No. 657,895. Patented Sept. 11, 1900.

E. RICKERSBERG.

STOP AND WASTE COCK.

(Application filed Mar. 1, 1900.)

(No Model.)

FIG. I

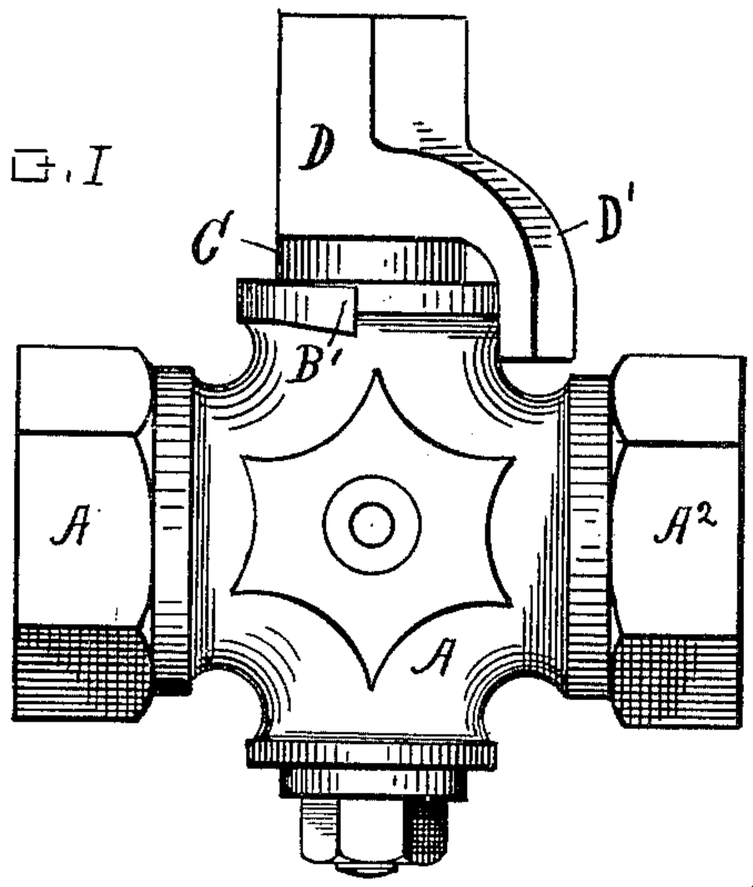


FIG. II

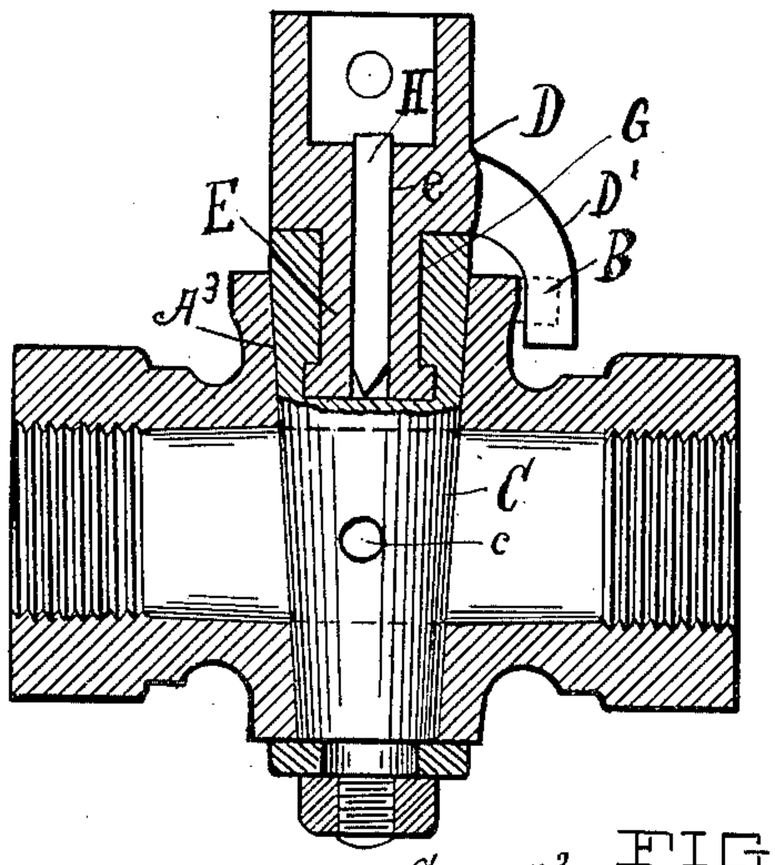


FIG. III

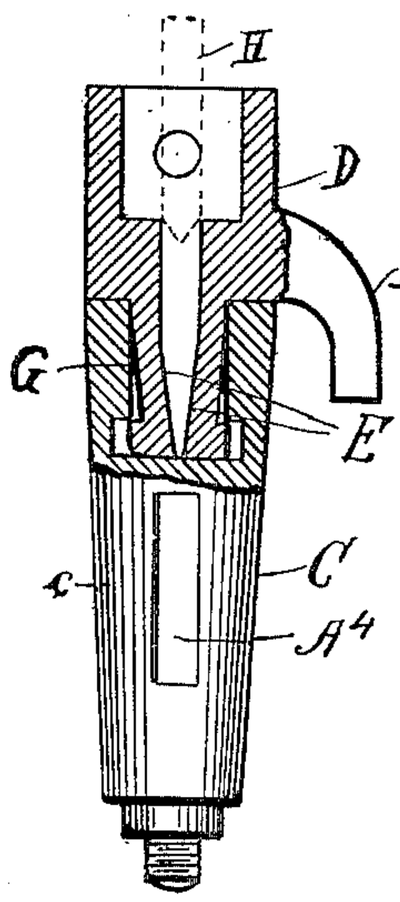


FIG. IV

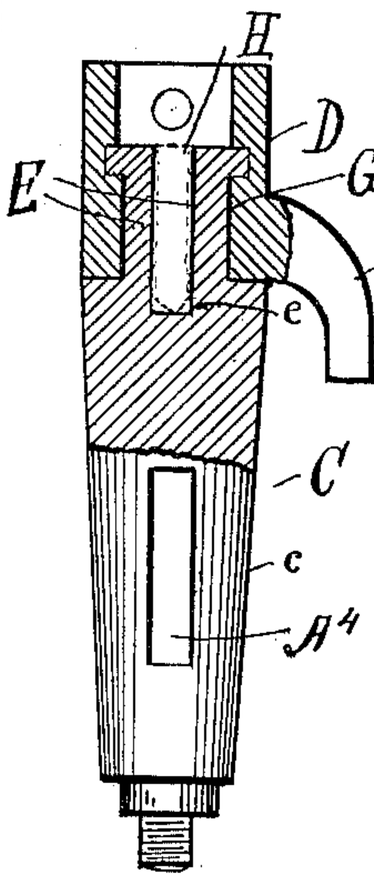
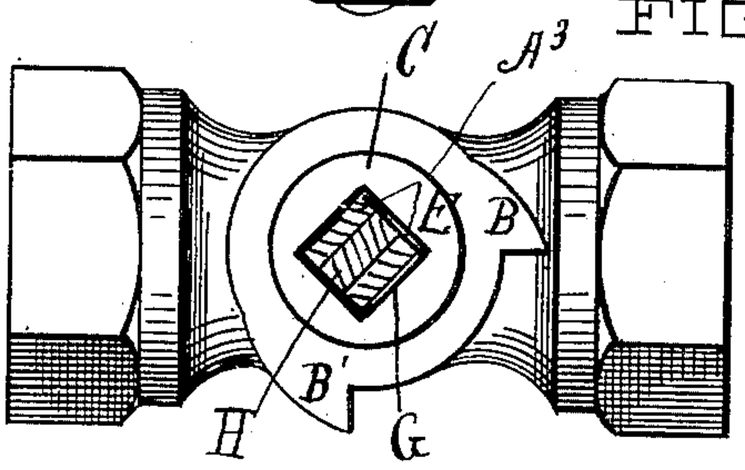


FIG. V



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UNITED STATES PATENT OFFICE.

EMANUEL RICKERSBERG, OF CLEVELAND, OHIO.

STOP AND WASTE COCK.

SPECIFICATION forming part of Letters Patent No. 657,895, dated September 11, 1900.

Application filed March 1, 1900. Serial No. 6,901. (No model.)

To all whom it may concern:

Be it known that I, EMANUEL RICKERSBERG, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Stop and Waste Cocks; and I hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to the so-called "plug-valves," and more especially to such when used in connection with main and service pipes as a connection between them and which allows communication between the mains and service-pipes and also between the service-pipe and any drain-orifice to drain the service pipe or pipes.

The object of my invention is to produce a cock or valve of the above character which can be cheaply constructed and which will fulfil the necessary requirements of a valve of this character.

My invention consists in the peculiar manner in which the valve-plug is constructed of two parts, which are cast and finished separately and then united rigidly, as will hereinafter be fully set forth and claimed.

In the drawings, Figure I is a view in side elevation of a stop and waste cock embodying my invention. Fig. II is a longitudinal vertical sectional view taken through a stop and waste cock and illustrating the two-part plug and one manner of securing the parts together. Fig. III is a view of the two-part plug, partly in section, illustrating the parts before they are secured to each other. Fig. IV illustrates a modified form of my invention, in which the connecting parts or means are reversed. Fig. V is a top plan view of the valve-body and also shows in cross-section the locking or securing device between the parts of the plug.

In valves of this type it is well known that economy of construction, which includes casting, finishing, fitting, and assembling of the parts, is an important factor and that these objects should be attained without detracting from the strength or lasting qualities of the device. By my invention I have constructed a stop and waste cock which has the foregoing attributes in connection with others which will be hereinafter fully set forth.

In order to economically construct the valve, it is necessary that the parts be finished to the greatest extent by casting and that the subsequent work of truing and fitting the parts be reduced to a minimum. It is also necessary that a plug and its seat form a tight joint, and hence the plug-blank should be cast so that it can be rotated within its seat in the valve body or casing while fitting it thereto.

In valves which are contemplated in this invention it is desirable and in some cases necessary that stops be provided to limit the rotation of the valve, so as to guide the operator of the valve and prevent mistakes, and more especially is this the case when the cock is placed beneath the surface of the ground. These stops may be constructed in the usual manner, as illustrated in the drawings, or the arrangement may be reversed or the stops may be formed and be correlative in any suitable manner to limit the rotation of the plug within certain prescribed extent when the parts are assembled. I have illustrated in the drawings my preferred manner of constructing and arranging the parts to attain the above result, which is as follows:

A represents a stop and waste cock body or valve-casing provided with the usual screw-threaded connections A' A^2 for connection at the respective ends to a main or means of supply and a service-pipe. The body or casing A is provided with the usual tapering bore A^3 for the reception of a tapering plug-valve and is provided at its upper end with lugs or stops B B', which extend out from the valve or casing A.

C represents a plug which is formed so as to fit the tapered opening or bore A^3 in the casing A. This plug C is provided with the usual "way" A^4 and waste-bore *c*, which communicates with the said way A^4 and is located, as is usual in this class of cocks, for the purpose of draining the house or service pipe. The plug C is provided at its upper end with a cap-piece D, which in turn is provided with an arm or projection D'. The arm or projection D' is so located and formed as to engage either of the lugs B or B', according to the direction of rotation of said plug,

and thus limit the rotation in either direction accordingly. The cap-piece D and the plug C are formed of two parts, which are united by forming one or the other with a projection E, which is bifurcated and which is enlarged at its free end when spread. The projection E is formed polygonal in cross-section throughout its length, and in the instance shown it is formed square in cross-section. The object of this is to prevent the turning of the cap-piece D in relation to the plug C when the parts are finally secured together. This is an important feature, inasmuch as the torsional strain is sustained by the projection along its full length.

G represents a recess formed in the plug C or the cap D, as the case may be, and shaped in cross-section so as to correspond both in depth and contour with the projection E, so that when the projection E is spread it will fill and closely engage the recess G.

For the purpose of forcing the parts of the projection E apart, and thus filling the recess G, so as to make the parts rigid, I have provided a "key" or spreader H, which is driven between the members of a projection, as illustrated in Figs. II and IV. I prefer that the key or spreader H be provided with paralleled sides and that it should extend into the solid portion or body of the part from which the projection E extends, as shown at *e* in Figs. II and IV, thus strengthening the connection against torsional strain. The key or spreader H may be made of wrought metal, thus further strengthening the parts against torsional strain, and it is intended after the key is driven home it shall remain in this position.

The details of construction may be departed from without evading my invention; but I prefer the construction shown.

What I claim is—

1. A stop-valve of the type set forth comprising a casing a plug seated within said casing said plug being provided with a stop adapted to engage one or more stops formed with or secured to said casing, and being formed in two parts connected together by means of a split or divided projection polygonal in cross-section throughout its length on one of said parts and a recess adapted to receive said projection formed in the other part said recess being of the same contour in cross-section as the projection E in combination with a key for expanding the split or divided portion within the recess for the purpose set forth.

2. In a stop-valve of the type set forth, a valve-casing provided with one or more stops, a plug fitted within said casing said plug having one or more ways registering with the ways or passages through the casing, and being provided with a cap-piece formed separate from the plug and secured thereto by means of a divided projection and a recess to receive the same said divided projection being formed upon one of the parts and having enlarged end portions, and said recess being formed on the opposed part and having lateral spaces adapted to receive the enlarged portion of the divided projection, in combination with a wedge or spreader for securing the parts together.

3. The method herein set forth of securing cap-pieces to valve-plugs, consisting in providing said cap or plug with a two-part projection of polygonal shape in cross-section, said parts being separated by an oblong or polygonal-shaped slot adapted to receive a key for spreading said parts and a recess provided in the opposed part said recess being of such contour as to receive the projection and hug the same closely when the parts of said projection are spread.

Signed by me at Cleveland, Ohio, this 18th day of January, 1900.

EMANUEL RICKERSBERG.

Witnesses:

W. E. DONNELLY,

E. B. DONNELLY.