

J. B. HARKINS.
PACKING FOR COMBINING TUBES OF INJECTORS FOR STEAM
BOILERS.

No. 195,007.

Patented Sept. 11, 1877.

Fig. 1.

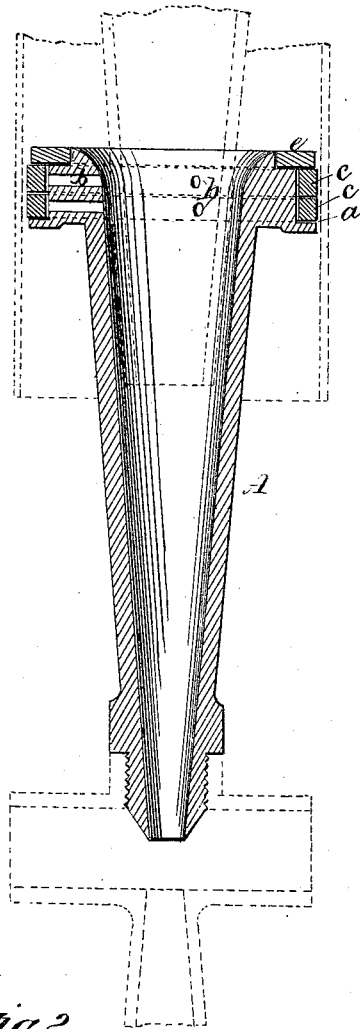
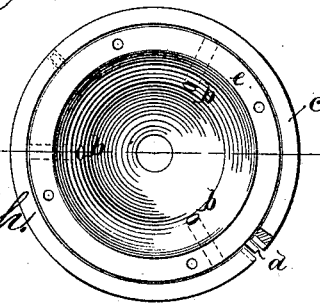


Fig. 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JAMES B. HARKINS, OF ALTOONA, PENNSYLVANIA.

IMPROVEMENT IN PACKING FOR COMBINING-TUBES OF INJECTORS FOR STEAM-BOILERS.

Specification forming part of Letters Patent No. **195,007**, dated September 11, 1877; application filed July 23, 1877.

To all whom it may concern :

Be it known that I, JAMES B. HARKINS, of Altoona, in the county of Blair and State of Pennsylvania, have invented a new and useful Improvement in Packing for Combining-Tubes of Injectors, of which the following is a specification:

Figure 1 is a longitudinal section on line *x* in Fig. 2. Fig. 2 is an end view.

Similar letters of reference indicate corresponding parts.

The invention will first be described in connection with the drawing, and then pointed out in the claim.

In the drawing, A is a conical combining-tube, similar in all respects to those in common use, except a rabbet, *a*, formed in the flange thereof, and holes *b*, extending from the inner surface of the tube to the rabbet in the flange. To the groove *a* two split rings, *c*, are fitted and arranged to break joints, so that steam or water cannot pass through the joints of the rings. Pins *d* project from the flange of the tube through the joints of the rings, to keep the rings from turning. A collar, *e*, is secured to the larger end of the tube by screws, and holds the rings *c* in place.

When the injector is in use the outward pressure of the water and steam exerted in the inner surface of the rings throws them against the barrel of the injector, and prevents water and steam from passing between the rings and barrel.

The packing thus made and applied requires no adjustment, as it remains tight until it is worn out.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

A combining-tube for boiler-injectors, provided with a rabbet to receive packing-rings and a follower, said rabbet being in communication with the passing stream of water through suitable openings extending to the inner surface of the tube, whereby the packing is expanded by the pressure of the water, as specified.

JAMES B. HARKINS.

Witnesses:

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