

E. E. GOLD.
HOSE COUPLING.

APPLICATION FILED AUG. 14, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

FIG. 1.

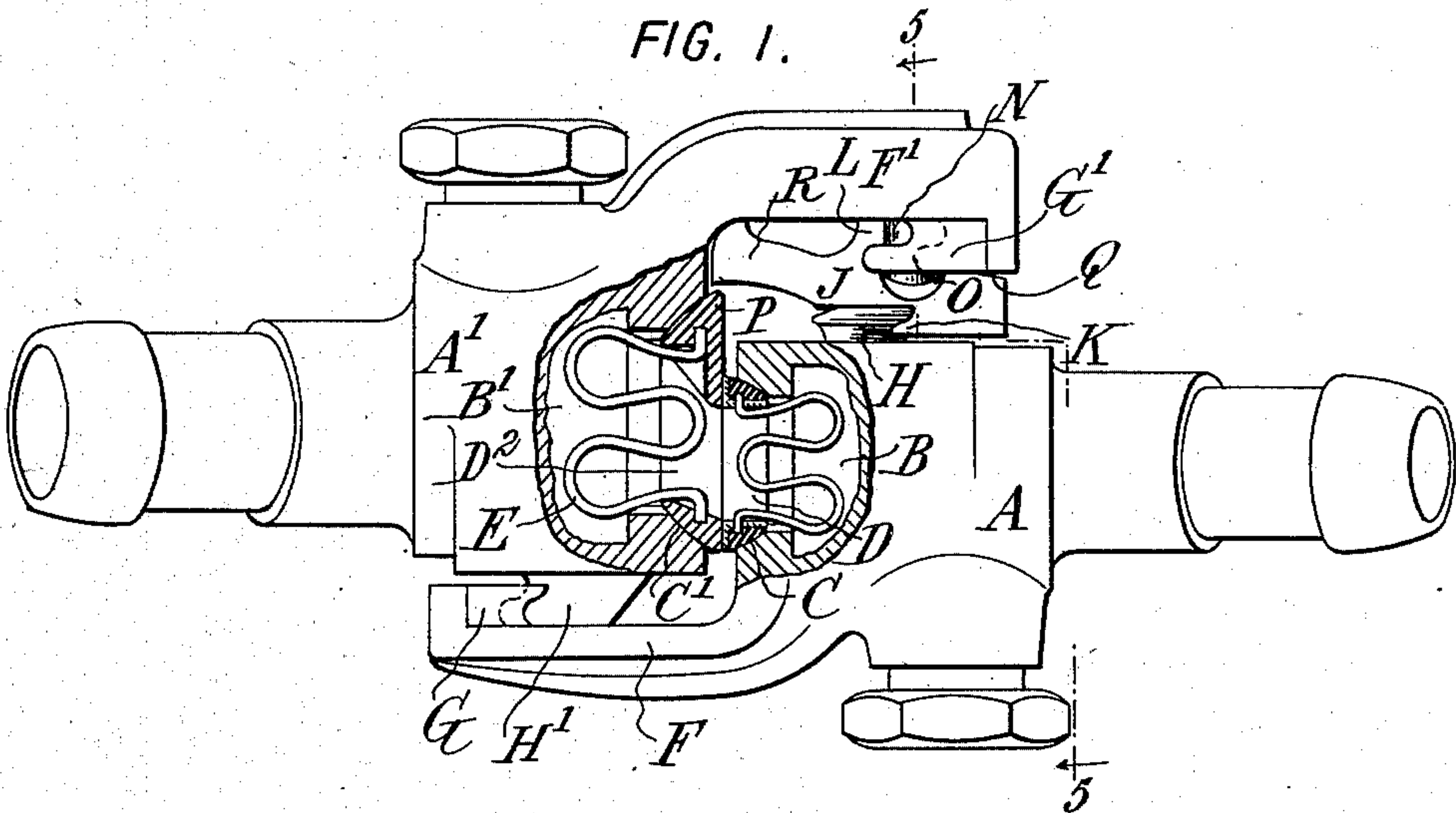


FIG. 2.

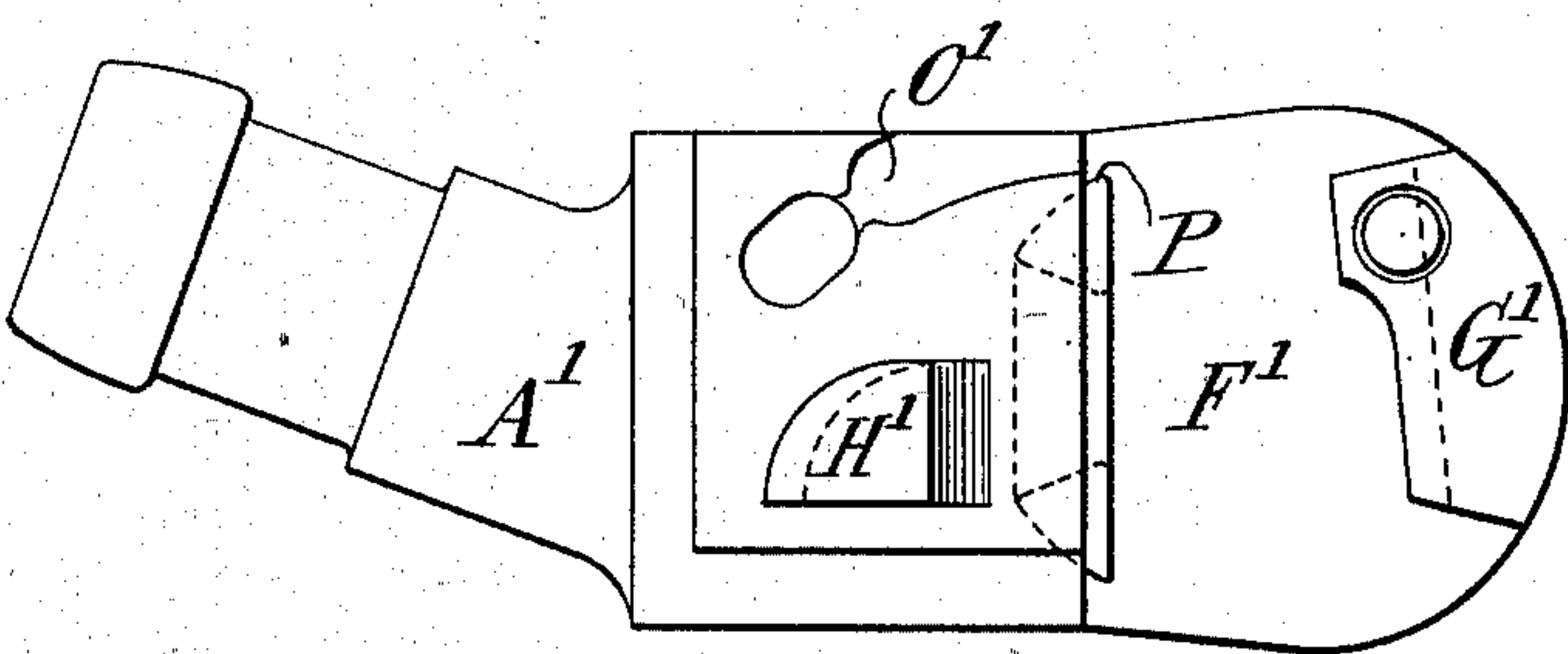


FIG. 3.

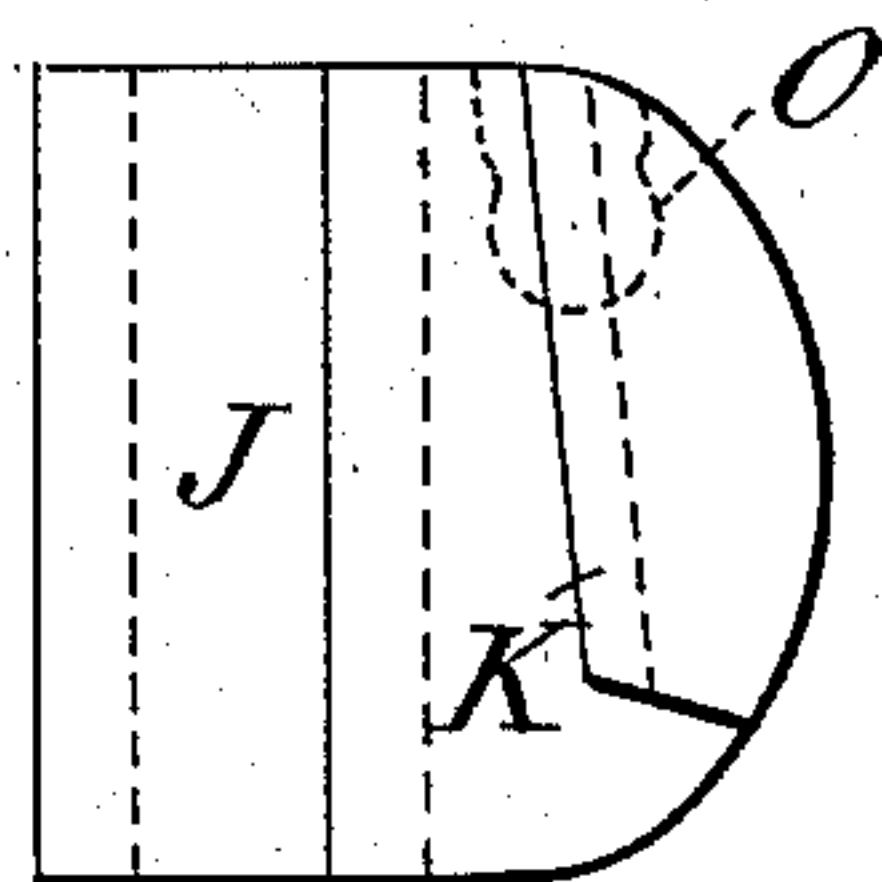


FIG. 5.

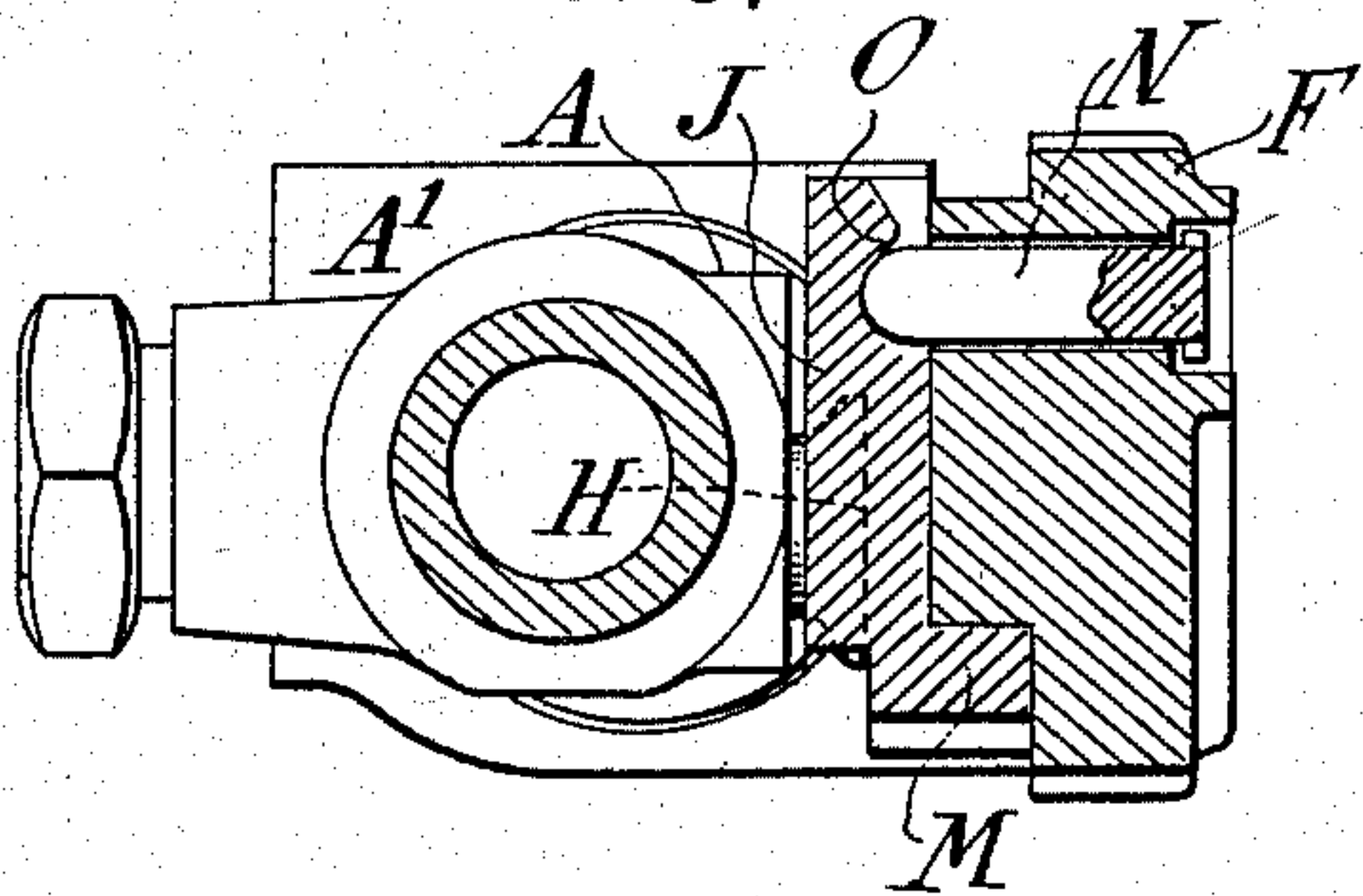


FIG. 4.

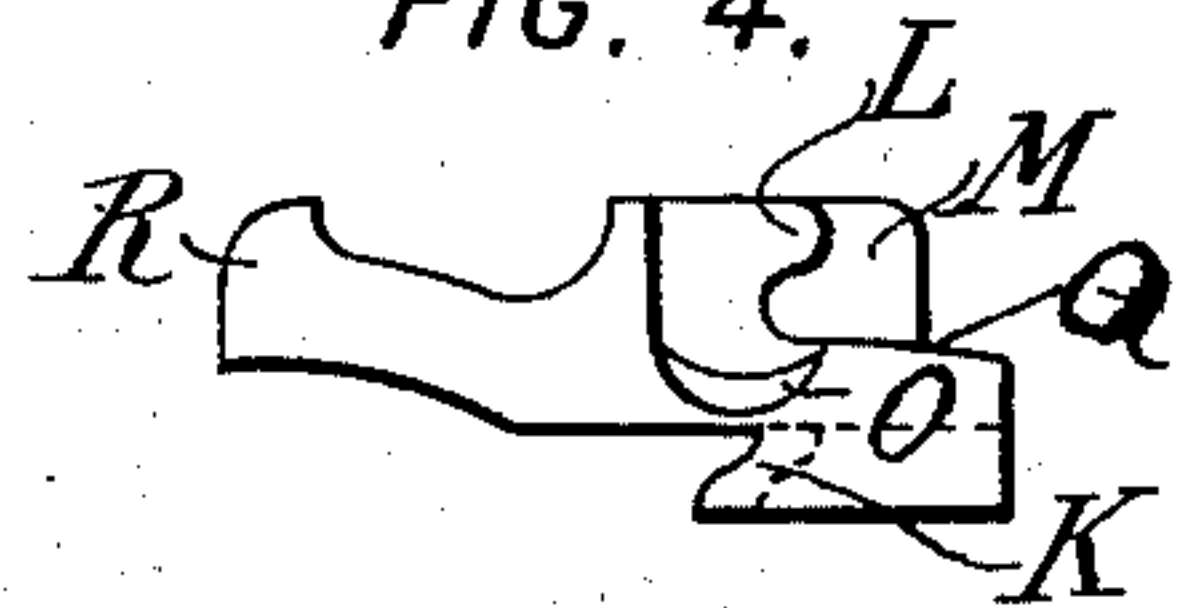


FIG. 6.

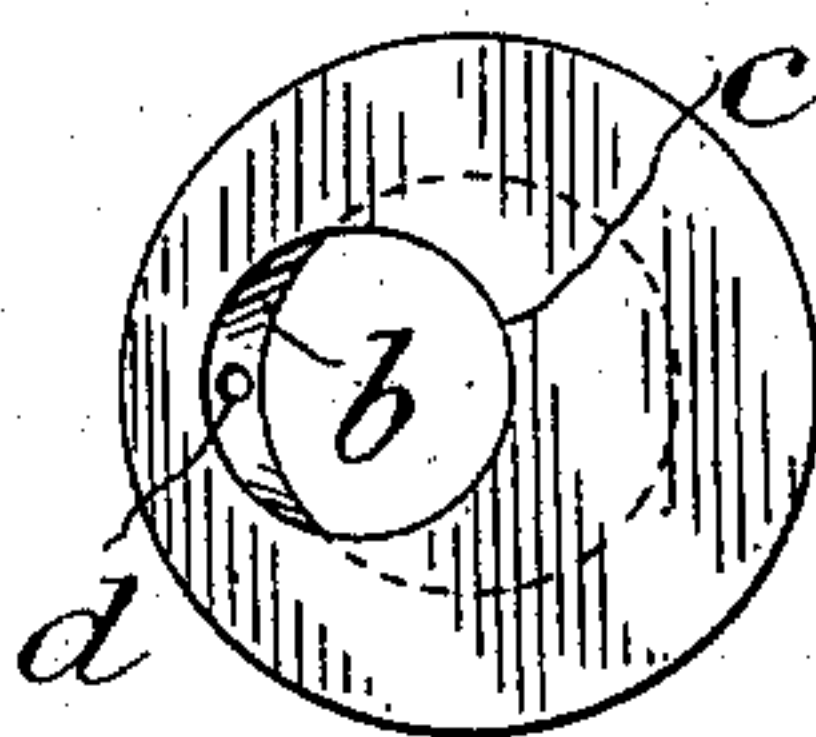


FIG. 7.

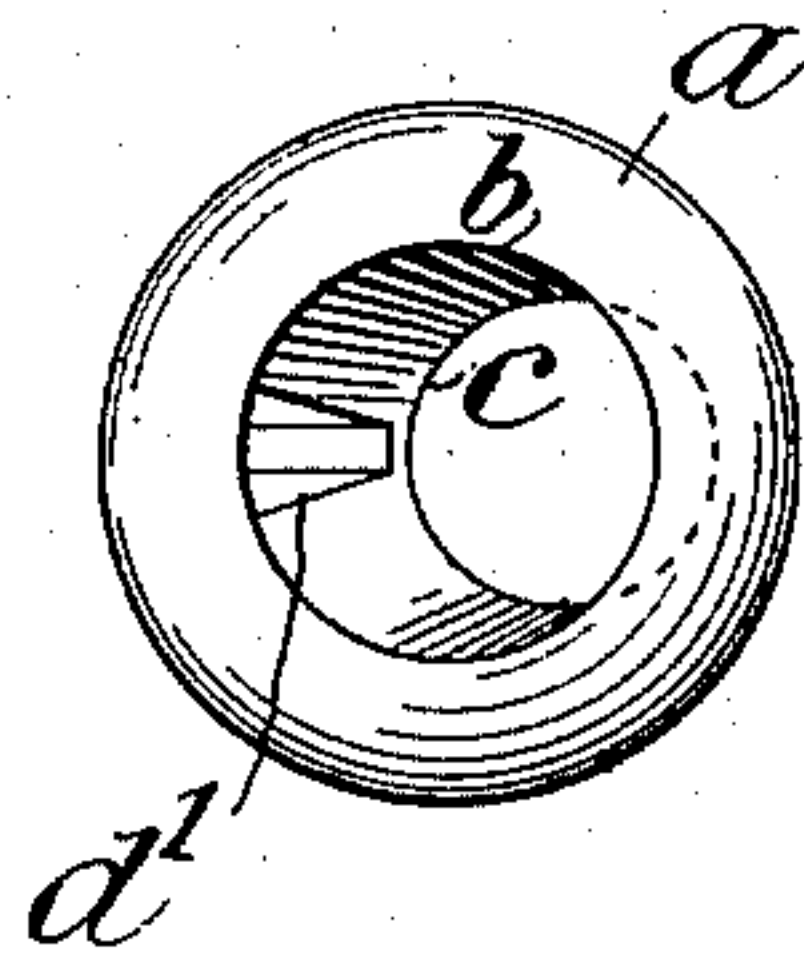
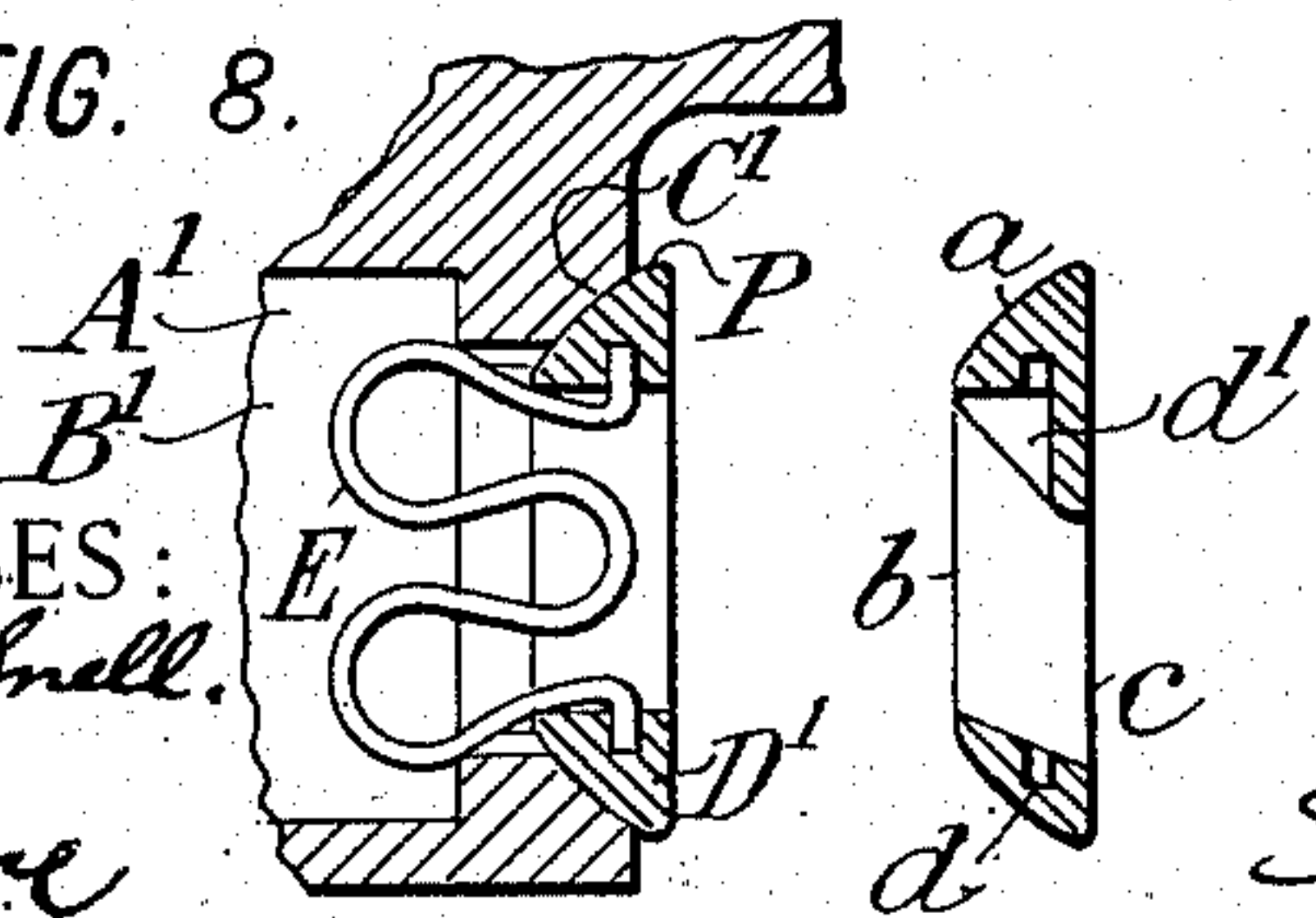


FIG. 8.



WITNESSES:
Theodore T. Snell.
Rene M. M. M.

INVENTOR:

Edward E. Gold
By Attorneys,

Shuman & Thayer

No. 749,483.

PATENTED JAN. 12, 1904.

E. E. GOLD.
HOSE COUPLING.

APPLICATION FILED AUG. 14, 1903.

NO MODEL.

2 SHEETS—SHEET 2.

FIG. 9.

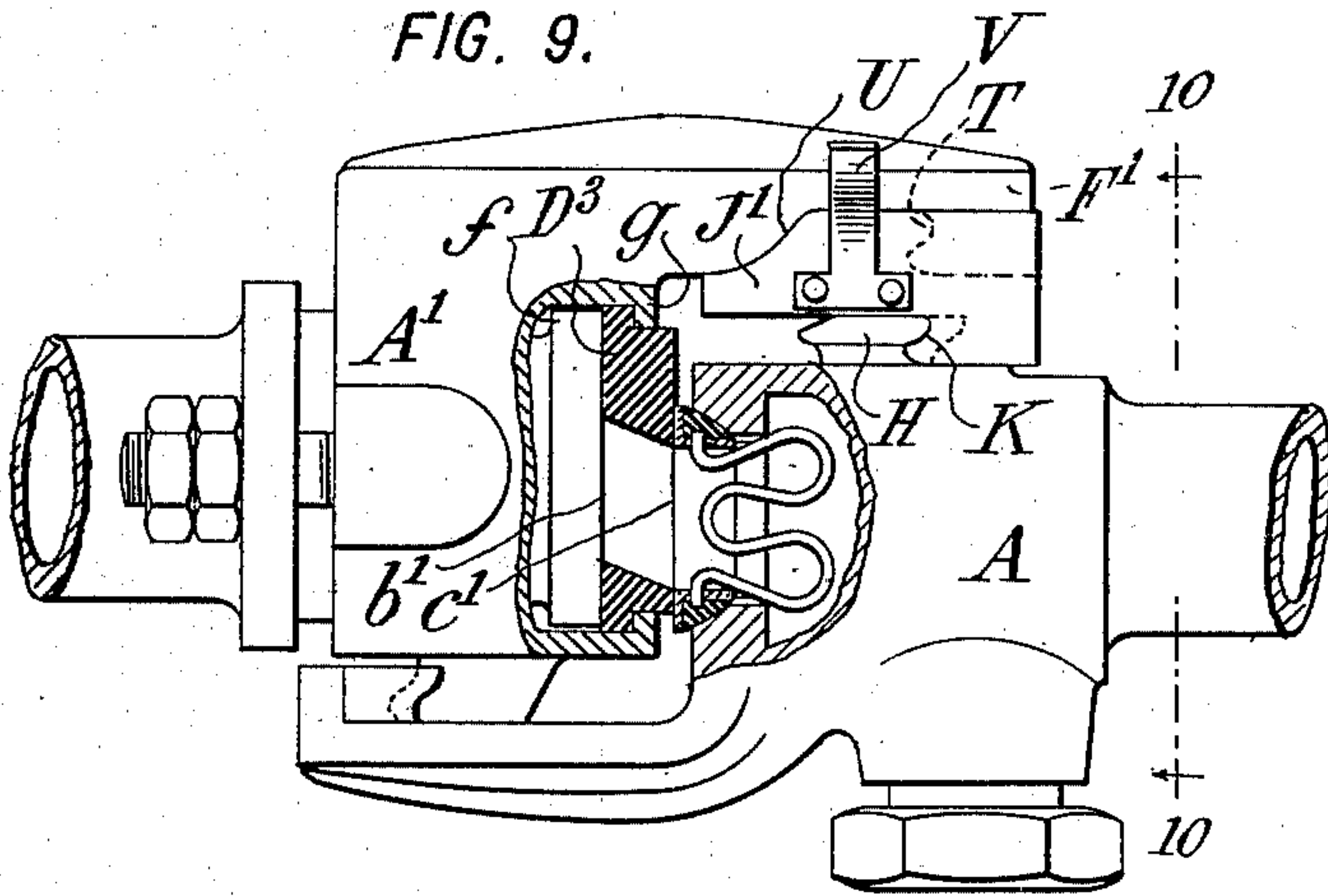


FIG. 10.

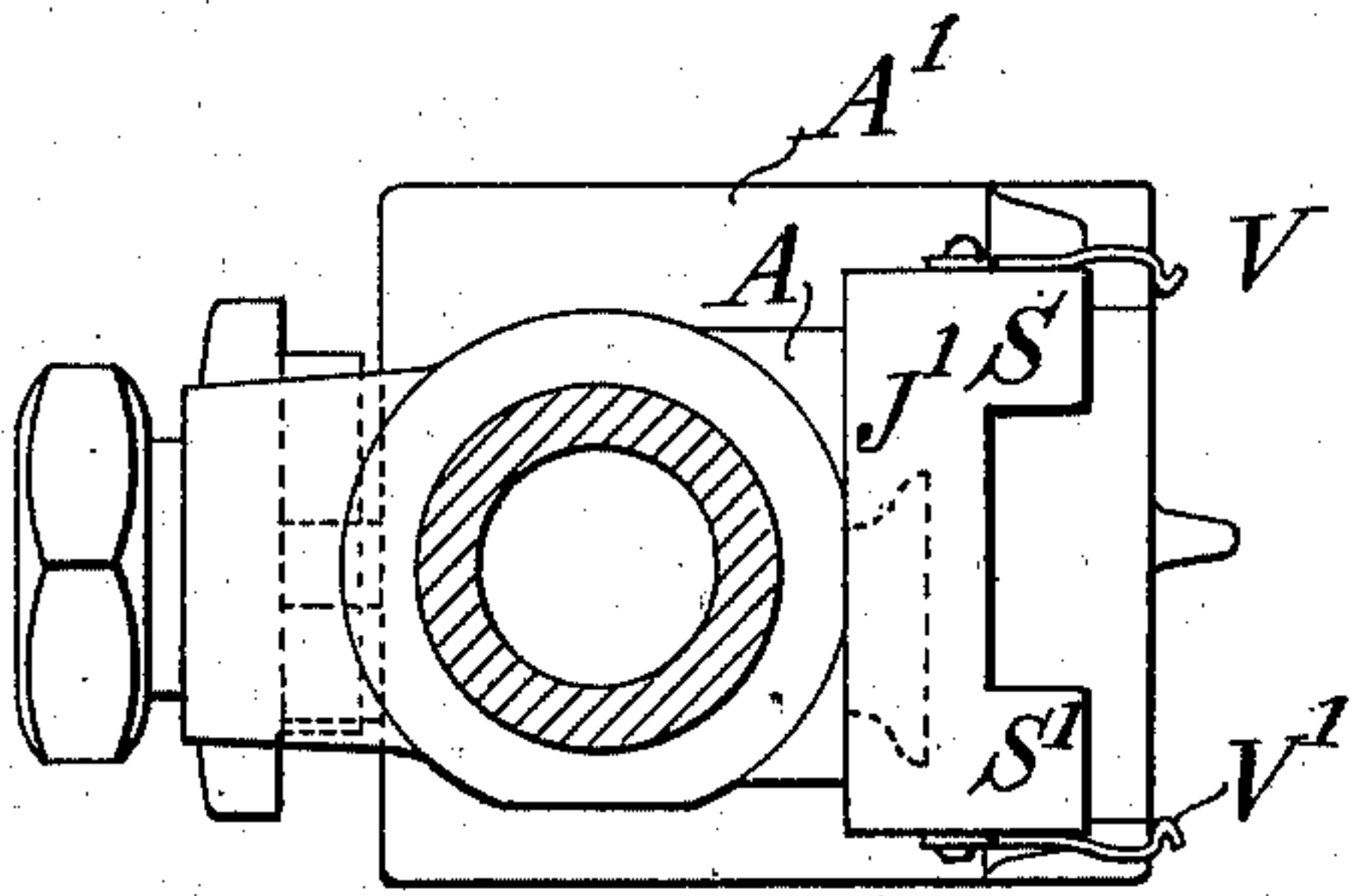


FIG. 11.

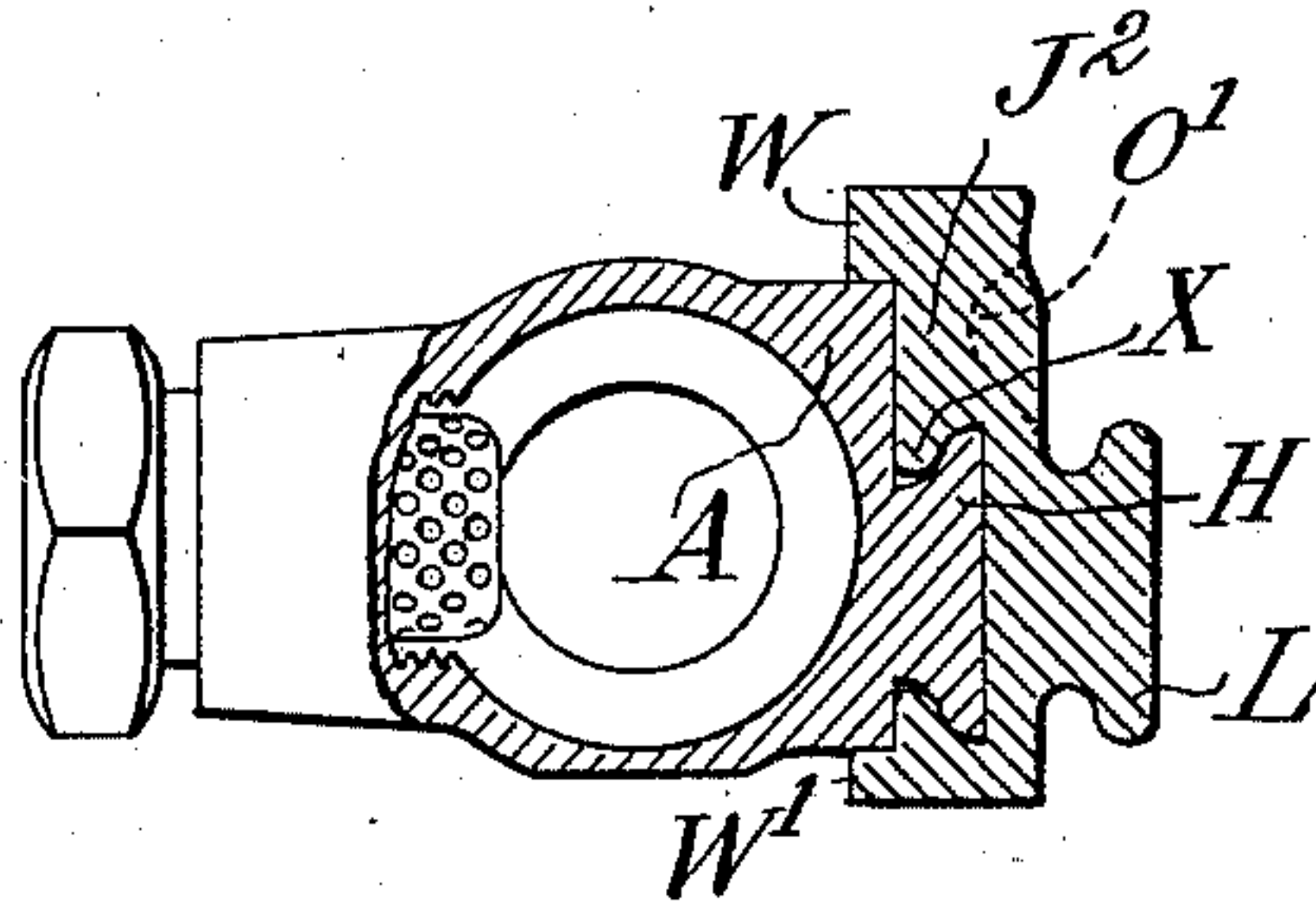


FIG. 12.

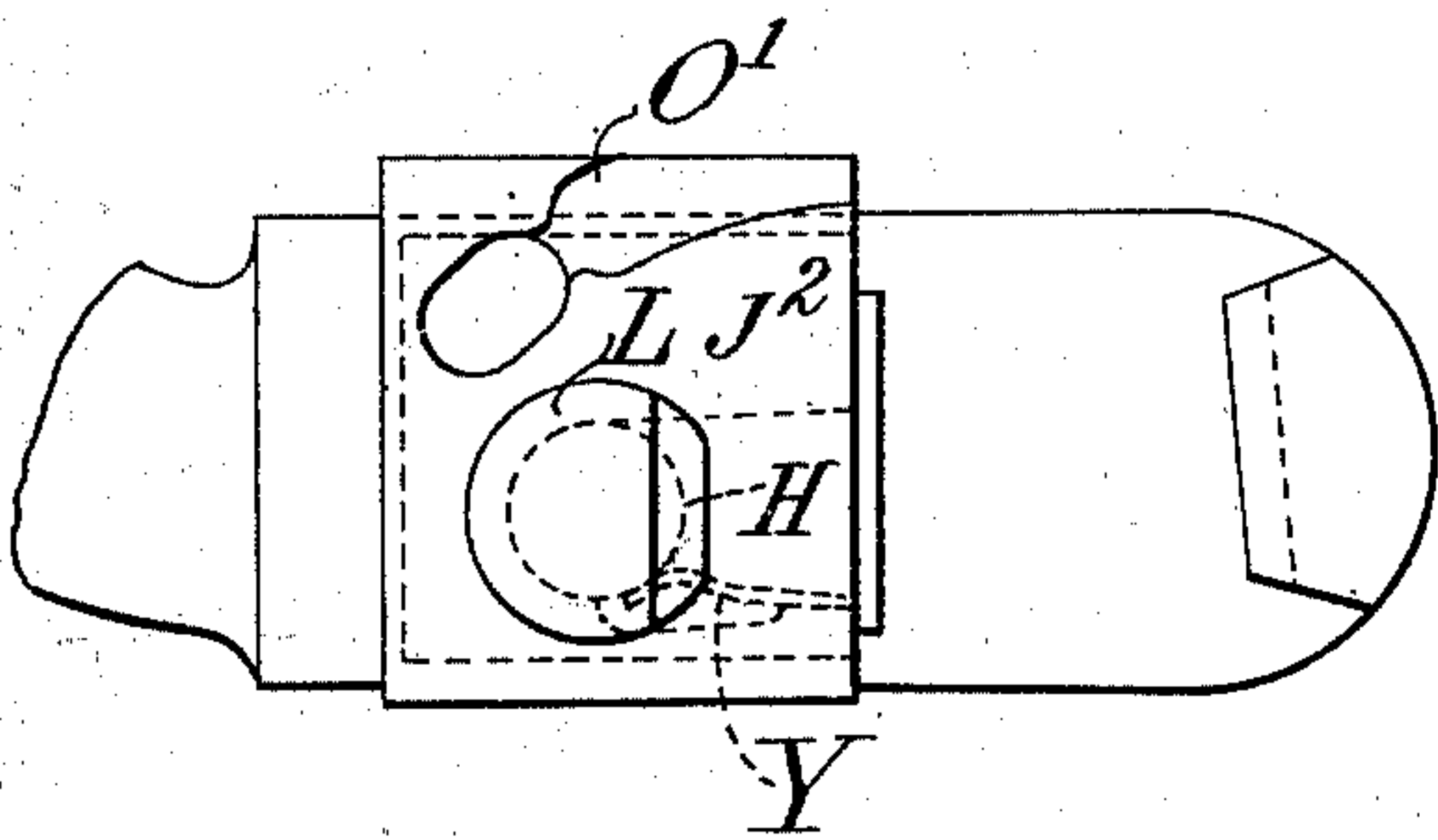
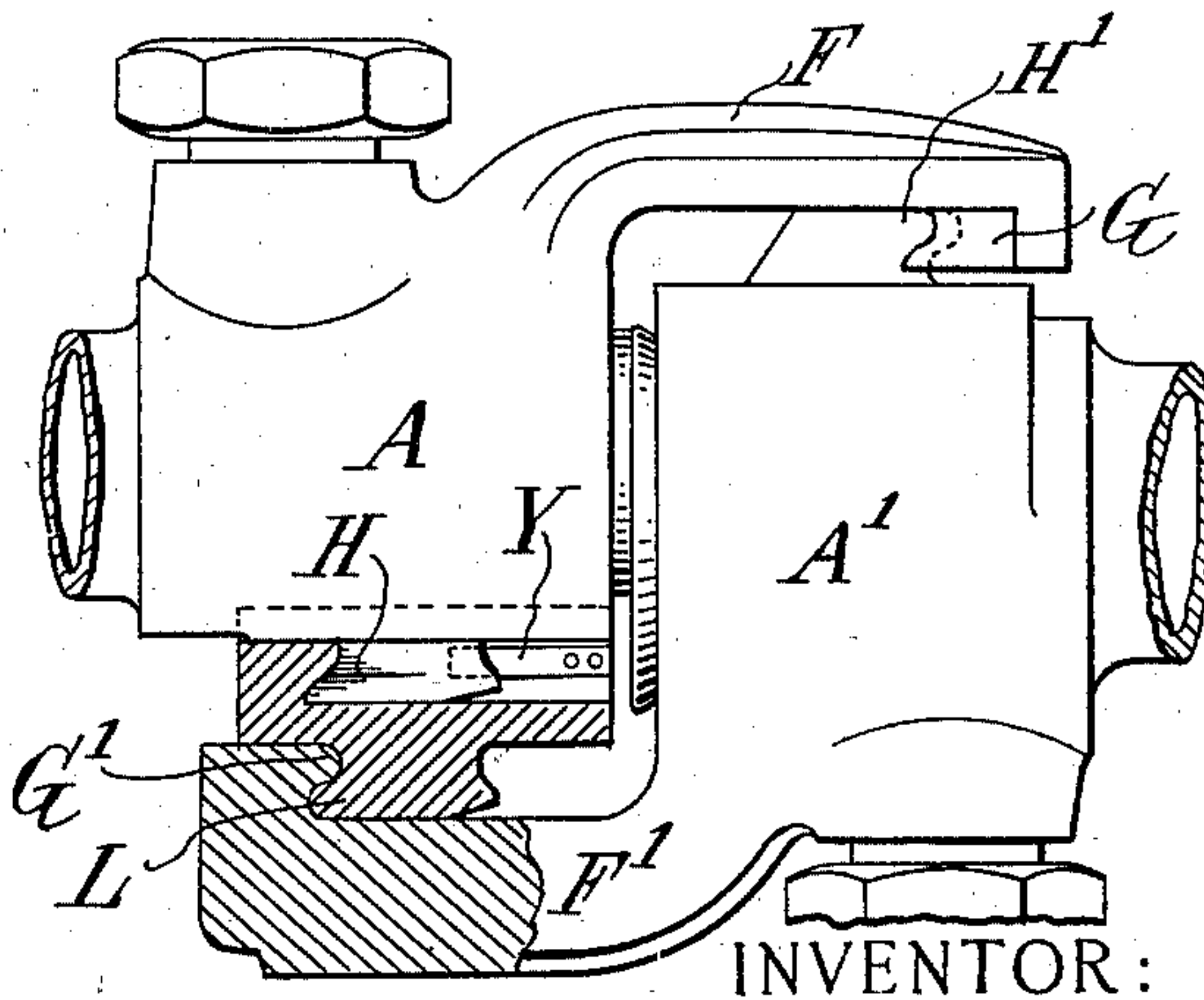


FIG. 13.



INVENTOR:

WITNESSES:
Theodore T. Snell.
Rene Prune

Edward E. Gold

By Attorneys,

Arthur G. Fraser & Co

UNITED STATES PATENT OFFICE.

EDWARD E. GOLD, OF NEW YORK, N. Y.

HOSE-COUPLING.

SPECIFICATION forming part of Letters Patent No. 749,483, dated January 12, 1904.

Application filed August 14, 1903. Serial No. 169,549. (No model.)

To all whom it may concern:

Be it known that I, EDWARD E. GOLD, a citizen of the United States, residing in the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Hose-Couplings, of which the following is a specification.

This invention relates to hose-couplings especially adapted for the steam-hose of railway-cars, and in its principal aspects is concerned with the type known as "straight-port" couplers. Such couplers as now commonly used consist each of two heads, each head having at one end a seating-face adapted to abut against a like face on the other head and having at its opposite end a tubular neck for engagement with the hose. Each head has also at its opposite sides coupling provisions whereby the two heads are adapted to be locked together with their axial lines coinciding. The heads are ordinarily provided with annular seats or gaskets which fit against each other tightly, so as to make a good joint.

For many years steam-hose couplers for railway-trains were made of a uniform and standard size—that is to say, to provide for a clear passage of one and one-eighth inches diameter through the hose and coupling-head and seats. Of recent years, however, owing to the increased length of railway-trains, it has become desirable to provide train-pipes, hose, and couplers of larger size, and accordingly couplers having a clear passage of from one and three-eighths to one and one-half inches diameter through the heads and seats are in use.

My Patent No. 704,792, dated July 15, 1902, shows an invention designed to facilitate the use of couplers with passages of different sizes. In the construction shown in said patent the outside dimensions or the relative positions of the coupling provisions are the same on the different heads. In such construction it has been necessary to make the outside dimensions of the head with the large passage substantially the same as those of the old head with the smaller passage.

According to my present invention I propose to make the outside dimensions of each head in about the same proportion to its passage. Thus the outside dimensions of the two

heads will be unequal, and the coupling provisions of each though adapted for coupling it to a like head will not be adapted for coupling it to the head of different dimensions. I then provide means for coupling the two unlike heads together in immediate communication with each other. The coupling is effected, preferably, by bringing into engagement the coupling provisions at one side and by using a special device for connecting the coupling provisions at the other side, which would otherwise be apart from and unconnected with each other. This manner of coupling, supposing the passages in the heads to be substantially central, holds the heads laterally out of line with each other, and in order to make a steam-tight joint I provide them with openings which are approximately coincident in the meeting position of the heads. The coincidence of the openings is preferably obtained by means of a compromise seat which I substitute for one of the normal seats, said compromise seat having an eccentric opening in position to substantially coincide with the opening in the normal seat of the other head. By this means I am enabled to design the new head in accordance with the requirements of the greater strains to which it is subjected by reason of its larger seating area and yet to couple the old and the new heads in direct communication with each other wherever cars provided with such heads are connected in the same train. Various other advantages in detail are referred to hereinafter.

The drawings herewith show practical embodiments of the invention.

Figure 1 is a plan, partly in section, showing two coupling-heads of the Gold type, but of different sizes, coupled together. Fig. 2 is a side elevation of the larger head of Fig. 1. Fig. 3 is a side elevation of the connecting device for connecting the larger and smaller heads. Fig. 4 is a plan of Fig. 3. Fig. 5 is a section approximately on the line 5-5 of Fig. 1. Fig. 6 is a face view of the compromise seat of Fig. 1. Fig. 7 is a rear view of the same. Fig. 8 is a section of a portion of the larger coupler, showing its normal seat in place and the compromise seat which may

be substituted therefor. Fig. 9 is a plan, partly in section, showing the connection of a large coupling-head of the Sewall type coupled to a smaller coupling-head of the Gold type. Fig. 10 is a section on the line 10 10 of Fig. 9. Fig. 11 is a transverse section of a coupler-head, illustrating another manner of applying the connecting-piece. Fig. 12 is a side elevation of the head shown in Fig. 11 with the connecting-piece applied. Fig. 13 is a plan of the same head, partly in section, coupled to a larger head.

The invention may be equally applied to heads of various types. In Figs. 1 to 8 two heads of the Gold type A A' are illustrated, having approximately central passages B and B', respectively, and being formed at their ends with the usual sockets C C' for receiving seats or gaskets adapted to make a tight connection. In normal use seats or gaskets D and D', Fig. 8, with plan efases and spherical rear and side edges are fitted into the sockets C C' and held in place by springs E. For coupling the two heads together they are provided with arms F F', provided with hooks or overhanging projections G G'. These hooks normally engage in the well-known manner similarly-shaped lugs H H' of an opposite head of the same width; but obviously where the heads are of different widths, as illustrated, the locking together of the projection and lug G H' at one side leaves the similar parts G' H at the opposite side spaced apart from each other. I propose to connect the coupling provisions so spaced apart by inserting between them a device or connecting-piece adapted to be engaged, respectively, on its opposite sides with one of the coupling provisions of each head. As illustrated, this device may comprise a plate J, provided on one face with a hook K similar to the hook G' and on its other face with a lug L similar to the lug H. This connecting piece or plate J is preferably first attached to one or the other of the coupling-heads, after which the heads may be brought together and locked in the usual manner. The form shown in Figs. 1 to 5 is adapted to be attached to the larger head. For example, it may be slid upward, with the lug L engaging the projection G', until a suitable stop, such as the flange M, Figs. 4 and 5, prevents further movement and accurately locates it in position. Where a larger head is provided with a spring locking-pin N, as fully described in my application for Patent, Serial No. 162,898, filed June 24, 1903, I may utilize this pin to hold the connecting-piece in place. For this purpose the connecting-piece may be provided on its rear face with a recess O, the upper beveled shoulder of which is engaged by the locking-pin to hold up the connecting-piece. I may also provide additional means for holding the connecting-piece in place, either in connection with heads provided with locking-pins N or with heads with-

out such locking-pins, by utilizing the portion P of a removable seat which projects beyond the face of the coupling-heads. For this purpose the connecting-piece may be beveled, as at Q, and provided with a tail portion R, projecting nearly to the body of the coupling-head. Then the seat being removed, the connecting-piece may be inserted by hooking the lug L over the end of the hook G' and then swinging the tail R around in a horizontal plane. The seat or gasket being then inserted projects sufficiently to hold the tail R back against the arm F' of the coupling-head. As with the preferred form of the invention the use of a larger coupling-head in connection with a smaller one always involves the withdrawal of the normal seat or gasket and the substitution of a special or compromise seat, there is no delay necessitated in the use of the seat for holding the connecting-piece in place.

Where the larger head A' is of the form shown in Figs. 9 and 10, the connecting-piece J' may be provided with upper and lower flanges S S', which limit its up-and-down movement, and with a hook-shaped portion T of special shape to fit into the recess U and engage the hook on the arm F' of the coupling-head. Springs V V' may be used for holding the connecting-piece in place against the arm. The outer face of the connecting-piece is provided with a hook K for engaging the lug H of the smaller coupling-head A.

The connecting device may be first attached to the smaller head, if preferred. Figs. 11, 12, and 13 illustrate such an arrangement. As shown in these figures, the connecting-piece J² may be provided with upper and lower flanges W W', which fit over the upper and lower edges of the coupling-head A. A groove with overhanging edges X engages the lug H on the coupling-head. A spring Y snaps under the lug H when the connecting-piece is in place and prevents its withdrawal, except by a considerable pull. The lug L on the outer face of the connecting-piece serves to engage the hook G' of the larger coupling-head. Such a connecting-piece is preferably provided with a groove O' identical with that shown on the larger head in Fig. 2 and adapted to cooperate similarly with the locking-pin N in the manner fully explained in my prior application above referred to.

Obviously when the coupling-heads of different sizes are brought together in the manner explained their passages and seating-faces are offset laterally from each other. With these or any other styles of couplers meeting in this way I propose to substitute for one of the normal seats a compromise seat, the opening of which at its seating-face is eccentric, so as to substantially or approximately coincide with the opening of the other coupling-head. Preferably the seat of the larger coupling-head has a contracted opening which is also laterally displaced to coincide with the

seat of the smaller. For example, as shown in Figs. 1, 6, 7, and 8, with a large coupling-head of the Gold type the compromise seat D^2 may have its rear surface a in the form of the segment of a sphere and the opening b at its rear face substantially the same as that of a normal seat. The passage, however, is tapered and axially inclined, so that the opening c at the front is eccentric to the opening b and reduced to correspond with that of the smaller coupling-head. The usual spring E engages at its ends in sockets d d' , the latter being flared to permit a slight rocking of the seat relatively to its socket in a vertical plane.

Where the seating-faces or gaskets are of the type shown in Fig. 9 of a ring D^3 of yielding or compressible composition held in place between the two shoulders f and g , the passage through the seating-face is not necessarily tapered, but may be merely inclined, the outer opening c' and the inner opening b' being of the same diameter, though eccentric to each other. In fact, if the port of the larger coupling-head be so large that the port of the smaller coupling-head would normally be tangent to or within it it would not be necessary even to incline the passage through the seat or gasket of the larger coupling-head. The essential thing is to have the openings of the seats at their outer faces approximately coincident, the shape of the passage being a matter which may be varied in accordance with the type of coupling used.

Though I have described with great particularity of detail various devices embodying my invention, yet it is to be understood that the invention is not limited to the particular details shown and described.

Various applications of the invention to other types of coupler and various modifications in details and in the arrangement and combination of the parts may be made by those skilled in the art without departure from the invention.

No claim is made herein for the coupling-head provided with a spring-latch or locking-pin and with a recess to be engaged by such a locking-pin on the complementary head, this being a separate invention and being claimed in my application for patent, Serial No. 162,898, previously referred to, and the present application including this feature only in combination with the connecting device described or its equivalent.

What I claim is—

1. In a hose-coupling, a compromise seat the opening through which is eccentric at the seating-face.

2. In a hose-coupling the combination with a coupling-head, of a seat therefor having the opening at its seating-face eccentric to the axis of the coupler.

3. In a hose-coupling the combination with a coupling-head having a socket, of a normal seat having a central opening, and a compro-

mise seat having an eccentric opening, both said seats adapted to fit said socket.

4. In combination, two coupling-heads of different-sized passages adapted to be inter-coupled with the passage of one eccentric to that of the other, the seat of the larger having its port contracted and laterally displaced to coincide with the seat of the smaller.

5. In combination, two coupling-heads of different-sized passages adapted to be united with the passage of one eccentric to that of the other, and means for connecting their coupling provisions to hold them coupled together.

6. In combination, a smaller and a larger coupling-head having each coupling provisions adapted to couple with those on a like head, those on the larger head being wider apart than those on the smaller head, said heads adapted to meet laterally out of line, so that their coupling provisions on one side are spaced apart, and means for connecting the coupling provisions so spaced apart.

7. In combination, two coupling-heads having each a pair of coupling provisions differently spaced and adapted to engage on one side so that those on the other side are spaced apart from each other, and means connecting those which are spaced apart.

8. In combination, a smaller and a larger coupling-head having each a hook and a lug adapted to couple with those of a like head, those on the larger head being wider apart than those on the smaller head, said heads adapted to meet laterally out of line, so that a hook of one is spaced apart from a lug of the other, and a connecting-piece provided on its opposite faces respectively with a hook and a lug adapted for engagement with a lug and hook so spaced apart.

9. In combination, two unlike coupling-heads each having coupling provisions adapted for coupling it to a like head but not adapted for coupling said unlike heads together, said heads adapted to meet with their seating-faces in immediate communication, and a connecting-piece having coupling provisions engaging those on said unlike heads to hold them coupled together.

10. A device for connecting coupling-heads of different widths, comprising a plate provided on one face with a hook and on the other face with a corresponding lug adapted to engage respectively a lug on one of said heads and a hook on the other.

11. The combination with a straight-port coupling-head having an arm with an overhanging projection and having a removable seat normally projecting beyond the end face of the head, of a connecting-piece adapted to be held in position against said arm by means of said overhanging projection and the projecting portion of said seat.

12. The combination with a coupling-head having a lock or latch, of a connecting device

for connecting said head with another head of different width and adapted to be engaged by said lock to hold it on the coupling-head.

13. In combination, a smaller and a larger
5 coupling-head having each coupling provisions adapted to couple with those on a like head, those on the larger head being wider apart than those on the smaller head, said
10 heads adapted to meet laterally out of line, so that their coupling provisions on one side are spaced apart, and means for connecting the

coupling provisions so spaced apart, said heads being provided with openings which are approximately coincident in the meeting position of the heads.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

EDWARD E. GOLD.

Witnesses:

DOMINGO A. USINA,
THEODORE T. SNELL.