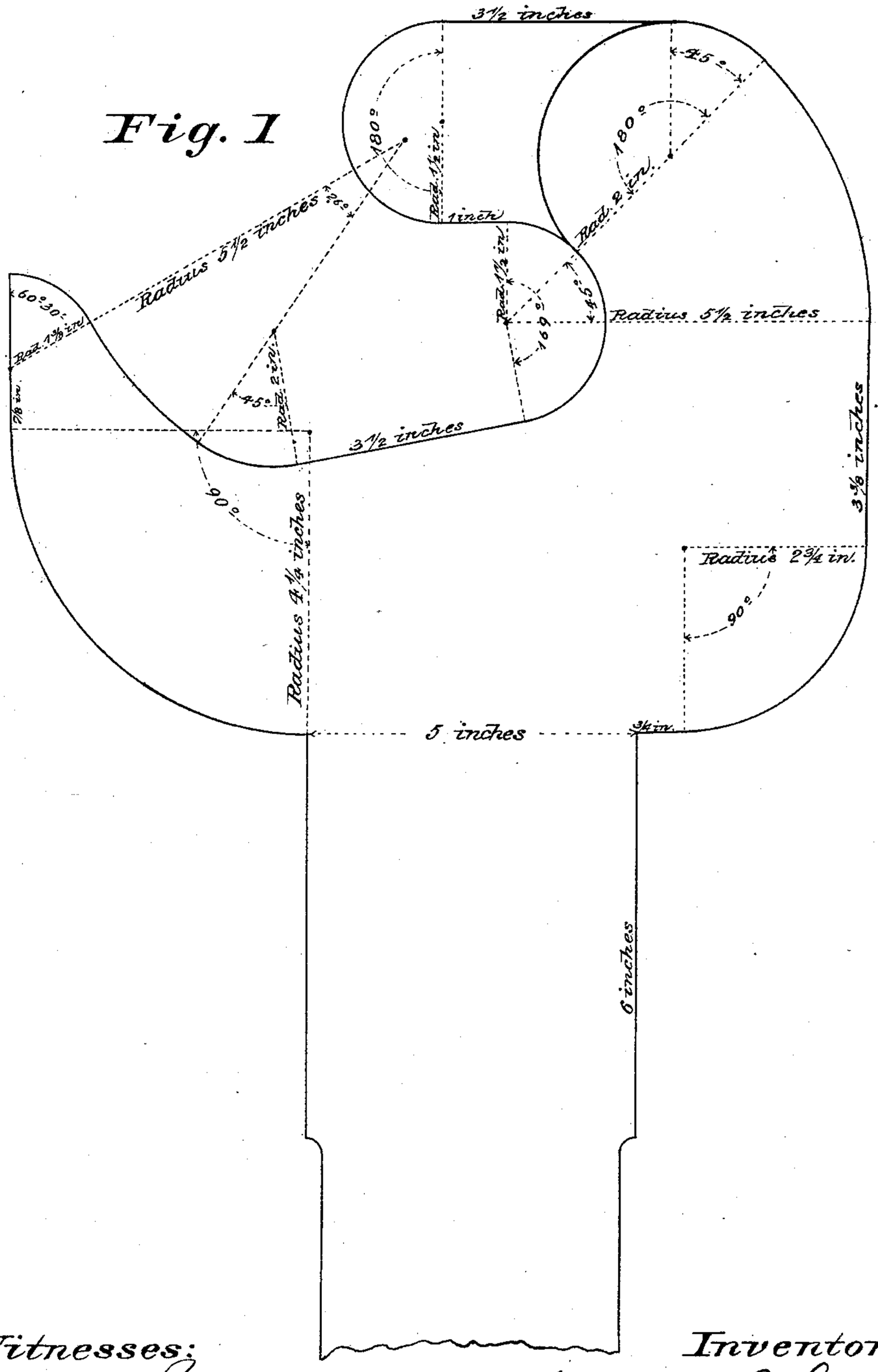
(No Model.) 3 Sheets—Sheet 1.

M. J. LORRAINE.

CAR COUPLING.

No. 353,320. Patented Nov. 30, 1886.

Fig. 1



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Inventor:
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by C. Hoody atty

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CAR COUPLING.

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Fig. 2

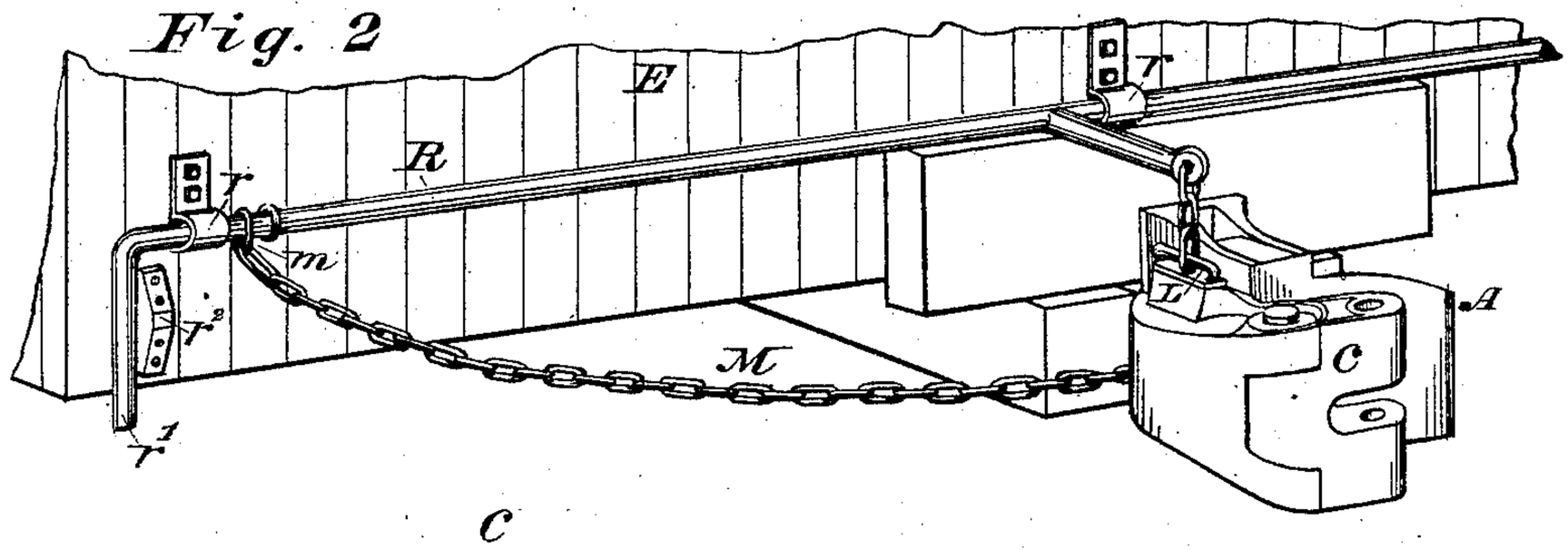


Fig. 3

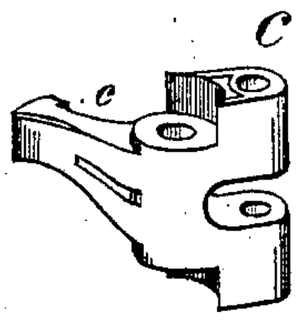


Fig. 4

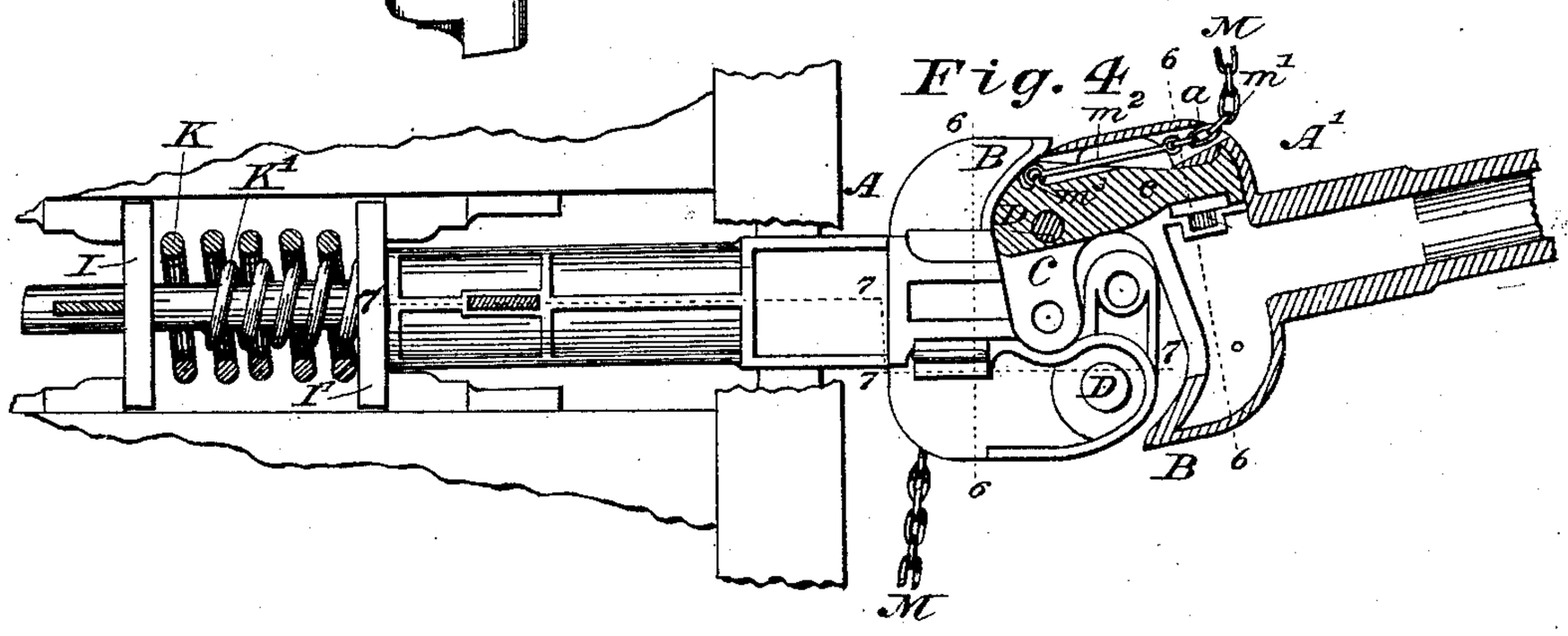
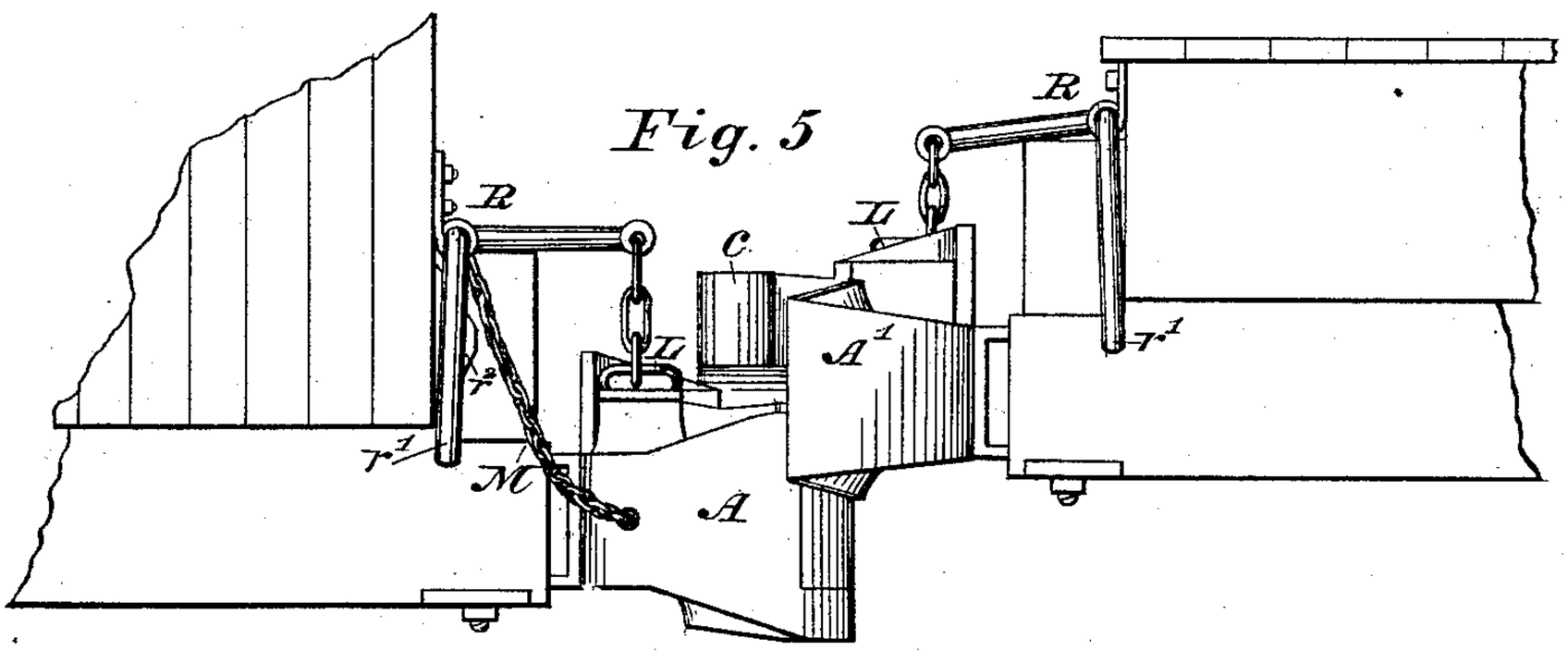


Fig. 5



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(No Model.) 3 Sheets—Sheet 3.

M. J. LORRAINE.

CAR COUPLING.

No. 353,320. Patented Nov. 30, 1886.

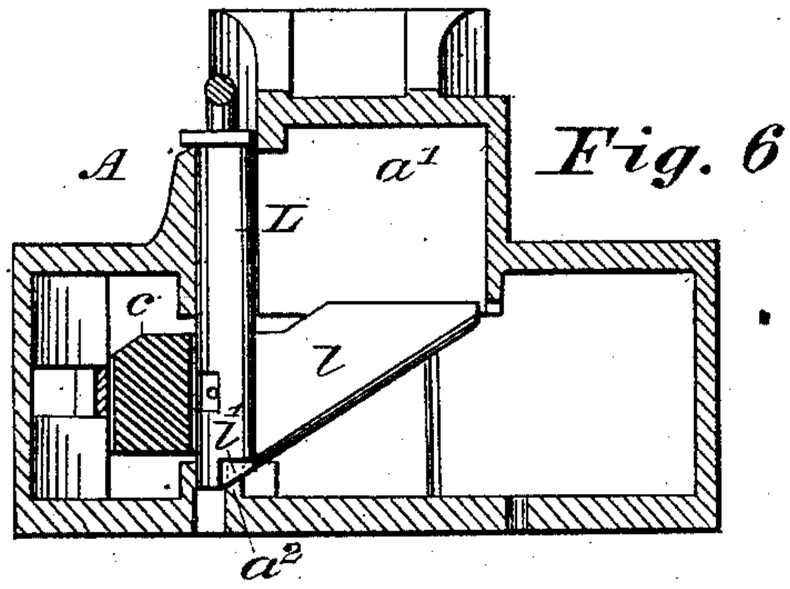

Fig. 6

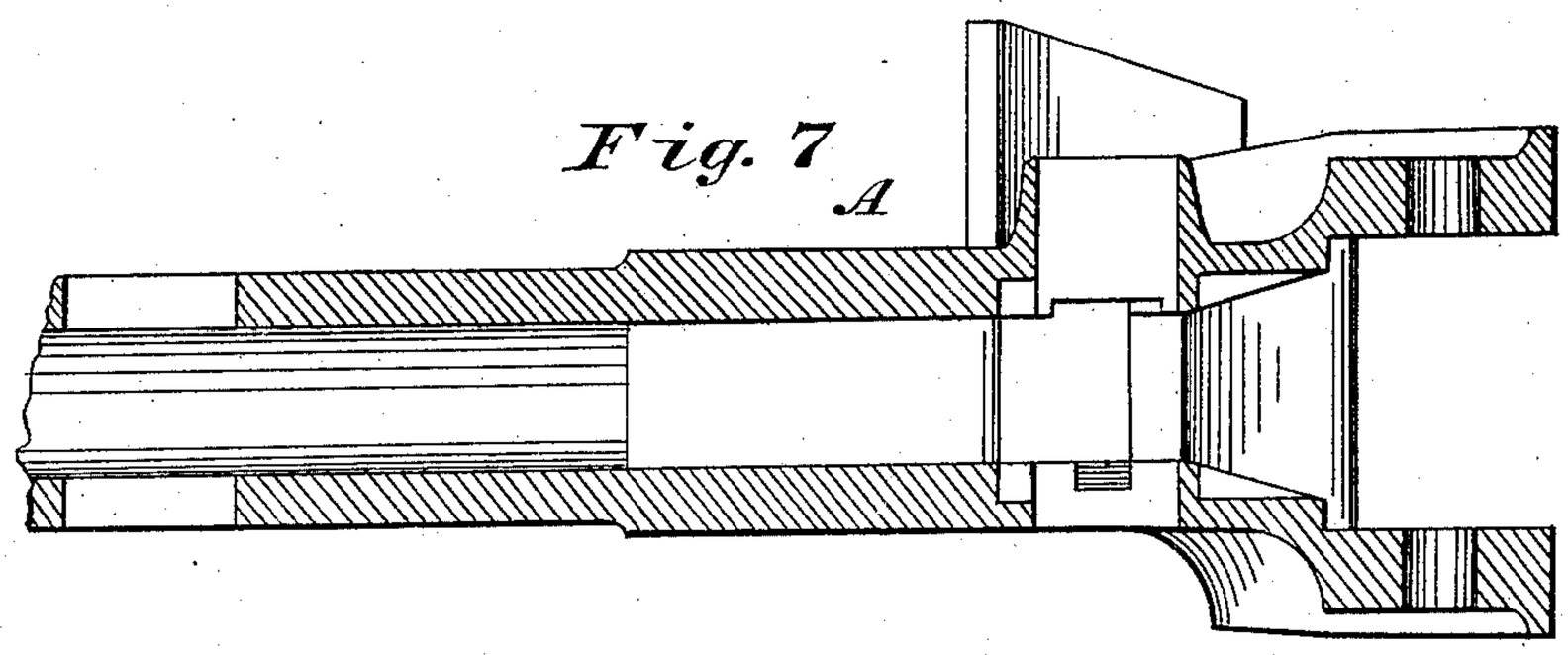

Fig. 7

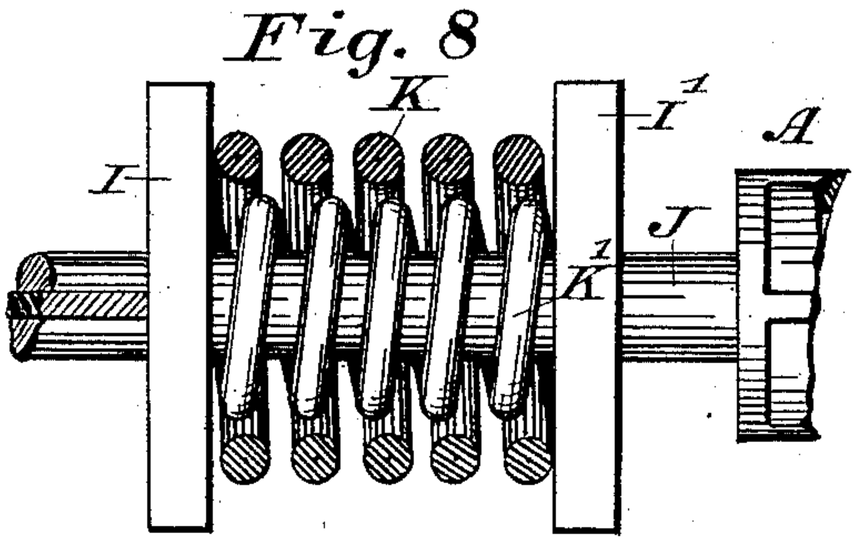

Fig. 8

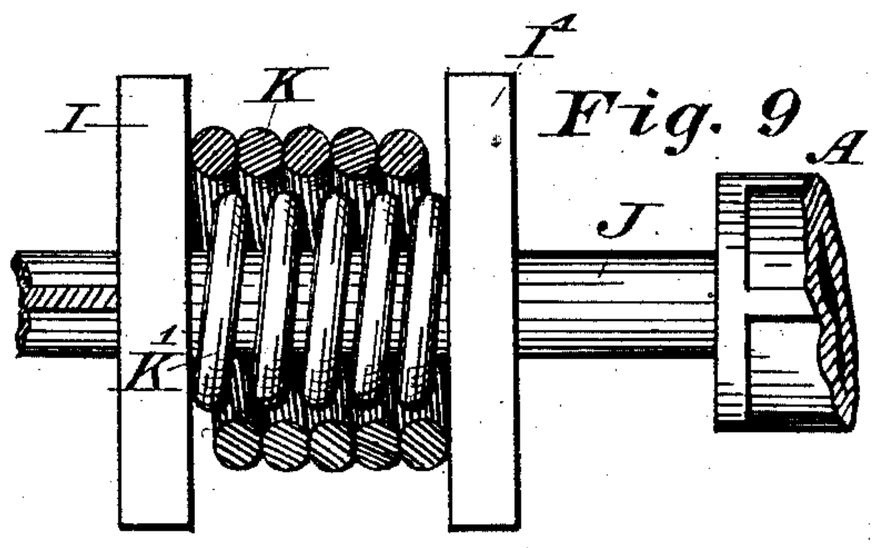

Fig. 9

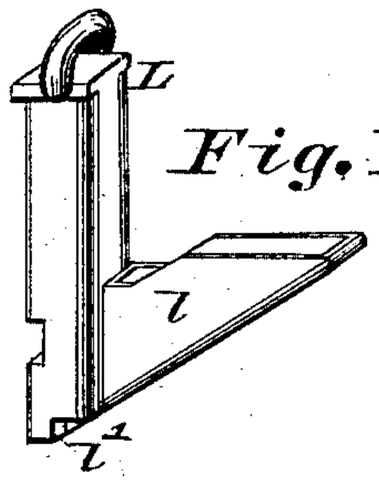

Fig. 10

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UNITED STATES PATENT OFFICE.

MADISON J. LORRAINE, OF ST. LOUIS, MISSOURI.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 353,320, dated November 30, 1886.

Application filed August 2, 1886. Serial No. 209,786. (No model.)

To all whom it may concern:

Be it known that I, MADISON J. LORRAINE, of St. Louis, Missouri, have made a new and useful Improvement in Car-Couplings, of which the following is a full, clear, and exact description.

The present improvement is closely related to the constructions described, respectively, in the two Letters Patent granted to me May 4, 1886, and numbered 341,026 and 341,027, respectively.

It consists in the means for opening the hook, in the means for obtaining the "slack" movement of the draw-bar, in the means for locking the pivoted hook, and in the means for preventing the coupling of the draw-head.

In the annexed drawings, making part of this specification, Figure 1 is a plan exhibiting the method of laying off the draw-head. Fig. 2 is a view in perspective of the improved draw-head in position upon a car. The view includes the device used in setting the draw-head not to couple and the means for opening the hook. Fig. 3 is a view in perspective of the hook. Fig. 4 is a top view, partly in horizontal section, of the coupling, and as upon a sharp curve. Fig. 5 is a side elevation of the coupling, one of the draw-heads being higher than the other. Fig. 6 is a vertical cross-section on the line 6 6 of Fig. 4. Fig. 7 is a vertical longitudinal section on the line 7 7 of Fig. 4. Fig. 8 is a horizontal section showing the parts of the slack device as when the longer spring is partly compressed and the shorter spring about to be compressed. Fig. 9 is another view of the slack device, both of the springs being compressed to their limit; and Fig. 10 is a view in perspective of the part used in locking the bolt.

The same letters of reference denote the same parts.

A A′ represent, respectively, the two draw-heads, which, saving as the construction is modified by the present improvement, are substantially similar to those used in the Letters Patent above referred to. The draw-heads are reversed, the hook in the present instance coming at the right, as viewed from the inner end of the draw-head, instead of at the left, as before. The part B, termed the "buffer," is not materially changed, nor is the hook C and its tail *c*. The means for opening the hook are changed. In the place of the spring formerly employed, the chain M, Figs. 2, 4, 5, is used. The outer end, *m*, of the chain leads to or toward the side of the car E, and is attached to some fixed part—say the crank-shaft R. The other end, *m′*, of the chain leads into the draw-head at *a*, and thence forward to its point of connection with the hook. Instead of being attached directly to the hook, the chain proper is attached to a rod, m^2, which in turn connects with the hook. In either case the point of connection m^3 with the hook should, substantially as is shown in Fig. 4, be so located as to cause the hook, when the chain is drawn toward the side of the car, to turn in its bearing at D and to point toward the opposing draw-head, and thereby be in position for coupling. The chain M can be drawn by hand or by winding it upon the crank-shaft.

In the former constructions the locking-block L is lifted through the agency of a latch whose upper end is hinged in the roof of the draw-head and whose lower end engages with the locking-block, the hook-tail, as the hook encounters the opposing draw-head, swinging backward into the draw-head and encountering the latch, and thereby lifting it sufficiently to pass the locking-block, which then drops in front of the hook-tail, and thereby locks the hook in its coupled position.

In the present instance the hinged latch is dispensed with, and in the place thereof the locking-block is furnished with a beveled projection, *l*, Figs. 6, 10, and when the hook-tail is swung around into the draw-head it encounters the projection *l*, and thereby causes the locking-block and projection to rise as one piece until the hook-tail passes it, when the locking-block drops, as in the original construction, and locks the hook. The draw-head is shaped to form a chamber, *a′*, Fig. 6, to receive the projection *l* when the locking-block is lifted, as described.

In Fig. 6 the hook-tail is shown confined by the locking-block. To prevent the locking-block from being dislodged at its lower end by the action of the hook, it is at its corners *l′*, Figs. 6, 10, shaped to form the shoulder shown, which, when the locking-block is down, comes against a corresponding shoulder, a^2, upon the draw-head, and the locking-block is thereby secured at its lower end.

The locking-block is operated, as before, by means of the crank-shaft R, Fig. 2. When it is desired to uphold the locking-block, so that the draw-head is free to remain uncoupled, even when the opposing draw-head strikes it, the crank-shaft can be slipped endwise in its bearings r to bring the crank r' over the block r^2 upon the car. The crank-shaft, by reason of its crank bearing upon the block r^2, cannot now be turned in its bearings, and the locking-block remains in its up position until the crank-shaft has been shifted endwise for its crank to clear the block r^2. The slack movement in the present construction is obtained by means of the two springs K and K′, Figs. 8, 9, 4. The draw-bar J, as before, is provided with the plates I and I′, and when the outward pull comes upon the draw-head the plate I encounters the inner end of the longer spring, K, Fig. 4, and compresses it into the position shown in Fig. 8, after which the plate I encounters both springs, the inner shorter one, K′, as well as the longer outer one, and the two springs are then compressed together into the position of Fig. 9. The movement is thus extended, and is initiated in a gentle manner.

I claim—

1. The combination of the draw-head A, the pivoted hook C, the rod m^2, and the chain M, substantially as described.

2. The combination of the draw-head A, the pivoted hook C, the rod m^2, the chain M, the crank-shaft R, and the car, substantially as described.

3. In a car-coupling in which the draw-bars are coupled by means of pivoted hooks, as described, the bar J, the two plates I and I′, the longer spring K, and the shorter spring K′, as described.

4. The combination of the draw-head and the locking-block having the beveled projection, said draw-head having a chamber to receive said projection when the locking-block is raised, as described.

5. The combination of the car, the block r^2, and the crank-shaft R, substantially as and for the purpose described.

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Witnesses:
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ALBERT GERST.