

(No Model.)

2 Sheets—Sheet 1.

W. YATES
CAR COUPLING.

No. 432,470.

Patented July 15, 1890.

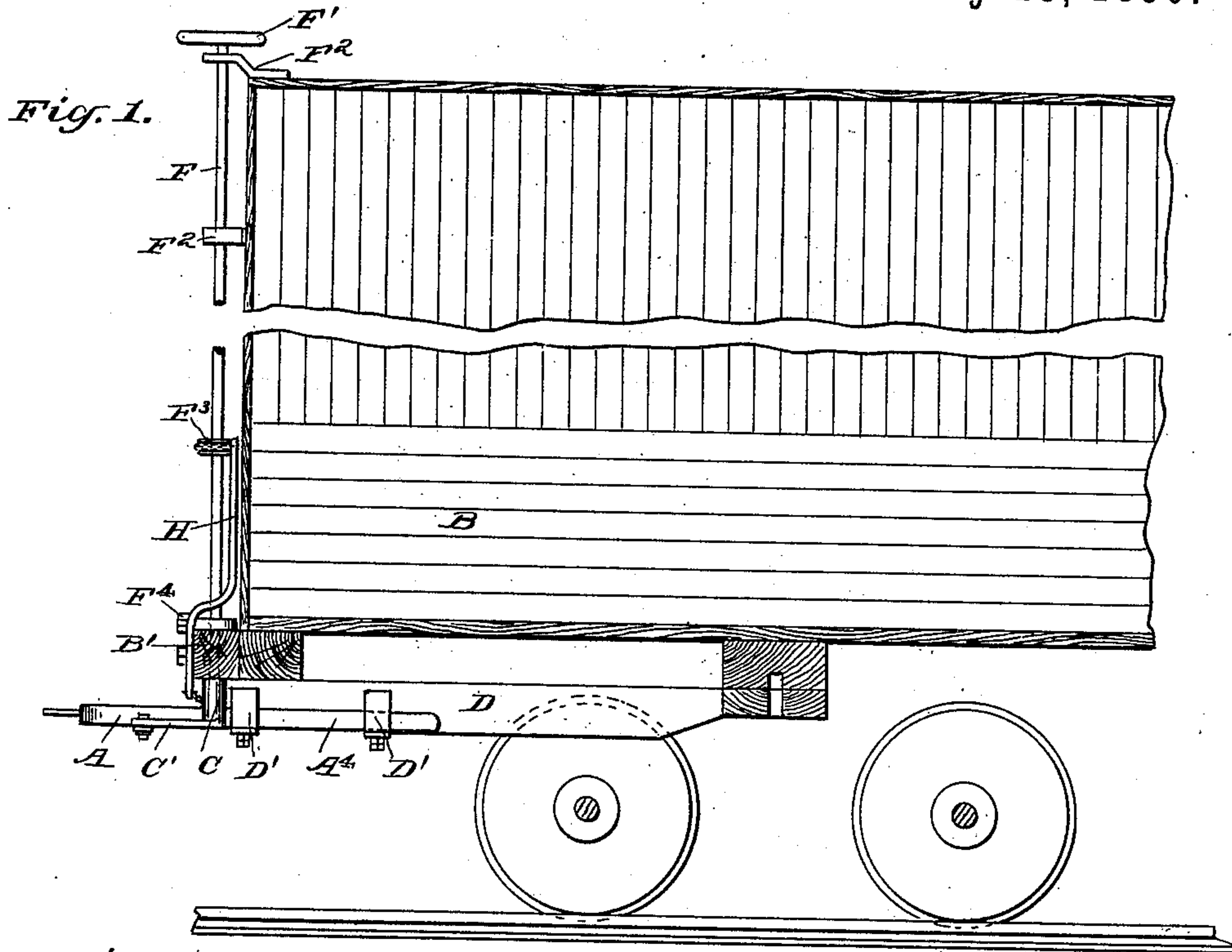


Fig. 2.

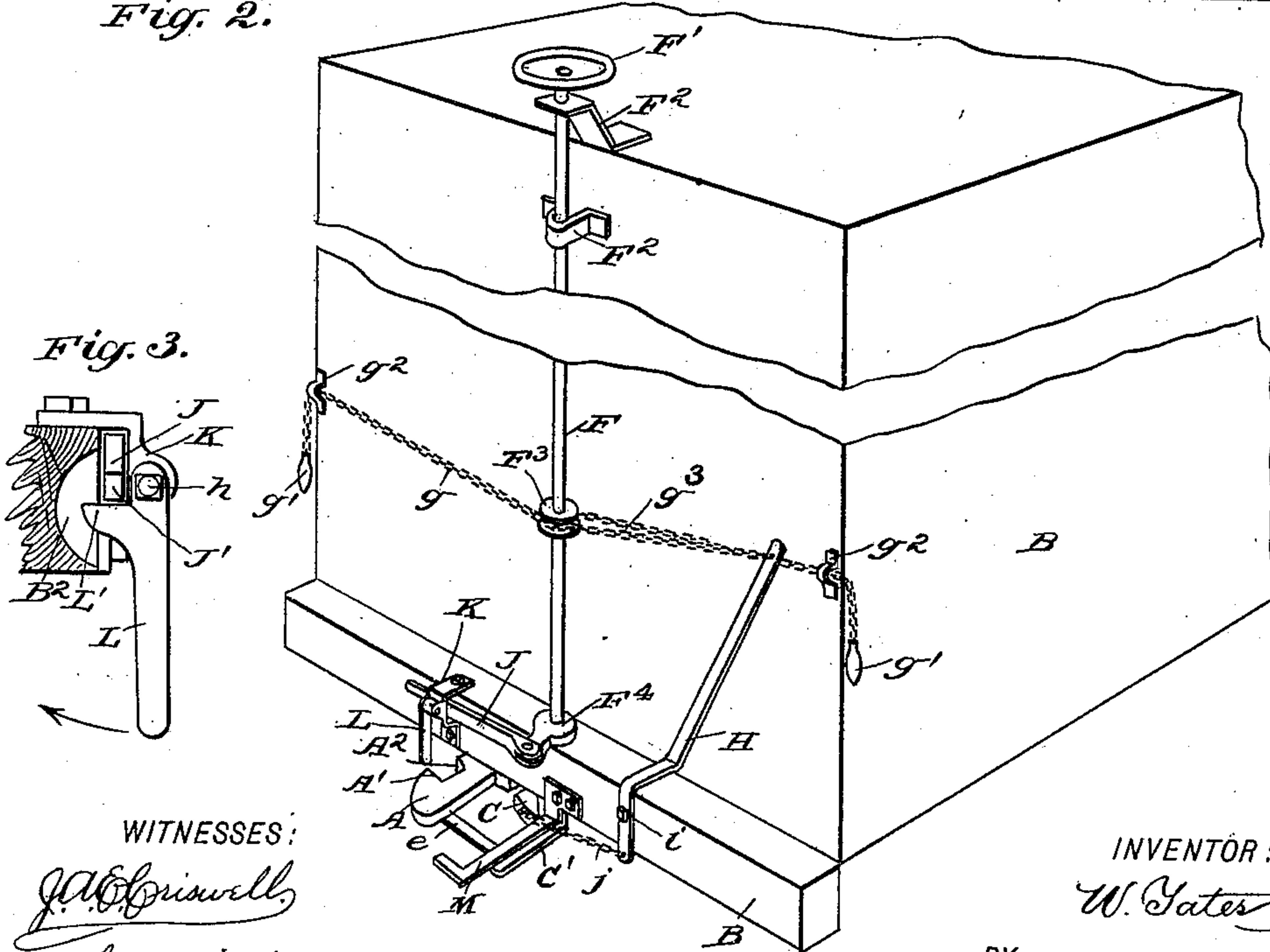
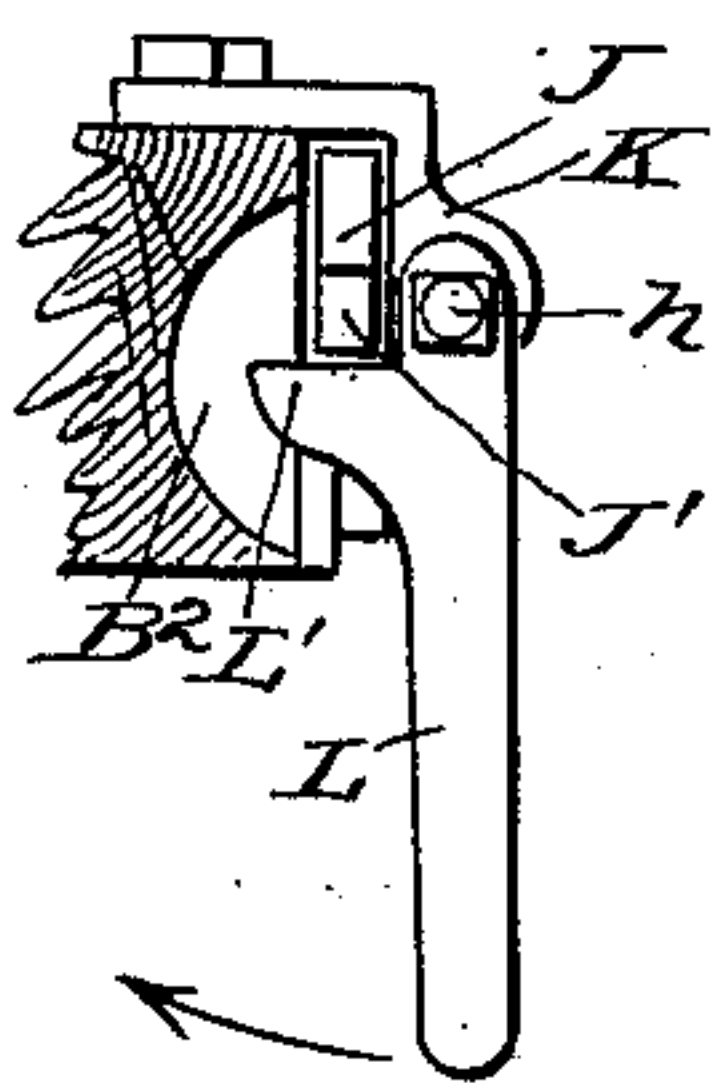


Fig. 3.



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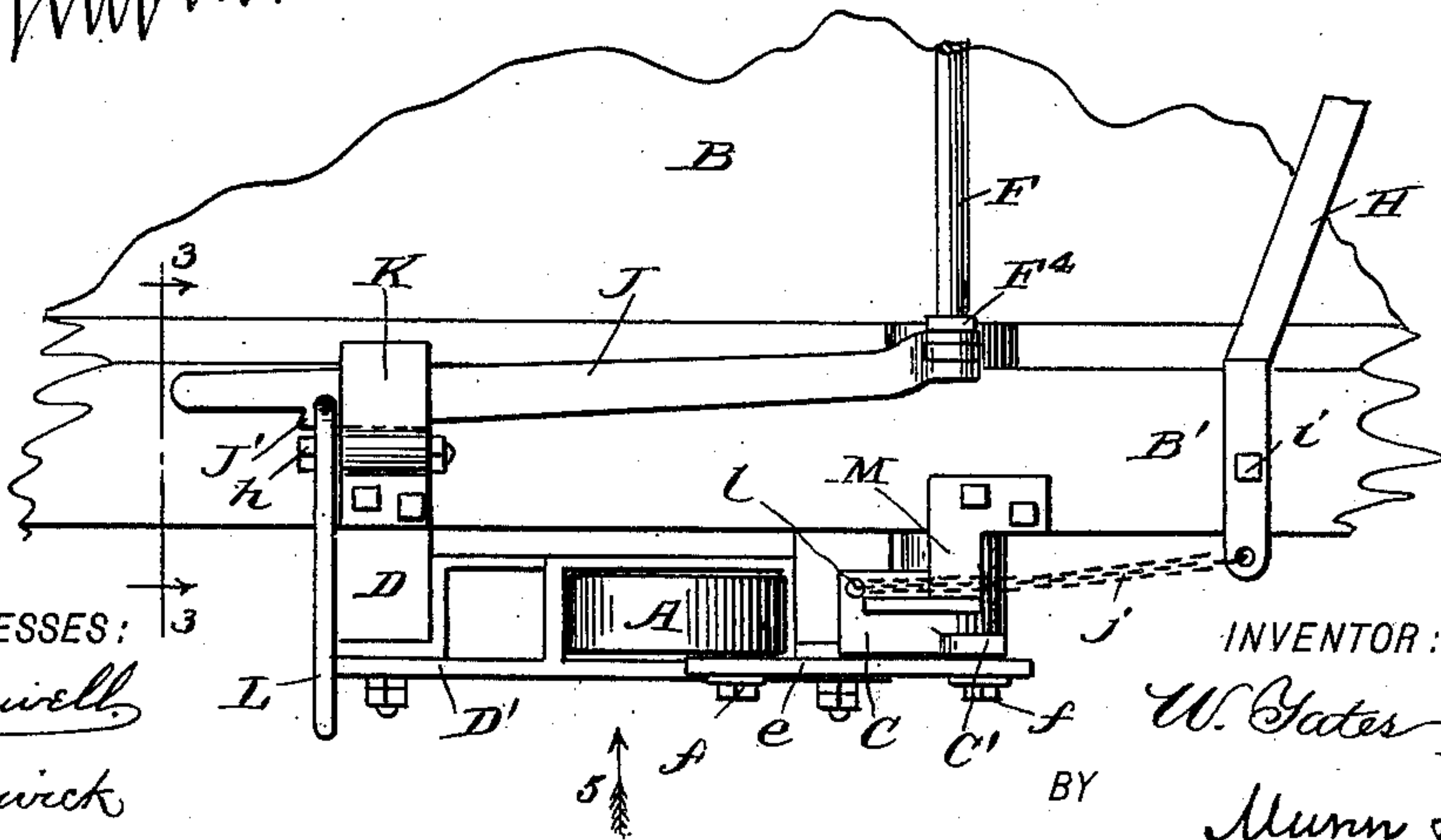
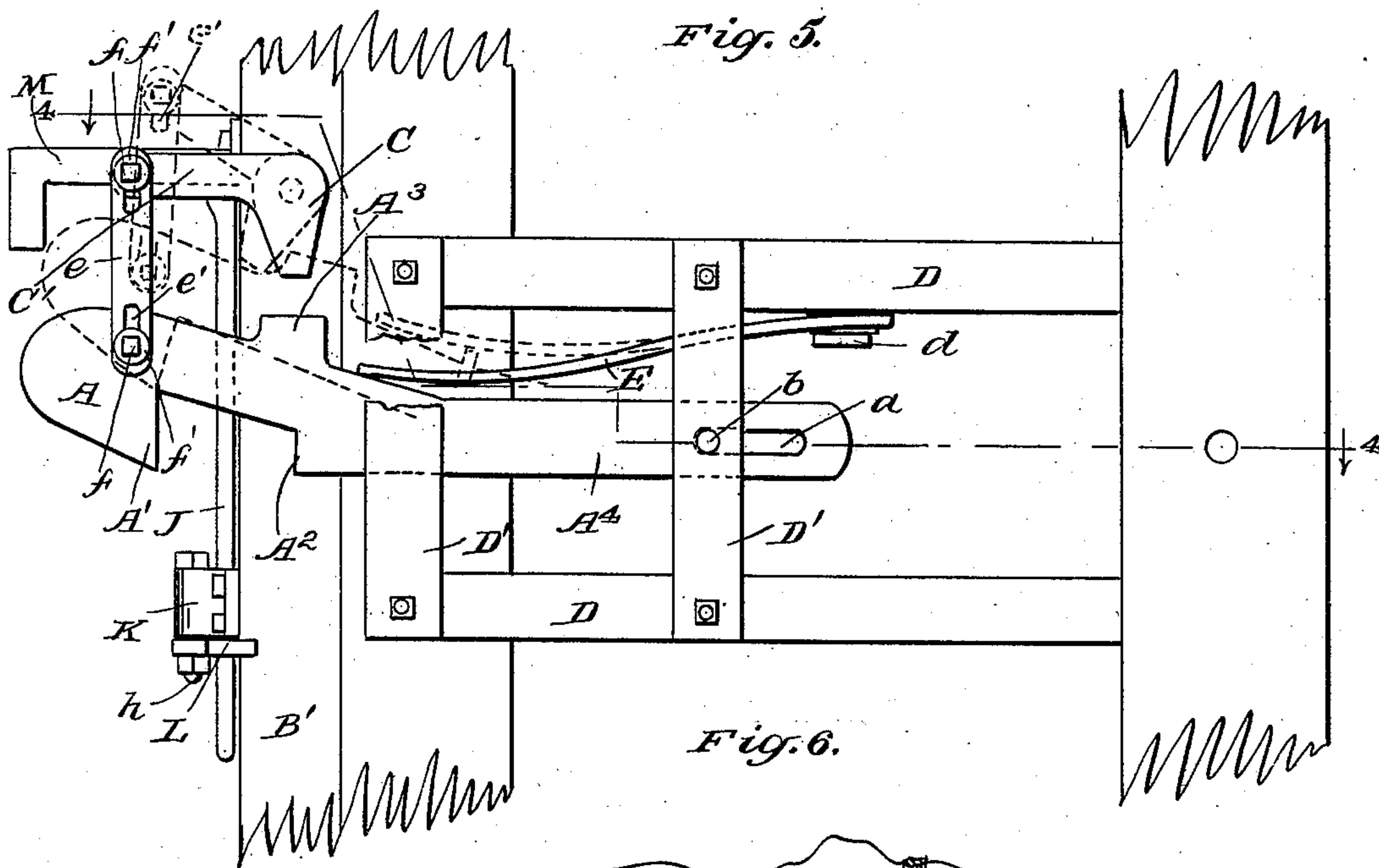
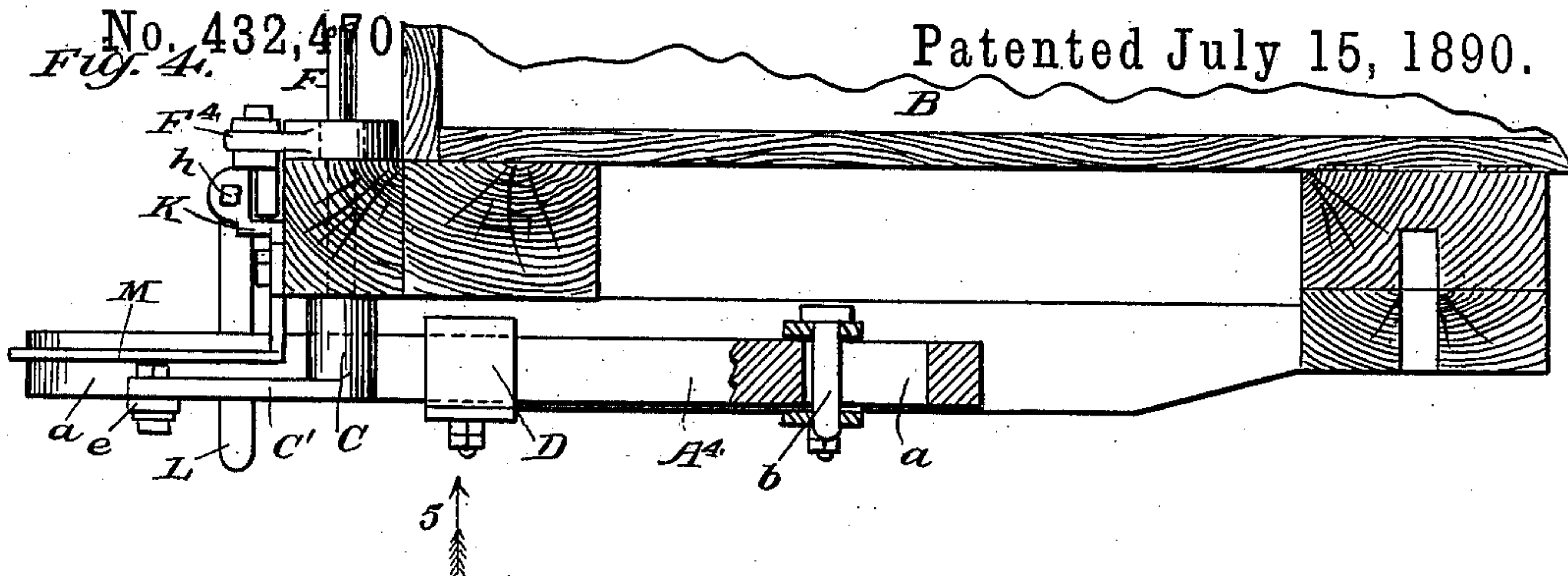
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2 Sheets—Sheet 2.

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WITNESSES:

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C. Sedgwick

INVENTOR:

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UNITED STATES PATENT OFFICE.

WILLIAM YATES, OF NEW YORK, N. Y.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 432,470, dated July 15, 1890.

Application filed March 7, 1890. Serial No. 342,999. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM YATES, of the city, county, and State of New York, have invented a new and Improved Car-Coupling, of which the following is a full, clear, and exact description.

My invention relates to improvements in car-couplings; and the object of my invention is to provide a simple, strong, and efficient coupling that will be thoroughly automatic, that may be operated from the top or sides of a car, and that will couple in such manner that it cannot be accidentally uncoupled.

To this end my invention consists in a car-coupling having its parts constructed and combined substantially as hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a broken vertical longitudinal section of a freight-car provided with a coupling embodying my invention. Fig. 2 is a broken perspective view of the same. Fig. 3 is a detail sectional view on the line 3 3 of Fig. 6. Fig. 4 is a vertical longitudinal section on the line 4 4 of Fig. 5. Fig. 5 is a broken inverted plan of the car with the coupling attached thereto, and Fig. 6 is a broken end view of the same.

The draw-bar A has a rounded outer end, as shown, a shoulder A', which interlocks with a similar shoulder of the coupling of an adjoining car, and by which the car is hauled, a shoulder A², which engages the end of a corresponding coupling and limits its longitudinal motion, a boss A³, formed upon the back side of the draw-head to engage the crank C and limit the lateral movement of the draw-bar, and a rearwardly-extending shank A⁴, having a slot a near the rear end thereof, through which projects a pin or bolt b, by which the draw-bar is attached to the bottom of the car B. The draw-bar A will thus have a longitudinal movement, which will be limited by the end of the slot a striking the pin b. The draw-bar is supported in a horizontal position by the cross-pieces D' of the frame D, which is suitably attached to the car-bottom.

Attached to the inner side of the frame D by a bolt d is a leaf-spring E, which presses against the back of the draw-bar A, so that when two draw-bars are pushed together the springs E will cause the shoulders A' of the draw-bars to interlock, and when once they have interlocked the boss A³ and crank C will prevent either of the draw-heads from moving back far enough to allow them to uncouple, as either draw-bar cannot move far enough to permit the uncoupling of the cars unless operated by the levers, as hereinafter described; but when they are coupled each draw-bar is moved, thus permitting them to interlock. The crank C is pivoted to the car-bottom by the rod F, which extends upwardly through the platform B' to the top of the car, if desired, where it is provided with a wheel F', by which the rod and crank may be turned and the car uncoupled, as hereinafter described. The crank C is also provided with a forwardly-extending arm C', which is connected with the draw-bar A by the rod e, which is attached to said parts by the bolts f, which pass through the longitudinal slots e' in the rod e, and upon which are washers f', so that the rod may move freely upon the bolts. By connecting the draw-bar A and crank C C' in this manner the draw-head may move a distance equal to the length of the two slots e' without affecting the crank to swing the end thereof out of the way of the boss A³, so that the draw-bars will uncouple. When the crank is turned, it will swing out of the way of the boss A³ and permit the draw-bar to be moved by the rod e far enough to uncouple by the movement of a single bar. This is a great advantage, as in other car-couplers having laterally-moving draw-bars it is necessary to move both draw-bars to uncouple them. The rod F extends to the top of the car, as described, being supported by suitable braces F², and is provided with a grooved pulley F³, which is fixed thereto and over which pass the chains g g³. The chain g³ connects with the lever H, and the chains g extend to the sides of the car, where they are provided with suitable handles g', by which they may be pulled and the car uncoupled, as described below, and these chains are supported by the eyes g², which are attached to the front of the car near each side thereof.

The rod F is also provided with a forwardly-extending crank F⁴, which rests upon the car-platform B', and to the end of which is attached one end of the locking-bar J. The locking-bar J extends along the front of the platform B', moving longitudinally in the bracket K, which is suitably attached to the front of the platform, and is provided upon the under side near the end with a shoulder J', which engages the bracket K and holds the coupling open when a car is uncoupled.

Pivoted upon one side of the bracket K by the bolt h, so as to turn freely thereon, is a depending latch L, having an inwardly-projecting shoulder L', which projects beneath the locking-bar J and into the recess B² of the platform B', so that when the latch is pressed inwardly the shoulder L' will press against the lower edge of the locking-bar J, lift the shoulder J' from engagement with the bracket K, and allow the spring E to move the draw-bar A.

The latch L is operated by a depending L-shaped arm M, which is attached to the platform B' on the opposite side of the draw-bar and at the same distance from the center as is the latch L, so that when two cars come together the arm M of one car will strike the latch L of the other and set the coupling, as described. When the arm passes beyond the latch L, the latch will drop into its former position of its own gravity.

The lever H is pivoted to the front of the platform by the bolt i, is connected at its lower end by means of a chain j with the crank C, the chain being attached to the crank by a bolt l to enable it to turn the crank easily—that is, to bring the chain off the center—and the upper end of the lever is attached to the chain g³, as described.

The coupling operates as follows: When two cars come together, the rounded ends of the draw-bar A will slip past each other, and when the shoulders A' are opposite the pressure of the springs E will cause them to interlock, the shoulders A² will prevent them from separating longitudinally, and the crank C and boss A³ will prevent them from separating laterally, so that they cannot accidentally uncouple. The necessary slack is produced by the end of the draw-bar striking the shoulder A² of the opposite draw-bar, thus causing said draw-bar to move longitudinally, which movement is permitted by the slot a and pin b, as described. To uncouple the cars, the rod F is turned either by the wheel F' or by pulling upon one of the chains g. This will turn the crank C and arm C', actuate the connecting-rod e, and pull the draw-bar A wide open. At the same time the crank F⁴ will be turned, thus actuating the locking-bar J, and causing the shoulder J' thereof to drop over the inner edge of the bracket K and hold the coupling in open position. When two cars come together with one or both of the couplings in this position, the arm M of one will strike the latch L of the

other, release the locking-bar, and set the coupling, as described. It will thus be seen that the coupling is thoroughly automatic, and that it is sure to work with the draw-bars in any possible position.

I do not confine myself to the precise arrangement of operating levers and chains, as said parts may be attached in many ways without changing the principle of my invention. Neither do I confine myself to the use of the spring E to give the necessary lateral movement to the draw-bar, as a spiral spring or any suitable spring may be substituted, or to the particular position of the boss A³, as it may be placed upon the top or bottom of the draw-bar with the same result.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. A car-coupling consisting, essentially, of a laterally-movable draw-bar pivoted to the under side of the car, said draw-bar having a shoulder to interlock with a similar shoulder of an adjoining coupling to draw the car, a shoulder longitudinally opposite said drawing-shoulder to limit the longitudinal movement of the adjoining coupling, a boss upon the back side of the draw-bar to engage a projecting crank, as shown, and limit the lateral movement of the draw-bar, a spring to press the draw-bar against the draw-bar of an adjoining coupling, and a suitable lever-connection for uncoupling the draw-bar, substantially as described.

2. The combination, in a car-coupling, of a draw-bar, an uncoupling-lever for said draw-bar, a locking-bar for locking the draw-bar in uncoupled position, and connections between the draw-bar and uncoupling-lever and between the uncoupling-lever and the locking-bar, whereby the locking-bar will be actuated when the uncoupling-lever is thrown, substantially as described.

3. The combination, with a spring-actuated draw-bar provided on its forward edge with a locking-shoulder and on its rear edge with a boss, of a crank extending in line with said boss and provided with a forwardly-projecting arm, and a slotted rod connecting said arm and the draw-bar, substantially as set forth.

4. The combination, with a spring-actuated draw-bar provided on its forward edge with a locking-shoulder and on its rear edge with a boss, of a crank extending in line with said boss and provided with a forwardly-projecting arm, a slotted rod connecting said arm and the draw-bar, a crank-arm on the pivot of said crank, a locking-bar pivoted on said crank-arm and provided with a shoulder, a bracket with which said shoulder may be engaged, a depending lever arranged to engage the locking-bar, and a depending arm adapted to engage the depending lever of an opposite car, substantially as shown and described.

5. The combination, with the draw-bar A, pivoted to the car B and having shoulders A', A², and the boss A³, as shown, of the crank C,

adapted to engage the boss A³ and limit the movement of the draw-bar, the arm C' of the shank, and rod e, connecting the crank and draw-bar, and means, as rod F and lever H, 5 for turning the crank and moving the draw-bar, substantially as described.

6. The combination, with the crank C and arm C', having means, as shown, for turning said parts, and the laterally-movable draw- 10 bar A, of the connecting-rod e, having slots e' for connecting the crank-arm and draw-bar, whereby the draw-bar may be moved the length of the slots e' before affecting the crank, substantially as described.

15 7. The combination, with the draw-bar A and crank C, connected as shown, and the rod F, connected with said crank, of means, as crank F⁴, locking-bar J, having shoulder J' and bracket K, for holding the draw-bar 20 in open position, substantially as described.

8. The combination, with the locking-bar J and bracket K, adapted to hold the draw-bar open, as shown, of means, as pivoted latch L, having shoulder L', and depending arm M 25 for releasing said locking-bar and setting the draw-bar, substantially as described.

9. In a car-coupling, the combination, with the draw-bar, of a crank having one arm disposed in the direction of the draw-bar, and a rod or link connecting the said crank and 30 draw-bar, substantially as described.

10. In a car-coupling, the combination, with the draw-bar having a boss or projection at the back thereof, of a crank having one arm 35 normally disposed toward said boss or projection, substantially as described.

WM. YATES.

Witnesses:

H. N. ROCKWELL,
F. H. ANDREWS.