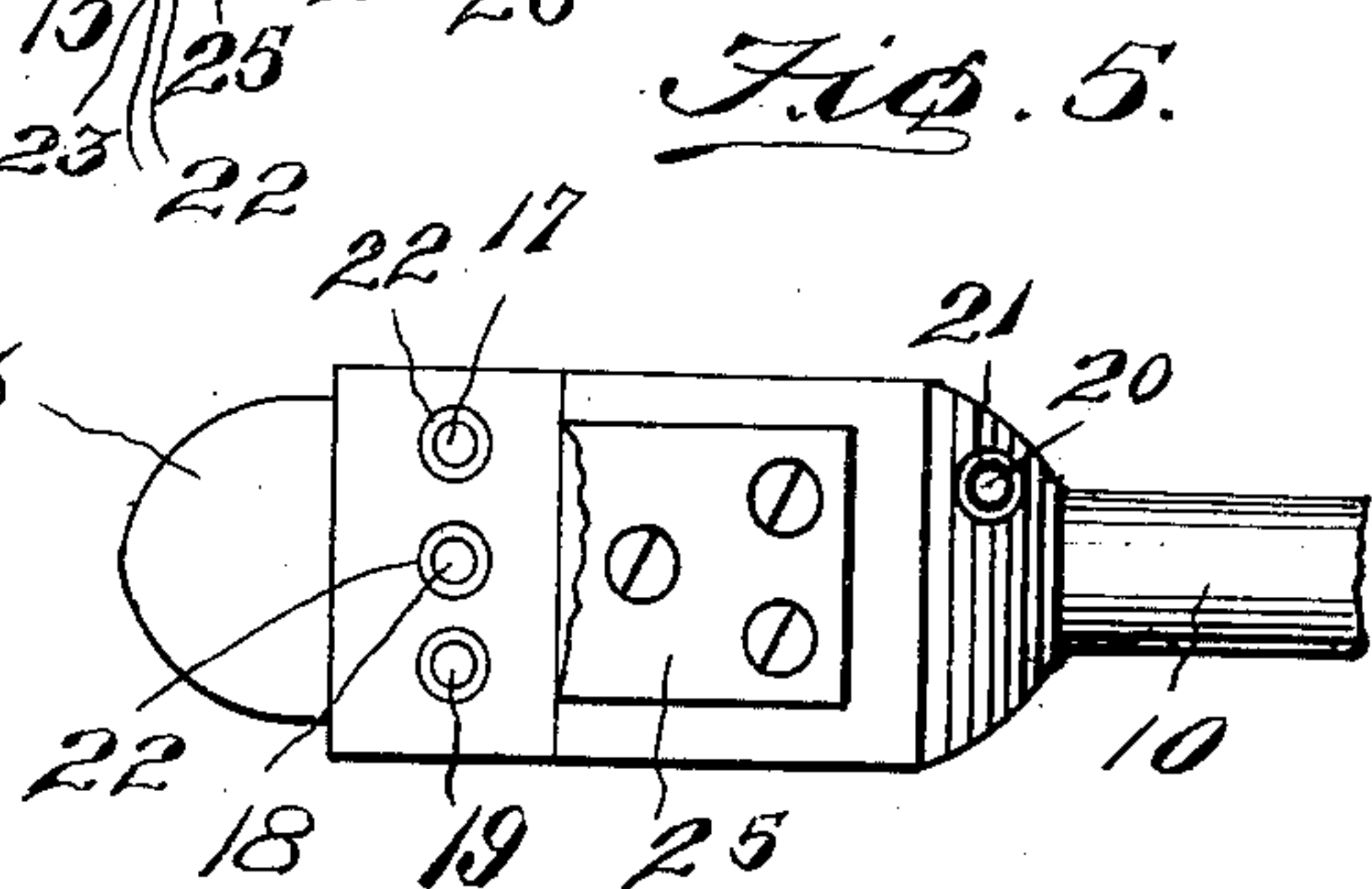
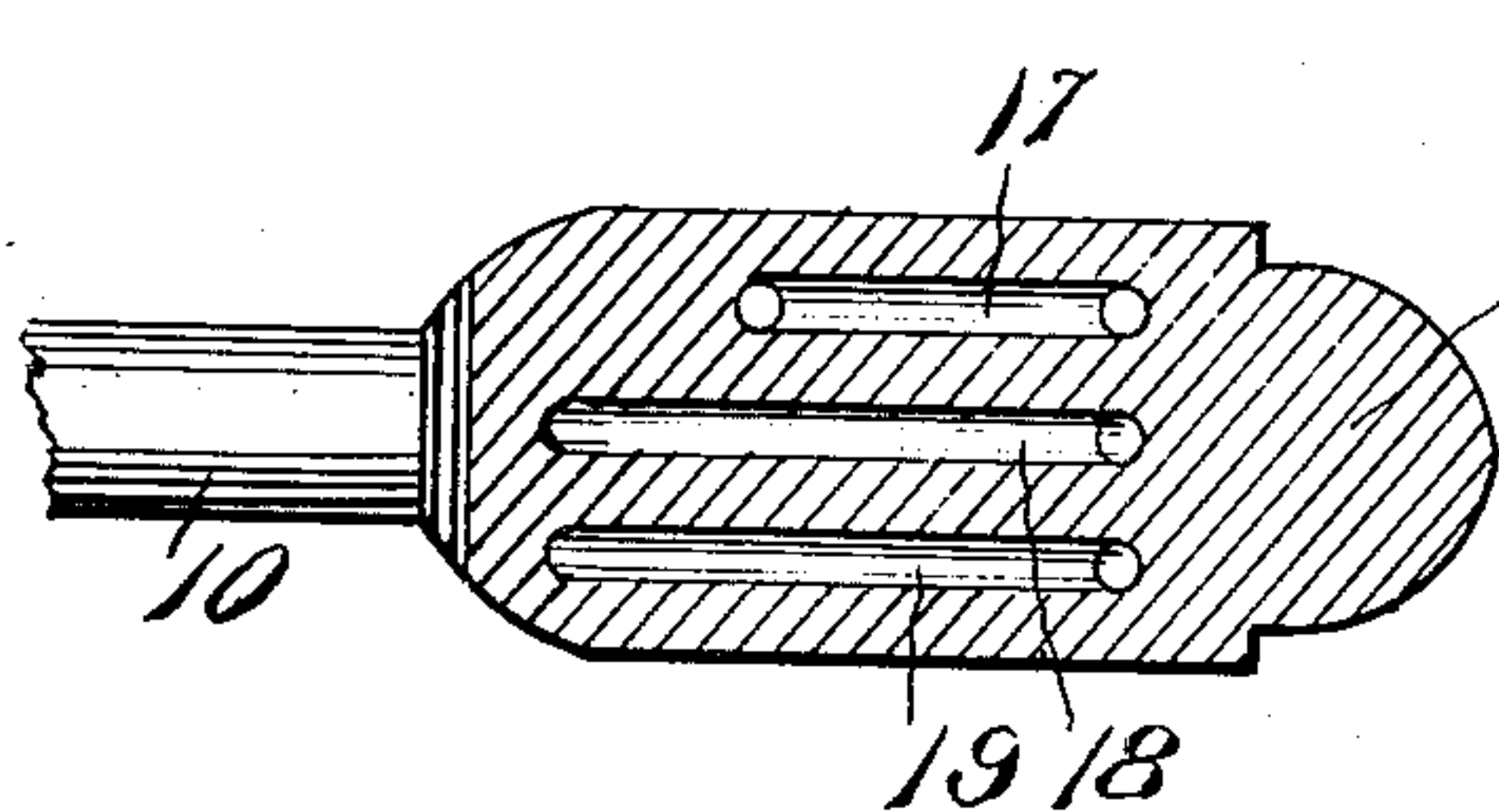
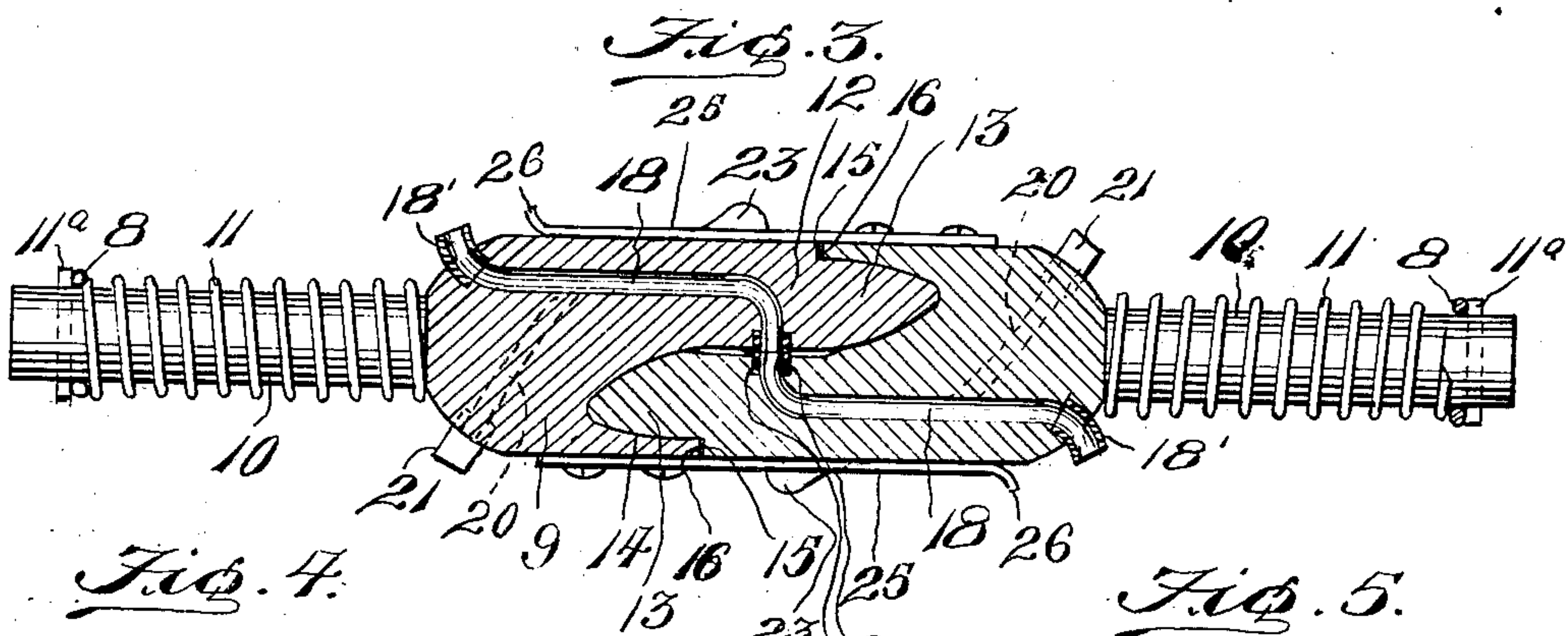
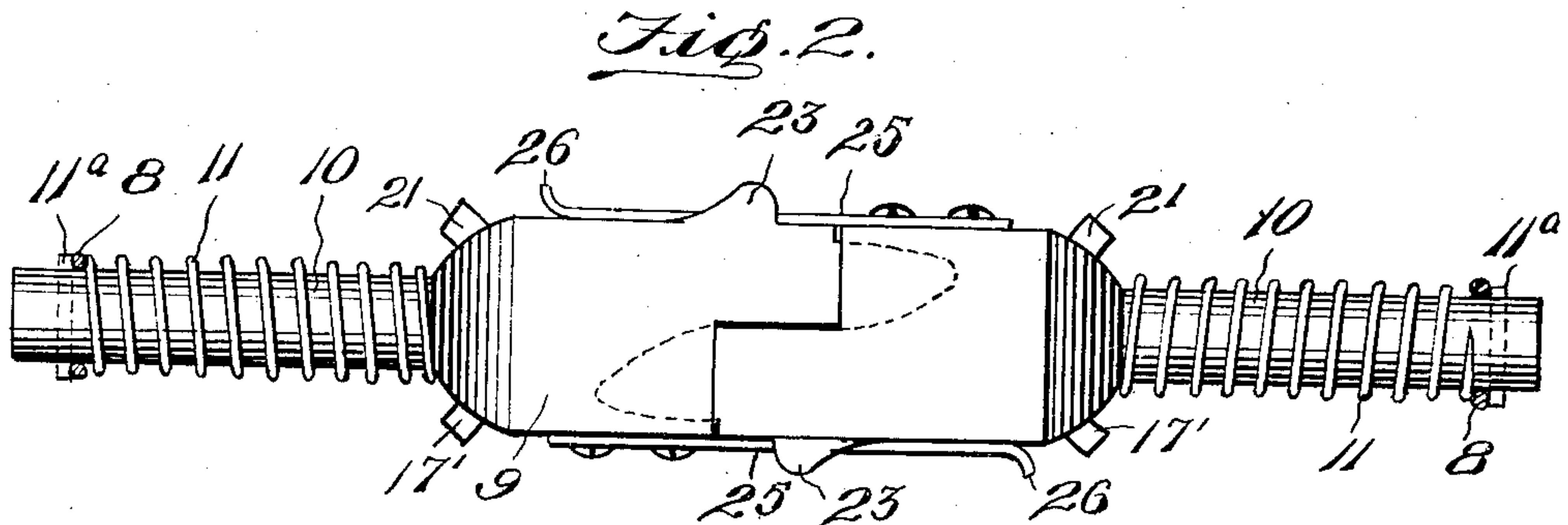
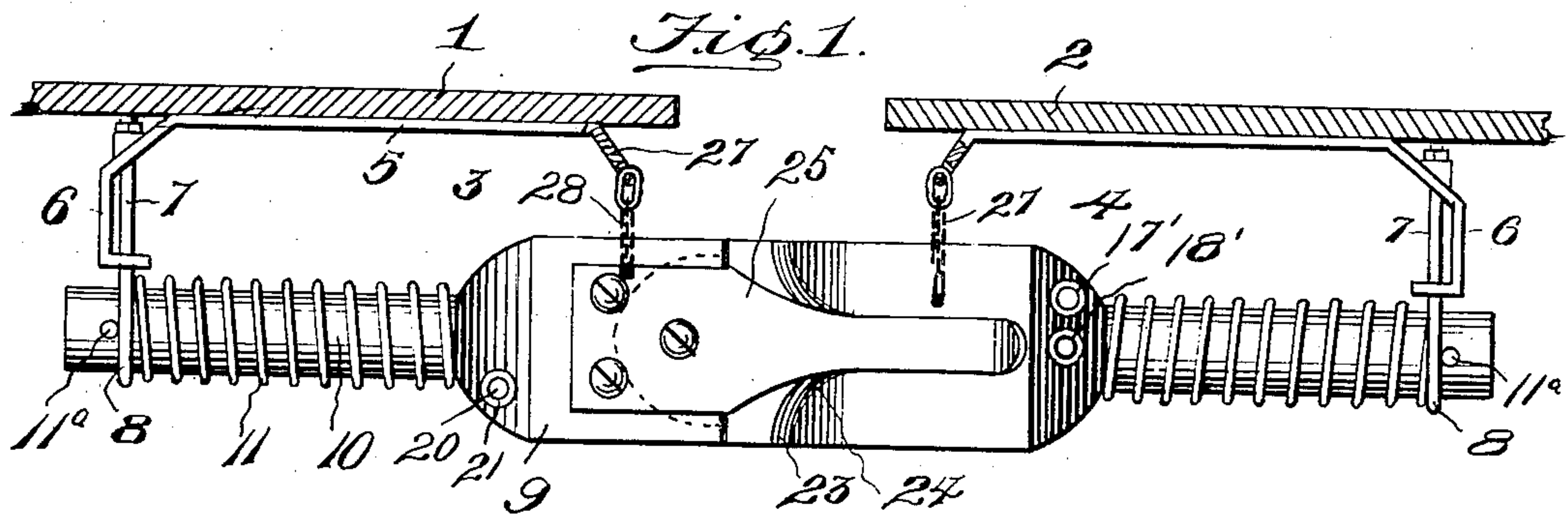


No. 891,718.

PATENTED JUNE 23, 1908.

T. B. McMILLAN.
COUPLING.

APPLICATION FILED JUNE 21, 1907.



Witnesses

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THOMAS B. McMILLAN, OF SHERRY, TEXAS.

COUPLING.

No. 891,718.

Specification of Letters Patent.

Patented June 23, 1908.

Application filed June 21, 1907. Serial No. 380,175.

To all whom it may concern:

Be it known that I, THOMAS B. McMILLAN, a citizen of the United States, residing at Sherry, in the county of Red River and State of Texas, have invented new and useful Improvements in Couplings, of which the following is a specification.

This invention relates to automatic air brake and steam pipe couplings for railway cars, and it is designed as an improvement upon the general construction of coupler shown in my prior application filed Jan. 19, 1907, Serial No. 353,136, allowed May 11, 1907.

The object of the present invention is to provide a construction of coupling for connecting the air, gas and steam pipes of conductors upon all cars of a train, which may be used for one or more of these purposes.

A further object of the invention is to provide a coupler which will couple automatically when the cars are brought together, which will accommodate itself to the movement of the cars in travel, and which is provided with means to effectually prevent the escape of the air, steam or other fluid.

With these and other objects in view, the invention consists of the features of construction, combination and arrangement of parts hereinafter fully described and claimed, reference being had to the accompanying drawing, in which:—

Figure 1 is a side elevation of connected couplers of two opposing cars embodying my invention, portions of the car being shown in longitudinal section. Fig. 2 is a top plan view of the same. Fig. 3 is a sectional plan view of the couplers. Fig. 4 is a longitudinal section through one of the coupler heads. Fig. 5 is an outer elevational view of one of the coupler heads with the locking spring broken away to better disclose the construction.

Referring to the drawings, 1 and 2 represent end portions of two cars equipped with my improved coupling devices 3 and 4. These coupling devices are similar in construction, so that a description of one will suffice for both.

Extending longitudinally upon the under side of the supporting portion of the car and suitably secured thereto is a bracket 5, the rear end of which is bent to form a supporting portion 6 for a bolt 7 carrying at its lower end a guide ring or yoke 8. The coupling proper comprises a head 9 provided

with a rearwardly extending shank or stem 10 projecting at its rear end through the yoke 8, in which it is slidably mounted to permit the coupling to move in a direction longitudinally of the car. A coiled cushioning spring 11 surrounds the shank between the head 9 and yoke to normally maintain the coupling head in a predetermined position and to cushion the impact when another coupling comes in contact therewith. A key 11^a, passing through the rear end of shank 10, abuts against yoke 8 to limit the forward movement of the coupler and prevent the shank from being pulled out of the yoke in uncoupling.

The head 9 comprises a solid body portion having at one side an arm or extension 12 terminating in a longitudinally tapered tongue 13. The said arm 12 is of a width corresponding substantially to one half the thickness or transverse dimensions of the head 9, and consequently lies wholly upon one side of the longitudinal center thereof, and in the head on the opposite side of its longitudinal center is formed a socket or recess 14 tapered correspondingly to the tongue 13, said socket being adapted to receive the cooperating tongue upon the opposing coupling. The tongue tapers or diminishes in width outwardly, while the socket is tapered inversely, so that when the tongues of two opposing couplers slide past one another in the operation of connecting the couplers together the tapering formation of the tongues and sockets will adapt the tongues to be guided accurately into position, thus causing the opposing faces of the couplers to be brought into intimate contact. The tongue 13 of each head merges at its inner side into the inner wall or face of the arm 12, but terminates short of the outer face of the arm, whereby an abutting shoulder 15 is provided at the juncture of the outer side of the arm with the tongue to abut against the coacting shoulder 16 formed at the forward end of the outer side of the socket 14 of the opposing coupler.

Each head is provided with one or more passages for the flow of the air, steam, gas or other fluid therethrough. In the present instance, I have shown each head provided with three longitudinal ducts or passages 17, 18 and 19. These passages extend longitudinally through the head 9 in alignment with the longitudinal center or axis of the arm 12, the passages 17 and 18 opening at

their rear ends through one side of the rear portion of the head and communicating with nipples 17' and 18' for connection with hose pipes leading to the pipes or conductors on the cars. The other duct 19 is in communication at its rear end with a diagonal duct or passage 20 shown in dotted lines in Fig. 3, extending across and opening through the rear of the head at the opposite side and communicating with a coupling nipple 21. The inner ends of all three ducts open through the inner face of the arm 12, one above the other, as indicated in Fig. 5, the said ends being counter-bored or enlarged to receive elastic rings or gaskets 22, said gaskets being adapted to abut against the gaskets upon an opposing coupler to effect a fluid-tight connection between the ducts upon the two couplers when the latter are coupled together. It will be understood that the three ducts may be respectively for the passage of air, gas and steam through the coupler to connect the pipes forming part of the brake mechanism and illuminating and heating equipment of the car.

Arranged upon the side of the head on which the arm 12 is formed, is a bifurcated shoulder comprising a pair of lugs or projections 23 arranged to form an intervening guide groove and receiving passage 24, while upon the opposed or socketed side of the coupling is disposed a coupling spring 25 adapted for coöperation with the bifurcated shoulder upon the opposing coupler. The shoulder is so formed that it will serve the function of a locking shoulder for use in connection with a humped locking spring of the type disclosed in my aforesaid prior application, and also operate in connection with a flat plate spring of the type herein shown. As illustrated, the spring 25 is fastened at its rear end to the face of the coupling and projects forwardly beyond the socket and beyond the extremity of the tongue 13, the outer or free end of the spring being bent or curved, as indicated at 26, to form a guide portion to adapt said spring to ride freely in contact with the opposing coupling. The free portions of the springs of the two coupling heads are adapted when the coupling heads come in contact to slide through the guide grooves or passages 24 in the respective heads and to clasp the heads with sufficient energy to hold them on all normal conditions of service in interlocking engagement, the construction, however, being such that upon the disconnection of the ordinary draft couplings of the cars and the movement of one car away from the other the spring will oppose no resistance to the disengagement of the coupler heads upon said cars. As no endwise parting strain falls upon the two coupler heads 9 in operation, so long as the draft couplers are connected, it will be understood that the springs will serve to maintain

the opposing faces of the coupler heads 9 in intimate contact so that the steam or other fluids may freely pass thereto from one car to the other without liability of leakage at the joint. It will be further observed that by the formation and arrangement of the lugs 23 the springs upon the two coupler heads interlock with said lugs so that the couplers will mutually act to sustain each other in a substantially horizontal position and prevent any possible liability of sagging of the couplers at a point in advance of the points from which they are suspended from the forward ends of the brackets 5.

It will be understood and be apparent from the illustrated disclosure that the coupler heads are arranged in "rights" and "lefts" upon the opposite ends of each car, so that the couplers upon opposing cars will come together with their tongues and socketed portions interfitting, as illustrated in Fig. 3.

In order to support the forward end of each coupler head, the forward portion of the bracket 5 is bent downwardly to provide an arm 27 which support chains or other flexible connections 28 attached at their lower free ends to the sides of the coupler head 9. These chains support the coupler head in position, while permitting the same to have both vertical and lateral play to adapt it to swing freely to communicate itself to the vertical and lateral play of the cars in running and rounding curves.

It will be understood that in operation when two cars come together the abutting faces of the two coupling heads thereon will ride in contact and mutually adjust themselves to duct closing position, and the springs will slide into their receiving grooves between the lugs and clasp the couplings together securely enough to effect an air pipe connection between them. In the separation of the cars, when the ordinary car couplings are disconnected, a slight movement of one car away from the other will withdraw the springs from engagement with the respective heads, thus permitting the coupling heads to separate.

In practice, the lever upon each car for operating the knuckle of the draft coupler may be suitably connected with the angle cock of the train pipe of the brake system, so that when the lever is adjusted to permit the sets of couplings to couple and uncouple the air will be simultaneously let on or cut off. The same type of actuating mechanism may be employed for the gas and steam lines.

Having thus described the invention, what I claim as new and desire to secure by Letters Patent is:—

1. In an automatic coupling of the character described, a coupler head provided upon one side of its longitudinal center with a forwardly extending arm having a tapered ter-

5 minal tongue, said tongue merging at its inner
side into the inner wall or face of the arm
and terminating at its outer side short of the
face of the arm, thereby providing an abut-
10 ting shoulder, the head being provided on
the opposite side of its center with a socket
terminating in rear of the arm and having
an abutting shoulder at the side thereof,
the head and arm being formed with a duct
15 opening at one end through the rear of the
coupler and at its opposite end through the
inner face of the arm, and a locking spring
secured to the socketed side of the head and
extending forwardly in a plane parallel to
the arm and tongue.

2. In an automatic coupling of the charac-
ter described, a coupler head provided on
one side of its longitudinal center with a for-
wardly extending arm having a tapered
20 tongue at its forward end merging at its in-
ner side into the face of the arm and termi-
nating at its outer side short of the outer

face of the arm, thereby providing a contact
shoulder, the other side of the arm being
formed with a pair of superposed guide 25
shoulders located in rear of said contact
shoulder and providing intervening longi-
tudinal guide grooves, and the head having
on the opposite side of its longitudinal cen-
ter a tapered socket terminating in rear of 30
the arm and provided at its outer side with
a contact shoulder, and a locking spring se-
cured to the socketed side of the head and
extending forwardly in parallel relation to
the arm and its tongue to engage with the 35
guide groove formed by the superposed
shoulder of an opposing coupling.

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

THOMAS B. McMILLAN.

Witnesses:

C. HOCKER,

F. F. MASABLE.