

No. 741,699.

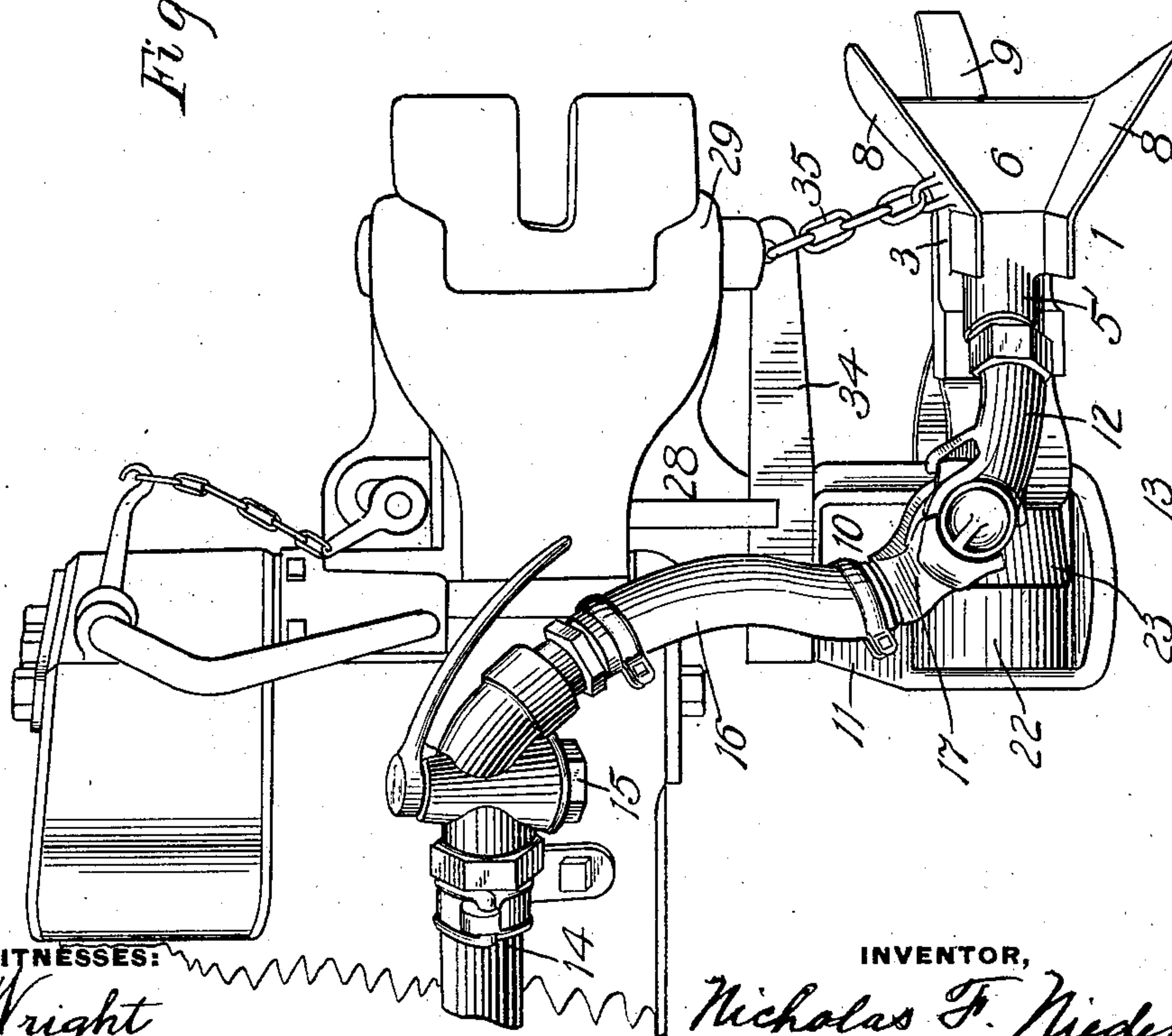
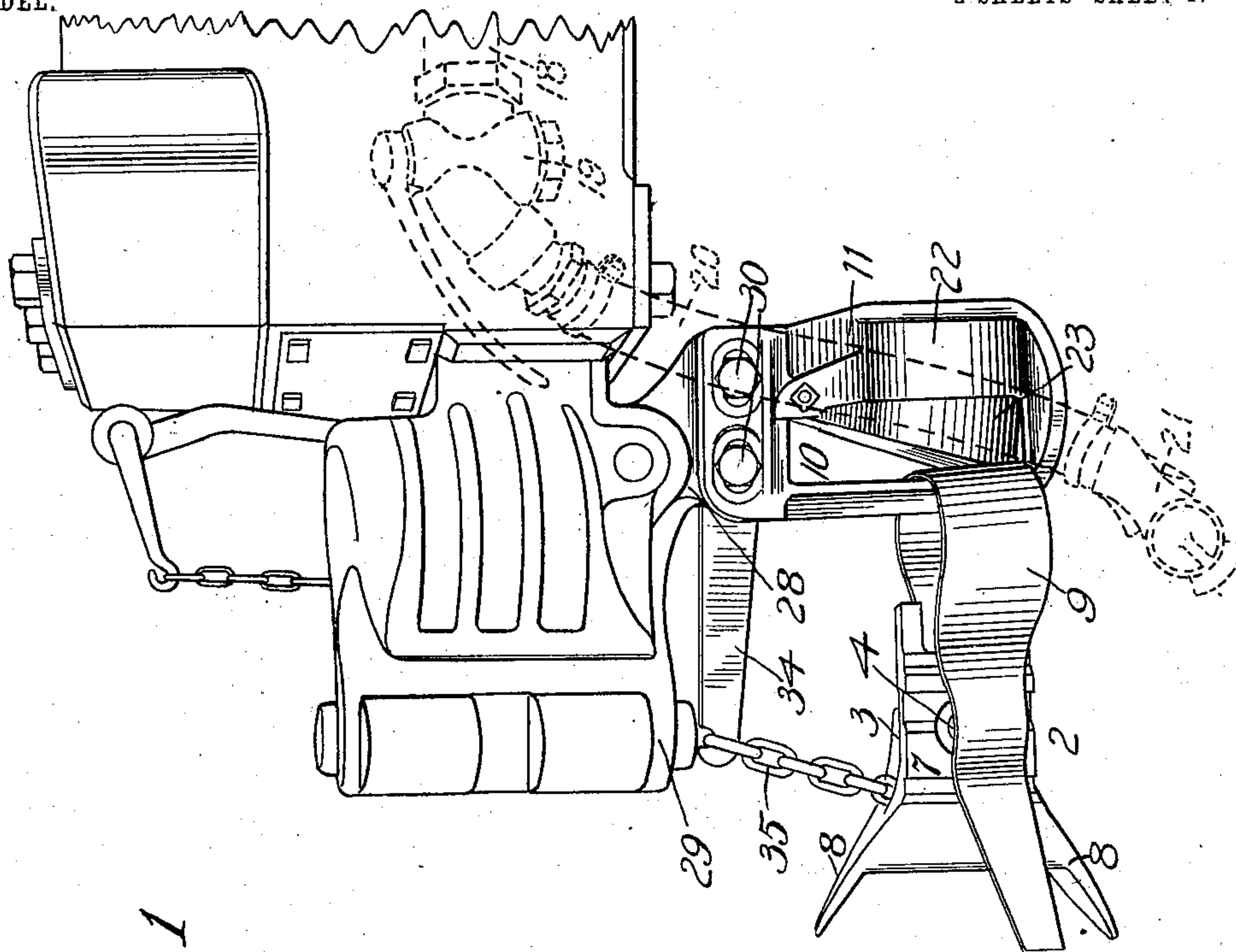
PATENTED OCT. 20, 1903.

N. F. NIEDERLANDER.
AUTOMATIC PIPE COUPLING.

APPLICATION FILED OCT. 16, 1900.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES:

E. A. Wright
R. G. Frazzetta

INVENTOR,

Nicholas F. Niederlander,
by T. J. Hogan, Att'y.

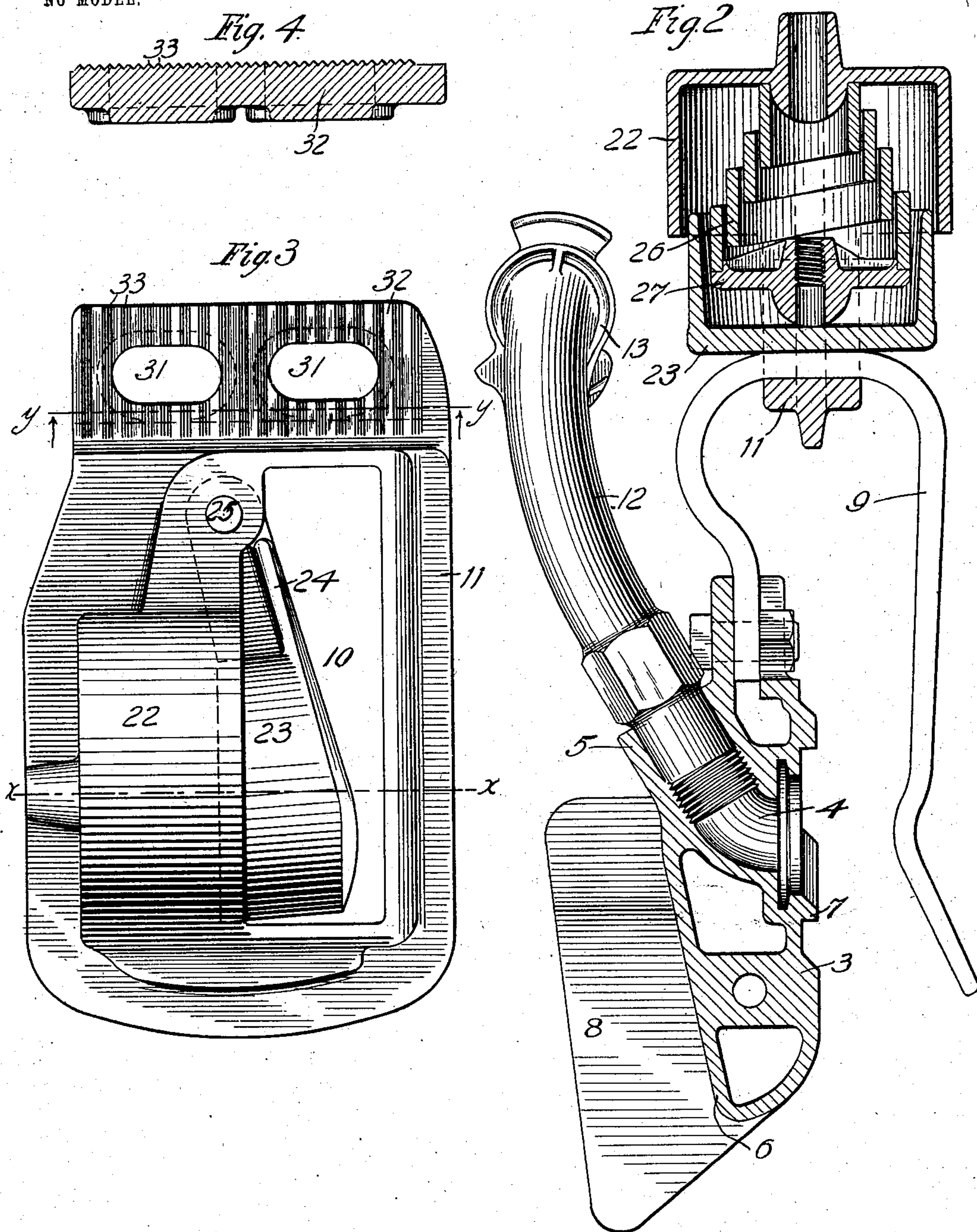
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2 SHEETS—SHEET 2.



WITNESSES:

E. Wright
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UNITED STATES PATENT OFFICE.

NICHOLAS F. NIEDERLANDER, OF ST. LOUIS, MISSOURI, ASSIGNOR TO WESTINGHOUSE AUTOMATIC AIR & STEAM COUPLER COMPANY, OF EAST ST. LOUIS, ILLINOIS, A CORPORATION OF ILLINOIS.

AUTOMATIC PIPE-COUPLING.

SPECIFICATION forming part of Letters Patent No. 741,699, dated October 20, 1903.

Application filed October 16, 1900. Serial No. 33,228. (No model.)

To all whom it may concern:

Be it known that I, NICHOLAS F. NIEDERLANDER, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented or discovered a certain new and useful Improvement in Automatic Pipe-Couplings for Cars, of which improvement the following is a specification.

My invention relates to automatic pipe-couplings for railway-cars, and has for its object to provide an improved form of coupling in which the two half-sections of the pipe-coupling on the adjacent ends of the cars will be automatically coupled when the cars come together and also in which the coupling may be readily made by hand in case the adjacent end of one of the cars is provided only with the old form of hand-operated hose-pipe coupling. As at the present time most of the railway-cars are provided only with the ordinary hand-operated hose-pipe coupling, it is desirable that any automatic pipe-coupling device which is to be introduced shall be provided with means whereby it may also be coupled with an ordinary hose-pipe coupling.

My invention therefore consists in improved means for connecting the train-pipe with the automatic coupling-head or half-section, whereby the coupling may be made by hand with the ordinary hose-pipe coupling of an adjacent car or automatically when both adjacent ends of the cars are provided with my improved automatic pipe-coupling sections.

It also consists in an improved form of adjustable spring-hanger for yieldingly supporting the half-section of the automatic pipe-coupling device in position and in certain combinations and features of construction, all as hereinafter set forth.

In the accompanying drawings, Figure 1 is a perspective view showing the adjacent ends of two cars slightly separated, with my improved automatic pipe-coupling devices attached thereto. Fig. 2 is a horizontal section of one of the half-sections or shoes and of the hanger, taken on the line $x x$ of Fig. 3, the short pipe-section connected to the shoe being shown in plain view. Fig. 3 is a side elevation of my improved form of adjustable

spring-hanger, and Fig. 4 is a horizontal section taken on the line $y y$ of Fig. 3.

My present invention is in the nature of an improvement on the automatic pipe-coupling device shown in my Patents No. 582,672, of May 18, 1897, and No. 649,472, of May 15, 1900, and the construction of the half-sections or shoes is similar to that shown in the patents referred to.

Each of the half-sections 1 and 2 of the automatic pipe-coupling, as shown in Figs. 1 and 2, is a duplicate of the other, and consists of a casting or shoe 3, with a passage 4 formed through it, which is adapted to be connected to a section of pipe on the car by means of a nozzle 5, and which are adapted to register with and open into each other when the two faces of the half-sections are in engagement and the two parts coupled together. In the drawings I have shown only one such opening through each of the half-sections, which may connect with the train-pipe of the air-brake system; but it is obvious that two or more openings may be employed, if desired, to connect with the train-pipes of the signal and heating systems. Each of the half-sections is provided with the inclined face 6, the meeting face 7, the inclined wings 8, and the curved spring 9, which passes through the opening 10 in the hanger 11. As thus far described my present invention does not differ materially from the construction shown in my patents already referred to. Into the nozzle 5 is screwed the short section of pipe 12, which at its outer end is provided with an ordinary hand-coupling section 13. The train-pipe 14 of the air-brake system with its angle-cock 15 are attached to a short flexible hose section, 16 which is provided with a coupling 17 and adapted to be readily coupled with or uncoupled from the coupling 13 of the pipe-section 12.

In Fig. 1 of the drawings I have shown the train-pipe 14 located on the opposite side of the end of the car from that which it is ordinarily located. By this means only a short length of flexible pipe is necessary to connect the train-pipe with the short pipe-section 12. If desired, however, the train-pipe may be located on the other side and a longer flexible

pipe-section used to connect it with the pipe-section 12. The train-pipe and connections therefrom to the shoe of the automatic pipe-coupling do not show in the right-hand part of Fig. 1, the view being taken at such an angle that these parts are located behind the coupling members.

Upon the end of the car shown at the right in Fig. 1 I have indicated in dotted lines the ordinary train-pipe 18, angle-cock 19, hose 20, and coupling 21, which may be readily coupled by hand with the coupling 17 of hose 16 in case one of the cars is not provided with an automatic pipe-coupling device.

My improved hanger 11, as shown more in detail in Figs. 2, 3, and 4, comprises a casting having an opening 10, in which the curved spring 9 of the half-section is supported, and also having a hollow cylindrical portion 22, in which the spring-buffer 23 is located. This buffer 23 is cup-shaped and has an arm 24, which is pivoted at 25 in a hollow upward extension of the cylindrical portion 22. In the hollow cylindrical portion is located the volute spring 26, which extends into the cup-shaped buffer 23, where it is provided with a cap 27, which bears against the inner wall of the buffer. The spring-buffer normally holds the curved spring 9 of the half-section against the forward part of the hanger in the opening 10, but at the same time allows same to yield during the act of coupling and to move about sufficiently to accommodate itself to the motion of the cars while running. The hangers are suspended by means of the brackets 28 from the car-couplers 29 and are secured to the brackets by bolts 30, which pass through the elongated holes or slots 31 in the upper part of the hanger. By this means the position of the hanger may be adjusted forward or backward, and in order to secure the hanger in position the face of the upper part or head 32 of the hanger, which is clamped against the bracket, is provided with a roughened surface, such as a series of grooves or corrugations 33, as shown more clearly in Fig. 4. In this way the hanger is securely held against displacement. The half-section of the automatic pipe-coupling also has attached thereto a chain 35, which is suspended from the outer end of the arm 34, the arm being secured to the bracket 28.

It will thus be seen that my improved automatic pipe-coupling may be adjusted to any position and that the air-pipes of cars provided with my improvement may be automatically coupled and uncoupled, while at the same time if any one of the adjacent cars is not provided with an automatic pipe-coupling the pipes may be readily coupled by hand.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In an automatic pipe-coupling device for cars, the combination with the half-section of the automatic coupling, of the train-pipe on the car, and an intermediate pipe connection adapted to be detached from the half-section of the automatic coupling and connected to the hose-coupling of an adjacent car.

2. In an automatic pipe-coupling device for cars, the combination with the half-section of the automatic coupling, of detachable means connected to the train-pipe and adapted to be connected either with the half-section of the automatic pipe-coupling of the same car or with the ordinary hose-coupling of an adjacent car.

3. An automatic pipe-coupling device for cars comprising, a half-section or shoe of the automatic coupling, and a detachable pipe connected at one end to the train-pipe and adapted to be connected at its other end either with the half-section of the automatic pipe-coupling of the same car or with the hose-coupling of an adjacent car.

4. An automatic pipe-coupling device for cars comprising, a yieldingly-supported half-section or shoe, a short pipe-section connected to the shoe and provided with a hand-operated coupling member, a flexible pipe attached to the train-pipe of the car and having at its end a coupling whereby it may be coupled either with the pipe-section of the shoe or with a hose of an adjacent car.

5. In an automatic pipe-coupling device for cars, the combination with a half-section of the automatic pipe-coupling suspended beneath the car-coupling, of a train-pipe on the car, and an intermediate detachable pipe connection adapted to couple the train-pipe either with the half-section of the automatic coupling of the car or with the hose-coupling of an adjacent car.

6. A hanger for an automatic train-pipe-coupling device comprising, a casting having an opening therein, a cup-shaped buffer having an arm pivoted in said opening and a volute spring for the buffer.

7. A hanger for an automatic train-pipe coupling, comprising a casting having an opening and a cylindrical recess therein, a pivoted cup-shaped buffer within the recess, and a volute spring for the buffer.

8. A hanger for an automatic train-pipe-coupling device, comprising a casing having an opening therein, a spring-buffer in said opening, and a flange provided with horizontally-elongated bolt-holes whereby the position of the hanger may be adjusted lengthwise of the car.

In testimony whereof I have hereunto set my hand.

NICHOLAS F. NIEDERLANDER.

Witnesses:

C. C. ZIEGLER,

JOHN R. WILLIAMS.