(No Model.)

J. T. & W. H. H. GRISCOM.

TUBE EXPANDER.

No. 257,319. Patented May 2, 1882.

Fig. 1

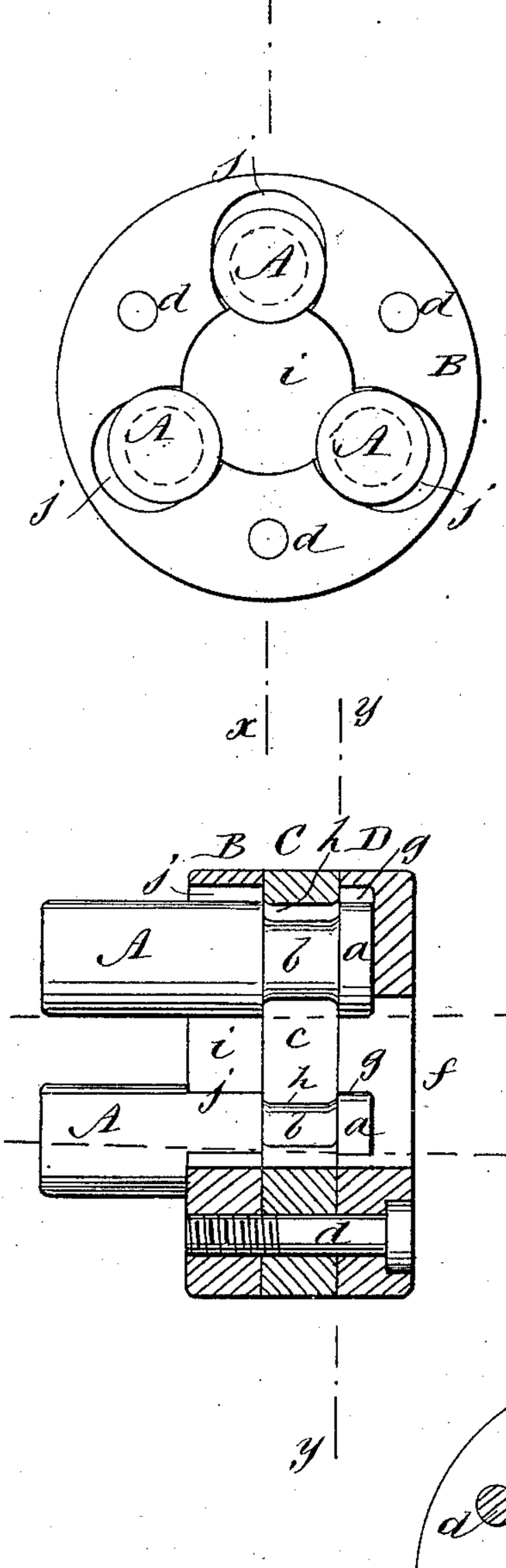


Fig. 2

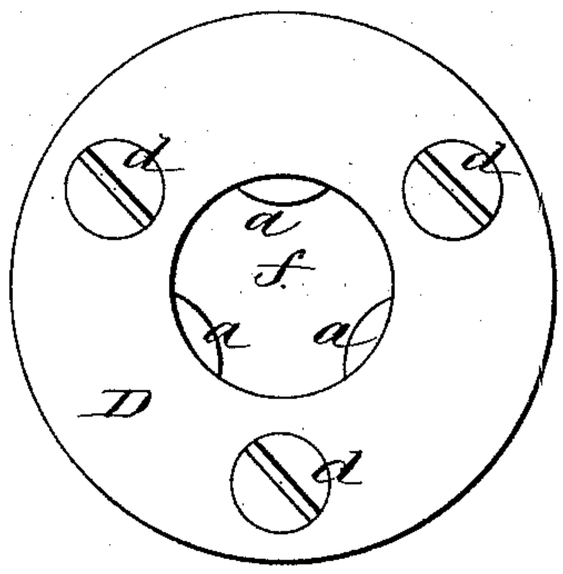


Fig. 3

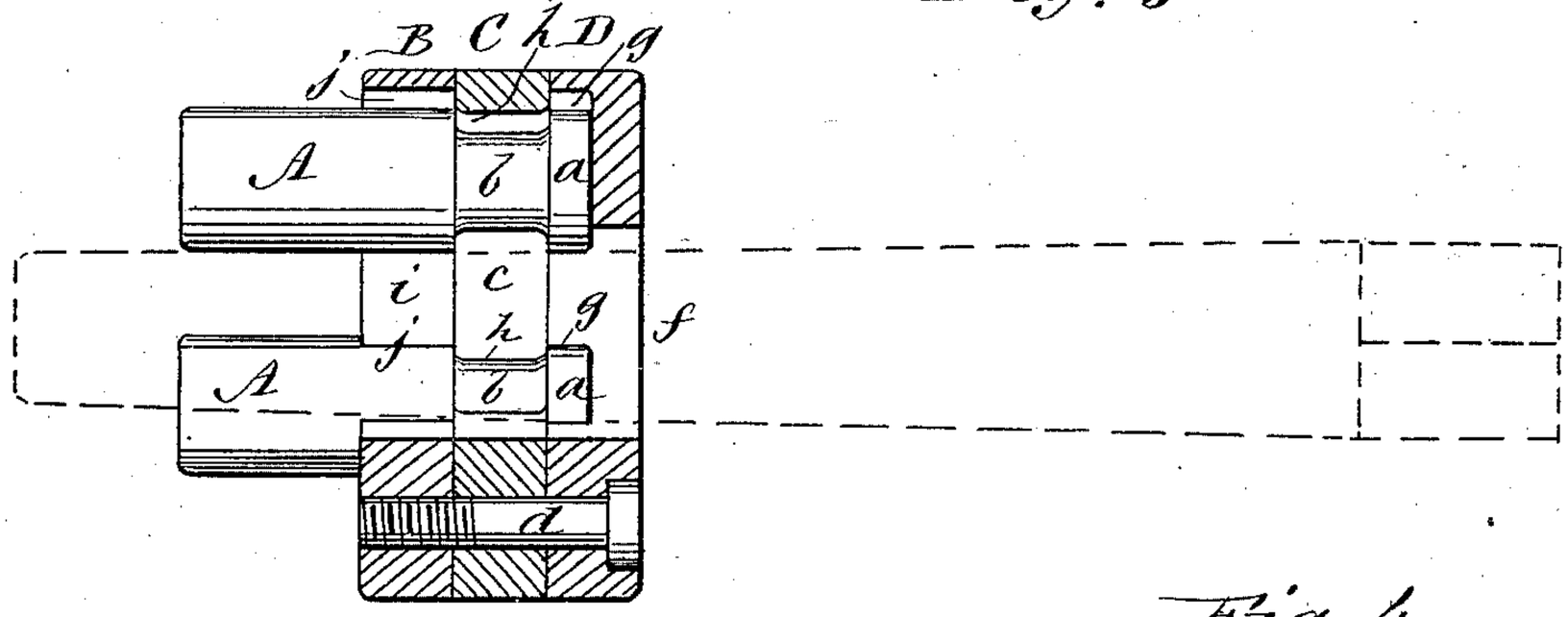
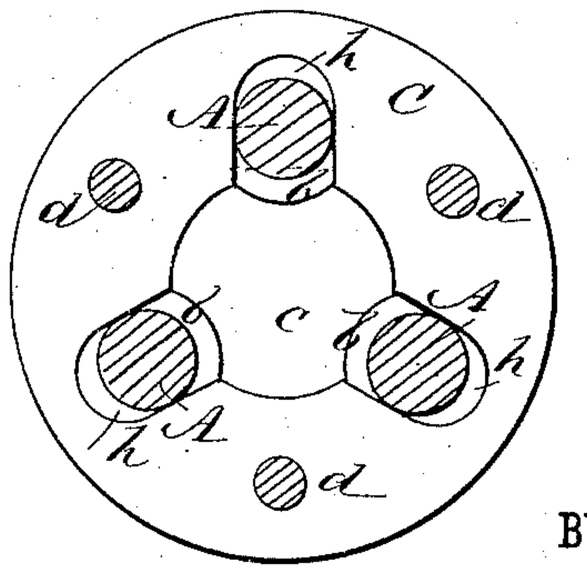


Fig. 4



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UNITED STATES PATENT OFFICE.

JOSEPH T. GRISCOM AND WILLIAM H. H. GRISCOM, OF NASHVILLE, TENN.

TUBE-EXPANDER.

SPECIFICATION forming part of Letters Patent No. 257,319, dated May 2, 1882.

Application filed March 7, 1882. (No model.)

To all whom it may concern:

Be it known that we, JOSEPH T. GRISCOM and WILLIAM H. H. GRISCOM, of Nashville, in the county of Davidson and State of Tennessee, have invented a new and Improved Roller Tube-Expander, of which the following is a full, clear, and exact description.

The object of our invention is to provide a cheap and efficient device for expanding the ends of boiler-tubes for securing them in the head-plates of the boiler; and the invention consists in the combination, with the headed rollers, the recessed plate, and the radially-slotted center plate, of the radially-slotted plate whose slots are contracted at their inner ends, and in the headed rollers and the centrally-perforated plates, in combination with the annular recessed plate, the said plates being held together by screw-bolts, as hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a rear elevation of our invention. Fig. 2 is a front elevation of the same. Fig. 3 is a sectional elevation taken on the line *x x* of Fig. 1, and Fig. 4 is a similar view taken on the line *y y* of Fig. 3.

A A represent the rollers, which are reduced in size, as shown at *b*, to form the heads *a;* and B, C, and D represent the plates in which the rollers are held, the plates being adapted to be secured together by the screw-bolts *d d*, as clearly indicated in the drawings. The plate D is formed with the central opening, *f*, and is recessed upon its rear or inner face, as shown at *g g*, to receive the heads *a* of the rollers A, as shown in Fig. 3. The plate C is cut away in the center to form the opening *c*, corresponding in size to the opening *f* in the plate D, and is formed with the radial slots *h*, which are of such width as to just receive the reduced portion *b* of the rollers, and the plate B is cut away in the center to form the opening *i*, corresponding in size to the central openings, *c* and *f*, of the plates C and D, and is formed with the radial slots *j*, of a size to receive the larger portions of the rollers, and having their inner ends contracted to prevent the rollers from coming out, as clearly indicated in Fig. 1. The parts are put together as follows: The plates C and D are first brought together and the rollers inserted therein, when the plate B is put over the outer ends of the rollers, pushed against the plate C and the whole clamped together by the screws *d*. By this construction of the plates it will be seen that a central passage is formed entirely through the device, and that the rollers will be loosely held in the plates and will be adapted to have slight radial movement in the plates, so that they may be easily inserted in the end of the tube and forced out for expanding the tube.

In use, the rollers A A having been thus inserted in the end of the tube, a mandrel, which by preference is made slightly tapering, as shown in dotted lines in Fig. 3, is passed through the central opening of the device as far as it will go.

The mandrel is operated by a hand-lever for forcing and working the device around in the end of the tube for expanding and enlarging the tube in the ordinary way of securing it in the head-plate of the boiler.

It will be understood that we do not confine our invention to the use of three separate plates, as the plates D and C might be made in one part, if desired, and other changes might be made and not depart from the spirit of our invention.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The headed rollers A and the centrally-perforated and radially-slotted plates B and C, in combination with the annular recessed plate D, the plates being secured together by the screw-bolts *d*, substantially as described.

2. The combination, with the headed rollers A, the recessed plate D, and the radial slotted plate C, of the plate B, provided with the radial slots *j*, having their inner ends contracted, substantially as and for the purpose set forth.

JOSEPH T. GRISCOM.
WILLIAM H. H. GRISCOM.

Witnesses:
W. H. BLACKMAN,
J. L. MORGAN.