

L. C. BAYLES.
PERCUSSIVE TOOL.
APPLICATION FILED MAR. 28, 1912.

1,060,224.

Patented Apr. 29, 1913.

Fig. 1.

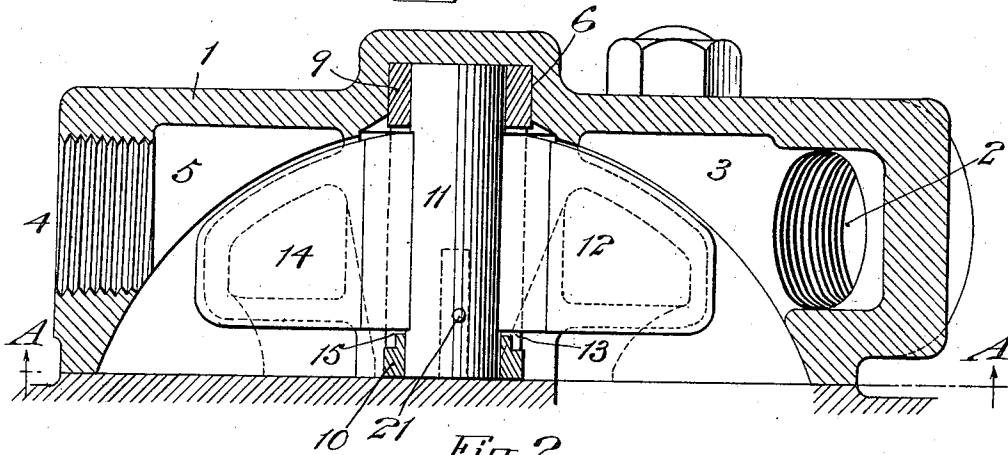


Fig. 2.

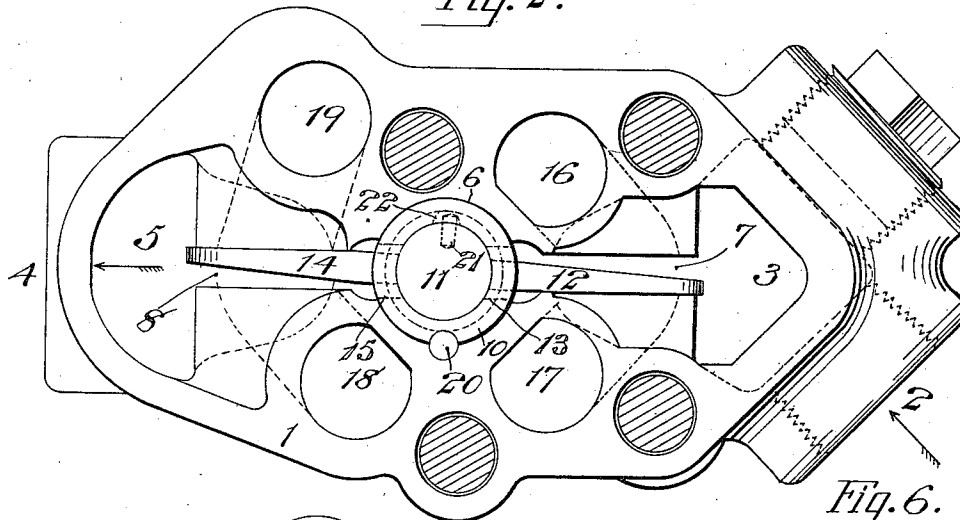


Fig. 4.

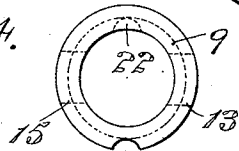


Fig. 7.

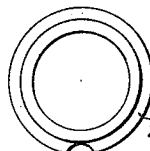


Fig. 5.

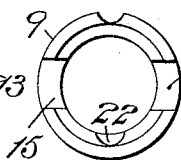


Fig. 3.

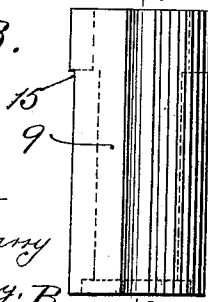


Fig. 6.

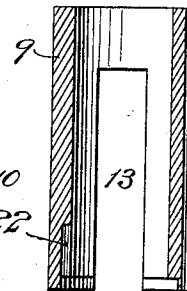
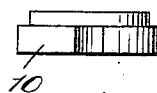


Fig. 8.



In Witnesses:-
Hyperion Barry
J. George Barry, B.

Inventor:-
Lewis C. Bayles
by his attorney
Mountsward

UNITED STATES PATENT OFFICE.

LEWIS C. BAYLES, OF EASTON, PENNSYLVANIA, ASSIGNOR TO INGERSOLL-RAND COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

PERCUSSIVE TOOL.

1,060,224.

Specification of Letters Patent.

Patented Apr. 29, 1913.

Application filed March 23, 1912. Serial No. 686,836.

To all whom it may concern:

Be it known that I, LEWIS C. BAYLES, a citizen of the United States, and resident of Easton, in the county of Northampton and State of Pennsylvania, have invented a new and useful Improvement in Percussive Tools, of which the following is a specification.

This invention has for its object to provide certain improvements in percussive tools, and particularly in valve mechanism therefor.

My invention relates to that type of valve mechanism shown, described and claimed in my Reissue Letters Patent No. 13317, dated November 21, 1911; in which a winged oscillating valve is employed for controlling the admission and exhaust of the motive fluid which operates the work piston of the tool, a novel mounting being provided for the valve whereby its operation is facilitated and its life prolonged.

In the accompanying drawings, Figure 1 is a longitudinal section through the valve chest and seat, the valve being shown in side elevation and its bushing in section. Fig. 2 is a section taken in the plane of the line A—A of Fig. 1, looking in the direction of the arrows. Fig. 3 is a view in side elevation of the outer member of the bushing. Fig. 4 is a top plan view of the said member. Fig. 5 is a bottom plan view of the said member. Fig. 6 is a longitudinal central section taken in the plane of the line B—B of Fig. 3, looking in the direction of the arrows. Fig. 7 is a top plan view of the inner member of the bushing, and Fig. 8 is a view in side elevation of the same.

The valve chest is denoted by 1, which chest is provided with a motive fluid inlet 2 leading to an inlet chamber 3, and a motive fluid outlet 4 leading from an outlet chamber 5. Intermediate the inlet and outlet chambers 3 and 5, is located a cylindrical chamber 6, from which cylindrical chamber slots 7 and 8 lead to the inlet and outlet chambers 3 and 5 respectively. These slots 7 and 8 and the intermediate cylindrical chamber 6, all open through the inner face of the valve chest 1, for permitting the ready assembly and removal of the parts as will hereinafter appear.

A cylindrical divided bushing is fitted to the cylindrical chamber 6 in the valve chest, and removable therefrom through the inner

face of the said chest. This bushing is divided transversely into outer and inner members 9 and 10 respectively, and forms a housing for the cylindrical body portion 11 of a double-winged oscillating valve. The wing 12 of said valve projects through an elongated slot 13 in the bushing into the slot 7, and the wing 14 of the said valve projects through a slot 15 in the bushing into the slot 8. These slots 7, 8, 13, 15, and the wings 12 and 13 are so shaped with respect to each other that the valve is permitted a slight oscillatory movement for alternately opening and closing communication between the inlet chamber 3 and the inlet passages 16, 17, and for alternately opening and closing communication between the outlet passages 18, 19, and the outlet chamber 5. The inner ends of the elongated slots 13, 15, in the outer member 9 of the bushing, are closed by the inner member 10 of the bushing. The bushing is locked against rotative movement by means of a pin 20 inserted into a recess formed partly in the walls of the inner and outer members of the bushing and partly in the walls of the cylindrical chamber 6 of the valve chest. A positioning means may also be used for insuring the replacing of the valve in its proper position in the valve chest when removed therefrom for any purpose, which positioning means is herein shown as a pin 21 projecting from the body portion 11 of the valve into a recess 22 in the bore of the outer member 9 of the bushing, which recess is of sufficient width to permit the oscillatory movement of the valve.

The valve and bushing may be removed from and inserted into the valve chest through its inner face when the chest is removed from its seat, and the valve may be removed from and inserted into the bushing by removing the inner member 10 of the bushing.

What I claim is:

1. A valve mechanism including a valve chest, a bushing therein having elongated slots through its walls, and a winged valve having its body portion fitted to oscillate in said bushing and its wings projecting through said slots, said valve being removable from the valve chest.

2. A valve mechanism including a valve chest having an inner face, a bushing in the valve chest having elongated slots through

its walls and a winged valve having its body portion fitted to oscillate in said bushing and its wings projecting through said slots, said valve being removable through the inner face of the valve chest.

3. A valve mechanism including a valve chest, a bushing therein having elongated slots through its walls and a winged valve having its body portion fitted to oscillate in said bushing and its wings projecting through said slots, said bushing being removable from the valve chest.

4. A valve mechanism including a valve chest having an inner face, a bushing in the valve chest having elongated slots through its walls and a winged valve having its body portion fitted to oscillate in said bushing and its wings projecting through said slots, said bushing being removable through the inner face of the valve chest.

5. A valve mechanism including a valve chest, a bushing therein having elongated slots through its walls, a winged valve having its body portion fitted to oscillate in said bushing and its wings projecting through said slots, said valve and bushing being removable from the valve chest.

6. A valve mechanism including a valve chest having an inner face, a bushing in the valve chest having elongated slots through its walls and a winged valve having its body portion fitted to oscillate in said bushing and its wings projecting through said slots, said valve and bushing being removable through the inner face of the valve chest.

7. A valve mechanism including a valve chest, a bushing therein having elongated slots through its walls and a winged valve having its body portion fitted to oscillate in said bushing and its wings projecting through said slots, said valve and bushing being removable from the valve chest and the said valve being removable from said bushing.

8. A valve mechanism including a valve chest having an inner face, a bushing in said valve chest having elongated slots through its walls and a winged valve having its body portion fitted to oscillate in said bushing and its wings projecting through said slots, said valve and bushing being removable through the inner face of the valve chest and said valve being removable from said bushing.

9. A valve mechanism including a valve chest, a divided bushing therein having elongated slots through its walls and a winged valve having its body portion fitted to oscillate in said divided bushing, and its wings projecting through said slots, said valve being removable from said bushing by the separation of the bushing members.

10. A valve mechanism including a valve chest, a bushing therein having elongated slots through its walls, a removable winged valve having its body portion fitted to oscillate in said bushing and its wings projecting through said slots and positioning means on the valve and bushing for insuring the proper replacement of the valve.

11. A valve mechanism including a valve chest, a bushing therein having elongated slots through its walls and a recess in its inner wall, a removable winged valve having its body portion fitted to oscillate in said bushing and its wings projecting through said slots, and a pin on said body portion arranged to project into said recess in the inner walls of the bushing for insuring the proper replacement of the valve.

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two witnesses, this twenty-sixth day of March 1912.

LEWIS C. BAYLES.

Witnesses:

F. GEORGE BARRY,
HENRY C. THIEME.