

E. E. GOLD.

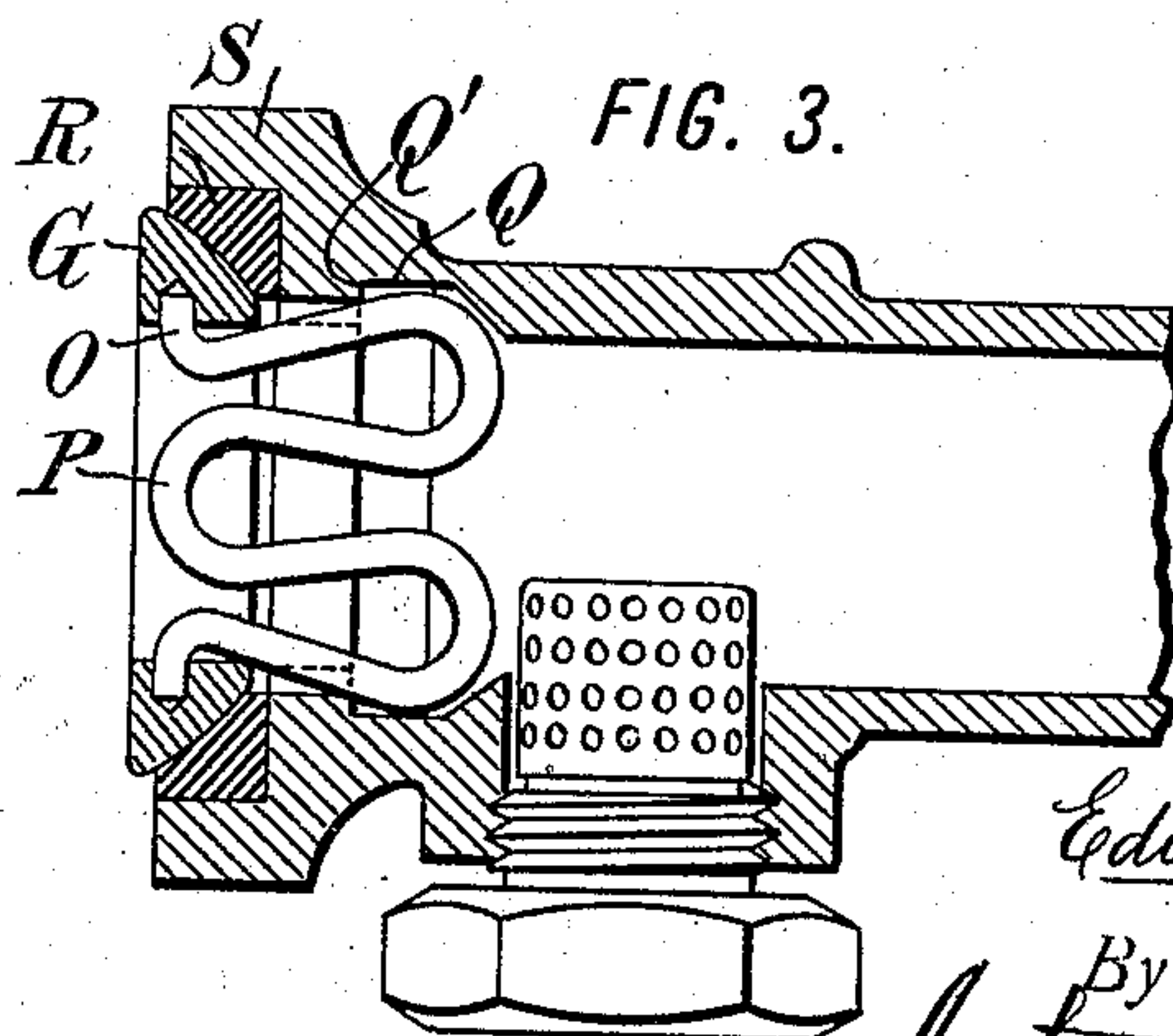
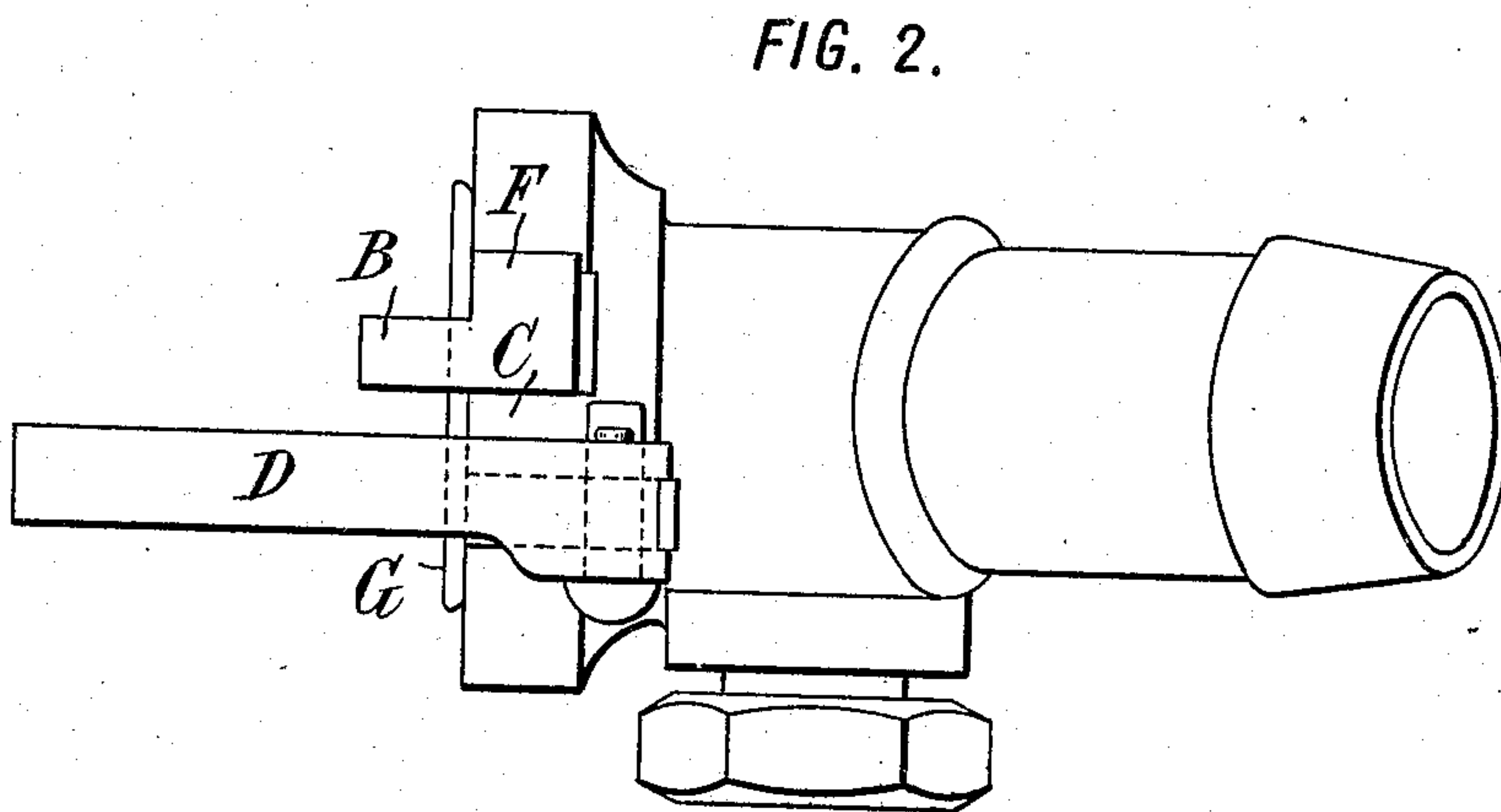
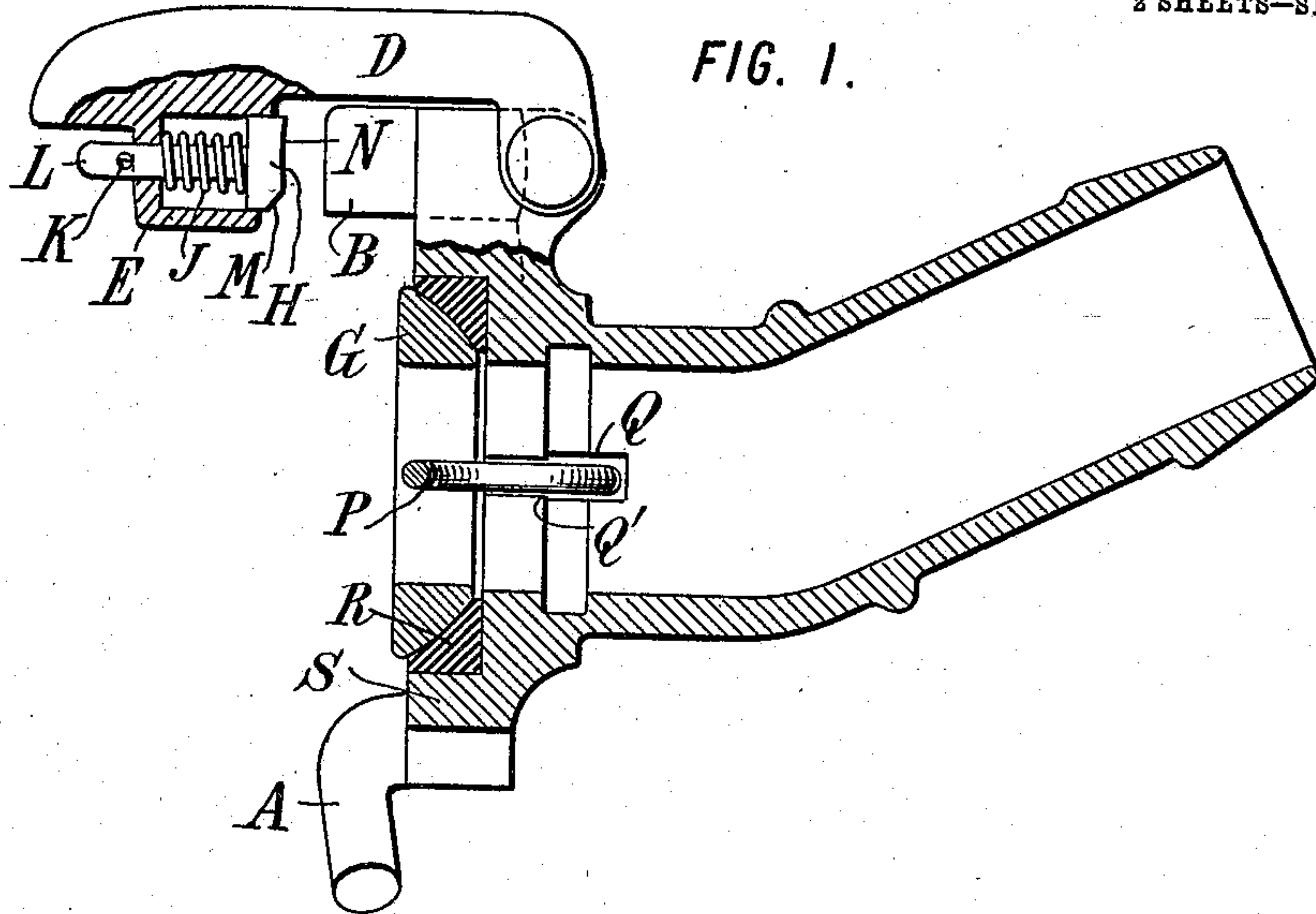
COUPLING.

APPLICATION FILED APR. 27, 1908.

924,161.

Patented June 8, 1909.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

FIG. 4.

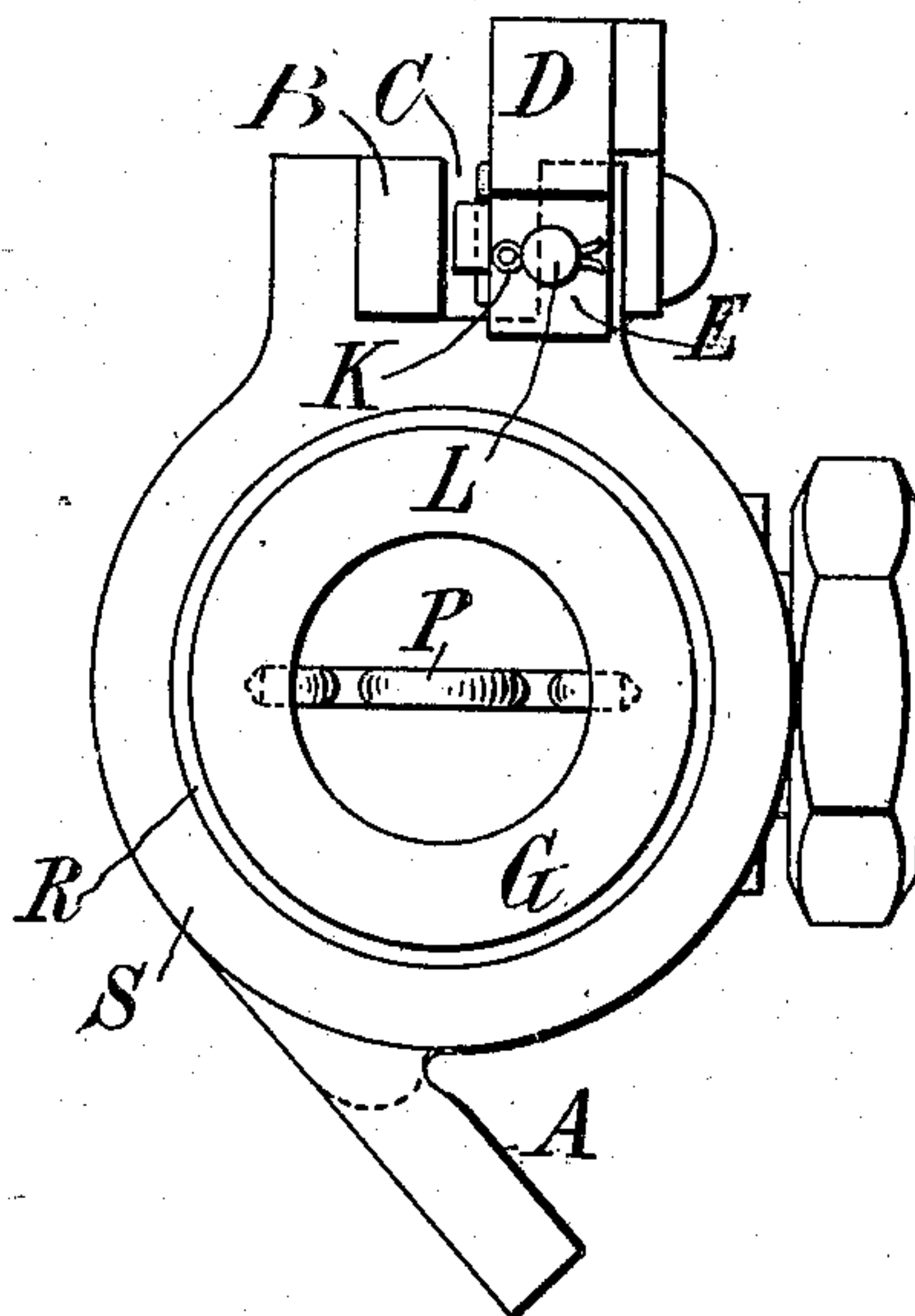
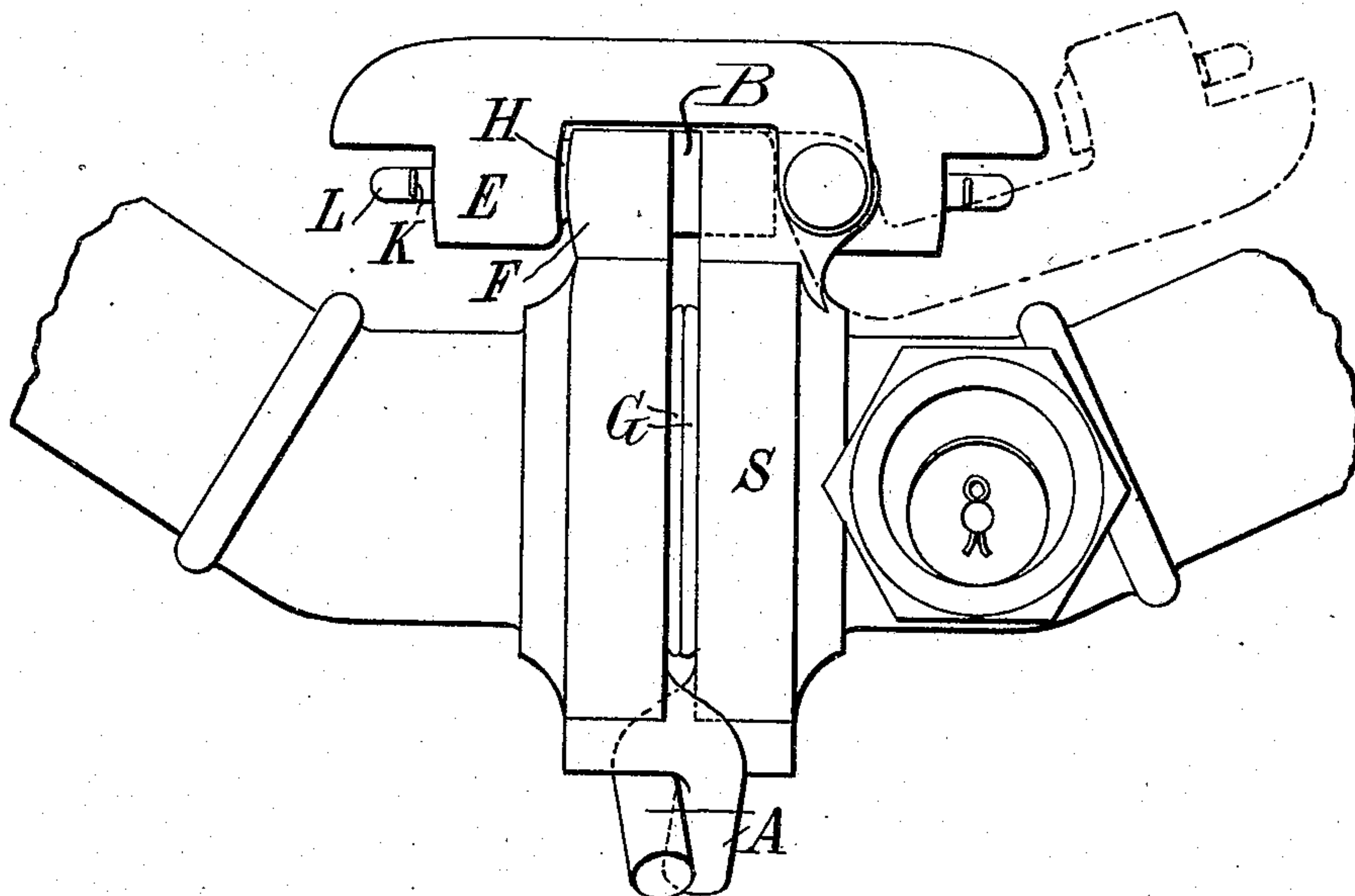


FIG. 5.



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UNITED STATES PATENT OFFICE.

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COUPLING.

No. 924,161.

Specification of Letters Patent.

Patented June 8, 1909.

Application filed April 27, 1908. Serial No. 429,568.

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 Couplers, of which the following is a specification.

This invention is especially designed for couplings for connecting the steam hose between railway cars; being adapted, however, for use in various other types of coupling. A yielding lock or connection is used so as to permit the use of a hard seat or gasket in place of the soft gaskets previously used and which have had to be expanded by the internal pressure in order to make a tight joint, and which have been found to burn out very soon under the action of steam. The manner of effecting the coupling makes it possible to easily effect the locking of the couplers with a spring which after it is locked opposes the tendency of the gaskets to separate with a force greater than that of the internal pressure tending to separate them.

The accompanying drawings illustrate an embodiment of the invention as applied to a type of coupler in common use on railway cars in England.

Figure 1 is a longitudinal vertical section of a coupler. Fig. 2 is a plan of the same. Fig. 3 is a horizontal section of the same. Fig. 4 is an end elevation. Fig. 5 is a side elevation of a pair of couplers coupled together.

Referring to the embodiment of the invention illustrated, the coupler is provided at the bottom with a forwardly offset finger A adapted to be hooked around a corresponding finger of the mating coupler, and is provided at the top with a tongue B adapted to project into a recess C of the mating coupler so as to prevent rotation of the two couplers relatively to each other after the fingers have been hooked and the couplers brought to the position of Fig. 5 with their meeting faces together and substantially vertical. Each coupler carries also a pivoted locking arm D. These locking arms stand approximately in the position shown in dotted lines in Fig. 5 until the meeting faces of the couplers are brought together, whereupon the locking arms are thrown down to the position shown in full lines, and the hooks or projections E of said locking arms pass down to the rear of fixed projections F lying

approximately in the rear of the tongues B. The locking arms D thus prevent the uncoupling of the couplers until the arms D are again thrown up to bring the hooks E above the abutments F. The hooks E and abutments F have previously engaged each other fixedly, and, in order to prevent leakage between the meeting gaskets of the opposite couplers, these gaskets have been arranged to yield in various ways, the principal type using soft rubber gaskets with lips pressed outwardly by the internal pressure. According to this invention the soft rubber gaskets are avoided, and hard gaskets G are used, and the engagement of the hook D of one coupler with the opposite coupler is such as to effect a spring pressure of the opposite couplers toward each other. The two couplers may be identical, or a single coupler of the style shown may couple with another coupler in which there is no such spring action.

The spring pressure between the two couplers may be exerted in a great variety of ways. In the style of coupler shown, for example, the hook E may carry a piston or plate H which is pressed forward by a helical spring J located in the hook (which is suitably cored for the purpose) and limited in its outward movement by a pin K passing through the outer end of a stem L which is attached to the piston H and projects through a suitable aperture in the rear of the hook. The face of the piston H is provided at its lower edge with a beveled face M, the angle and width of the bevel being such that the operator after dropping the couplers into position may swing the arm D over the abutment of the opposite coupler and force it down into position with the approximately flat portion N of the piston face engaging the corresponding face of the abutment of the opposite coupler. The face N and the corresponding abutment face are preferably brought into engagement at an angle normal to the pull tending to separate the couplers in use. They thus form a positive lock against the separation of the couplers. Their inclinations, however, may be varied so that under all ordinary circumstances the couplers will be locked, but impositively, so that upon an extraordinary pull, such as the separation of two cars, the locking arms D will be forced upward and the couplers will separate before the strain becomes sufficiently great to break the hose. By reason of the

wedging action with which the lock is thrown into operation, the operator has a good purchase over the spring, and a very powerful spring may be used. For example, the spring may be designed to resist a pressure of 90 pounds where the maximum internal pressure tending to separate the couplers is 60 pounds, so that the faces of the gaskets will always be held together. Various other spring locking arrangements may be provided; and such spring locks may be applied to various other types of coupler.

The gaskets G are preferably of the well known Gold type, with flat outer faces and spherical rear faces, so as to permit them to rock about the ends O of horizontally arranged springs P the sides of which enter horizontal grooves Q in the heads of the couplers and which have shoulders Q' to prevent accidental withdrawal of the gaskets, said grooves serving also to prevent rotation of the gaskets about the longitudinal axis of the couplers. The gaskets G may be of brass or other good gasket metal backed by a seat R of vulcabeston with a concaved face receiving the gasket, and with its rear face of such shape as to prevent its rocking in the head S of the coupler. Any one of various known or suitable styles of gaskets may be used, preferably a style having a hard face since such faces wear best and may be readily used in connection with the spring lock. But the lock prescribed is especially useful in combination with the style of gasket described.

What I claim is:—

1. A coupler having at the bottom a hook adapted to engage a mating coupler unyieldingly and having at the top a pivoted arm adapted to engage and hold said mating coupler, and a spring which is adapted to yieldingly press the gaskets of the two couplers together and which is brought into action automatically by said arm in its movement to its engaging position, said coupler having a gasket with a hard face.

2. A coupler having at the bottom a hook adapted to engage a mating coupler unyieldingly and having at the top a pivoted arm adapted to engage and hold said mating coupler, and a spring which is adapted to yieldingly press the gaskets of the two couplers together and which is brought into action automatically by said arm in its movement to its engaging position, said coupler having a metal gasket.

3. A coupler provided at the bottom with an offset finger adapted to be hooked around a suitable portion of a mating coupler and to prevent separation of the bottoms of the

couplers by a longitudinal pull, and provided at the top with a recess and a tongue adapted to project into a suitable recess of a mating coupler to prevent rotation of the two couplers relatively to each other, and provided also with a gasket having a hard face, and a pivoted locking arm adapted to engage the mating coupler and to press the gaskets of the two couplers together with a yielding pressure.

4. A coupler provided at the bottom with an offset finger adapted to be hooked around a suitable portion of a mating coupler and to prevent separation of the bottoms of the couplers by a longitudinal pull, and provided at the top with a recess and a tongue adapted to project into a suitable recess of a mating coupler to prevent rotation of the two couplers relatively to each other, a pivoted locking arm adapted to engage the mating coupler, and a spring reacting against said arm and pressing the two couplers yieldingly together.

5. A coupler provided at the bottom with an offset finger adapted to be hooked around a suitable portion of a mating coupler, and provided at the top with a recess and a tongue adapted to project into a suitable recess of a mating coupler to prevent rotation of the two couplers relatively to each other, a pivoted locking arm adapted to engage the mating coupler, a piston H carried by said arm and through which it engages the mating coupler, and a spring J pressing said piston H against the adjacent portion of the mating coupler.

6. A coupler provided at the bottom with an offset finger adapted to be hooked around a suitable portion of a mating coupler, and provided at the top with a recess and a tongue adapted to project into a suitable recess of a mating coupler to prevent rotation of the two couplers relatively to each other, a pivoted locking arm adapted to engage the mating coupler, a piston H carried by said arm and through which it engages the mating coupler, and a spring J pressing said piston H against the adjacent portion of the mating coupler, said piston H having its lower edge formed with a beveled face M to facilitate forcing it down into engagement with the mating coupler.

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

EDWARD E. GOLD.

Witnesses:

DOMINGO A. USINA,
FRED WHITE.