

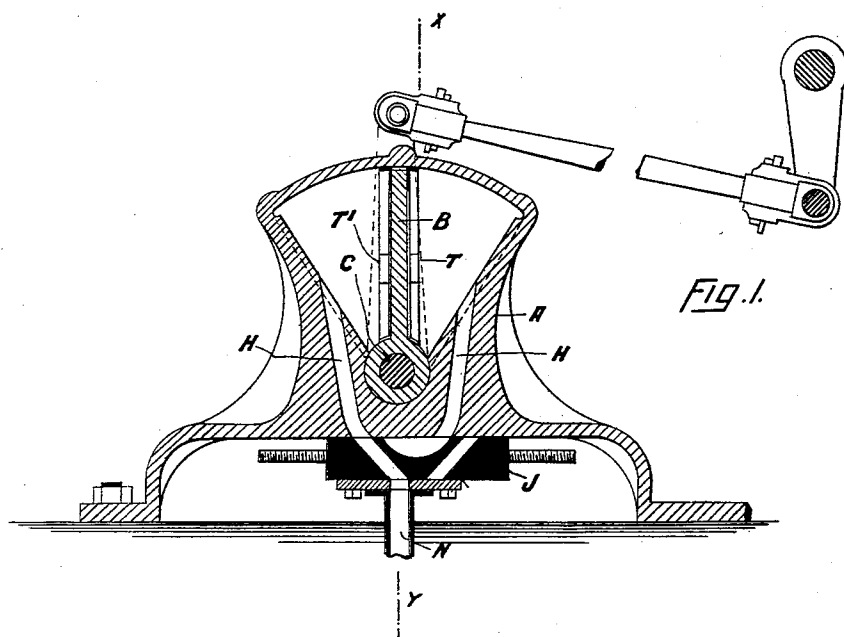
(No Model.)

2 Sheets—Sheet 1.

J. YATES.
STEAM PACKING.

No. 564,908.

Patented July 28, 1896.



Witnesses,
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John C. Wilson.

Inventor
Joseph Yates
— by William H. Milner
Attorneys.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

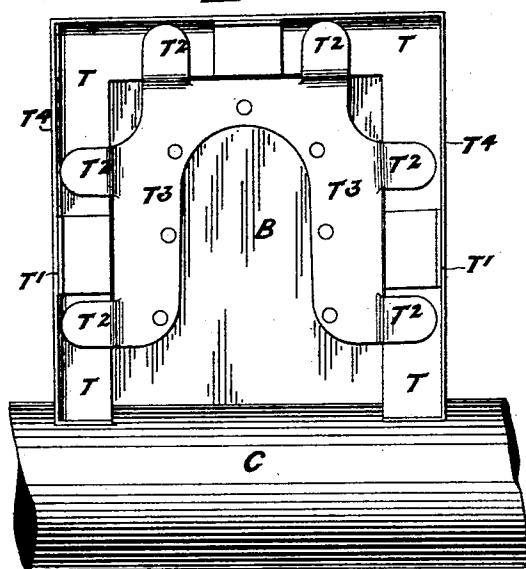


Fig. 3.

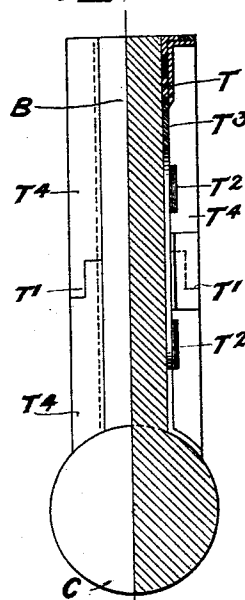


Fig. 4.

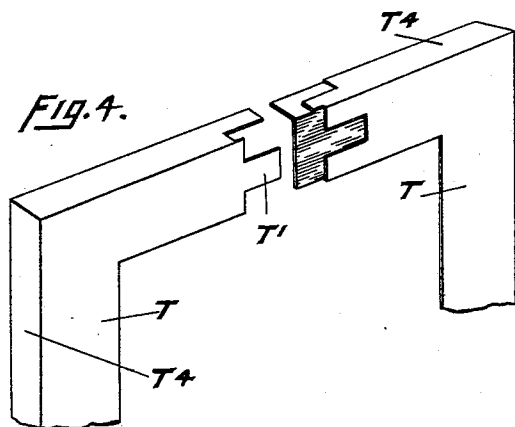
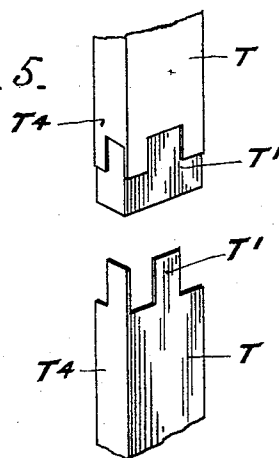


Fig. 5.



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UNITED STATES PATENT OFFICE.

JOSEPH YATES, OF LONDON, ENGLAND.

STEAM-PACKING.

SPECIFICATION forming part of Letters Patent No. 564,908, dated July 28, 1896.

Application filed October 7, 1895. Serial No. 564,944. (No model.) Patented in England May 3, 1893, No. 8,888; in France April 28, 1894, No. 238,144; in Belgium April 30, 1894, No. 109,725, and in Germany May 20, 1894, No. 81,140.

To all whom it may concern:

Be it known that I, JOSEPH YATES, a subject of the Queen of Great Britain, residing at London, England, have invented a certain new and useful Improved Steam-Packing, suitable for other fluid pressure, (for which I have obtained patents in Great Britain, No. 8,888, dated May 3, 1893; in Germany, No. 81,140, dated May 20, 1894; in France, No. 238,144, dated April 28, 1894, and in Belgium, No. 109,725, dated April 30, 1894;) and I do 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 appertains to make and use the same.

My invention relates to improvements in packing for pistons, and more especially to packing for that class of pistons which reciprocate in a curve; and it consists of the novel features hereinafter described and claimed.

My invention will be understood by reference to the accompanying drawings, wherein the same parts are indicated by the same letters throughout the several views.

Figure 1 illustrates a partial sectional side elevation of a piston and its casing with which my improved packing is used. Fig. 2 illustrates an enlarged front elevation of the piston fitted with my improved packing. Fig. 3 illustrates a sectional side elevation of the piston shown in Fig. 2; and Figs. 4 and 5 illustrate detail perspective views of the packing-strips, showing the method of joining the same.

A represents the casing for the piston, which corresponds to the usual cylinder of a steam-engine.

B represents the piston, which in working moves forward and backward in the casing A from its bottom as a pivotal point, being attached to the shaft or axle C.

H and I represent steam-ports.

J represents a slide-valve, and N represents the exhaust.

T represents the piston-packing. This packing consists of angular strips of metal T, which fit together, as shown at T', where it will be seen that each member is provided with a plurality of tongues and grooves, which connect with corresponding tongues and grooves on the opposite member. An angu-

lar plate is fitted over the joint between each pair of members and is attached to one of said members, while it will slide freely upon the opposite member. In this way a slight longitudinal movement of each member will be allowed and the joint will yet remain tight.

The packing-strips T are held in place upon the piston B by means of the flat metal frame T³, which has outwardly-extending lugs or fingers T², which extend across the inner faces of the said packing-strips and hold them in position, as shown most clearly in Fig. 2. The fingers T², however, should bear loosely upon the packing-strips in order to allow the same to spread when steam enters the cylinder behind the piston.

When the piston is at either end of the stroke the steam entering the cylinder through its proper port will cause the various members of the packing-strips to slide outward, due to the pressure of the incoming steam acting upon the side flanges T⁴ of the said packing-strips, and these strips will thus be caused to bear firmly against the inner walls of the cylinder-casing as long as the steam-pressure continues, or, in other words, until the end of the stroke.

When the exhaust takes place, the pressure of the steam being removed from the packing on the return stroke, the packing on the exhaust side will come back practically free from the inside of the cylinder-casing, as there will be no great amount of pressure upon the side flanges T⁴ to expand it. It will be understood that this arrangement of packing is on each side of the piston, and that when the engine is working the packing on the two sides of the piston will be expanded alternately, according to which side of the piston the steam is acting upon.

It will be seen that I provide a simple and effective packing which is suitable for many kinds of pistons and which requires no springs or other mechanical means to make said packing effective when in use.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. The combination, with a piston of the character described, of a packing composed

of a plurality of angular metal packing-strips
T having side flanges T¹, and each provided
with a plurality of tongues and grooves which
register with corresponding tongues and
5 grooves on the adjacent strip, and allow of
longitudinal motion; and a metal frame se-
cured to each side of said piston and having
outwardly-extending lugs or fingers thereon
which bear loosely upon said packing-strips,
10 and hold the same in position, substantially
as described.

2. The combination, with a piston of the
character described, of a packing composed
of a plurality of angular metal packing-strips.
15 T having side flanges T¹, and each provided

with a plurality of tongues and grooves which
register with corresponding tongues and
grooves on the adjacent strip; an angular
plate attached to one of said strips at each
junction and covering the same on the inner 20
sides of the said strips; a metal frame secured
to each side of said piston, and lugs or fin-
gers on said frame which fit over and bear
loosely upon said packing-strips, and hold the
same in position, but allow of their expansion 25
and contraction, substantially as described.

JOSEPH YATES.

Witnesses:

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WILLIAM MUIR.