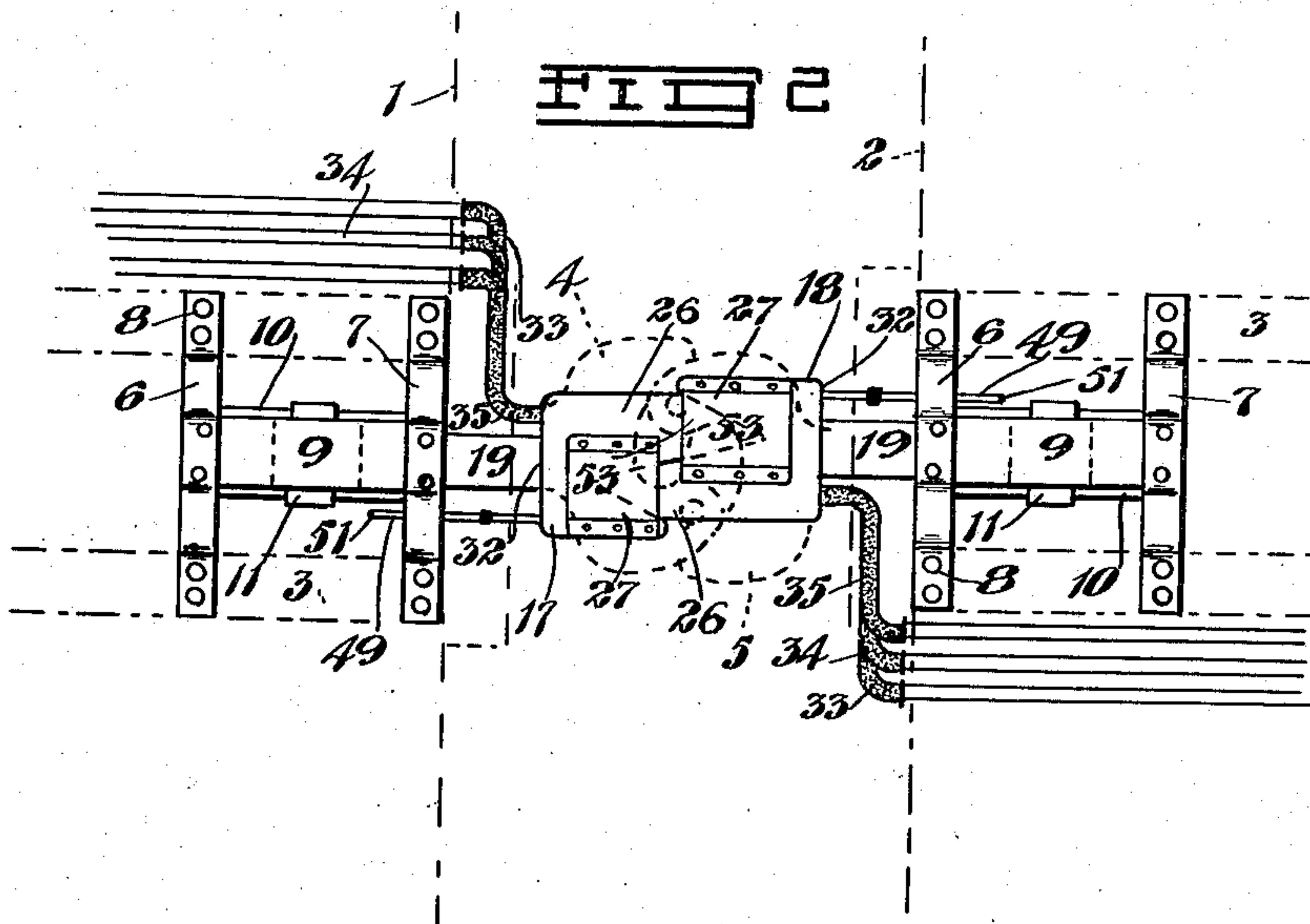
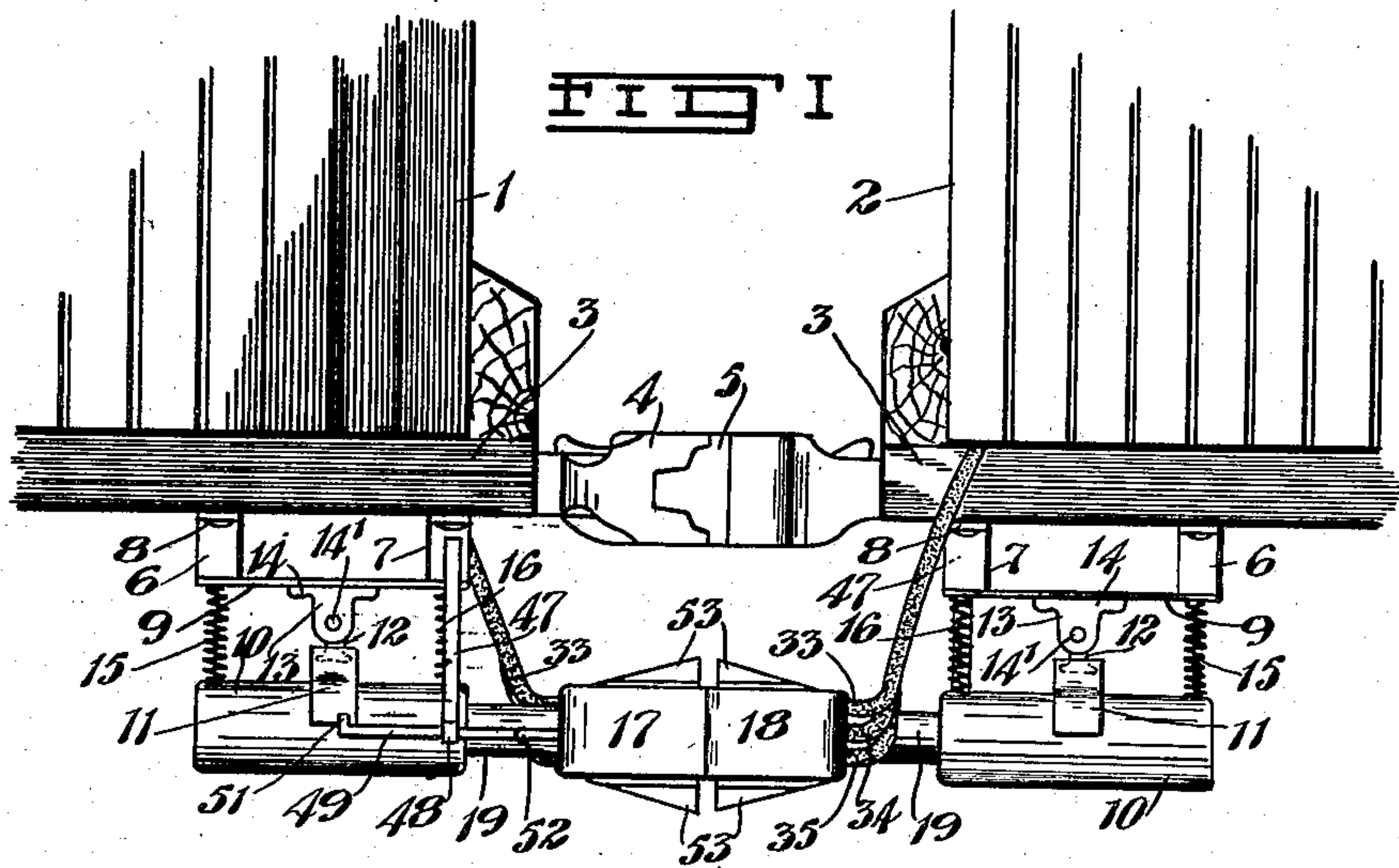


P. A. SENECA.
CAR PIPE LINE COUPLING.
APPLICATION FILED MAY 19, 1908.

915,894.

Patented Mar. 23, 1909.
2 SHEETS—SHEET 1.



Witnesses.
Gerald S. Rosburgh
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Inventor.
P. A. Senecal

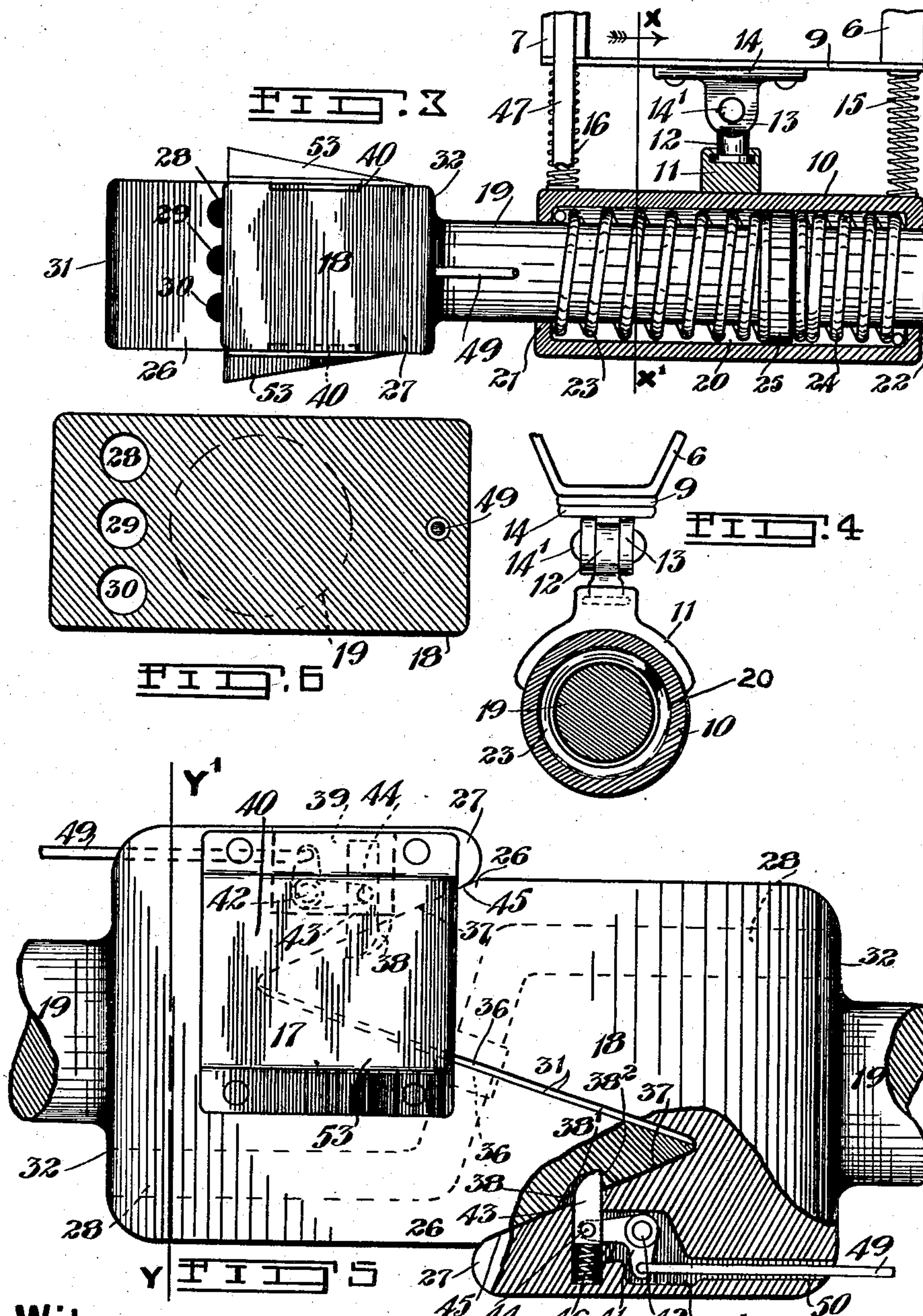
By *Frederick P. Listerman*
His Atty.

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Witnesses.

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UNITED STATES PATENT OFFICE.

PETER AVILA SENECA, OF WINNIPEG, MANITOBA, CANADA.

CAR PIPE-LINE COUPLING.

No. 915,894.

Specification of Letters Patent.

Patented March 23, 1909.

Application filed May 19, 1908. Serial No. 433,787.

To all whom it may concern:

Be it known that I, PETER AVILA SENECA, of the city of Winnipeg, in the Province of Manitoba, Canada, have invented certain new and useful Improvements in Car Pipe-Line Couplers, of which the following is the specification.

My invention relates to a coupler for effectually inter-connecting the train line, the signal line, and the steam heating line in a train of cars, and the objects of the invention are firstly, to provide an inexpensive, serviceable, and efficient device, which will automatically couple and effect a direct inter-connection between the several pipe lines of a train of cars; secondly, a device which will automatically reset itself after having acted; and lastly a device which will release and dis-connect the pipe lines when adjoining cars part or break coupling.

It consists essentially in equipping each car of a train of cars with a complementary set of laterally and vertically movable jaw-shaped heads, the heads at the ends of the adjoining cars being designed to engage with each other; means for inter-connecting the pipe lines with the respective heads so that a continuous line is effected when the heads are inter-connected, and for automatically locking the adjoining heads when they are brought together, and also for unlocking them when the cars break coupling and means for resetting itself after the cars have broken coupling, the parts being arranged and constructed in detail as hereinafter more particularly described.

Figure 1, represents a side elevation of a portion of two adjoining cars equipped with my invention. Fig. 2, is a plan view as in Fig. 1, the cars and couplers being shown in dotted outline. Fig. 3, is an enlarged vertical section view through one cylinder of my pipe line coupler, the head being shown in side elevation. Fig. 4, is a vertical section view through the coupler in the plane denoted by the line X X' in Fig. 3. Fig. 5, is a further enlarged plan view of two of the heads inter-connected the one with the other, parts being broken away to expose the construction. Fig. 6 is a vertical cross sectional view through one of the heads, the section being taken on the plane denoted by the line Y Y', Fig. 5.

In the drawings like characters of reference indicate corresponding parts in each figure.

1 and 2 represent a portion of the ends of two adjoining cars of which 3 are the supporting floor beams.

4 and 5 represent the ordinary car couplers for interconnecting one car with the other and throughout this specification will be referred to as the car couplers. The car couplers form no part of my invention and may be of any of the forms now in use.

6 and 7 are brackets securely fastened by bolts 8 to the under side of the cars at the ends, one directly in line with the other and spaced longitudinally of the car.

9 are cross plates securely bolted to the brackets 7 and 8 and pass longitudinally of the cars.

10 are cylinders placed directly beneath the plates 9 from which they are suspended in each case by means of a central saddle supported by a swivel eye 12 which is received between two depending lugs 13 passing downwardly from a plate 14. The latter plate is secured to the cross plate 9 and the eye is connected to the lugs by means of a pivot pin 14'. This arrangement is such that it will allow the cylinder to turn in either a horizontal or vertical plane, the reason for which will shortly be apparent.

15 and 16 are coil springs passing between the extending ends of the cylinders and the cross plates 9 in this way tending to keep the cylinders normally in a horizontal position and preventing any loose motion or play.

17 and 18 are two complementary jaw-shaped heads through the agency of which the pipe lines are inter-connected, as later explained.

19 are circular shafts passing backwardly from the heads, of which they form a part. The shafts pass into the cylinders 10 and it will be noticed that their cross sectional area is somewhat less than the internal cross sectional area of the cylinders. Consequently there is formed between the shafts and the cylinders an annular chamber 20. The ends of the cylinders are partially closed over at 21 and 22 to form a suitable bearing for the shafts, and the flanges so formed provide an abutment for a set of springs 23 and 24 which are placed within the annular chamber and encircling the shaft. The springs are separated by a collar 25 which is secured firmly on the shaft and free to move with the shaft, backwardly and forwardly within the chamber.

The heads are formed by cutting a verti-

cally directed V-shaped channel in each of them in a manner to produce a long and a short jaw 26 and 27 respectively. The head 17 differs from that 18 only in so far as that it is the reverse or complementary, that is to say, when the two are placed together the short jaws are on opposite sides and the long jaws adjoining. Each head is provided with three ducts or posts 28, 29, and 30, respectively, which lead from the inner face 31 of the long jaw 26 to the base 32 of the head. The ducts are arranged in each head so that when the heads are placed together they will be continuous or registering. The train lines 33, the signal lines 34, and the steam lines 35 with which the ordinary cars are already equipped are collected and interconnected through any suitable detachable joint with the ports 28, 29, and 30, respectively, the connection being made at the base of the head, as shown.

36 are rubber gaskets placed or screwed into the ends of the ducts 33, 34, and 35, where they open to the inner face of the jaws 26. The gaskets prevent any leakage occurring in the transmission line between the heads when the heads are brought together. Each of the jaws 26 have provided in their outer face 37 a recess or slot 38 the one wall of which 38' is curved and the other 38² straight, the straight wall being toward the tip of the jaw. Each of the short jaws 27 of the heads is recessed at 30, the recess being closed over by a plate 40 which is bolted to the head.

41 is a bell crank pivotally secured within the recess by a pin 42 and free to operate therein.

43 is a locking pin or bar interconnected with one of the arms of the bell crank by a pin 44. The end of the bar passes horizontally through an opening provided in the jaw and extends beyond the inner face 45 of the jaw, its position being designed so that it will enter the slot 38 formed in the outer face of the jaw 26.

46 is a spiral spring abutting one of the walls of the recess 39 at one end and the inner end of the locking bar 43 at the other. The spring is employed to continuously press the locking bar to its outer position so that it will normally be set for engagement with the slot.

47 are bars secured at their upper end firmly to the brackets 7 and have their lower ends looped or turned back on themselves at 48 in order that each may receive and support a longitudinally movable rod 49. The bars 47 are positioned so that the rods may pass through an opening 50 provided in each head, the opening entering directly to the recesses 39 which admits of the bars being fastened to the free arms of the bell cranks. The extending ends of the rods are turned upwardly at 51 to form a

stop. In practice it may be found advisable to place an adjustable stop on the rod which could be done by providing a short sleeve carrying a set screw. It is necessary, in order that the rod may adjust itself to the various positions that the head may assume, to have a universal joint inserted in the rod at 52 between the brackets 7 and the point where it enters the head. It is considered that it is unnecessary to further refer to the universal joint as its use and construction is well known.

53 are guides secured to the heads, one at either side, and they are provided in order to insure that there will be perfect contact between the heads as that will always tend to direct the jaws so that the ducts will register. I have found it necessary to provide these guides for the reason that the floors of the cars are not always the same height above the tracks, and that consequently if a high and a low car were to be coupled together the ports in the heads would not register, but would be displaced the one above the other. With these guides such a condition is impossible.

In order to better understand my invention I will now describe its operation assuming at the outset that the cars are coupled and the pipe line coupler is connected as shown in Figs. 2 and 5. If for any reason, either predetermined or accidental, the car couplers 4 and 5 are undone or "break coupling", the heads 17 and 18 will remain interconnected until such time as they are extended till the stops 51 on the rods 49 engage the loop of the bars 47. The springs 23 and 24 allow the shafts 19 to extend and consequently the heads to remain coupled. As soon as the stops reach the loop 48 and the cars continue to part the locking bars are withdrawn from the slots 38 by means of the action of the rods and the bell crank. This allows the heads to part coupling and consequently disconnects the ducts or ports 28, 29 and 30, and consequently the lines 33, 34, and 35. As soon as the heads part coupling the springs 23 force the shafts and consequently the heads from their extended position, to the normal position, and this motion frees the stop 51 from the loop 48 and the springs 46 reset the locking bars 43, that is, force them to their outer position. When two cars are being coupled the heads receive each other and the locking bars are primarily forced inwardly within the short jaws 26. However as soon as the slots 38 are opposite the locking bars the bars spring outwardly due to the springs 46 and lock the heads together.

What I claim as my invention is:

1. In a device of the class described, the combination with the car of a cylinder pivotally supported beneath the car and laterally swingable; a jaw-shaped head hav-

ing a rearwardly extending shaft passing into the cylinder; a collar on the shaft; and a spring interposed between the collar and the respective ends of the cylinder, as and for 5 the purpose specified.

2. In a device of the class described the combination with the car and the pipe line supported beneath the car, of a set of brackets secured to and extending beneath 10 the car; a plate inter-connecting the brackets; a cylinder supported from the plate in such a manner that it may be vertically and laterally swingable; a set of springs passing between the ends of the cylinder and the 15 brackets; a jaw-shaped head having a shaft passing backwardly and into the cylinder, such head having a series of ducts therein to which are led the pipe lines; a collar on the shaft within the cylinder and springs 20 interposed between the collar and the respective ends of the cylinder, as and for the purpose specified.

3. In a device of the class described the combination with the adjoining cars and the engaging supplemental jaw-shaped heads 25 supported from and carried beneath the cars and adapted to inter-connect the pipe lines carried by the car, each of the jaws being provided with a recess in its outer face, of a locking bar carried by each of the 30 heads and adapted to enter the aforesaid recesses when the heads are engaged; a bell crank interconnected with each of the locking bars; a bracket extending downwardly from each of the cars; a rod passing 35 from each of the bell cranks and supported by the latter bracket, and a stop at the end of the rod, as and for the purpose specified.

Signed at Winnipeg, in the Province of Manitoba, this 1st day of April 1908.

PETER AVILA SENECA.

Witnesses:

JAS. M. TOPLEY,
GERALD S. ROXBURGH.