J. H. BLESSING.

VALVE.

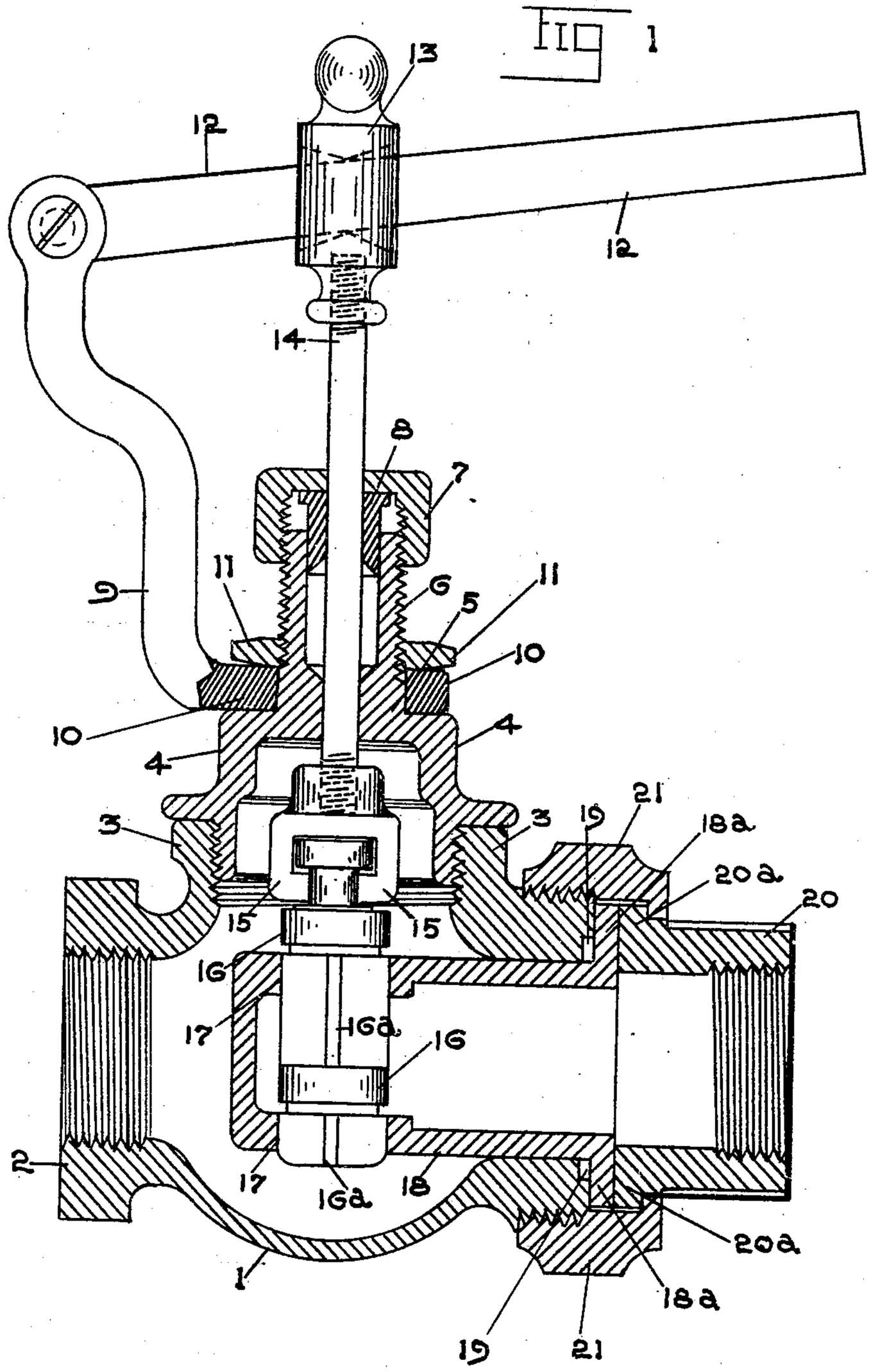
APPLICATION FILED MAY 12, 1906.

930,135.

Patented Aug. 3, 1909.

2 SHEETS—SHEET 1.

Fig 1




WITNESSES

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2 SHEETS—SHEET 2.

Fig 2

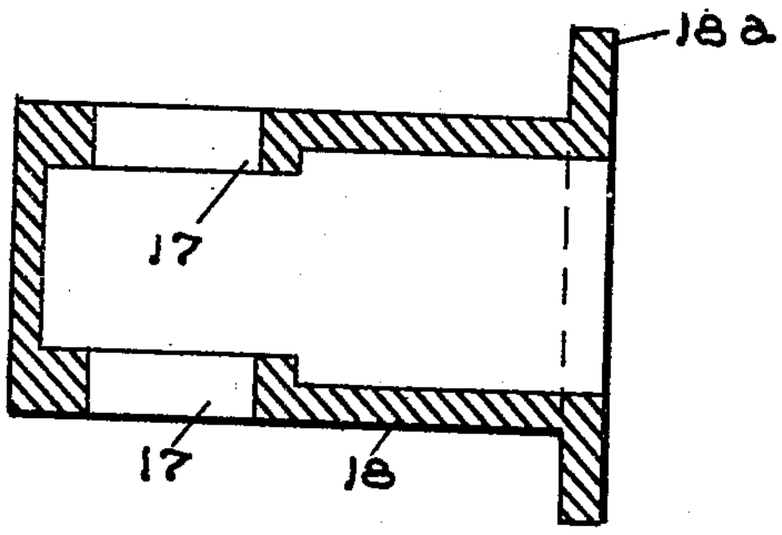



Fig 3

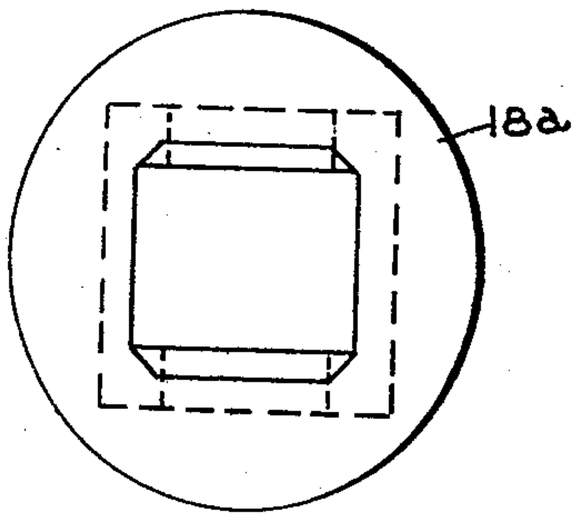
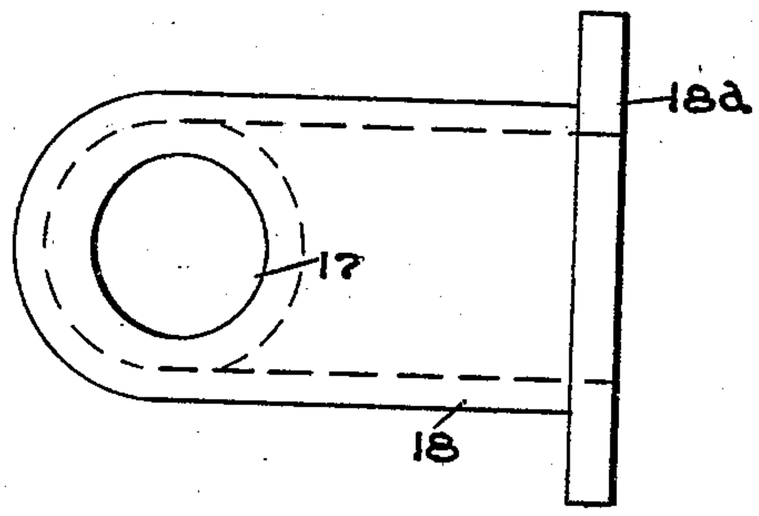



Fig 4

Fig 5



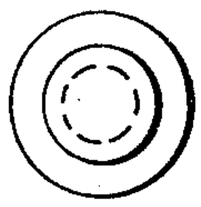
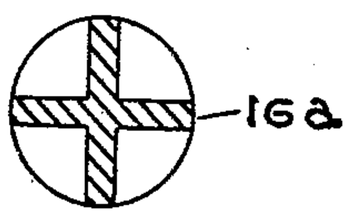
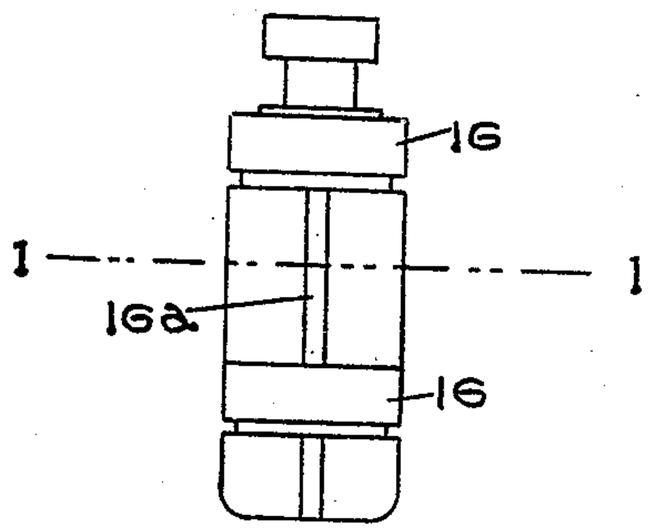



Fig 7

Fig 6

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# UNITED STATES PATENT OFFICE.

JAMES H. BLESSING, OF ALBANY, NEW YORK.

## VALVE.

No. 930,135. Specification of Letters Patent. Patented Aug. 3, 1909.

Application filed May 12, 1906. Serial No. 316,424.

*To all whom it may concern:*

Be it known that I, JAMES H. BLESSING, a citizen of the United States, and resident of Albany, in the county of Albany and State of New York, have invented certain new and useful Improvements in Valves, of which the following is a specification.

My invention relates to what is known as double piston balance valves, and has for its object to provide means adapted to permit the wearing parts of the valve to be readily withdrawn from the valve casing and renewed independently of the other portions of the valve and also to provide means for compensating for any deviation between the axial line of the valve and the valve stem. In providing a valve with a detachable seat or inner casing, it is difficult, without the expenditure of considerable time and labor, to so construct the removable parts that when placed in position in an old outer casing the axial line of a valve stem will coincide with the axial line of the valve and its seat, and it is, therefore, important to provide means for so connecting the valve with its stem that the parts will be operative and the valve prevented from binding in its seat even if there be a divergence or deviation between the axial line of the valve stem and that of the valve and its seat. These objects I accomplish by the means illustrated in the accompanying drawings in which—

Figure 1 is a vertical section of a valve embodying my invention, showing some of the parts in side elevation. Fig. 2 is a vertical section of a detachable inner casing provided with valve ports. Fig. 3 is an end elevation of the same. Fig. 4 is a plan view of the upper side of the inner casing shown in Fig. 2. Fig. 5 is a plan view of a valve detached. Fig. 6 is a horizontal section taken on the line 1—1 of Fig. 7, and Fig. 7 is a side elevation of a valve, detached.

As illustrated in the drawings, 1 represents an outer valve casing having one of its ends, 2, flanged and threaded interiorly and adapted to be attached to a pipe system. The upper portion of the casing is also provided with an interiorly threaded flange, 3, which engages an exteriorly threaded cap, 4, provided with a sleeve 5, having an exterior thread, 6, which engages a nut 7. A packing collar, 8, is arranged within the nut 7 and is adapted to compress the packing inserted between said collar and the sleeve 5. A bracket, 9, is provided with a collar 10, which is clamped on to the cap 4 by means of a nut 11. A lever 12 is pivoted to the upper end of the bracket 9 and is pivotally connected with a head 13 secured to a valve stem 14 to the lower end of which stem is secured a yoke, 15, having a loose jointed or pivotal connection with a valve 16, preferably by means of an annular head on the valve, which engages the correspondingly recessed yoke 15, whereby the valve is adapted to be operated by the stem even if said stem is out of alinement with the axial line of the valve.

The valve 16 is provided with double cylindrical disks, which bear against correspondingly cylindrical surfaces, 17, of the valve ports formed in opposite walls of an inner casing 18 and serve as valve seats. Wings or vertical flanges $16^a$ having their outer edges arranged in the arc of a circle, are formed on the valve 16, and extend from said disks downward, and serve to guide the valve in its vertical movement in the valve ports. The inner casing 18 is provided with a flanged end $18^a$ adapted to bear against and form one end of the valve. A ring of packing 19 may, if desired be interposed between the flange $18^a$ of the inner casing 18 and the end of the valve casing. A sleeve 20 is threaded interiorly so as to be adapted to be attached to a pipe system, and provided with a flange, $20^a$ by means of which and an engaging nut 21, the sleeve may be clamped to the valve casing.

By means of such construction the flange $18^a$ of the inner casing 18 is firmly clamped against the end of the outer casing 1 with the center of the valve ports in line with the axial line of the valve. If, however, for any reason in renewing the inner casing the axial line of the valve ports does not coincide with the axial line of the valve stem, the loose jointed connection between the valve stem and valve compensates for such irregularity, and enables the valve to be operated without binding on the valve seat.

When the disks or seats of valves of this character now in use become worn so that the disks do not bear evenly and closely on their seats, the valve must be removed entirely from its pipe connections and repaired. If, moreover, the wearing parts of the valve have become worn too much to be repaired the entire valve becomes useless and must be discarded although the wearing parts of the valve represent but a comparatively small

portion of the cost of the valve itself. By means of the construction herein shown and described however, the wearing parts may be readily renewed and replaced at a comparatively small expense. Thus when a valve or its seat has become worn, the head 4 may be unscrewed from the casing and removed therefrom, and with it the valve 16 and valve stem connected therewith. The nut 21 may then be detached from the casing, the inner casing 18 removed and a new inner casing inserted in its stead. The nut 21 may then be replaced, and the valve 16 inserted in the valve ports.

By means of the construction and arrangement of the parts contemplated by my invention, the valve seats and detachable inner casing may be made of bronze while the other portions of the valve are made of cast iron.

What I claim as new and desire to secure by Letters Patent is:

1. In a valve, the combination with an outer casing, of a valve stem mounted in said casing, a detachable inner casing having oppositely disposed walls, each provided with a valve port arranged in the axial line of said valve stem, and provided with a flange adapted to bear against one end of said outer casing, a valve having guiding flanges and double disks adapted to engage the ports of said inner casing, a sleeve having a flange adapted to bear against the flange of said inner casing, a coupling for securing the flanges of said sleeve and inner casing with the end of said outer casing, and loose jointed head and socket connections between said valve and the end of said valve stem.

2. In a valve, the combination with an outer casing, of a detachable inner casing having oppositely disposed walls provided with valve ports, and a flange adapted to be secured to and form one end of the outer casing, a valve engaging said ports and provided with an annular head, a valve stem having a yoke loosely engaging said head of the valve, a sleeve having a flange adapted to bear against the flange of said inner casing and a coupling adapted to clamp the flange of said sleeve and the flange of said inner casing with the end of the outer casing substantially as described.

3. In a valve, the combination with an outer casing, of a detachable inner casing having oppositely disposed walls provided with valve ports, means for detachably securing said inner casing to the outer casing, a valve having double disks and guiding flanges engaging said ports, a valve stem having a pivotal connection with said valve, a sleeve having a flange, and a coupling adapted to clamp the flange of said sleeve and the ends of said inner and outer casing together substantially as described.

Signed at Albany, in the county of Albany and State of New York this 10th day of May, A. D. 1906.

JAMES H. BLESSING.

Witnesses:
JACOB F. BARENDS, Jr.,
JOHN J. GOODMAN.