

L. D. WOODRUFF.
SAFETY LOCK FOR COUPLING HEADS.
APPLICATION FILED JULY 6, 1913.

1,104,597.

Patented July 21, 1914.

2 SHEETS-SHEET 1.

FIG. 1.

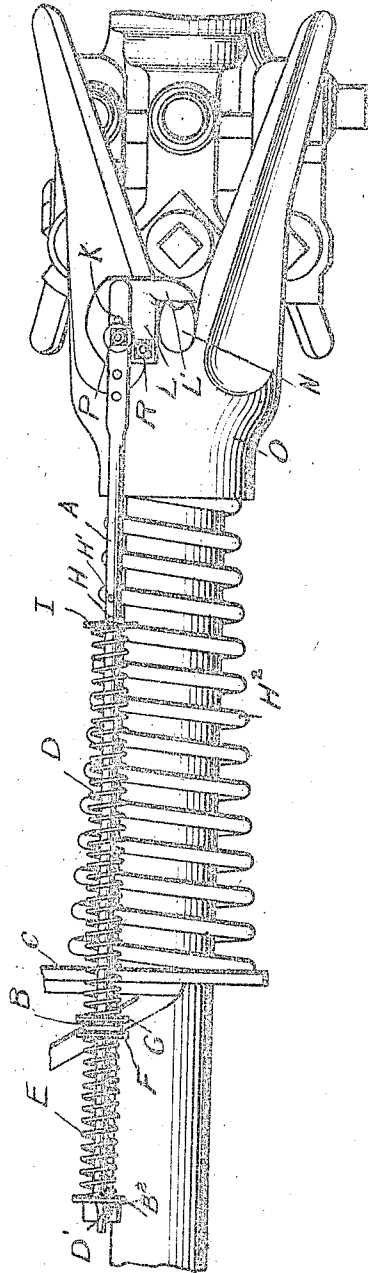
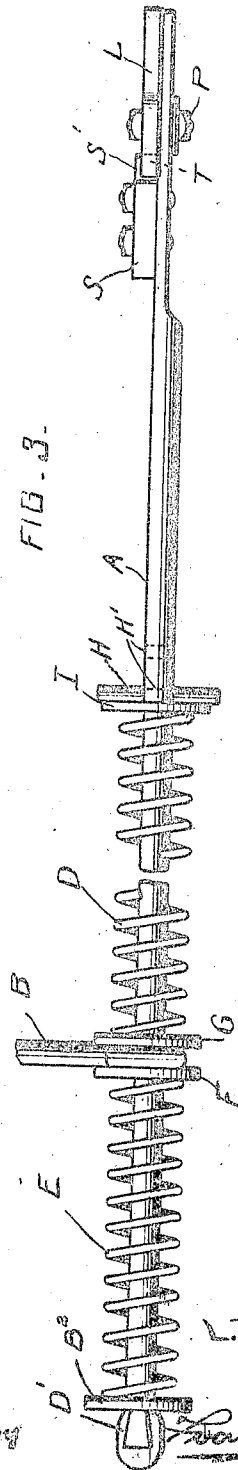


FIG. 3.



Witnesses

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L. D. WOODRUFF.
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 2 SHEETS—SHEET 2.

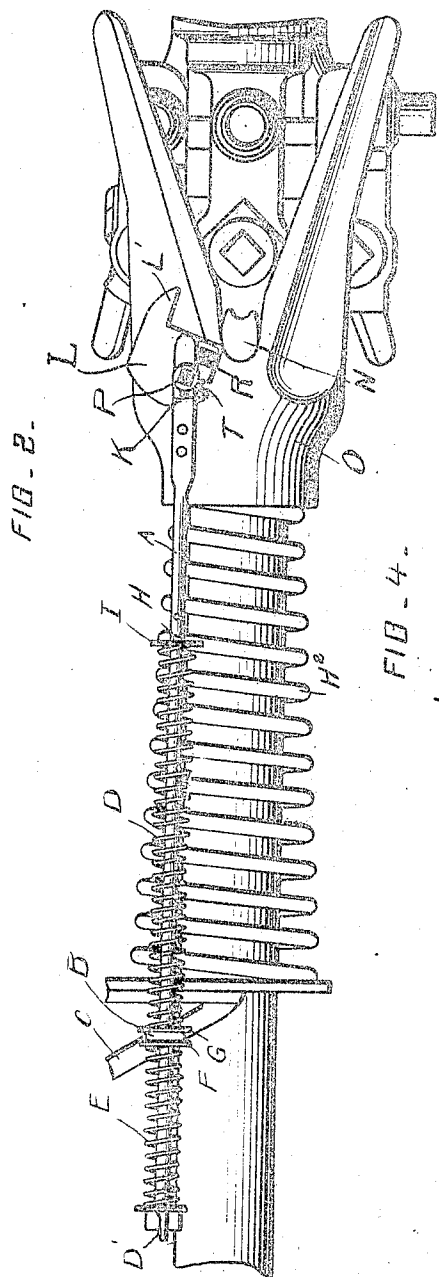
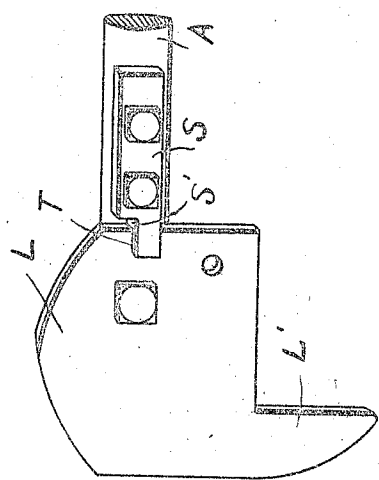


FIG. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

LEONIDAS D. WOODRUFF, OF HATTIESBURG, MISSISSIPPI.

SAFETY-LOCK FOR COUPLING-HEADS.

1,104,597.

Specification of Letters Patent.

Patented July 21, 1914.

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To all whom it may concern:

Be it known that I, LEONIDAS D. WOODRUFF, a citizen of the United States, residing at Hattiesburg, in the county of Forest and State of Mississippi, have invented certain new and useful Improvements in Safety-Locks for Coupler-Heads; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to certain new and useful improvements in automatic safety locks for use in connection with fluid pressure couplings and comprises a simple and efficient device of this nature adapted to serve as a latch to lock automatically over the horn or projection of the head of a coupler head when two heads are coupled together, the object being to produce a safety means whereby, in the event of the coiled springs which bear against the coupler heads becoming broken, the couplers will still be held together, thus avoiding any leakage to the jointed connection.

The invention comprises various details of construction and combinations and arrangements of parts which will be hereinafter fully described, shown in the accompanying drawings and then specifically defined in the appended claims.

I illustrate my invention in the accompanying drawings, in which:—

Figure 1 is a side elevation showing the application of my invention in a locked relation relative to one of the coupler heads. Fig. 2 is a similar view showing the couplers engaged and just before the latch drops. Fig. 3 is an enlarged detail view showing the pivotal connection of the latch with the rod which is mounted upon the turn table, and Fig. 4 is an enlarged view of the latch detached from the coupler head and turn table.

Reference now being had to the details of the drawings by letter, A designates a bar, one end of which is supported by an eye bolt B which is fastened to the turn table C. Coiled springs, designated by letters D and E, are mounted upon said rod, the former of which springs bears intermediate washers G and I the former of which is held by the spring D against the eye bolt B, the other

washer being held by a pin H which passes through one of a series of openings H' formed in the rod A. The spring E bears between a washer B² at one end of the rod held by a key D', and a washer F which also bears against the eye bolt. Said bar has adjacent to its forward end a longitudinally-disposed slot K, and L designates a latch having a tongue or projection L' which, when in a locked position, is adapted to engage over a laterally projecting pin N upon the coupler head O, thereby serving as means for holding the two coupler heads in locked relation with each other in the event of one of the coiled springs H² breaking. A bolt, designated by letter P, is carried by the latch and passes through said slot and affords means for allowing the latch to have a sliding movement independent of the rod by reason of the bolt passing through the elongated slot in the latter. Said latch is pivotally mounted upon a bolt R which is carried by the coupler head and, through the medium of the sliding pivotal connection between the rod and the bolt, it will be noted that, as the nut is given a longitudinal movement, the latch may be raised or lowered. Said rod has a projection S upon one side thereof adjacent to its slotted end, which projection has a shoulder S', adapted to engage a slot T formed in the latch when the latter is at its farthest inner throw, thus serving as means for holding the latch in a locked position.

In the construction of my automatic safety lock, it will be noted that two springs are employed, although one may serve the purpose if desired, two being utilized for convenience. The spring D, it will be noted, is longer than the spring E, the former acting to allow the air heads and connected parts to push back under the cars as far as they may move and which will allow said spring D to give and protect the lock, thereby having a pressure against the rod at the front end, keeping the latch locked and resting against the projection of the turn table at the rear end. The shorter spring E, it will be noted, will allow the air heads to come forward as far as desirable without damage to the lock and serve to hold the lock raised at the proper time.

At the moment the coupling heads meet, the latch L is in the raised or inoperative position as shown in Fig. 2. As the coupling heads are located in advance of the

car couplers, they are forced back against the tension of the springs H² as the car couplers move into engagement. As the bar A is held relatively stationary by the opposing springs D and E, this rearward movement of the head puts a pressure upon the bolt R which tilts the latch downwardly about the bolt P causing it to engage with the pin X of an opposing coupler. When in this position, the latch moves backwardly with the head until the bolt P contacts with the inner end of the slot K in the bar A, during which operation the walls of the slot T engage the sides of the projection S. Any further movement of the head carries the latch L and the bolt A rearwardly against the pressure of the spring D. As the cars separate in uncoupling, the reverse takes place, the bar A moving forward to its normal position and then remaining stationary; the latch L then tilting upward into its inoperative position as a pull is exerted upon the bolt R as the coupling head is forced forward by the spring H².

What I claim to be new is:—

1. An automatic safety lock for fluid pressure coupling comprising, in combination with a coupler head, a latch pivotally mounted thereon and having a lateral projection for engagement over a portion of an adjacent coupled head, a longitudinally movable rod having sliding pivotal connection with said latch adjacent to one end, means for supporting its opposite end, and means upon said rod for holding the latch in a locked position.

2. An automatic safety lock for fluid pressure coupling comprising, in combination with a coupler head, a latch pivotally mounted thereon and having a lateral projection for engagement over a portion of an adjacent coupled head, a longitudinally movable rod having sliding pivotal connection with said latch adjacent to one end, means for supporting its opposite end, said latch having a notch in its edge adapted to be engaged by a projection upon said rod to hold the latch in a locked position.

3. An automatic safety lock for fluid pressure coupling comprising, in combination with a coupler head, a latch pivotally mounted thereon and having a lateral projection for engagement over a portion of an adjacent coupled head, a spring-pressed rod having a longitudinal slot formed near one end thereof, a bolt secured to the latch and having sliding pivotal connection with the sliding portion of the rod, and means carried by the latch for engaging said slot for holding the latch in a locked position.

4. An automatic safety lock for fluid pressure coupling comprising, in combination with a coupler head, a notched latch pivotally mounted thereon and having a lateral projection for engagement over a portion of an adjacent coupled head, a spring-pressed rod having a longitudinal slot formed near one end thereof, a bolt secured to the latch and having sliding pivotal connection with the sliding portion of the rod, said rod having a lateral projection with a shouldered end adapted to engage said notch of the latch to hold the latter in a locked position.

5. An automatic safety lock for fluid pressure coupling comprising, in combination with a coupler head, a latch pivotally mounted thereon and having a lateral projection for engagement over a portion of an adjacent coupled head, a rod having a longitudinal slot formed near one end thereof, a bolt projecting from the latch and engaging said slot, said latch having a recess in its edge adapted to receive a projection upon said rod to hold the latch in a locked position, an eye bolt and means for supporting the same, said eye bolt adapted to receive said rod, keys fastened in the rod, and springs bearing intermediate the eye bolt and said keys.

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

LEONIDAS D. WOODRUFF.

Witnesses:

A. L. HOUGH,
FRANKLIN H. HOUGH.