

J. S. WILSON.  
 Tube-Packing for Surface-Condensers.  
 No. 221,435.                      Patented Nov. 11, 1879.

FIG 1

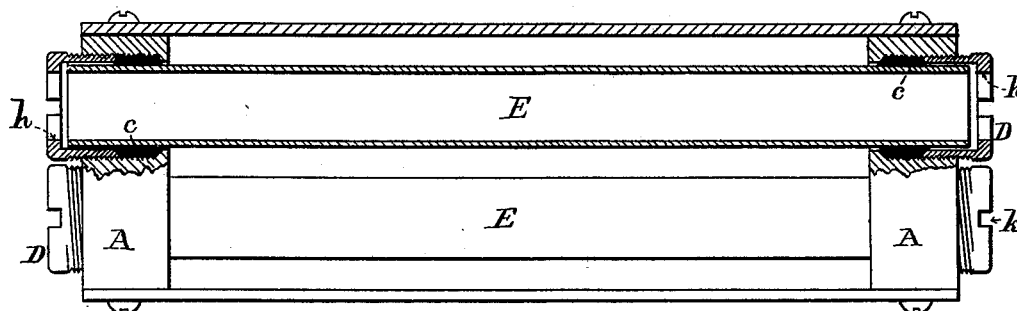
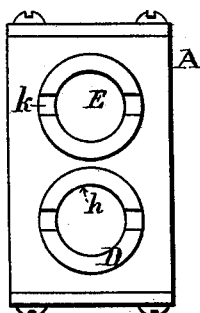


FIG. 2



Witnesses.

Edw. Brown  
 John F. Grant

Inventor  
 J. Shields Wilson

# UNITED STATES PATENT OFFICE.

JOSEPH SHIELDS WILSON, OF PHILADELPHIA, PENNSYLVANIA.

## IMPROVEMENT IN TUBE-PACKINGS FOR SURFACE-CONDENSERS.

Specification forming part of Letters Patent No. **221,435**, dated November 11, 1879; application filed April 25, 1879.

### *To all whom it may concern:*

Be it known that I, JOSEPH SHIELDS WILSON, of Philadelphia, Pennsylvania, have invented a new and useful Improvement in Tube-Packings for Surface-Condensers, of which the following is a specification.

In the construction of surface-condensers the tubes are liable to move endwise from their position by continued expansion and contraction.

My improvement is upon the system known as Hall's; and it consists in an improved gland or cap to be used in connection with the tube-sheet, tube, and packing, the said gland being provided with an annular interior flange to prevent a creeping or an end movement of the tube, and also with a slot, whereby the said gland may be set up or adjusted by means of a screw-driver or similar tool, as hereinafter more particularly specified.

In the accompanying drawings, Figure 1 is a side elevation of a part of the condenser, showing one of the tubes in view and the other in section. Fig. 2 is an end view of the same.

A represents the tube-sheets of the condenser; E, the tubes; c, the packing, of wick or other customary material, which is placed within the packing-box formed within the tube-sheet.

D is the gland which screws upon the packing. Upon the outside end of this gland is a flange or lip, *h*, projecting inward to the thickness of the tube, and also a screw-driver slot, *k*, cut across said gland. This flange *h*, which prevents the tube from creeping out of its po-

sition, also provides additional strength of metal where needed, at the slot *k*, by which the packing is tightened.

The gland is screwed upon the packing so that the flange *h* is at a distance from the end of the tube sufficient to permit of the usual expansion, and by means of the flanges at each end the tubes are confined to their positions in the tube-sheets.

I do not claim a gland having its end perforated to receive a square implement used for setting up said gland; neither do I claim a slotted gland unprovided with an interior flange to prevent a creeping movement of the tube, since neither of said devices will fully accomplish the results aimed at by my invention, which are to effect the setting up of the tube without involving the use of a specially-constructed tool and sacrificing the strength of the gland, and also to prevent the end movement of said tube; but,

Having described my invention, I claim—

An improved screw gland or cap to be used in connection with a tube-sheet, tube, and packing, the said gland being provided with an annular interior thickened flange to prevent a creeping or an end movement of the tube, and also with a slot, whereby the said gland may be adjusted by means of a screw-driver or similar tool, substantially as specified.

J. SHIELDS WILSON.

Witnesses:

EDWD. BROWN,  
JOHN F. GRANT.