

No. 869,506.

PATENTED OCT. 29, 1907.

W. H. MYERS & W. G. STEVENS.

TRAIN PIPE COUPLING.

APPLICATION FILED APR. 12, 1907.

2 SHEETS—SHEET 1.

Fig. I.

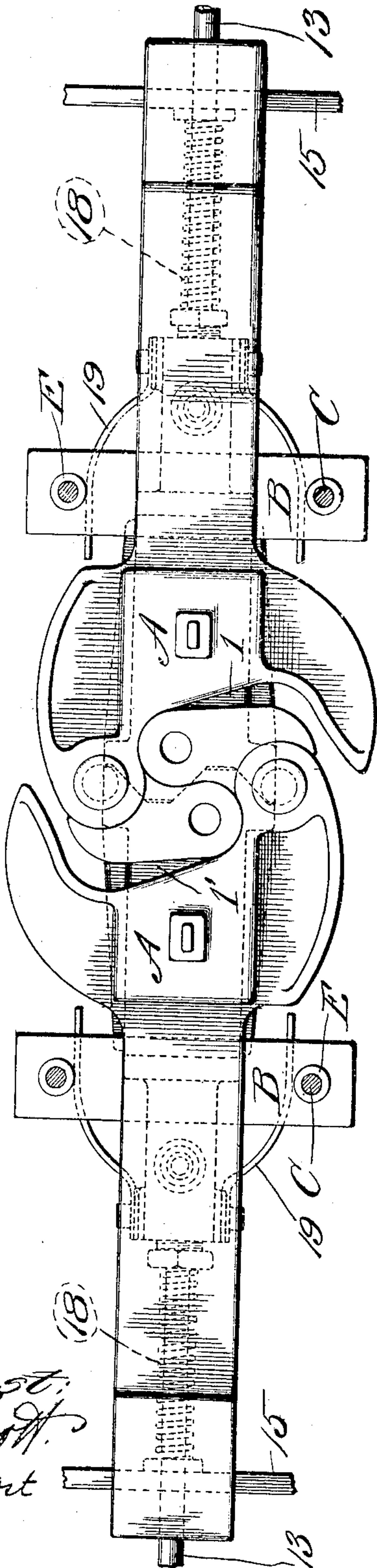
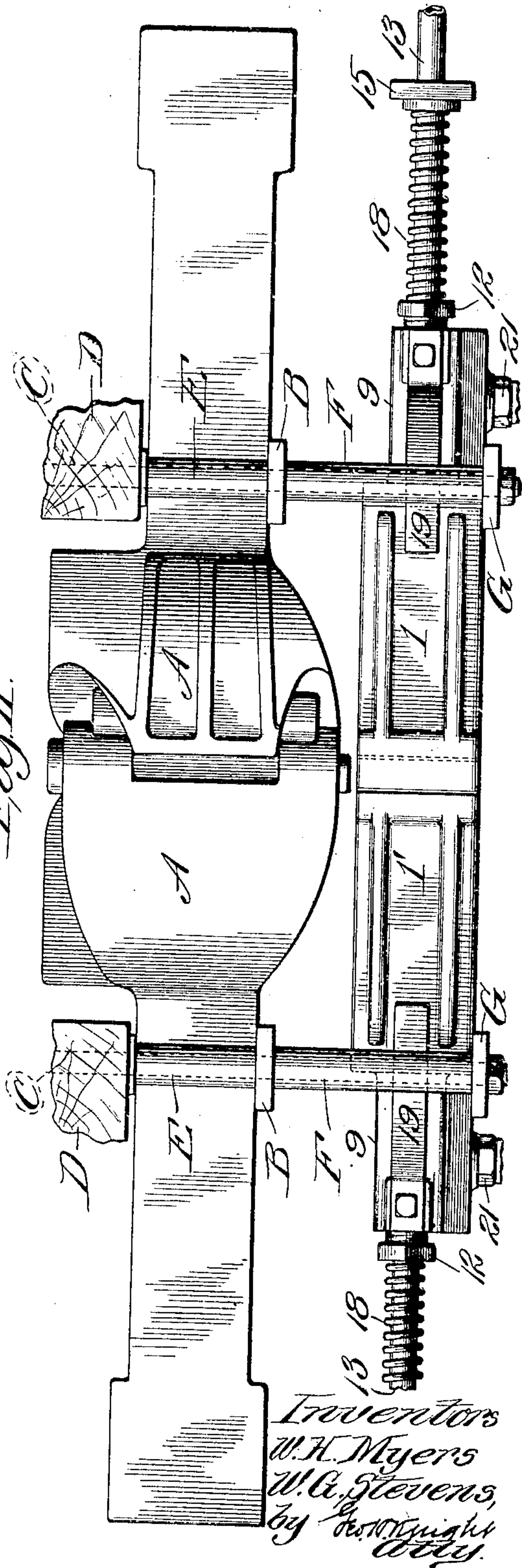


Fig. II.



Attest:
W. H. Myers
W. G. Stevens
by R. H. Knight
Att'y.

Inventors
W. H. Myers
W. G. Stevens,
by R. H. Knight
Att'y.

No. 869,506.

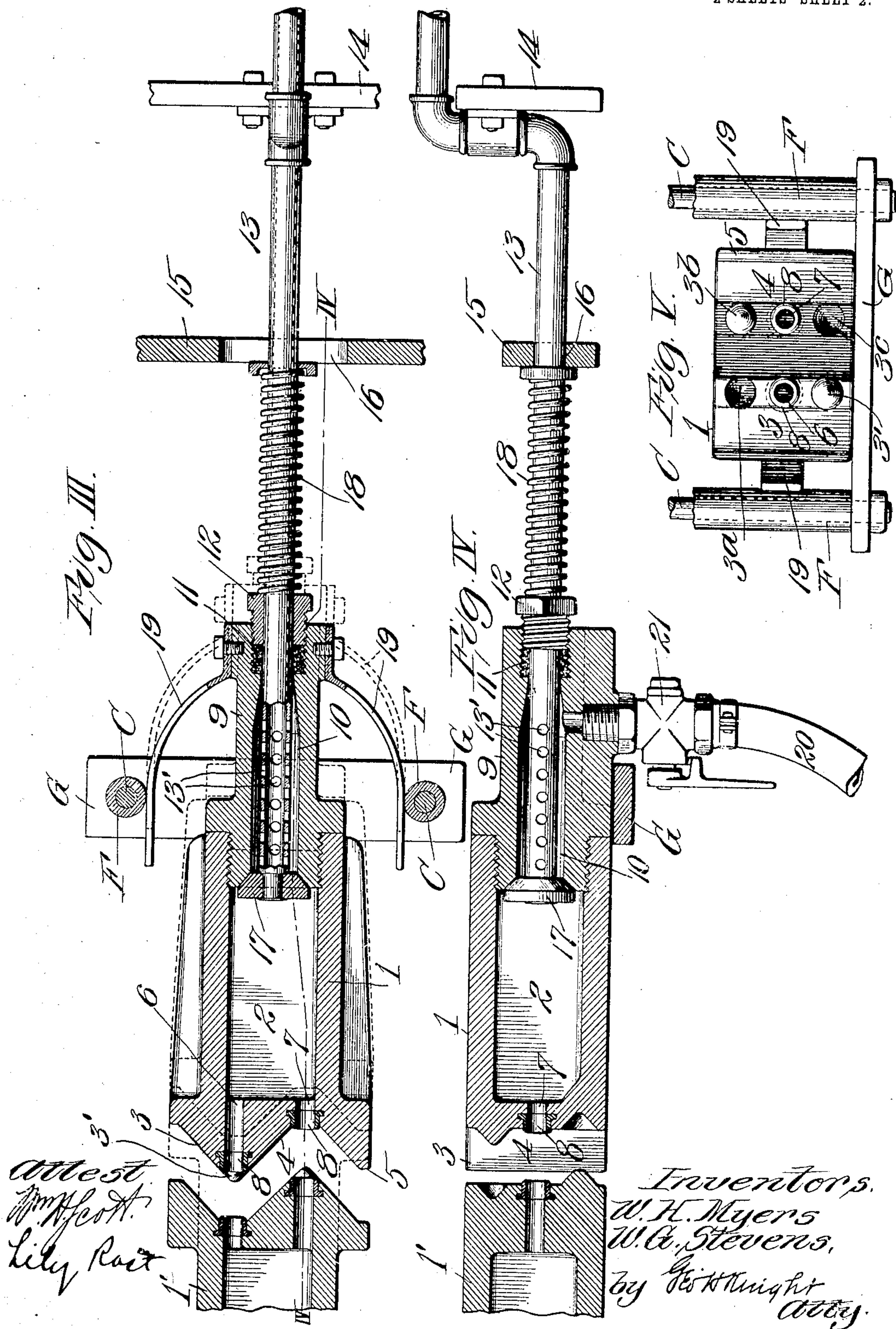
PATENTED OCT. 29, 1907.

W. H. MYERS & W. G. STEVENS.

TRAIN PIPE COUPLING.

APPLICATION FILED APR. 12, 1907.

2 SHEETS—SHEET 2.



UNITED STATES PATENT OFFICE.

WILLIAM H. MYERS AND WILLIAM G. STEVENS, OF BELLEVILLE, ILLINOIS.

TRAIN-PIPE COUPLING.

No. 869,506.

Specification of Letters Patent.

Patented Oct. 29, 1907.

Application filed April 12, 1907. Serial No. 367,858.

To all whom it may concern:

Be it known that we, WILLIAM H. MYERS and WILLIAM G. STEVENS, citizens of the United States of America, residing in Belleville, in the county of St. Clair and State of Illinois, have invented certain new and useful Improvements in Train-Pipe Couplings, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

Our invention relates to a coupling for use upon railway cars to connect the pipes of air brake systems and it has for its object to provide a coupling of this character which will become automatically assembled when the car couplings of the cars equipped with an air brake system containing our couplings are brought together and also a coupling which will become automatically disconnected when the car couplings are uncoupled.

Figure I is a top or plan view of a car coupling and our train pipe coupling associated therewith. Fig. II is a side elevation of the parts shown in Fig. I. Fig. III is a horizontal section taken through one end of our train pipe coupling showing the interlocking coupling heads. Fig. IV is a vertical longitudinal section taken on line IV—IV, Fig. III. Fig. V is an end elevation of one of the interengaging coupling heads and a supporting means therefor.

Referring to the accompanying drawings, A designates the members of a car coupling which may be of any usual type and supported in any ordinary manner, such as by the means of carrying irons B suspended by rods C from a fixed part of a railway car, such as the end sills D, see Fig. II. The rods C are surrounded above the carrying irons B by sleeves E and below said irons by sleeves F.

G are lower carrying irons which are supported by the rods C at points considerably beneath the upper carrying irons B and which serve as supports for the members of our train pipe coupling to be described.

The connecting and cooperating parts of our train pipe coupling are of uniform construction upon the different cars that are equipped with the couplings and therefore in setting forth the construction of these parts the coupling members at one end of a single car will be only in the main described with the understanding that the corresponding parts upon another car are similar to those of which description is given.

1 designates a coupling head having a zigzag face that is adapted to mate with a corresponding zigzag face of the complementary coupling head 1'. This coupling head 1 is provided with a chamber 2 and the head terminates at its forward end in a zigzag face providing a V-shaped nose 3, and a V-shaped socket 4, one of the walls of which is the same as the inner wall of the nose 3 and the other wall of which is the inner one of a wing 5 at the side of the head opposite to that at which the nose 3 is located. The coupler head 1' is

of a configuration corresponding to that of the coupler head 1 and therefore when the two coupler heads are brought together the nose of one coupler head enters into the socket of the other coupler head for the mating of said parts with each other in close assemblage. Projecting from the point of the nose 3 of the coupling member 1 is a conical boss 3' and in said nose is a tapering pocket 3^a and at the base of the socket in the coupler head is a conical boss 3^b and the tapering pocket 3^c.

The parts just referred to are duplicated in the coupler head 1' and so disposed that when the two coupler heads are brought together the conical bosses upon each head will enter into the opposing pockets of the other head for the purpose of centering the two coupler heads relative to each other in a vertical direction while they are being centered in a horizontal direction, due to the engagement of the tapering noses of the coupler heads in the coupler head sockets into which said tapering noses enter.

In the forward end of the coupler head 1 is a duct 6 extending through the nose of the head and a duct 7 extending through the end of the head at the location of the socket 4. These ducts provide communication between the chamber 2 in the head and the exterior of the head at its end and each duct has seated therein at its outer end a gasket 8. The ducts and gasket just referred to are duplicated in the mating coupler head 1' in order that flow of air may be established between the chambers of the two coupler heads when the heads are brought together.

9 designates a coupler head carrying shank to which the coupler head 1 is preferably removably attached and which is movably mounted upon the carrying iron G beneath it. In the shank 9 is an air channel 10 that is adapted to be placed into communication with the chamber 2 in the coupler head and the rear end of which is closed by suitable packing 11 held in place by a gland 12.

13 designates an air conducting pipe that is supported by a hanger 14 that may be connected to the car on which the coupling is used in any suitable manner and which is further supported by a hanger 15 provided with a horizontal slot 16 in which the pipe is permitted to move in a lateral direction. The pipe 13 extends into the shank of the coupler head 1 and is provided with a plurality of perforations 13' through which air present in said pipe may escape into the channel in the shank or through which air that may have entered into said channel from the chamber of the coupler head may find access into the pipe according to the direction in which it is being conducted through the coupling.

17 is a valve carried by the pipe 13 at its forward end and adapted to control communication between the chamber in the coupler head and the channel in the shank of said head or vice versa, the valve for this purpose being adapted to seat against the forward end of the

shank or to be separated therefrom as will hereinafter appear.

18 designates a pressure spring that surrounds the air conducting pipe 13 and is located between the hanger 5 15 and the shank of the coupler head. This spring acts to normally force the coupler head in a forward direction and to yieldingly hold the head pressed forwardly into firm impact against the mating coupler head when said heads are assembled, in which connection it is to be 10 understood that the spring associated with the other coupler head performs the same office with respect to it.

19 designates a pair of spring arms that are carried by the shank of the coupler head 1 and are arranged in engagement with the sleeves F surrounding the supporting rods C by which the carrying arm G is upheld. 15 These spring arms serve as centering members for the coupler head in order that it may be held in a neutral position at all times and properly positioned for assemblage with the mating coupler head to which it is to be 20 fitted when two cars, equipped with our coupling members, are brought together.

When, in the practical use of our coupling two cars are brought together to be coupled, the coupler heads 1 and 1' mate with each other before the draft car couplings are united and as these coupling heads approach 25 each other they are caused to move into close assemblage, due to the tapering shapes of their noses and sockets and the bosses and pockets all of which are located at the forward ends of the heads. As the coupler 30 heads become assembled, the gaskets 8 carried thereby become snugly fitted to each other so that the ducts in the forward ends of the coupler heads become continuous through both of the heads and provide communication between the chambers in said heads and the coupler heads are moved rearwardly relative to the air conducting pipes against the action of the pressure springs 18 surrounding said pipes. It is to be understood that 35 the valve 17 was, previous to the assemblage of the coupler heads, in positions to prevent communication between the chambers of the coupler heads and the channels in the shanks of said heads in order that air may be prevented from escaping from said channels into which it enters from the air conducting pipes and it will be seen that when the shank of each coupler 40 head is moved rearwardly the valve upon each air conducting pipe is separated from its seat with the result of establishing communication between the chamber in each coupler head and the channel in each coupler head shank. The air that is present in either section of 45 conducting pipe according to the direction in which such air is to be conducted is then permitted to flow through the mating coupler heads to follow the course usual in air brake systems.

It is to be noted that in our train pipe coupling we do 55 not use any means for the direct connection of the coupler members but rely upon the action of the pressure springs utilized to hold the coupler heads in such firm contact that leakage between them will be obviated and that due to this arrangement the coupling is

rendered an automatic one inasmuch as the coupler 60 heads need only move into assemblage and out of assemblage when the draft couplings are connected and disconnected.

In Fig. IV we have shown a coupling hose 20 connected to the shank of the coupler head of our coupling 65 by a valve 21 for the purpose of illustrating means whereby a member of our coupling may be connected to a train pipe coupling of an ordinary type, such as that at present in use, the hose 20 being adapted to 70 carry, for this purpose, a coupling member of ordinary type.

We claim:

1. A train pipe coupling comprising a pair of fluid conducting pipes having openings in the walls thereof, valves carried by said pipes and a pair of spring pressed coupler heads slidably mounted upon said pipes and arranged for assemblage with each other, substantially as set forth. 75

2. A train pipe coupling comprising a pair of fluid conducting pipes having perforations in the walls thereof 80 valves carried by said pipes and coupler heads slidably fitted to said pipes and arranged for assemblage with each other and springs supported by said pipes and acting to force said coupler heads in an outward direction on the pipes, substantially as set forth. 85

3. A train pipe coupling comprising a pair of fluid conducting pipes provided with openings in the walls thereof, valves carried by said pipes, a pair of coupler heads containing chambers, channeled shanks carrying said coupler heads and fitted to said pipes and springs for exerting 90 forward pressure upon said coupler heads and their shanks, substantially as set forth.

4. A train pipe coupling comprising a pair of perforated fluid conducting pipes, a pair of coupler heads having channeled shanks slidably fitted to said pipes and provided 95 with valve seats, valves carried by said pipes and arranged to control the flow of fluid through said coupler heads, springs for exerting forward pressure upon said coupler heads, and means for holding said coupler heads in neutral position whereby they are caused to move into engagement when brought together, substantially as set forth. 100

5. A train pipe coupling comprising a pair of fluid conducting pipes, a pair of coupler heads having shanks slidably fitted to said pipes, valves carried by said pipes and arranged to control the flow of fluid through said coupler heads, springs for exerting forward pressure upon said coupler heads, and spring arms for centering said coupler heads relative to each other, substantially as set forth. 105

6. A train pipe coupling comprising a pair of fluid conducting pipes and having openings in the walls thereof, valves carried by said pipes and a pair of spring pressed coupler heads, slidably fitted to said pipes and having complementary angular noses and sockets corresponding in contour to said noses, substantially as set forth. 110

7. A train pipe coupling comprising a pair of fluid conducting pipes and having openings in the walls thereof, valves carried by said pipes and a pair of spring pressed coupler heads slidably fitted to said pipes and having complementary angular noses and sockets corresponding in contour to said noses and being provided with conical 115 bosses and pockets into which said bosses enter when the coupler heads are brought together, substantially as set forth. 120

WILLIAM H. MYERS.
WILLIAM G. STEVENS.

In presence of—
BLANCHE HOGAN,
LILY ROST.