

No. 843,702.

PATENTED FEB. 12, 1907.

P. H. RUTHERFORD.
AUTOMATIC AIR BRAKE COUPLING FOR RAILWAY CARS.
APPLICATION FILED SEPT. 17, 1906.

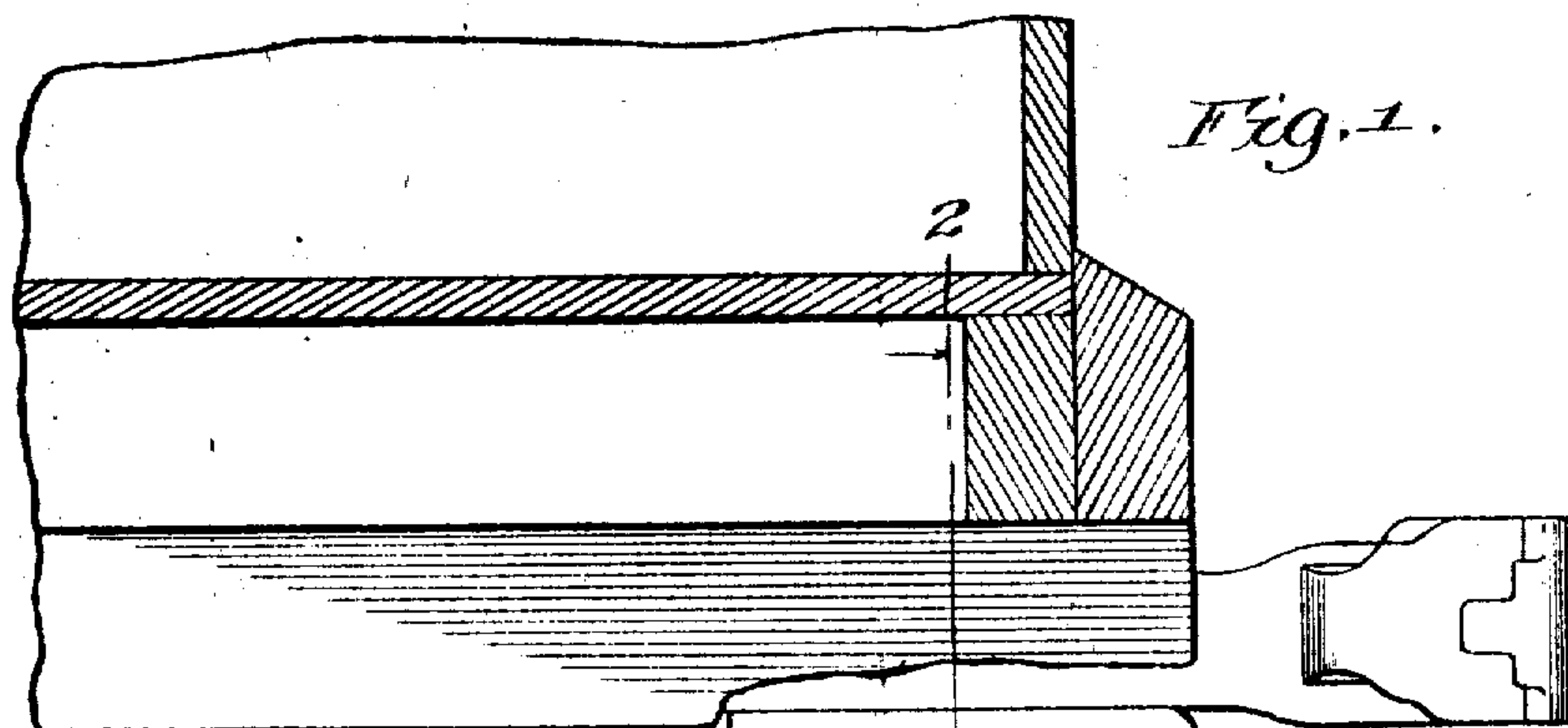


Fig. 1.

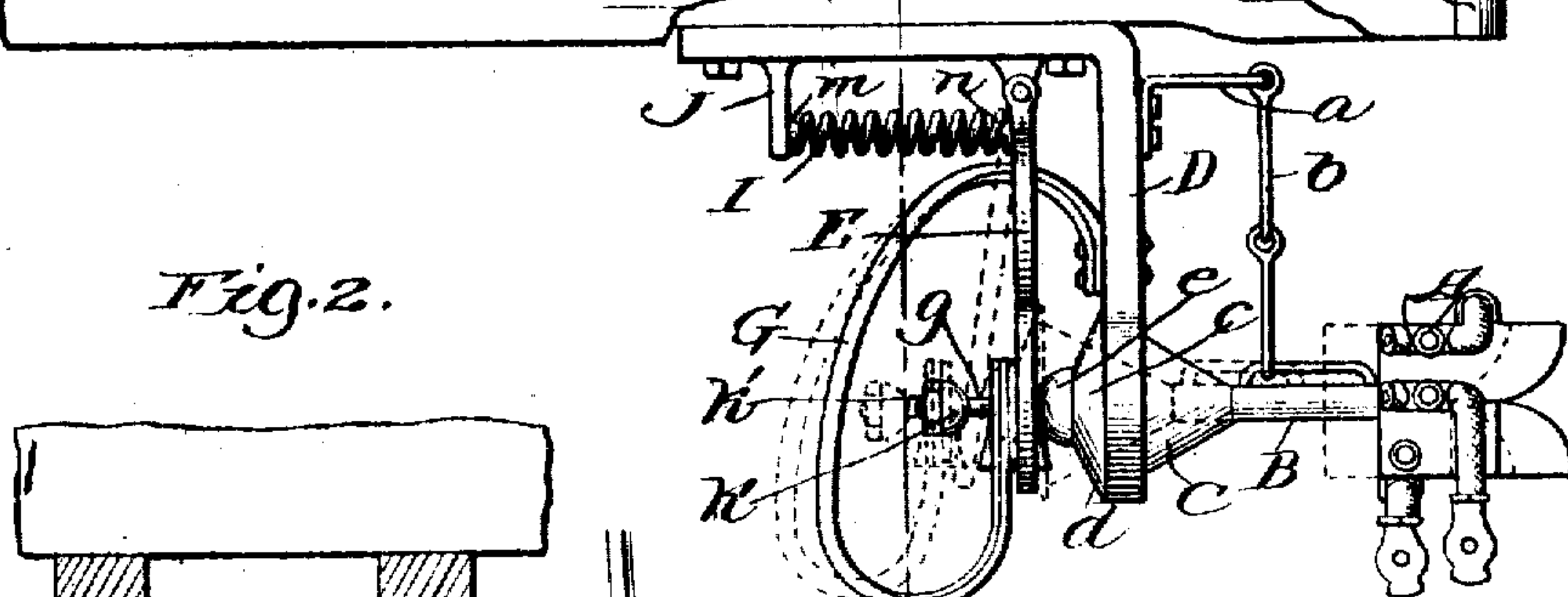


Fig. 2.

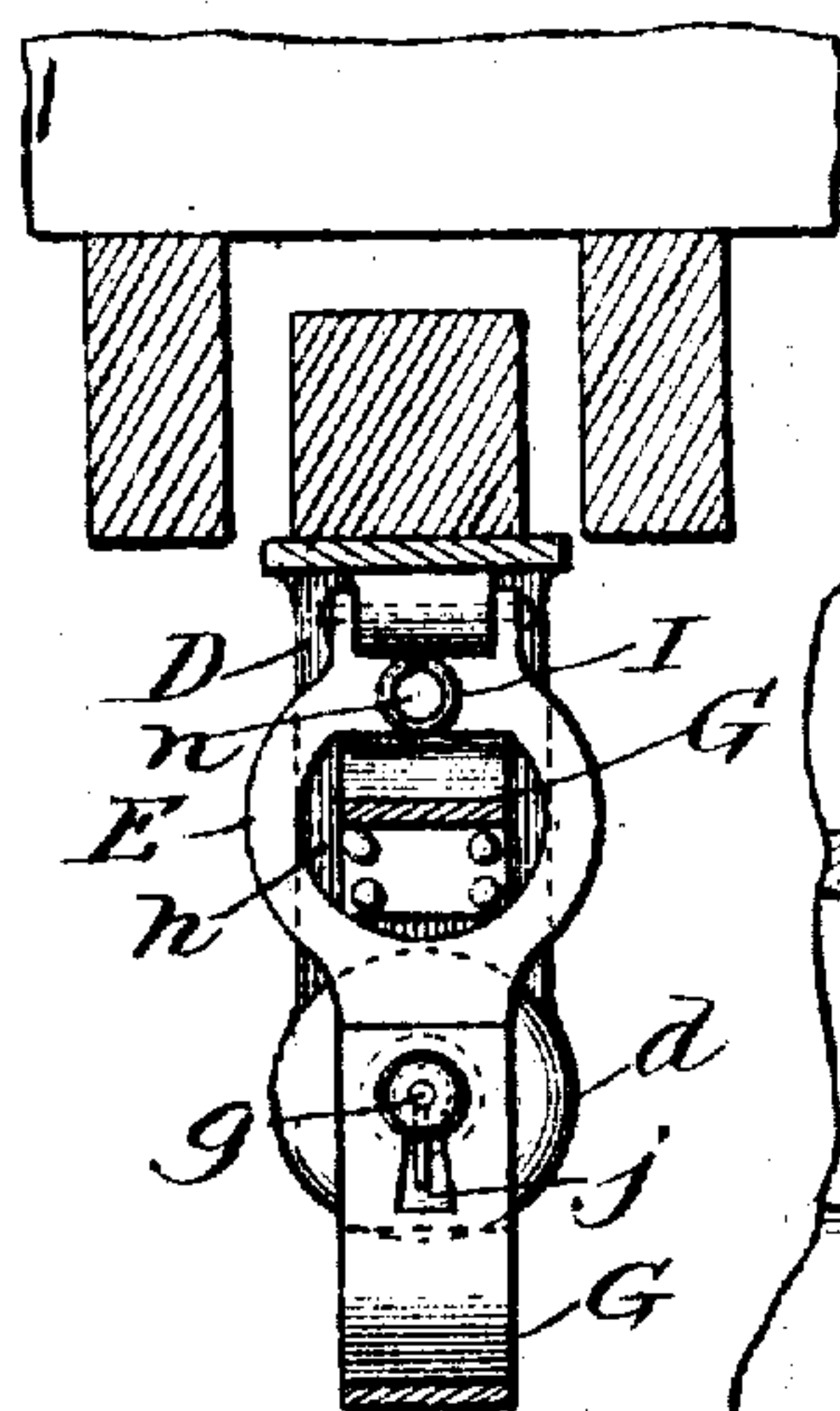
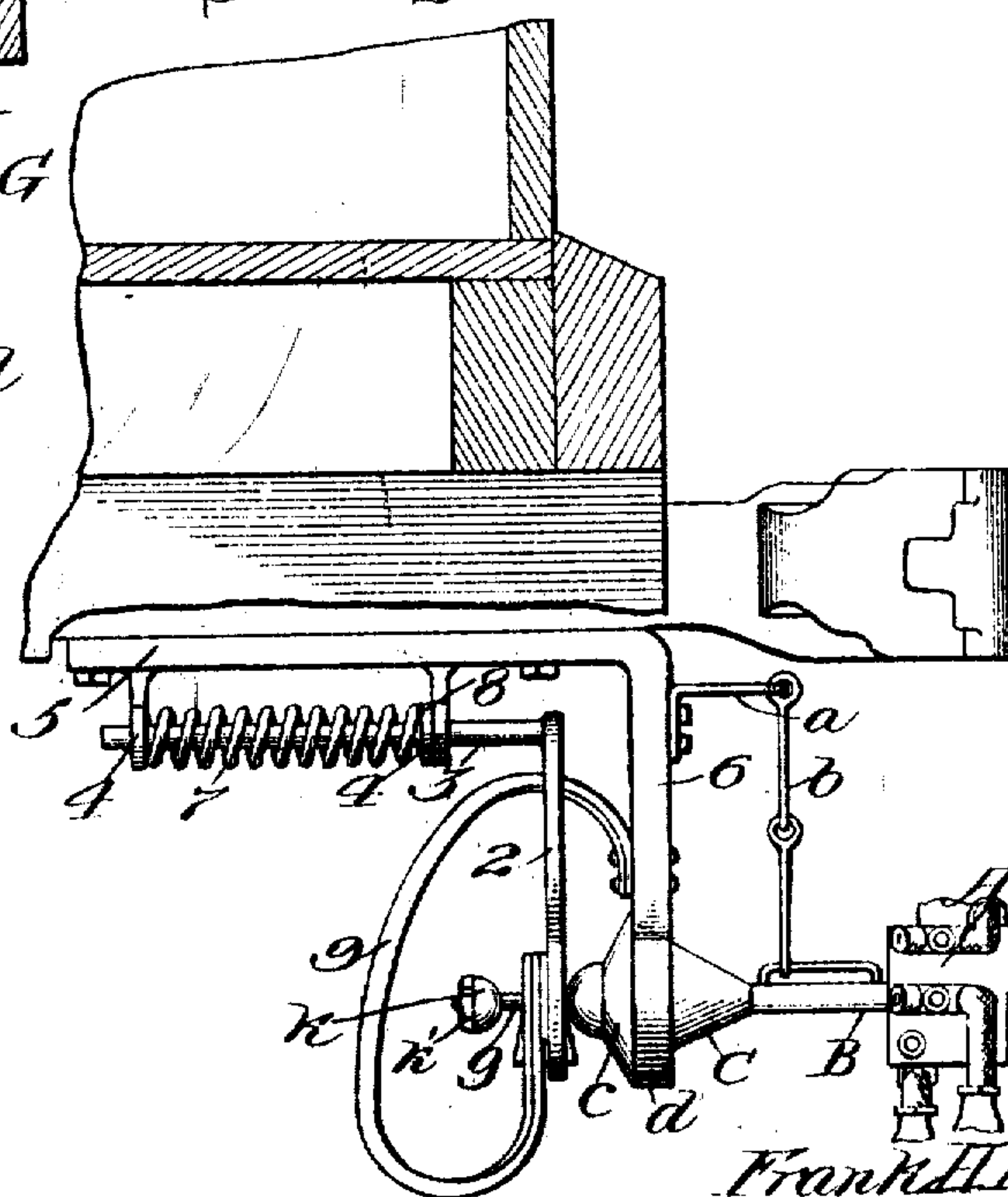


Fig. 3.



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FRANK H. RUTHERFORD, OF CHICAGO, ILLINOIS.

AUTOMATIC AIR-BRAKE COUPLING FOR RAILWAY-CARS.

No. 843,702.

Specification of Letters Patent.

Patented Feb. 12, 1907.

Application filed September 17, 1906. Serial No. 334,904.

To all whom it may concern:

Be it known that I, FRANK H. RUTHERFORD, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Automatic Air-Brake Couplers for Railway-Cars, of which the following is a full, clear, and exact specification.

My invention relates to automatic couplers for the train-pipes of cars; and its object is to so construct the same that the springs employed to maintain the longitudinally-movable coupler normally at the forward limit of its movement or assist in so doing can be so disposed or located as to avoid interfering with the brake mechanism of the car or the trucks thereof or other equipments of the same. This I accomplish by the means hereinafter fully described, and as particularly pointed out in the claims.

In the drawings, Figure 1 is a side view of my invention applied to the end of a car. Fig. 2 is a transverse vertical section taken on dotted line 2 2, Fig. 1. Fig. 3 is a side view similar to that shown in Fig. 1 of a modified construction of my invention.

My invention consists of a train-pipe coupler, which may be of any desired construction so long as it has a longitudinal body movement and is capable of movement to a limited extent at right angles to the line of draft of the car. I prefer, however, to use my invention in connection with the automatic train-pipe coupler described and illustrated in an application for Letters Patent of the United States, filed by me September 17, 1906, Serial No. 334,903.

The coupler referred to consists of a head A, waist B, and body C, which is supported by a hanger D, having an opening in its lower portion through which the body of the coupler extends and having a bracket *a*, secured to and projecting horizontally forward from it, to which latter links *b* depend, which are connected to and support the portion of the coupler in front of the hanger D in a horizontal position. The rear end *c* of the body C of the coupler has a circumferential flange *d*, which provides an annular shoulder that normally presses forward against the rear of the hanger, and the extremity of said body is convex and has a central semicircular boss *e*.

The preferred form of my invention con-

sists of a pendent arm E, which has its upper end suitably pivoted to lugs or knuckles *f*, projecting down from the under side of the horizontal part of hanger D, bolted or otherwise secured to the draw-bar or other suitable portion of the underframe of the car. This arm extends downward about as far as the hanger and has an opening in its lower portion, back through which passes the guide-bar *g*, extending rearwardly from the center of body C of the coupler. Between its lower opening and its pivot arm E is provided with a larger opening *h* for the passage of the upper portion of a flat somewhat C-shaped spring G. The upper downturned end of spring G is suitably secured to the rear of the hanger D, and from thence it extends back through opening *h* and then down to a point below hanger D and thence curves upward and has an opening *j* in its upturned lower end, which latter presses forward against the lower end of arm E, through which guide-bar *g* also extends. The rear extremity of guide-bar *g* has a buffing-boss *k*, suitably secured thereon by a nut *k'*, substantially as shown; but both of these last-mentioned parts may be omitted, if desired.

The lower end of arm E is engaged by spring G. The upper part of the arm, preferably just below its pivot, is engaged by a horizontally-disposed coil expansion-spring I, the rear end of which is held by a teat *m*, projecting forward from a lug J, projecting down from the rear end of the horizontal portion of hanger D, and the forward end of which is retained in engagement with said pivoted arm by a similar teat *n*, projecting rearwardly therefrom. This disposition of the spring-pressure on arm E insures sufficient forward pressure against the rear end of the coupler to keep the same normally at the forward limit of its movement and in a horizontal position. If desired, however, spring G may be dispensed with and spring I alone be depended upon.

In Fig. 3 of the drawings I show a modified form of my invention. In this modification an arm 2, performing the same function as arm E, hereinbefore described, is rigidly attached to and depends down from the forward end of a horizontal reciprocal bar 3, which travels in a suitable guide-opening in lugs 4 4, projecting down from the horizontal portion 5 of the hanger 6. This arm 2 and its supporting-bar 3 are normally kept at the

limit of their forward movement by a sufficiently powerful expansion coil-spring 7, which surrounds bar 3 between its bearings and has its forward end pressing against a collar 8, fast on said bar 3, and its rear end bearing against the rear guide-lug 4. A C-shaped spring 9 (similar to spring G, hereinbefore alluded to) may be used in connection with this modification or not, as desired.

10 What I claim as new is—

1. The combination with a car, and a longitudinally-yielding integral train-pipe coupler, of a spring located and exerting a forward pressure in a plane parallel to the axis of the coupler, and means for applying said pressure to the rear portion of said coupler.

2. The combination with a car, and a longitudinally-yielding train-pipe coupler, of a longitudinally-disposed spring located and exerting a forward pressure in a plane parallel to the axis of the coupler, and means for applying said pressure to the rear portion of said coupler.

3. The combination with a car, and a longitudinally-yielding integral train-pipe coupler, of a longitudinally-disposed coil-spring located and exerting a forward pressure in a plane parallel to the axis of the coupler, and means for applying said pressure to the rear portion of said coupler.

4. The combination with a car, and a longitudinally-yielding integral train-pipe coupler, of a spring located and exerting a forward pressure in a plane parallel to the axis of said coupler, and an arm for transmitting and applying the pressure of said spring to the rear portion of the coupler.

5. The combination with a car, and a longitudinally-yielding integral train-pipe coupler, of a spring located and exerting a forward pressure in a plane parallel to the axis of said coupler, and a pivoted arm for transmitting and applying the pressure of said spring to the rear portion of the coupler.

6. The combination with a car, a longitudinally-yielding train-pipe coupler, and a hanger having an opening in its lower part through which said coupler passes, and a horizontal portion secured in suitable manner to said car having a lug projecting down therefrom, of an arm pivoted at its upper end to said lug and having its lower end engaging the rear portion of the coupler, and a spring pressing said arm forward.

7. The combination with a car, a longitudinally-yielding train-pipe coupler, and a hanger having an opening in its lower part through which said coupler passes, and a horizontal portion secured in suitable manner to said car having lugs projecting down therefrom, of an arm pivoted at its upper end to said lug and having its lower end engaging the rear portion of the coupler, and a longitudinally-disposed coil expansion-spring interposed between the rearmost of said lugs

and said arm and normally pressing said arm forward.

8. The combination with a car, and a longitudinally-yielding integral train-pipe coupler, of an arm engaging the rear portion of said coupler, a spring pressing forward against one end of said arm, and an independent spring engaging the other end of the same.

9. The combination with a car, and a longitudinally-yielding integral train-pipe coupler, of a pivoted arm engaging the rear portion of said coupler, a spring pressing forward against one end of said arm, and an independent spring engaging the other end of the same.

10. The combination with a car, and a longitudinally-yielding integral train-pipe coupler, of an arm pivoted at one end and engaging the rear portion of said coupler at the other, a coil expansion-spring engaging said arm near its pivoted end and a curved spring of flat material engaging the other end of said arm.

11. The combination with a car, and a longitudinally-yielding integral train-pipe coupler, of an arm pivoted at one end and engaging the rear portion of the coupler at the other, a coil expansion-spring engaging said arm near its pivoted end and a curved spring of material one end of which is secured at a point collateral to said coupler and the other end engages the movable end of said arm.

12. The combination with a car, a longitudinally-yielding train-pipe coupler, and a hanger therefor, of an arm pivoted at its upper end to the horizontal part of said hanger and its lower end engaging said coupler, and having an opening therein mediate its ends, a horizontally-disposed coil expansion-spring pressing forward against said arm above said opening, and a C-shaped spring secured at one end to the vertical portion of said hanger, extending rearwardly through the opening in said arm and having its upturned lower end engaging the lower end of said arm.

13. The combination with a car and a longitudinally-yielding integral train-pipe coupler, of a spring located and exerting a forward pressure on a plane parallel to the axis of the coupler, which normally keeps said coupler at the limit of its forward movement.

14. The combination with a car and a longitudinally-yielding integral train-pipe coupler, of a coil-spring located and exerting a forward pressure on a plane parallel to the axis of the coupler which normally keeps said coupler at the limit of its forward movement.

In testimony whereof I have hereunto set my hand this 13th day of September, A. D. 1906.

FRANK H. RUTHERFORD.

Witnesses:

E. K. LUNDY,

O. M. WERMICH.