

A. DICKERSON.
 PORT PACKING FOR ROTARY VALVES.
 APPLICATION FILED MAR. 24, 1919.

1,354,539.

Patented Oct. 5, 1920.

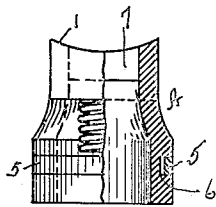


Fig. 2.

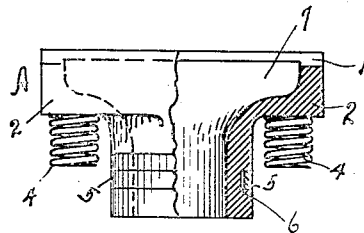


Fig. 3.

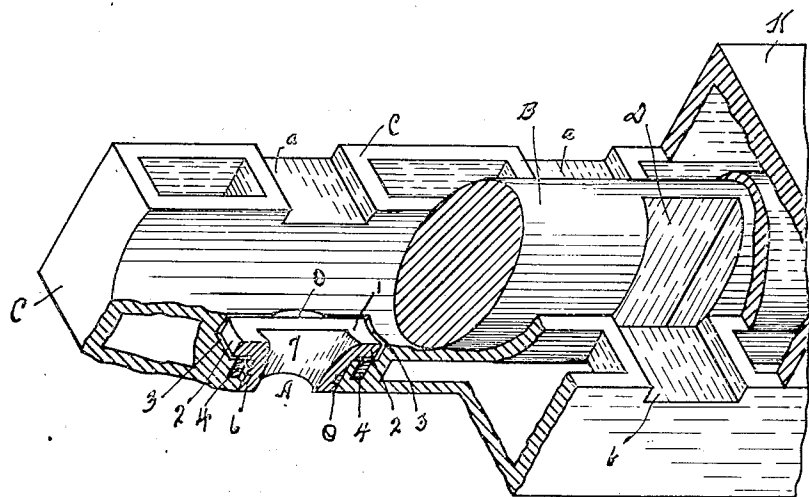


Fig. 1.

Arthur Dickerson
 INVENTOR.
 by J. McThorn
 ATTORNEY.

UNITED STATES PATENT OFFICE.

ARTHUR DICKERSON, OF SALT LAKE CITY, UTAH, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO DICKERSON ENGINE COMPANY, A CORPORATION OF UTAH.

PORT-PACKING FOR ROTARY VALVES.

1,354,539.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ARTHUR DICKERSON, a citizen of the United States, residing at Salt Lake City, in the county of Salt Lake and State of Utah, have invented certain new and useful Improvements in Port-Packings for Rotary Valves, of which the following is a specification.

My invention relates to internal combustion engines, and has for its object to provide a port packing for rotary valves used in such engines, which will prevent the escape of gas around the intake or exhaust ports of such rotary valves.

These objects I accomplish with the device illustrated in the accompanying drawings in which similar letters and numerals of reference indicate like parts throughout the several figures and as described in the specification forming a part of this application and pointed out in the appended claims.

In the drawings in which I have shown a substantial embodiment of my invention, Figure 1 is a view in perspective of a valve shaft casing and a rotary valve therein, with my device shown in place in said casing, parts cut away. Fig. 2 is an end elevation of the device, parts shown in section. Fig. 3 is a side elevation of the same, parts cut away.

In the operation of the internal combustion engines constructed in accordance with the invention patented to me February 11th, 1919, numbered 1,293,376 and other similar engines and valves I have found it hard to provide a rotary valve casing and packing means for the valve shaft which will allow for expansion and contraction of the parts and will not bind or leak. In the drawings filed herewith I have shown a portion of a rotary valve shaft B in place between two coacting casing members K and C portions of which are cut away. With a valve and casings similar to the ones shown and explosion cylinders positioned contiguous said casing C, the gas is introduced through the ports *a* D and 7 into the explosion cylinders contiguous said casing C, and which are not shown, and the exploded gas exhausts through the ports 7, D and *b*.

In the present invention I overcome such difficulties by enlarging the port 7 which is alternately the intake and then the exhaust port in the lower casing C provided for the valve shaft B. This enlargement I will

herein designate as recess O and in which recess I provide a casing A. The said casing has one end shaped as the arc of a circle shown at 1 to conform with the periphery of the valve shaft B. The said casing A has two outwardly flared portions shown at 2, which gives the portion of said casing which contacts with said valve shaft, a rectangular shape, and a portion of said recess O is extended at the ends as shown at 3 to receive said portions 2, and to form seats for one end of the spiral springs 4. The opposite ends of said springs 4 bear against the underside of said portions 2 of the casing. A packing ring 5 is carried in an annular groove 6 that is cut in the tubular portion of said casing A. The interior of said casing A has the port 7 formed therein to coact with the adjacent port of the valve shaft B, a duplicate of which is shown at D, to allow the ingress of an explosive gas and the egress of an exploded or exhaust gas, which port 7 extends from the interior of the valve casing C to the interior of the explosion cylinder. The springs 4 hold the portion 1 of said casing A in contact with the valve shaft B and the end portions 2 ride or press against the periphery of said valve when the port D passes by and into alinement with port 7, and any expansion or contraction of said rotary valve B due to the heat of the explosions will be compensated for by the springs 4. In one portion of my casing A it takes a tubular or cylindrical form and in the wall of said tubular portion I cut a packing groove 6 in which is carried a packing ring 5. This will prevent any escape of the exploded gas between my packing and the wall of the casing C.

I thus secure a tight fit at all times between the portions of said valve and its casings which surround the ingress and egress ports, and as will be obvious my invention may be used equally as well with any form of rotary valves.

Having thus described my invention I desire to secure by Letters Patent and claim:—

1. A packing for ports of internal combustion engines comprising a port casing having one end portion formed to contact with a rotary valve shaft and the other end within the adjacent explosion cylinder; extended portions on the end of said casing adapted to bear in a recess in the adjacent valve casing; springs bearing against said

end portions to yieldingly hold said casing against said rotary valve shaft; and packing rings carried in said casing adapted to bear against the walls of the adjacent parts of said valve casing.

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2. A packing for ports of an internal combustion engine comprising a port casing formed on one end to conform with the periphery of a rotary valve and having an opening therethrough adapted to coact with ports in said valve; springs to yieldingly hold said port casing in contact with said rotary valve, and packing rings carried in the exterior wall of said port packing.

3. A packing for ports of a rotary valve adapted for use in an internal combustion engine comprising a rotary valve having ports of ingress and egress; a metal casing adapted to conform at one end with the periphery of said valve and having an opening therethrough to coact with the ports of said valve; extensions on the sides of said casing; and springs bearing against said metal casing to hold said casing against said valve.

In testimony whereof I have affixed my signature.

ARTHUR DICKERSON.