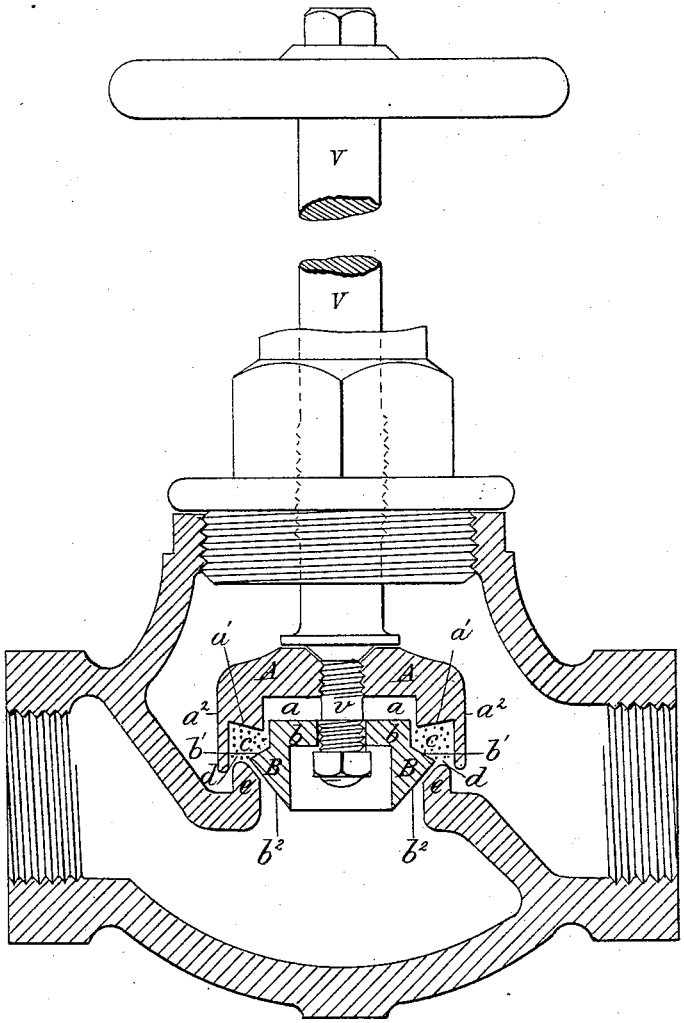
(No Model.)

J. ROBINSON.

STOP VALVE.

No. 454,007. Patented June 9, 1891.



Witnesses.
William Murray
Frederick Mann Bunning.

Inventor
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UNITED STATES PATENT OFFICE.

JAMES ROBINSON, OF PENRYN, ASSIGNOR OF TWO-THIRDS TO ST. CLAIR KELBURN MULHOLLAND STOBART AND HENRY BLACKHOUSE FOX, BOTH OF FALMOUTH, ENGLAND.

STOP-VALVE.

SPECIFICATION forming part of Letters Patent No. 454,007, dated June 9, 1891.

Application filed December 31, 1890. Serial No. 376,432. (No model.) Patented in England October 17, 1889, No. 16,352.

To all whom it may concern:

Be it known that I, JAMES ROBINSON, residing at Penryn, in the county of Cornwall, England, a subject of the Queen of Great Britain, have invented a new and useful Improved Stop-Valve, (for which I have obtained a patent in Great Britain, No. 16,352, bearing date October 17, 1889,) of which the following is a specification.

This invention relates to an improved construction of stop-valve, which is applicable to stop-valves for steam, gas, compressed air, water, or other fluids. Such improved construction is illustrated in the accompanying drawing, which shows a view, partly in section and partly in elevation, of my improved stop-valve.

The letters of reference occurring in the following description of my invention refer to corresponding letters upon such drawing.

My invention consists in making the valve of two castings A B, which fit into each other and are of any convenient shape. The outer casting forms the valve-body and the inner casting a loose valve-center. A recess *a* is formed on the inside of the top of the valve-body, wherein the crown *b* of the valve-center fits. The thickness of metal surrounding the recess *a* is reduced on its under surface, so as to form a beveled face *a'*, which terminates in a deep rim a^2. A second beveled face *b'* is formed on the outside of the valve-center immediately below the crown *b*. These two beveled faces are made at contrary angles to each other, so that when the two castings are fitted together a packing-chamber C is formed round the valve-center. This chamber is filled with asbestus or any other suitable elastic packing, which packing is indicated by dots in the accompanying drawing. The size of the packing-chamber is regulated by the degree of approximation existing between the valve-body and the valve-center, and such chamber may be readily made either smaller or larger by operating the valve-spindle, and so slackening or increasing the pressure on the valve-center. On reference to the drawing, it will be seen that when the valve-body and valve-center are fitted together a groove *d* is formed round the valve-center, into which the metallic face of the valve-seat *e* fits. By this means such face is brought into immediate contact with the asbestus or other packing, which is partially forced out from the packing-chamber by the compression of the valve-center against the valve-body, thus rendering the valve thoroughly air-tight. The rim a^2 on the valve-body extends below the packing-chamber and forms a guard which prevents the steam or other fluid cutting through the asbestus or other packing. The hole in the crown of the valve-center is not threaded, so that when the center is fitted on the central stud *v* it is free to move up and down thereon. The loose valve-center may be mounted on two or more such central studs, or in the case of large valves the ordinary arrangement of a small central valve to facilitate opening the larger valve may be employed. Such loose valve-center projects below the packing-chamber and serves as a guide whereby to adjust the valve in its proper position when it is closed. A beveled metallic face b^2, similar to that on an ordinary stop-valve, is formed on the under surface of the valve-center, so that in the event of the asbestus or other packing in the chamber *c* becoming displaced my improved stop-valve will act temporarily in the same way as an ordinary stop-valve. The valve-spindle V is attached in any convenient manner.

I would here observe that I do not confine myself to the precise details of construction hereinbefore described, as the same admit of various minor modifications without departing from the principle of my invention, which is to construct a stop-valve with a loose center, which, together with the valve-body, forms an adjustable packing-chamber and a groove wherein the face of the valve-seating fits, whereby I provide a simple and ready means of applying and fixing asbestus or other suitable material to the faces of stop-valves in such a manner as to resist the cutting or wearing action of the steam or other fluid.

The advantages of my invention may be summarized as follows: First, the asbestus or other packing, being brought into direct contact with the face of the valve-seating, is held firmly in position, thereby thus keeping the

valve perfectly tight under any pressure and temperature; second, there is no liability to leakage through unequal expansion and contraction; third, the asbestus or other packing is protected by the guard against the wearing action of the steam or other fluid; fourth, no grinding in or refacing is required, as the valve can be renewed in a few minutes by inserting fresh packing; fifth, owing to its combined efficiency, utility, and simplicity, and the facility with which it can be renewed, my improved stop-valve is particularly adapted for use for marine and other steam-engines.

What I do claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, with a valve-spindle, of the outer portion of the valve secured to the said spindle and provided with a recess *a*, a beveled surface *a'*, a guard-rim, and the adjustable lower portion sliding in the said upper portion and provided with the beveled surface *b'*, and the crown *b*, entering the said recess *a*, whereby elastic packing may be held between the two said beveled surfaces, substantially as and for the purpose set forth.

2. The combination, with the upper portion of the valve provided with an annular chamber *c*, adapted to receive elastic packing, of the lower portion provided with a beveled upper surface for confining the packing in the said chamber, and a reversely-beveled lower surface adapted to bear against the valve-seat when the packing becomes displaced, substantially as set forth.

JAMES ROBINSON.

Witnesses:
WILLIAM MURRAY,
FREDERICK MANN CUMMING.