

No. 649,991.

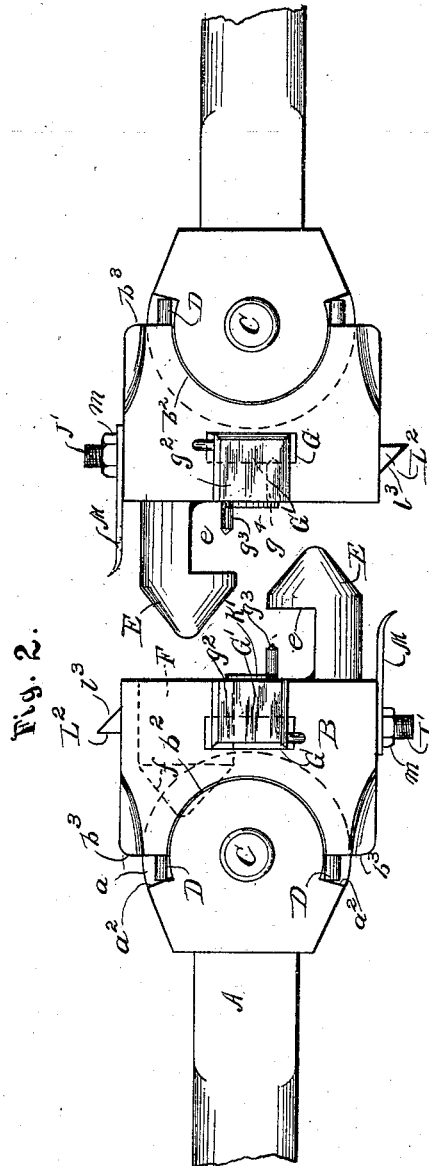
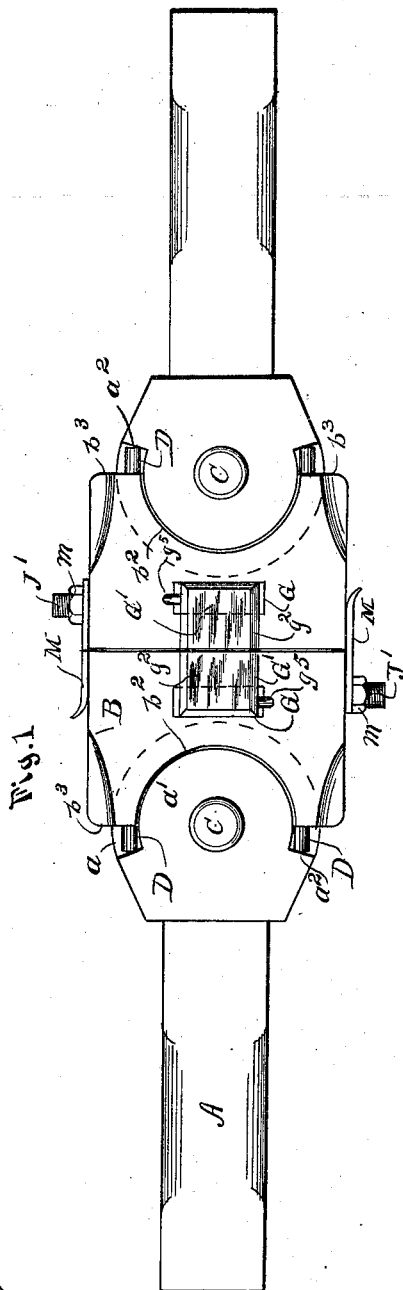
Patented May 22, 1900.

L. LECOMPTE.
CAR COUPLING.

(Application filed June 17, 1899.)

(No Model.)

5 Sheets—Sheet 1.



Witnesses:

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Att'y.

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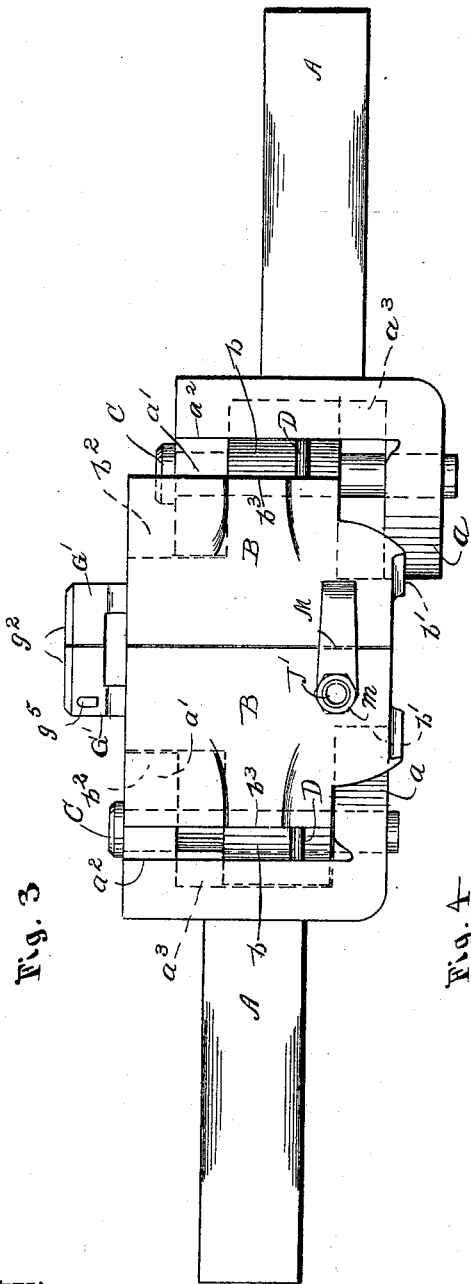
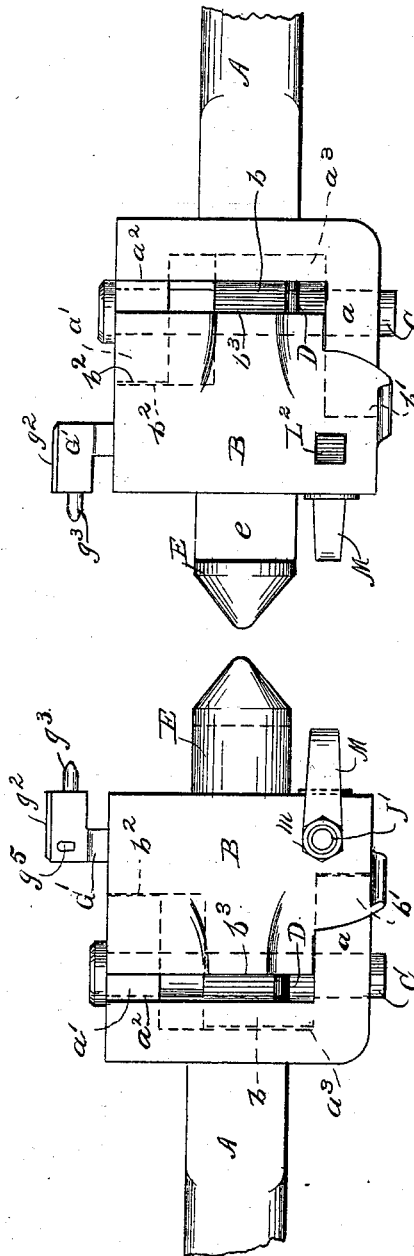


Fig. 3

Fig. 4



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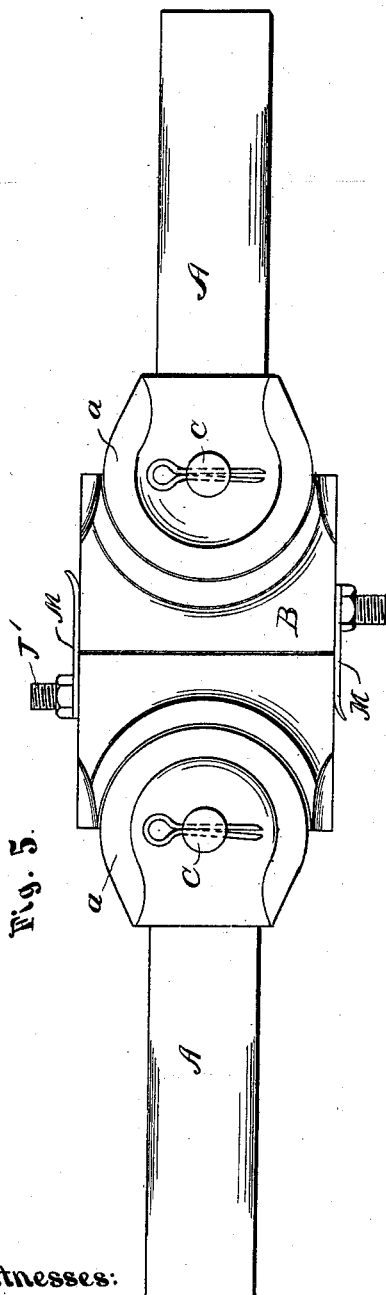


Fig. 5.

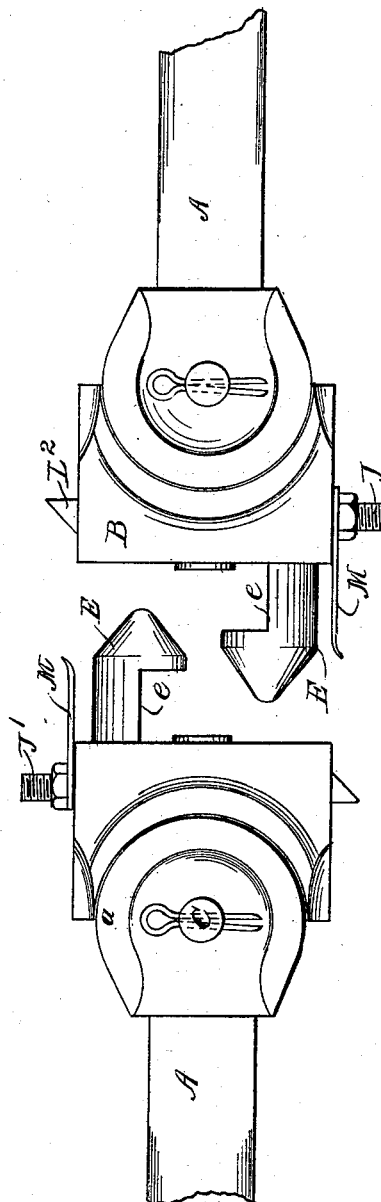


Fig. 6.

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Fig. 7.

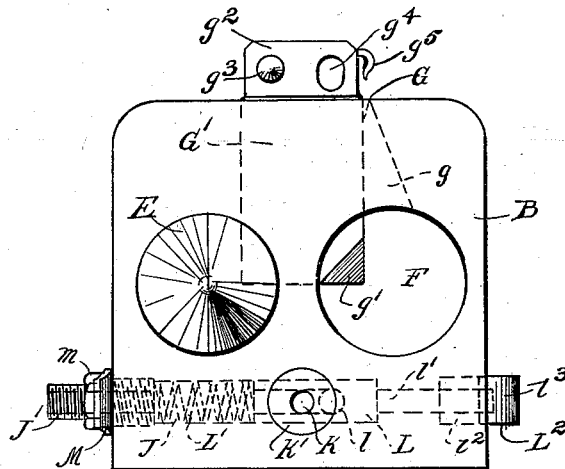
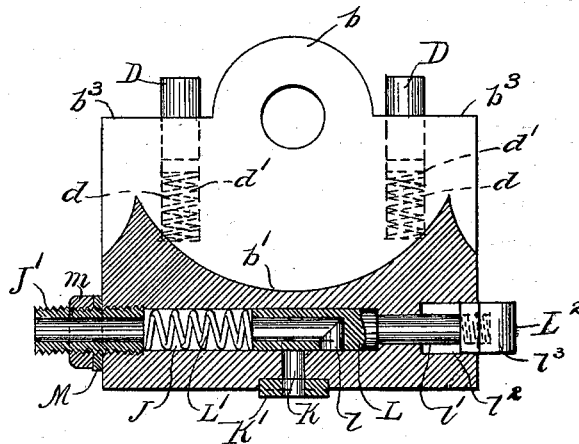


Fig. 8.



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Fig. 9

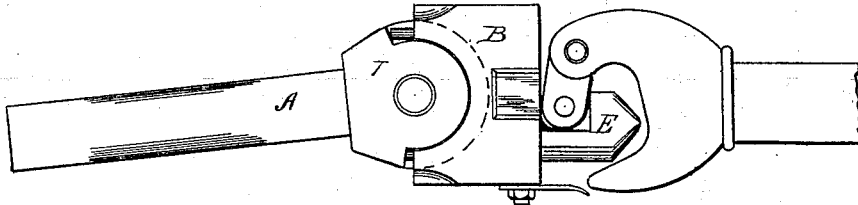
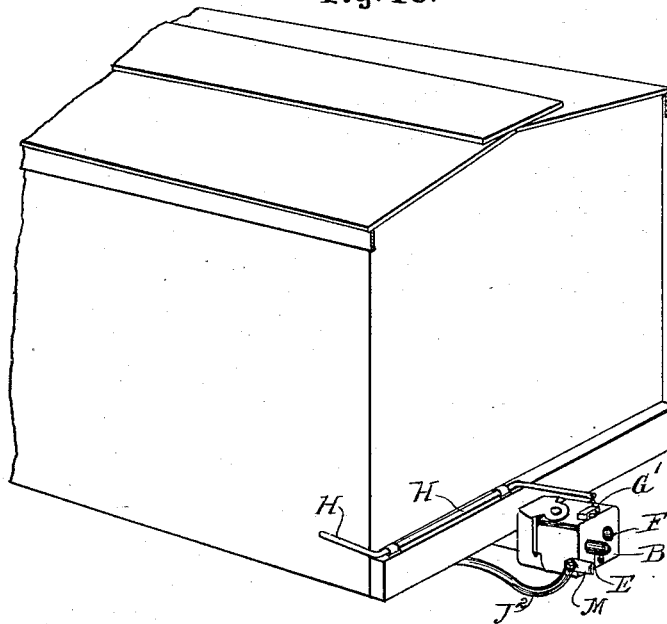


Fig. 10.



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UNITED STATES PATENT OFFICE.

LOUIS LECOMPTE, OF CHICAGO HEIGHTS, ILLINOIS, ASSIGNOR OF ONE-HALF
TO JOHN W. THOMAS, OF SAME PLACE.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 649,991, dated May 22, 1900.

Application filed June 17, 1899. Serial No. 720,899. (No model.)

To all whom it may concern:

Be it known that I, LOUIS LECOMPTE, a citizen of the United States, residing at Chicago Heights, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Car-Couplings, of which the following is a specification.

The invention relates, primarily, to combined car and air-brake couplings; but certain features thereof are applicable to car-couplings generally, as will hereinafter appear. Its objects in the main are to simplify and strengthen the construction of the coupling as a means of traction, to so construct and arrange the valve of the air-coupling that it shall be accessible from the exterior and shall not be opened except by the engagement of a twin coupler, to dispense with the pivoted coupling-hooks generally used and substitute therefor coupling bolts or blocks arranged to interlock with the interlocking of the couplers, so that power applied to draw the one will also draw the other, to construct said interlocking coupling-blocks and their sockets in such manner that they may be lifted in unison and independently swung to rest upon the top of the draw-hooks while the train is at a standstill, so that the cars may be separated by the switch-engine without further attention, and to provide improved means for normally alining the draw-bar and draw-head to insure perfect engagement of the couplings and to prevent rattling in action.

In the drawings, Figure 1 is a top plan view of a connected coupling embodying my invention; Fig. 2, a like view of said coupling with the two heads disconnected and apart from each other; Fig. 3, a side elevation of said coupling connected; Fig. 4, a like elevation of said coupling disconnected; Fig. 5, a bottom plan view of said coupling connected; Fig. 6, a like view of said coupling disconnected; Fig. 7, a front elevation of one of the draw-heads, with its immediate accessories; Fig. 8, a plan view of said draw-head, partly broken away to disclose the air-brake valve. Fig. 9 represents a Janney coupler engaged with one of my couplers; and Fig. 10 is a perspective view of part of a car with my improved coupling applied thereto, showing

means for disconnecting the coupling from the side of the car.

A represents a draw-bar having at its forward end a broad semicircular base-lip a and a narrower overhanging lip a' , concentric in outline with the lower lip, and shoulders a^2 , extending from said lower lip past the upper lip. Between these lips the draw-bar is chambered concavely, as at a^3 , upon an arc concentric with the arcs of the lips to receive a semicircular tongue b , projecting rearwardly from the draw-head B, which tongue is of less vertical thickness than the space between the lips, so as to allow the draw-head to rise or lift when coupled to a draw-head not on the same normal level. Beneath the tongue the draw-head is concavely recessed, as at b' , to receive the lower lip of the draw-bar, and above the tongue it has a second concave recess b^2 for the upper lip, shoulders b^3 extending up from the lower recess to coact with the shoulders on the draw-bar to limit the lateral play or flexion of the head. A bolt or pivot-pin C, passing through the tongue and lips on an axis concentric with the arcs of the several recesses and of said chamber, tongue, and lips, serves to unite the draw-head to the draw-bar.

In order to normally aline the draw-head with the draw-bar, I interpose spring pressing devices between their respective shoulders on each side of the connecting-pin. Convenient means to this end are afforded by forming recessed seats d in the shoulders of one of the members, preferably the draw-head, to receive coiled springs d' , upon which are seated followers D, extending into contact with the shoulders of the opposite member (in this instance the draw-bar) and pressed constantly thereagainst by the springs, thus not only serving the purposes of alinement, but also steadying the rise and fall of the draw-head and easing off any tendency to jolt or rattle.

Projecting from the front end of the draw-head to one side of the center is a rigid draw-hook E, consisting of a cylindroidal body with conoidal end, notched at e in the side toward the axis of the draw-head to form the hook. Equidistant on the other side of said axis is

formed a cylindroidal socket F, with conoidal base f to receive the corresponding hook of an opposed draw-head provided with a like socket for the reception of the first hook. In the top of each draw-head, preferably extending transversely on each side of the center, is cut a vertical socket G, having parallel sides and extending down to about half the depth of the above-mentioned sockets for the reception of the draw-hooks, from which latter sockets these will be hereinafter distinguished as "coupling-sockets," since their office is to receive the blocks G' or rectangular bolts which engage the hooks and complete the coupling of two draw-heads together. The end wall of the coupling-socket on the hook side of the draw-head is vertical, or essentially so, to resist lateral thrust of the coupling-block when engaged with the hook of a coacting draw-head; but above the socket which receives the hook of said latter draw-head this coupling-socket is undercut, as at g , to permit the block to be swung over the top of the hook after being lifted and rested thereon in uncoupling the cars of a stationary train. The coupling-block is of such dimensions that one corner projects considerably into the socket F to engage with the coupling-hook received therein, and the front face of this corner is beveled, as at g' , that it may be struck and raised by the conoidal end of the hook when the latter enters the socket, the block immediately thereafter dropping behind the shoulder of the hook and making close engagement therewith. The head or cap g^2 of each coupling-block projects forward practically to the front line of the draw-head and has to one side of the center a rigid forwardly-projecting pin g^3 and to the other side an elongated recess g^4 to engage with and receive a like recess and pin on the coupling-block of the companion draw-head when the two are coupled. By this means if one coupling-block is lifted the other is also lifted thereby; but when raised the elongated recesses permit such play that they can be swung, respectively, to one side and to the other to be rested upon their corresponding draw-hooks. Each coupling-block has a conveniently-located hook or eye g^5 for connection with means for lifting it—as, for instance, with the bell-crank lever H, extending to the side of the car, so that uncoupling may be effected without entering between the cars.

Each draw-head is transversely bored to form an air-passage J, closed at the outer end by a threaded nipple J' for the reception of the air-brake hose J², as shown. With this passage connects a centrally-located air-duct K, opening to the front of the draw-head and having a projecting bushing or gasket K' to make air-tight contact with the corresponding gasket on the companion draw-head. In the air-passage J plays a valve-block L, having an angular duct l open to the passage J at one end and at the other capable of making registry with the aforesaid duct K, but

normally held out of registry therewith by the force of a coiled spring L', seated against the nipple. The valve-stem l' plays through a bearing formed in the body of the draw-head in line with the nipple and receives at its outer end, on the opposite side therefrom, a cam-block L², playing in an angular recess 12 in the side of said head and held thereby, so as always to present its beveled face l^3 to the front. The depth of the recess is such that when the cam-block is driven home the duct l will register with the duct K, establishing connection between passage J and said latter duct. Secured to the draw-head on the nipple side is a valve-cam M, which when two draw-heads come together rides upon the cam-block of the opposite head and closes it in, thus opening the valve and establishing through connection. This valve-cam may be movable, so as to throw it out of position for engaging the cam-block, in order to leave the valve controlled by the latter closed if for any reason it should not be desirable to establish air connection between one car and the next. Such capacity of movement may readily be secured by forming the valve-cam as an independent curved plate adapted to fit over the nipple and fixing it in position by means of a nut m , which may serve at the same time as a jam-nut for the nipple.

Having thus described my improvement, I desire it to be understood that I do not limit myself to the specific details of construction or outline of parts as herein described, considering that these may be varied to a very marked degree without departing from the spirit of the invention; but

What I claim, and desire to secure by Letters Patent, is—

1. The combination of the draw-bar having an overhanging lip, a subtending lip of greater diameter and an intermediate concave chamber, the draw-head having a rearwardly-extending convex tongue of lesser thickness than the height of said chamber and recessed above and beneath said tongue to receive the lips of the draw-bar, and the pivot-bolt uniting the draw-head and draw-bar on the axis from which said lips, recesses, tongue and chamber are described.

2. The combination of the draw-bar having an overhanging lip, a subtending lip of greater diameter, an intermediate concave chamber and shoulders on each side of the chamber, the draw-head having a rearwardly-extending tongue of lesser thickness than the height of said chamber, shoulders on each side of said tongue and recesses above and beneath the tongue to receive the lips of the draw-bar, the pivot-bolt uniting the draw-head and draw-bar on the axis from which said lips, recesses, tongue and chamber are described, and elastically-yielding cushions between the shoulders of the draw-bar and draw-head.

3. The combination with draw-heads and draw-hooks carried thereby, of interlocking coupling bolts or blocks engaging said hooks

in the respective draw-heads, whereby the disengaging of one block also disengages the other.

4. The combination with draw-heads and
5 draw-hooks carried thereby, of coupling bolts or blocks engaging said hooks in the respective draw-heads and constructed to loosely interlock as the draw-heads are brought together, whereby they may be simultaneously
10 disengaged as one, but independently swung to bring them to rest upon the top of their respective hooks.

5. The combination with the draw-heads and their conoidal-ended draw-hooks and
15 hook-sockets, and undercut coupling-sockets, of the coupling-blocks provided with projecting heads carrying interlocking devices for mutual engagement.

6. The combination with the draw-heads
20 and their conoidal-ended draw-hooks and hook-sockets, and undercut coupling-sockets, of the coupling-blocks provided with projecting heads each having on one side an engaging pin and on the other an elongated socket
25 for reception of a like pin from the companion block.

7. The combination with the draw-head and transverse air-passage therein, and the forwardly-extending duct, of the spring-seated
30 valve playing in said passage and having a stem extending to the farther side of the draw-head, the cam-block on said stem, and a cam on the opposite draw-head for automatically

moving said cam-block and opening the valve as the draw-heads come together.

8. The combination with the draw-head and air-passage therein, of the air-valve, automatically-acting devices for opening said valve, and means whereby said automatic devices
35 may be thrown out of action.

9. The combination with the draw-head and air-passage therein, of the spring-seated valve having a stem extending through the side of the draw-head, the cam-block on said stem, a cam on the opposite draw-head for automatically moving said cam-block and opening the valve, and means whereby said cam may be
40 displaced so as not to engage the cam-block.

10. The combination with the draw-head and its air-passage, of the valve and its cam-
45 block, the nipple, the valve-cam sitting over said nipple, and the nut confining the valve-cam.

11. The combination with the draw-head and its air-passage, of the spring-seated valve-
50 block with its angular duct, the nipple confining the spring, the valve-stem, the cam-block thereon, the angular recess in which said block plays, and the valve-cam.

In testimony whereof I affix my signature
60 in presence of two witnesses.

LOUIS LECOMPTE.

Witnesses:

G. S. NOBLE,
F. BENJAMIN.