

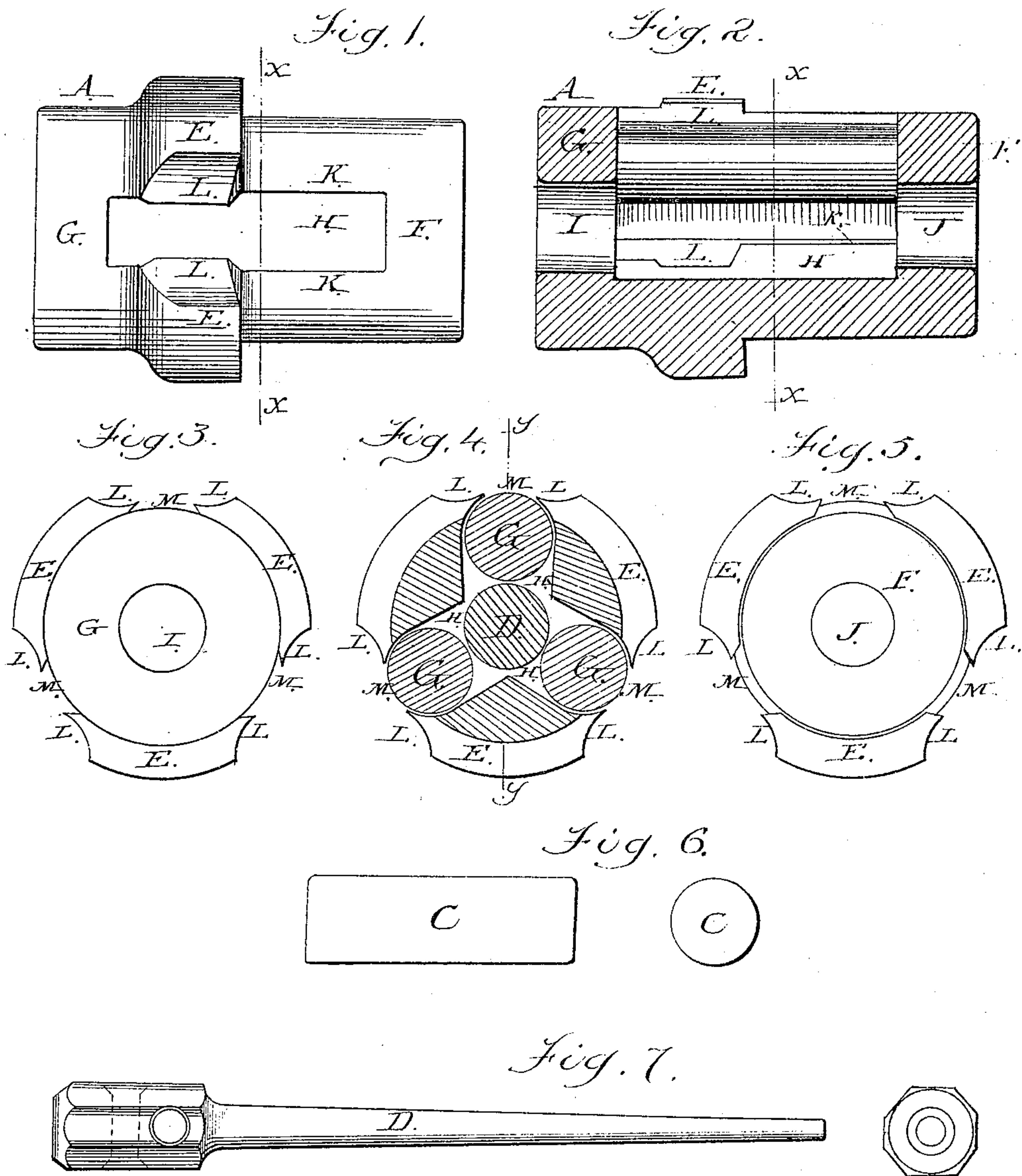
(Model.)

J. FAESSLER.

FLUE EXPANDER.

No. 270,770.

Patented Jan. 16, 1883.



Witnesses;

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# UNITED STATES PATENT OFFICE.

JOHN FAESSLER, OF MOBERLY, MISSOURI.

## FLUE-EXPANDER.

SPECIFICATION forming part of Letters Patent No. 270,770, dated January 16, 1883.

Application filed April 24, 1882. (Model.)

*To all whom it may concern:*

Be it known that I, JOHN FAESSLER, of Moberly, county of Randolph, and State of Missouri, have invented certain new and useful Improvements in Flue-Expanders; and I hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

10 Figure 1 is a side elevation of the roller-box. Fig. 2 is a longitudinal section of the same on line *y y* of Fig. 4. Fig. 3 is an end elevation of the same, showing that end which is at the left hand in Figs. 1 and 2. Fig. 4 is a cross-section through *x x* of Figs. 1 and 2. Fig. 5 is an end elevation of the box, showing the end which is at the right hand of Figs. 1 and 2. Fig. 6 is a side and end elevation of rollers C. Fig. 7 is a side and end elevation of the tapering pin D.

20 The object of my invention is to expand flues of steam-boilers; and it consists in the combination and arrangement of devices hereinafter explained, and specifically pointed out in the claim.

25 To enable others skilled in the art to make and use my invention, I will proceed to describe the exact manner in which I have carried it out.

30 In the drawings, A is a roller-box, provided with shoulder E, front end, F, back end, G, and embracing the three cavities H and two holes, J and I, and made of one piece of suitable wrought or cast metal.

35 K and L are flanges for holding the rollers in position, and flanges L prevent the rollers from falling out should the flange K become worn. The flanges L are in no danger of wearing or breaking, as the holes I and J are made just large enough to admit a pin not larger in diameter than that intended for that particular box, thereby preventing the rollers C from being forced out too far.

40 An essential feature of the box is the shoulder E, which serves to admit the expander into the flue a uniform distance. Not being a continuous ring, it does not hide the end of the flue or the rollers from the view, as by means of the openings M the operator can see over the top of the rollers C, (best shown in Fig. 4,) and govern his work accordingly without having to withdraw the expander, and thereby lose time. It sometimes happens that the flue is

so near the flange of the side that a detachable collar would strike the flange or rivet-heads, in which case the collar must be taken off, and the expander, deprived of its collar, is apt to slip too far in or out of the flue, while the shoulder E, being but little larger in diameter than the extreme diameter of the flue, has never been found to be an obstruction.

The only passage for the rollers C, Fig. 6, into or out of the box is the hole I, as the hole J is made smaller than the rollers to prevent their falling through. The cavities are made of suitable size to admit the rollers to revolve easily upon their axes, and to prevent their being moved out of place either side or end wise.

The rollers C (illustrated in Fig. 6,) are made of double length—that is, of such length that only one-half enters the flue, so that in case the end in use becomes worn or defective the position of the rollers can be reversed and the opposite end used. Their increased bearing in the box protects both the rollers and box from excessive friction and wear. Their increased length also gives them additional support on the tapering pin D, and thereby prevents the slipping and wear between the pin and rollers, should the inside of a flue be rugged; and the pressure on the pin is distributed over a larger surface, being less liable to crystallize the metal forming the pin and rollers. The pin is also less liable to be broken by the side strain caused by the lever or bar used to turn them, as the long rollers support and hold it better than the short ones.

The tapering pin D (illustrated in Fig. 7) is the same shape of any other pin or mandrel used for similar purposes.

What I claim as new, and desire to secure by Letters Patent, is—

The roller-box A, provided with the shoulder E, front end, F, and back end, G, and embracing the three cavities H, and two holes, I and J, constructed of one piece of suitable wrought or cast metal, in combination with the double-length reversible rollers C and the tapering pin or mandrel D, substantially as and for the purpose herein shown and described.

JOHN FAESSLER.

Witnesses:

JOHN W. HOOVER,  
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