

No. 636,361.

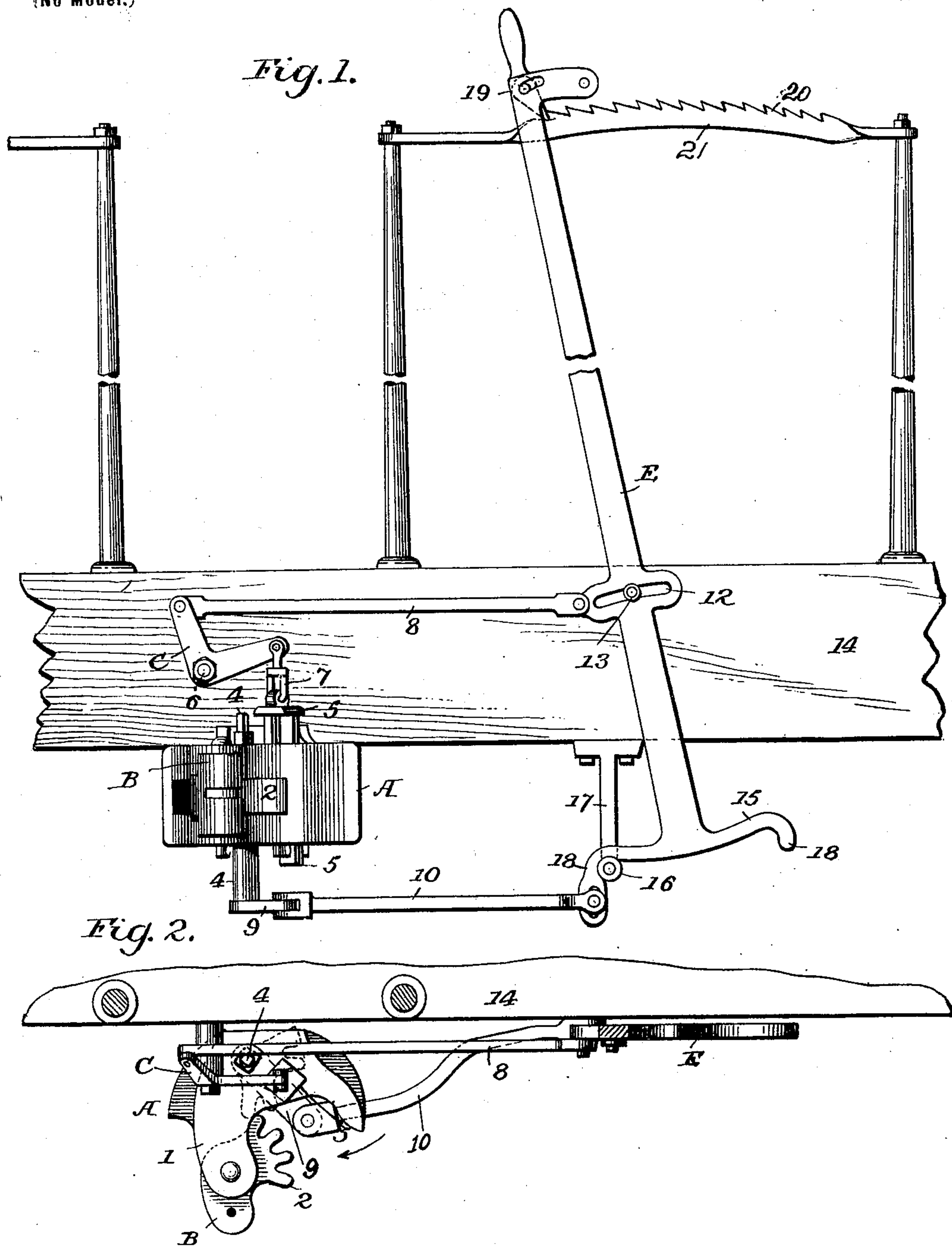
Patented Nov. 7, 1899.

L. N. SINGIN.
CAR COUPLING.

(Application filed Mar. 21, 1898.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses

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Fig. 3.

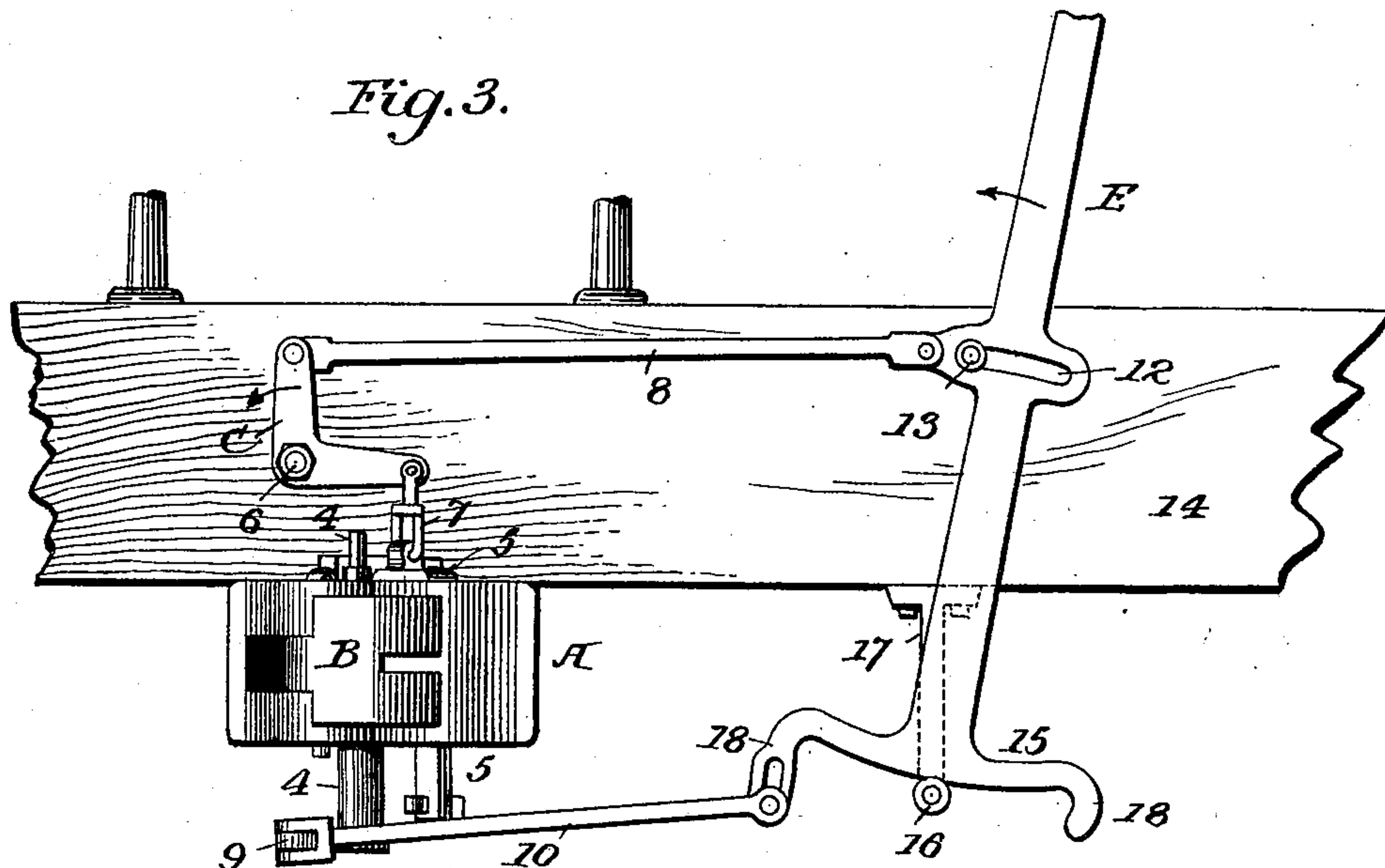
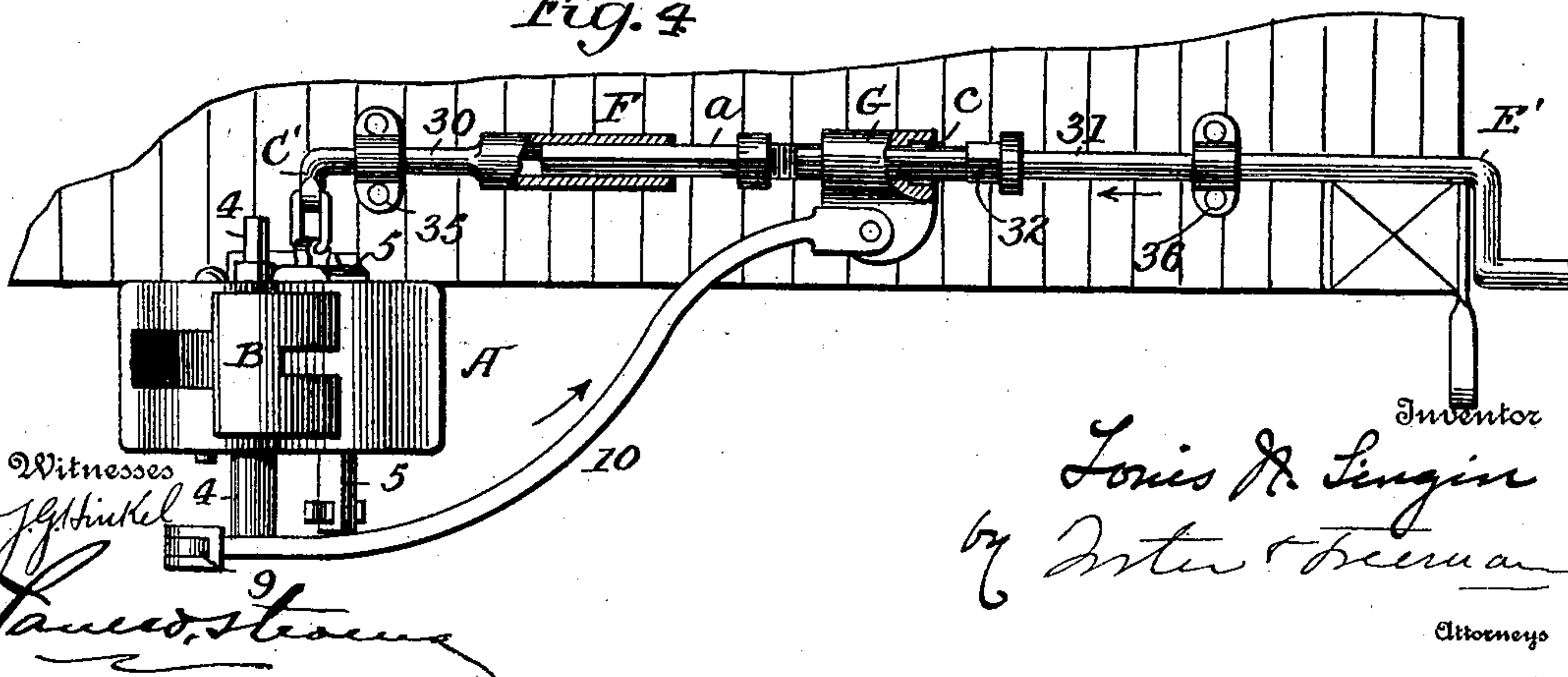


Fig. 4



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UNITED STATES PATENT OFFICE.

LOUIS N. SINGIN, OF WALL, PENNSYLVANIA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 636,361, dated November 7, 1899.

Application filed March 21, 1898. Serial No. 674,676. (No model.)

To all whom it may concern:

Be it known that I, LOUIS N. SINGIN, a citizen of the United States, residing at Wall, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Car-Couplings, of which the following is a specification.

My invention relates to that class of car-couplings in which the locking-pin is supported by a sector geared with the knuckle and in which the parts are manipulated from the side or platform; and my invention consists in the construction and combination of parts set forth hereinafter and illustrated in the accompanying drawings, in which—

Figure 1 is a partial end view of a passenger-car platform and coupling, illustrating my improvement. Fig. 2 is a plan of Fig. 1; Fig. 3, a view showing the parts in a different position from that shown in Fig. 1; Fig. 4, a view showing my improvement as applied to a freight-car.

The coupling-head A is supported at the end of the draw-bar beneath the platform of the car, or beneath the front beam in the case of a freight-car, in any suitable manner, the coupling-head only projecting beyond the front beam or cross-sill.

The coupling-head A is constructed like that of the Janney coupler in its ordinary outline, and to the longer fork 1 is pivoted the coupling-hook B. This coupling-hook has connected with it a toothed sector 2, which gears with another toothed sector 3 within the coupling-head and secured to a shaft 4, passing vertically through the coupling-head, the sector 3 serving to support the locking-pin 5, all substantially as in the construction shown in my Letters Patent No. 497,930 or No. 570,211.

In order that I may operate the parts from the side of the car, so as to lift the locking-pin and open or close the hook or knuckle B, I make use of suitable appliances for lifting the pin and turning the shaft 4, as fully set forth hereinafter. In the construction shown in Figs. 1, 2, and 3 a lever C is pivoted at 6 to the platform and is connected by links or chains 7 to the pin 5 and is also connected with an operating-rod 8. From the bottom of the shaft 4, below the coupling-

head, extends an arm or lever 9, to which is connected a rod 10. Both the arm 9 and the lever C are operated from a floating lever E. This lever has a curved slot 12, receiving a pin 13, extending from the front sill 14, and at the lower end has a cross-head 15, which may be slotted to receive a fixed pin 16 upon a bracket 17, or, as shown, the lower edge of the cross-head may rest on the said pin, the terminals (shown as lugs 18 18) preventing the cross-head from passing from contact with the pin. The connecting-rod 10 is pivoted to the inner lug 18, and the connecting-rod 8 is pivoted to the lever E opposite the inner end of the slot 12. At the upper end of the lever E is carried a pawl 19 for engaging a rack 20 on a bar 21, supported suitably in position upon the railing of the platform.

Any suitable devices for lifting the pawl 19 out of engagement with the rack may be employed; but as they form no part of the present invention none will be specifically described or illustrated.

Assuming that two cars are coupled together and standing on the track and it is desired to permit them to separate when they are drawn apart, the parts of the above-described apparatus will be in the position shown in Fig. 3. The lever E in such case is swung in the direction of the arrow, Fig. 3, until the pawl 19 engages one of the teeth of the rack 20. This pushes on the rod 8, swings the lever C in the direction of its arrow, and lifts the locking-pin 5. If now either car is drawn upon to separate the cars, the knuckle B will swing to its open position, permitting the train to be cut at the point where the lever E was pushed in. In the act of opening the knuckle B the two sectors 2 3 are turned, the sector 3 being brought to a position below the locking-pin 5, so that the latter cannot descend without contact with the sector. As the knuckle B was opened and the sectors were turned the rod 10 was thrust outward and the lever E was carried from the position shown in Fig. 3 to the position shown in Fig. 1, the position of the locking-pin 5 not being affected by this action, inasmuch as it was held in place by the sector 3. The separation of the cars therefore brings all the parts to the position shown in Fig. 1. If under these

conditions two cars are brought together, the nose of the opposite knuckle hits the forward edge of the sector 2 and turns the latter and the knuckle B to a locking position, at the same time turning the sector 3 in the direction of its arrow, Fig. 2, until said sector passes from below the locking-pin 5, which then drops and locks the parts in place. As the knuckle B closes and the sector 3 is turned with it the connecting-rod 10 is drawn upon, carrying the lower end of the lever E inward, while the descent of the locking-pin swings the bell-crank lever C in a direction the reverse of the arrow, Fig. 3, thrusting the connecting-rod 8 outward, so that when the parts are coupled they occupy the position shown in Fig. 3, in which case they are in position ready to be operated whenever it is necessary to again cut the train.

In Fig. 4, while there is an operating-lever E' and while the parts of the coupling-head A are constructed as before described, the intermediate parts are differently constructed and arranged. In this case the lever for operating the locking-pin consists of an arm C' at the end of a rock-shaft F, which consists of two sections 30 31, so connected in any suitable manner that they will turn together, while one section will slide independently of the other section. One means of securing this result is to provide the section 31 with an angular end *a*, which slides in an angular socket at the end of the shaft-section 30. The connecting-rod 10, which projects from the arm or lever 9, extends upward to a sliding block G, through which the section 31 of the shaft F passes, an angular shoulder or projection 32 on the section 31 being adapted to an angular socket *c* in the block G. The two sections of the shaft turn in brackets 35 36, bolted to the car or its frame at any suitable points.

Assuming the parts to be in the position shown in Fig. 4, when two cars are coupled the lever E' is turned to lift the arm or lever C' and raise the locking-bolt 5. The lever E' is then pushed inward in the direction of its arrow to carry the shoulder 32 into the socket *c*, when the shaft will be prevented from turning and the locking-bolt will be held in its upper position. When the cars separate, the knuckle B swings outward and the sector 3 rotates, pushing the connecting-rod 10 in the direction of its arrow and carrying the block G and the section 31 of the shaft F outward. In such case the bolt 5 cannot descend, both because the shaft F is prevented from turning by the block G and because the sector 3 is below the bolt or pin. When another car is brought toward the draw-head A, the contact of the knuckles swings inward the knuckle B, and the connecting-rod 10 is then drawn inward, carrying the lock G away from the shoulder 32, so that when the sector 3 passes from below the locking-pin the latter can at once descend and lock the parts in their places.

It will be seen that while I have shown a draw-head and knuckle with the sectors and locking-pin, as in my aforesaid patent, No. 497,930, these features are combined with parts differently constructed and arranged from those specified in said Letters Patent, the construction shown in Figs. 1 to 3 being especially adapted for passenger-cars and that shown in Fig. 4 especially adapted for freight-cars. It is my purpose, however, to apply either construction wherever it may be most available.

The construction above described, in which the connecting-rod 10 extends below the draw-head directly under the knuckle B when in its closed position, will prevent certain classes of accidents resulting from the breaking of the draw-bar. In such case the draw-head which is broken away will slide down in the companion draw-head until it comes into contact with the arm 9 or the connecting-rod 10 of such companion draw-head, when it will be supported thereby and prevented from falling to the track.

It will be seen that in each of the constructions shown in Figs. 1 and 4 the locking-pin is lifted by swinging the lever E or E' and then locked in its upward position, even when the knuckles of the two heads are in coupled position, so as to unlock on drawing them apart. This permits the train to be "cut" at any point where the locking-pin is so set without any further attention on the part of the brakeman than is necessary to manipulate the operating-lever. He can then leave the train with the knowledge that when the train is drawn upon the separation will take place at the point where the lever was operated upon. In Figs. 1 and 3 the locking device consists of the pawl and ratchet, and in Fig. 4 it consists of the socketed block G and the shaft, with its corresponding shoulder. In either case, however, the result is the same.

Without limiting myself to the precise construction and arrangement of parts shown, I claim as my invention—

1. The combination with the knuckle of a draw-head, of a vertical shaft supported in the draw-head to operate the knuckle, said shaft projecting below the draw-head, an arm projecting forwardly from the lower end of the shaft, an operating-lever, and a rod connecting the lever and forward end of the arm said rod lying directly below the space occupied by the coupling end of the knuckle when closed and serving to support the companion draw-head in the event the latter is broken from its draw-bar, substantially as set forth.

2. The combination with a car, of a draw-head having a pivoted knuckle, a vertical shaft supported in the draw-head to operate the knuckle and projecting below the bottom of the draw-head, a lever upon the car, and parts connected with the lever and shaft to operate the latter, some of said parts being directly under the coupling end of the knuckle when the latter is closed, and serving as

a support for the companion draw-head in the event the latter is broken from its draw-bar, substantially as specified.

3. The combination of a car, draw-head, 5 knuckle and knuckle-operating segments, of a shaft connected to one of the segments and extending down through and below the draw-head, a lever upon the car, and a rod connecting the lever and the shaft and extending directly under the knuckle when the latter is 10 closed, substantially as and for the purpose specified.

4. The combination with the draw-head, its knuckle, knuckle-operating shaft 4, and lock-

ing-pin, of an operating-shaft F in two sec- 15 tions, one connected with the pin and the other with the shaft 4, a block G, connected with the latter shaft and having an angular socket to receive an angular shoulder upon the other section of the operating-shaft, sub- 20 stantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LOUIS N. SINGIN.

Witnesses:

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