are made of steel or wrought-iron, and several of them can be conveniently carried in the caboose or way- 75 car of a train ready for use in emergencies, in which they can be readily and quickly applied, and will enable the comparatively large stock of extra knuckles ordinarily carried to be dispensed with, as well as avoid trouble 80 and delay in application, which is commonly experienced in present practice.

I claim as my invention and desire to secure by Letters Patent—

1. A substitute knuckle, adapted to be connected 85 with a coupler-head of the Master Car-Builders' type and provided with means for being held in operative position by a positive clutching engagement with the outer surface of the wall of the coupler. 90

2. A substitute knuckle for a coupler-head of the Master Car-Builders' type, having a body insertible in the opening of a coupler-head, a coupling-arm of standard contour on one side of said body, and a stop-arm, adapted 95 to bear against the outer surface of the wall of a coupler-head, on the opposite side of said body.

3. A substitute knuckle for a coupler-head of the Master Car-Builders' type, having a 100 body insertible between the lugs of a coupler-head, provided with a passage for a knuckle-pin to connect it with said lugs, a coupling-arm of standard contour on one side of said body, provided with a passage for a link coupling-pin, and a stop-arm adapted to bear 105 against the outer surface of the wall of a coupler, on the opposite side of said body.

4. A substitute knuckle for a coupler-head of the Master Car-Builders' type, having a 110 body insertible in the opening of a coupler-head, a coupling-arm of standard contour on one side of said body, a stop-arm adapted to bear against the outer surface of the wall of a coupler-head on the opposite side of said 115 body, and a check-piece adapted to bear against the inner surface of the wall of a coupler-head.

5. The combination of a coupler-head of the Master Car-Builders' type, a substitute 120 knuckle having a body fitting between the lugs of said coupler-head, a coupling-arm of standard contour on one side of said body, and a stop-arm adapted to bear against the coupler on the opposite side of said head, and 125 a knuckle-pin connecting the substitute knuckle to the coupler-head.

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Witnesses:

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