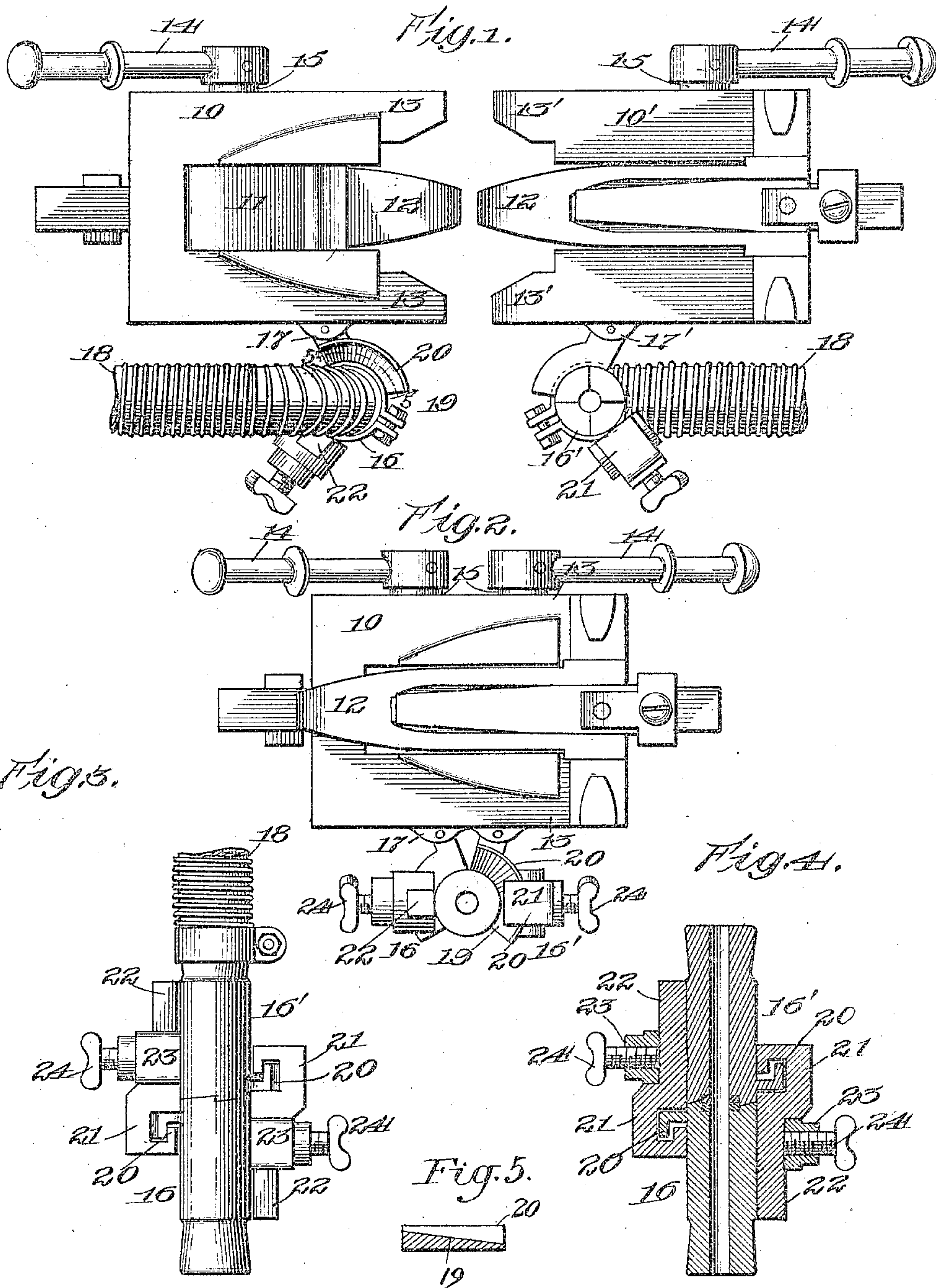


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AUTOMATIC AIR BRAKE AND CAR COUPLING COMBINED.

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AUTOMATIC AIR-BRAKE AND CAR-COUPLING COMBINED.

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To all whom it may concern:

Be it known that I, LEWIS C. CARY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have
5 invented certain new and useful Improvements in an Automatic Air-Brake and Car-Coupling Combined, of which the following is a specification.

This invention has for its object to automatically lock the air-brake couplings of two cars when the cars are coupled together, and thus avoid the necessity for a trainman going between the cars and doing this work by hand.

With this and other ends in view, which
15 will be fully pointed out hereinafter, the invention consists, essentially, in hanging the air-brake couplings on the coupling-heads of the cars and constructing them in such a manner that they will automatically engage and
20 interlock with each other in proper position when the heads are brought together to couple the cars.

In the accompanying drawings I have illustrated one form in which my invention may
25 be embodied and as applied to a car-coupling, also of my invention, and referring thereto—

Figure 1 is a side elevation of a car-coupling with the heads separated and my invention applied thereto. Fig. 2 shows both the car-coupling and the air-brake coupling locked.
30 Fig. 3 is a bottom plan view, and Fig. 4 is a horizontal sectional view, of the air-brake coupling locked. Fig. 5 is a sectional view on the line 5 5 of Fig. 1.

It will be understood at the outset that this invention is not limited in any way to use with a car-coupling of any particular construction and that my box-coupling shown in the drawings is merely adopted for the purpose of explaining this invention and the manner in
40 which it works.

Like numerals of reference designate corresponding parts in the several figures of the drawings, and referring thereto 10 10' are the
45 two heads of the car-coupling, each of which is provided with a locking device 11, adapted to be engaged with the other to effect the coupling when the heads are brought together. Each head is provided with a guide 12 adja-

cent to its locking device, and when the coupling is locked the parts 13 on one head lap the parts 13' on the other head. The locking devices are automatically closed when the heads are brought together, and they are opened by means of handles 14 on the shafts 15, carrying said locking devices.
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The air-brake couplings 16 16' are pivotally connected to the coupling-heads at 17 17', and they hang below the coupling-heads, as shown in Fig. 1, when said heads are separated and are caused to swing in arcs of circles to interlock when the coupling-heads are brought together. The air-pipes 18, attached to the air-brake couplings, may be of any suitable character, and they serve to hold said couplings in proper position for interlocking with each other when the heads 10 10' are brought together. Each of the air-brake couplings is provided with an incline 19 and a flange 20, and the incline and flange on one coupling are engaged by a locking-jaw 21 on the other coupling, Fig. 3, so that the two couplings will be securely locked together when the cars are coupled together. The air-brake couplings are suspended from the coupling-heads in the position shown in Fig. 1 when the latter are uncoupled, and when the coupling-heads move together the air-brake couplings will be carried into engagement and swing into the position shown in Fig. 2. When the air-brake couplings are thus brought together into engagement with each other, the jaw of each air-brake coupling will engage the incline and flange on the other air-brake coupling, and as the coupling-heads move into locked position and the air-brake couplings are swung into the position shown in Fig. 2 the jaws will travel on the inclines and in interlocking engagement with the flanges, while the inclines and flanges are traveling in the opposite direction against the jaws. In other words, when the two air-brake couplings are brought together they are swung relatively and in opposite directions with the jaw on each coupling in engagement with the incline and flange on the other. When the coupling-heads are unlocked and the cars separated, the air-brake couplings will be automatically pulled apart from the position shown
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in Fig. 2 to that shown in Fig. 1, this operation being effected solely by the separation of the coupling-heads. The air-brake couplings are thus automatically coupled and uncoupled as the coupling-heads are coupled and uncoupled, and this operation of the air-brake couplings is effected without the manipulation of any parts other than the movement of the coupling-heads. The jaws 21 are carried on stems 22, which are adjustably secured in the sockets 23 by the set-screws 24.

While I have shown the invention embodied in a coupling for air-brake pipes only, it will be apparent to those skilled in the art that the coupling may be provided with more than one opening, so that it can be used to couple at the same time the air-pipes and the steam-pipes.

It will be observed that the action of the invention is entirely automatic both in coupling and in uncoupling the air-pipes. The air-pipe couplings can be made to hang in proper position for coupling by gravity; but I have found that the air-brake pipes which are permanently connected to the couplings will hold the couplings properly, so that the parts will interlock easily and securely when the heads are brought together. When the heads are uncoupled, the air-brake couplings fall again into their open position, as shown in Fig. 1, by gravity and by the action of the pipes.

This invention works entirely automatically and obviates the necessity for a trainman going between the cars and stooping down in the usual fashion to couple or uncouple the air-brake coupling, which is a source of great danger and frequently results not only in injury to the trainman but often in total disability and death.

The invention is strong and substantial in character, and it can be easily applied to any coupling-heads which will permit the air-brake couplings to engage and interlock with each other in the manner herein shown and described.

Without limiting myself to the exact construction and arrangement of parts herein shown and described, what I claim, and desire to secure by Letters Patent, is—

1. The combination with a pair of coupling-heads, of a pair of pipe-couplings pivoted to

said heads and adapted to interengage and swing in the arcs of circles to interlock when said heads are coupled.

2. The combination with a pair of coupling-heads, of a pair of pipe-couplings pivotally depending from said heads, and means for causing said couplings to swing in arcs of circles and interlock when said heads are coupled.

3. The combination with a pair of coupling-heads, of a pair of pipe-couplings depending from said heads, and a jaw carried by each pipe-coupling and adapted to make locking engagement with the other to cause said pipe-couplings to swing in arcs of circles and interlock when said heads are coupled.

4. The combination with a pair of coupling-heads, of a pair of pipe-couplings suspended from said heads, a curved flange on each of said pipe-couplings, and jaws on said pipe-couplings adapted to engage said flanges to lock the pipe-couplings together when said heads are coupled.

5. The combination with a pair of coupling-heads, of a pair of train pipe-couplings suspended from said heads, inclines on said pipe-couplings, and jaws on said pipe-couplings adapted to travel on said inclines to swing said couplings in arcs of circles and thereby clamp and lock them tightly together when said heads are coupled.

6. The combination with a pair of coupling-heads, of a pair of pipe-couplings suspended from said heads, an inclined and a curved flange on each of said couplings, and locking-jaws on said couplings adapted to ride on said inclines and flanges to swing said couplings in arcs of circles and thereby clamp and lock them together when the heads are coupled.

7. The combination with a pair of coupling-heads, of a pair of pipe-couplings pivotally suspended from said heads, inclines and flanges on each of said heads, and longitudinally-adjustable jaws on said heads adapted to travel on said inclines and engage said flanges to clamp and lock the pipe-couplings together when the heads are coupled.

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