

B. R. KOZLOWSKI.

TRAIN PIPE COUPLING.

APPLICATION FILED JAN. 30, 1907. RENEWED FEB. 20, 1908. RENEWED OCT. 10, 1908.

908,013.

Patented Dec. 29, 1908.

2 SHEETS—SHEET 1.

Fig. 1.

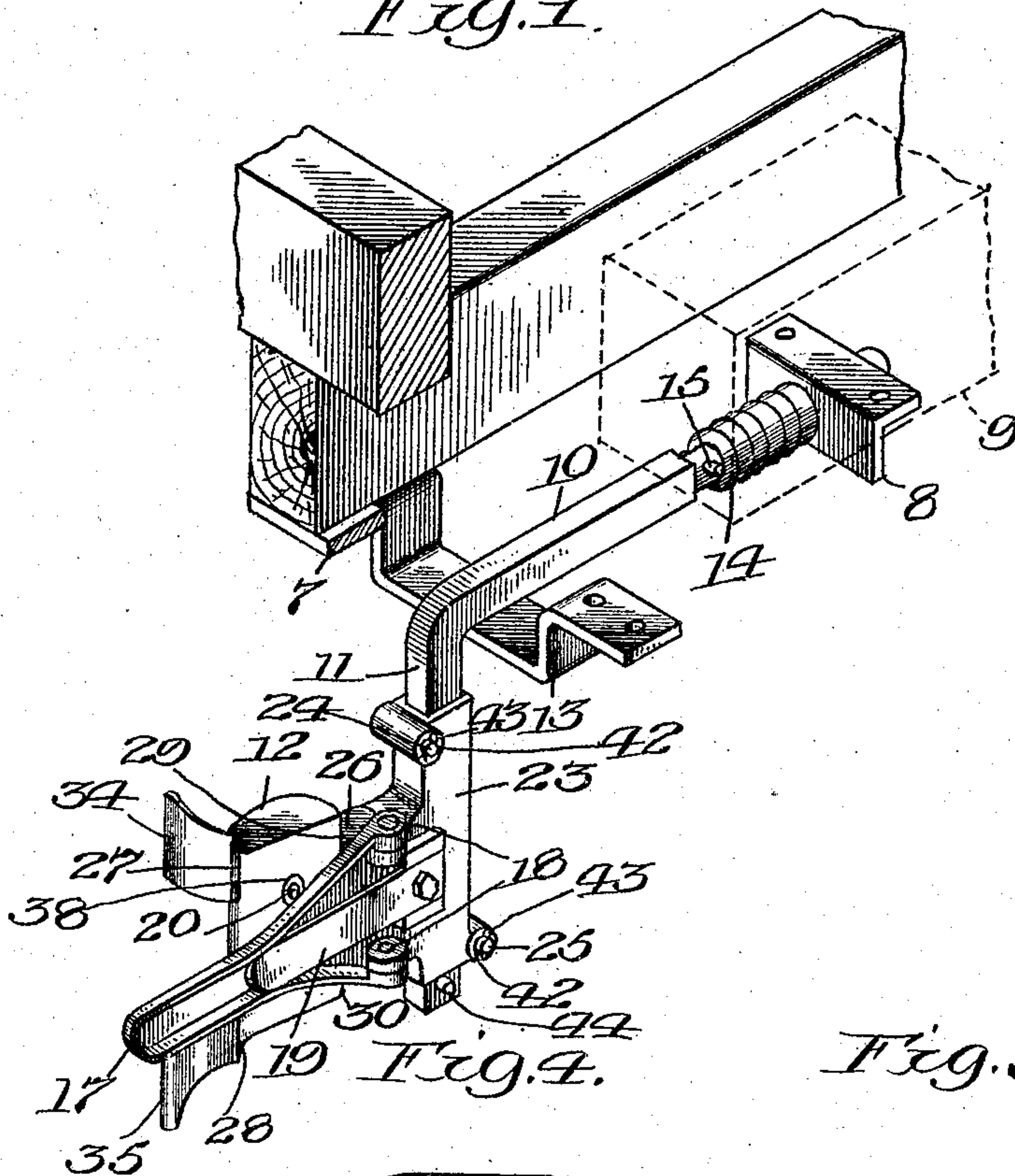
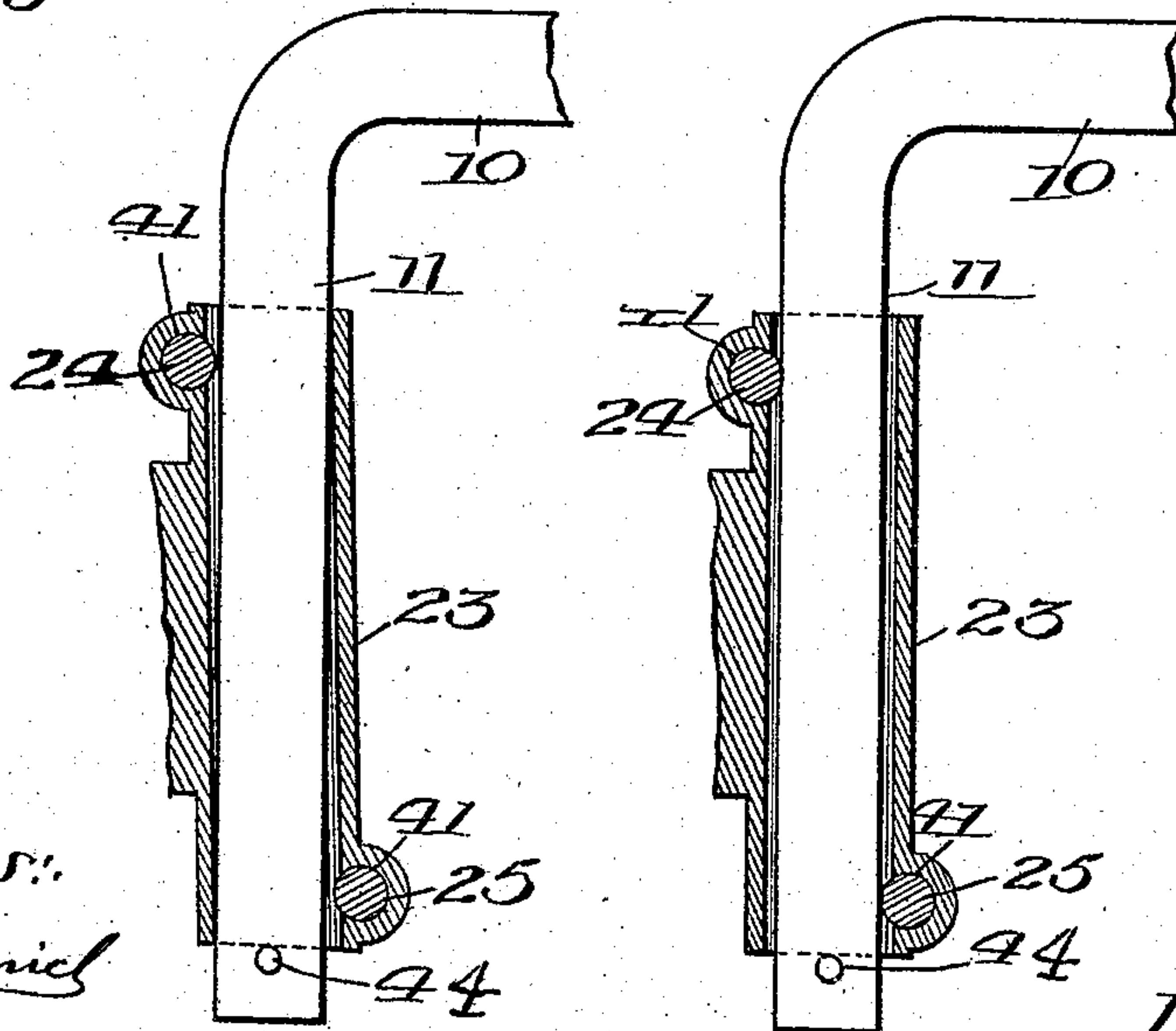


Fig. 5.



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2 SHEETS—SHEET 2.

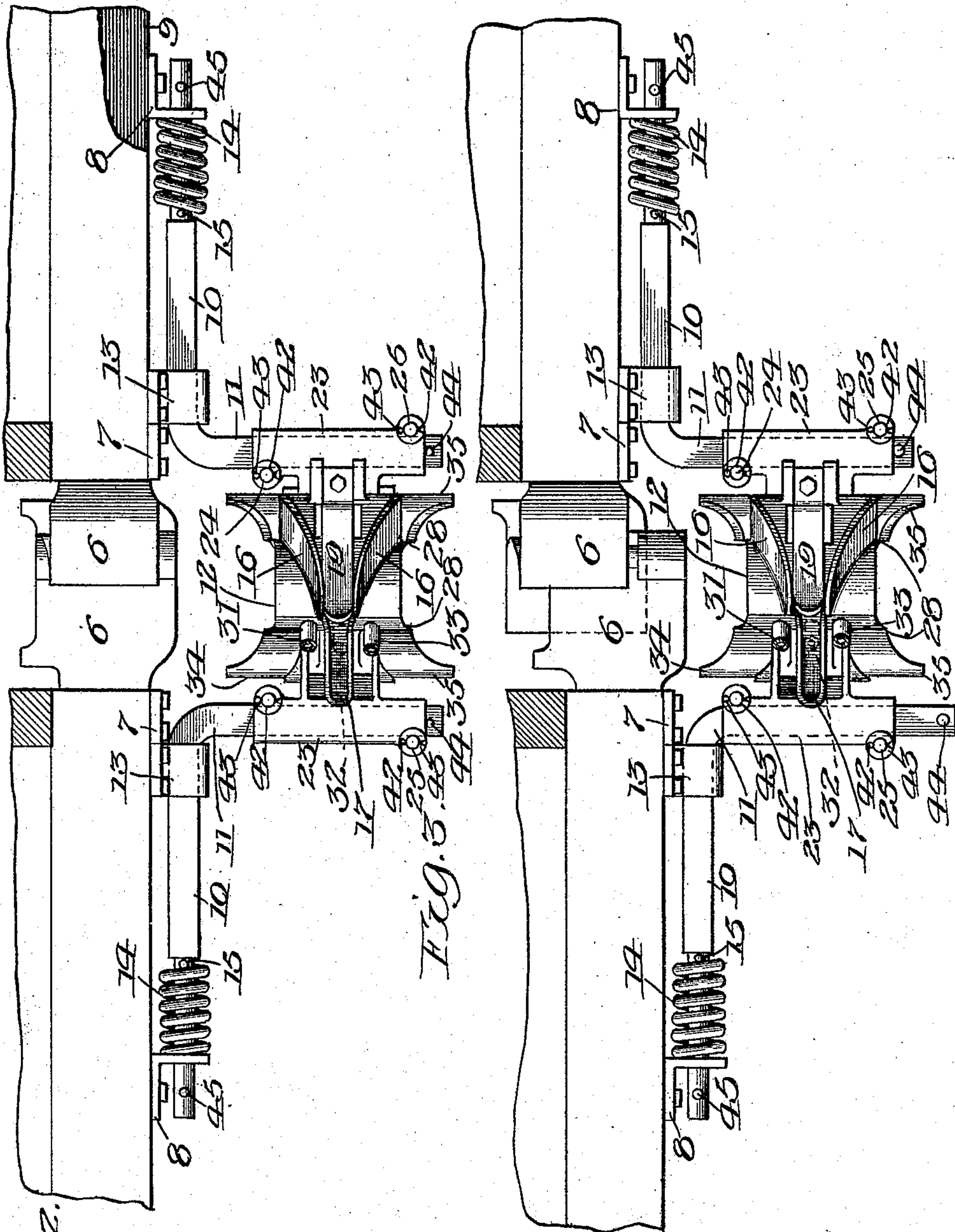


Fig. 2.

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# UNITED STATES PATENT OFFICE.

BOLESŁAW R. KOZŁOWSKI, OF CHICAGO, ILLINOIS.

## TRAIN-PIPE COUPLING.

No. 908,013.

Specification of Letters Patent.

Patented Dec. 29, 1908.

Application filed January 30, 1907, Serial No. 354,815. Renewed February 20, 1908, Serial No. 416,927. Again renewed Oct. 10, 1908. Serial No. 457,136.

*To all whom it may concern:*

Be it known that I, BOLESŁAW R. KOZŁOWSKI, citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Train-Pipe Couplings, of which the following is a specification.

This invention relates to train pipe couplings, and has for its object to effect improvements in a device of this character whereby the train pipes will be automatically coupled and uncoupled when the cars are brought together and coupled by impact of the cars or separated after uncoupling of the same.

To this end the invention contemplates the employment of companion pipe coupling members suspended from the draw bars and the substructure of the car and yieldingly urged in the direction of the opposed coupling member to effect an automatic coupling when the members are brought together by the operation of coupling the cars.

The invention further contemplates the employment of means tending to obviate friction and facilitate prompt adjustment of the pipe coupling members when the cars are coupled to effect the direct apposition of the members which in the uncoupled position may not be accurately alined.

With the above and other objects in view, this invention consists of the novel features and the combination and arrangement of parts hereinafter more specifically described, illustrated in the drawings, and more particularly pointed out in the claims hereunto appended.

In describing the invention in detail, reference is had to the accompanying drawings forming a part of this specification wherein like numerals of reference indicate corresponding parts throughout the several views and in which—

Figure 1 is a perspective view showing the portion of the car coupler and my pipe coupling draw-bar assembled for operation; Fig. 2 is a side elevation showing two car coupler heads and two pipe coupling members in coupled engagement; Fig. 3 is a side elevation showing two car couplers in different horizontal planes, and two pipe coupling members in the same horizontal plane, both coupled; Fig. 4 is a vertical central section showing the normal position of the casing relative to the arm when uncoupled; and Fig. 5 is a vertical central section showing the posi-

tion of the rollers with reference to the arm during the act of alinement.

I will now describe one embodiment of my invention: The draw-bar head, 6, of the car coupler may be of any type, preferably the M. C. B. coupler, carried in any suitable manner by the car structure and having its outer end supported by a transverse bar, 7, located a suitable distance in the rear of the car coupler head. A bracket, 8, having a relatively large aperture therethrough to permit lateral movement of the pipe coupling draw-bar therein, is secured to the under side of the draw-bar, 9, a considerable distance behind the bar, 7, and is designed to slidably receive the rearward end of the pipe coupling draw-bar, 10. The bar, 10, is constructed with a depending arm, 11, on its forward end, and the arm carries a pipe coupling member, 12, mounted for sliding movement thereon. The member, 12, is designed for engagement with an opposite correspondingly constructed, supported, and operated coupling member, 12, which, by reason of its being an exact duplicate, need not be so particularly described. It will be understood that the description of one member applies also to the other member. The front end of the bar, 10, is supported by a hanger, 13, carried at the under side of the substructure and adapted to permit a limited lateral movement of the forward end of the bar, 10, in coupling or when the cars are upon a curve or curves of the track. The rearward movement of the bar, 10, is yieldably opposed by a spring element consisting of a spiral spring bearing at its rear end against the bracket, 8, and at its forward end against the pin, 15. This suspension of the coupling member affords recession under the impact of the opposing member when coupling is effected, or laterally to facilitate the alinement of the members for coupling engagement.

Projecting from one side and forwardly of the members, 12, there are integral outwardly-extending, diverging guide-blades, 16, 16, of similar construction. Adjacent to the face or front of member, 12, I provide forwardly and outwardly extending guide arm, 17, adapted to contact with the inner surface of one or the other of the guide-blades, and ultimately bear upon the back of the opposite member, 12, to compel the alinement of the members if they be in any



degree disalined by reason of the variant heights of coupler positions, or for other causes, as the cars are brought together to automatically effect the coupling of the cars and the train pipe couplings. The guide arm is pivoted at 18 and has an elastic blade, 19, which constantly urges it in the direction of the parts 20, in the face of the pipe coupling member, 12. The casing, 23, is provided with an anti-friction element composed of a roller bearing, 24, at or near the upper end thereof. An additional roller bearing, 25, is placed near the lower end of the casing. On reference to the drawings it will be seen that the opening through the casing is relatively greater in cross-section than the arm on which it is slidably mounted for the purpose of permitting more or less rotative movement and more or less fore and aft movement of the member 12 relatively to the arm 11. It will readily be seen that the draw-bar, 10, has a movement with and a movement independently of the draw-bar of the car, 9. The rotatable bearings, 24 and 25, are adapted to contact with the forward and rearward surfaces, respectively, of the arm, 11.

The usual ports are provided in the face or front of members, 12, for air, signal and steam. The air, signal and steam hose are attached to the rear of the members, 12, in the usual or in any desired or suitable manner, or at 31, 32 and 33. The segmental extensions, 34 and 35, on members, 12, afford additional gathering means in the act of coupling the members. The rearward movement of the draw-bar, 10, is yieldably opposed by a suitable spiral spring, 14, intermediate pin, 15, and bracket, 8. This spring, preferably, is of sufficient cross-section and strength to maintain the bar, 10, parallel with the longitudinal axis of the bar, 9, when no deflecting force is applied to the bar, 10. When the coupling members, 12, are being uncoupled, the shoulders, 27, 28, will cause the faces or front surfaces of the members to recede from each other and thus avoid injury to the gaskets, 38, 39 and 40 in the ports of the members.

The roller bearing shown consists of a cylindrical rod in aperture 41 and 42. This aperture is through the two side walls of the casing and at right angles to the vertical axis thereof. The roller is provided with a cotter-pin, 43, through each end thereof to prevent withdrawal of the roller. The numeral, 44, denotes a removable pin through the aperture in the lower part of the arm, 11, to avoid the pipe coupling member dropping from the arm, and 45 represents a pin or bolt through the rear end of the draw-bar, 10, to obviate withdrawal from the bracket, 8.

When the cars are brought together with a sharp impact upon their coupler heads, the shock is sustained largely by the car couplers

as in the preferred form I attach the pipe coupling draw-bar to the under side of the car coupler draw-bar.

It will be seen from the foregoing construction that the pipe coupling members will have various motions, among others the following: longitudinal motion with the car coupler; longitudinal motion relatively to the car coupler; lateral motion relatively to the car coupler; and vertical, rotative and fore and aft movements of the member relatively to the arm.

In operation it will be understood that as the members, 12, 12, are brought into contact in the act of coupling, the guide-arm on each member, if not in exact alinement, will first contact with the inner surface of one or the other of the guide-blades and compel alinement by adjusting the opposite member to the same horizontal plane, and if in exact alinement, then it will contact with the back of the member between the guide-blades and proceed to and between the rear or converging ends of the blades until the inwardly projecting shoulders, 27, 28, have advanced sufficiently to engage with the heel, 29, 30, of the opposite member, when, by a lateral movement relative to one another, the gaskets in the faces of the members are brought into contact with the force of the spring, 19, on the arm, 18, which exert a constant pressure to retain the members in close contact to prevent the escape of air or steam between the opposed gaskets. It will be apparent that when the cars are uncoupled or separated, the pipe coupling members will pull apart without injury to the parts. By reason of the construction of the shoulders, 27, 28, when the members begin to be pulled apart the inclined engaging faces of the coupling members recede from each other and consequently no injury is done to the gaskets. It will be noticed the gaskets are not in the paths of the shoulders.

Variation in the form, arrangement and construction above described is possible, and I desire, therefore, not to limit my invention by the above description of the preferred form in which it has been embodied.

The subject matter disclosed and not claimed in this application is disclosed and claimed in my concurrent application filed February 20, 1908, Serial Number 416,928.

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

1. The combination of a pipe coupling draw-bar having a depending arm at one end and a pipe coupling member constructed and arranged on said arm to permit substantially vertical movement thereon.

2. In a train pipe coupling, the combination of a pipe coupling draw-bar having a depending arm at one end and an elastic element at the opposite end, and a pipe coupling



ling member constructed and arranged on said arm to permit substantially vertical movement thereon to afford alinement of said member with an opposing member.

5 3. A train pipe coupling comprising a pipe coupling draw-bar having a depending arm at one end and an elastic element at the opposite end, and a pipe coupling member having a substantially vertically disposed casing adapted to partly embrace said arm for slid-  
10 able movement thereon.

4. In a train pipe coupling, the combination of a pipe coupling draw-bar having a depending arm at one end, and a pipe coupling  
15 member, a substantially vertically disposed casing and an anti-friction element, said member being mounted for slidable movement on the arm to permit alinement of the member with an opposing member.

20 5. The combination of a pipe coupling draw-bar having a depending arm at one end, a pipe coupling member having a casing constructed and arranged on the arm to have substantially vertical movement thereon,  
25 and a plurality of rotatable bearings carried by the casing to facilitate prompt alinement of the member with an opposing member.

6. The combination with the substructure of a car with a front hanger and a rear  
30 bracket of a pipe coupling draw-bar having a depending arm at one end, a pipe coupling member and an anti-friction element, said member being mounted for slidable movement on the arm.

7. The combination of a draw-bar of a car, 35 a pipe coupling draw-bar having a depending arm at one end, and a pipe coupling member having a substantially vertically disposed casing carrying a rotatable bearing adapted to contact with the arm to facilitate quick  
40 alinement of the member with an opposing member.

8. In a train pipe coupling, the combination of a pipe coupling draw-bar having an arm at one end, a pipe coupling member and  
45 an anti-friction element, said member being mounted for slidable movement on the arm.

9. In a train pipe coupling, the combination of a pipe coupling draw-bar having an arm at one end, a pipe coupling member and  
50 an anti-friction element, said member being loosely mounted on the arm and adapted to permit rotative movement relatively to the arm.

10. In a train pipe coupling, the combination 55 of a pipe coupling draw-bar having an arm at one end, a pipe coupling member and an anti-friction element, said member being loosely mounted on the arm and adapted to permit fore and aft movement relatively to  
60 the arm.

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

BOLESŁAW R. KOZŁOWSKI.

Witnesses:

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