

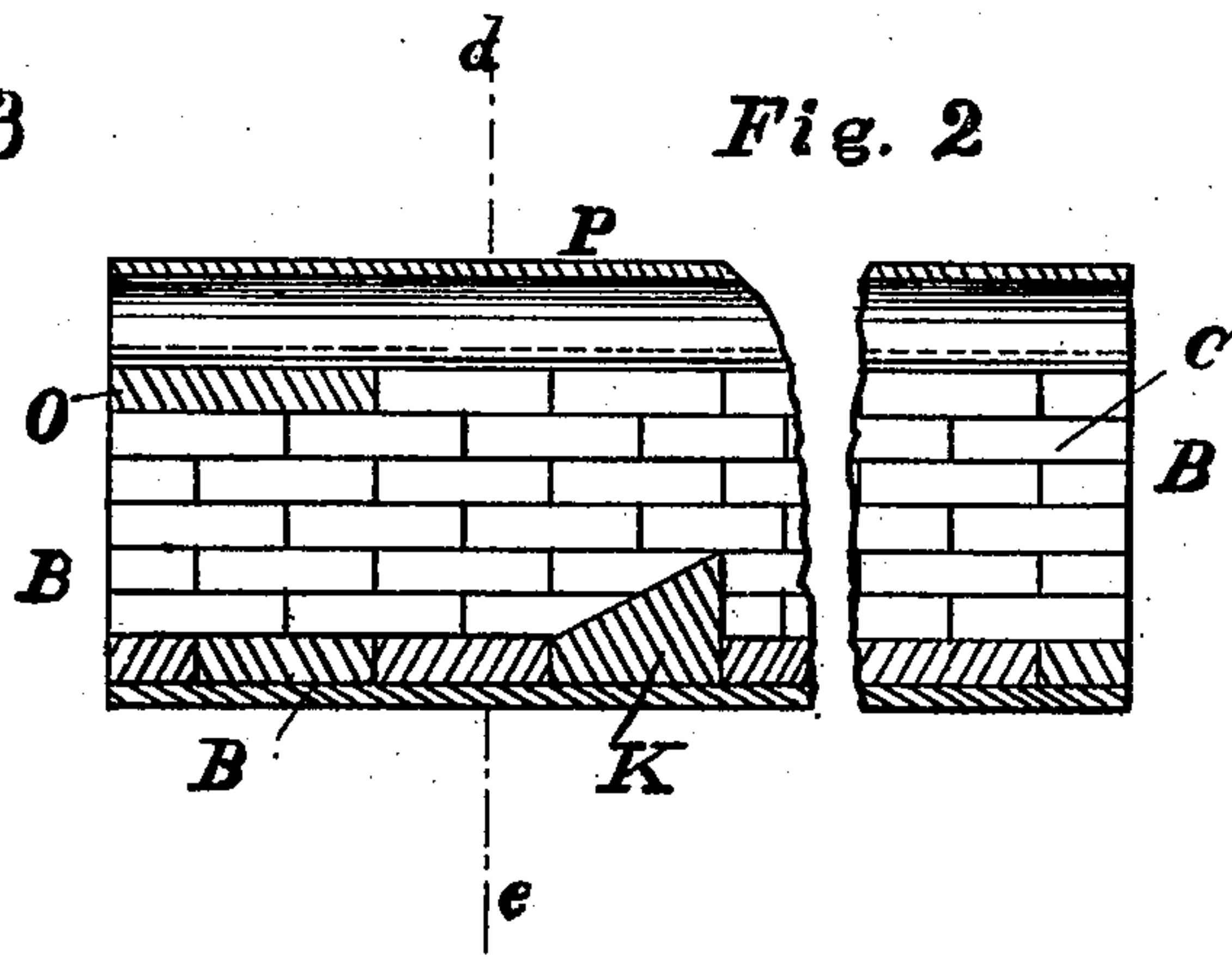
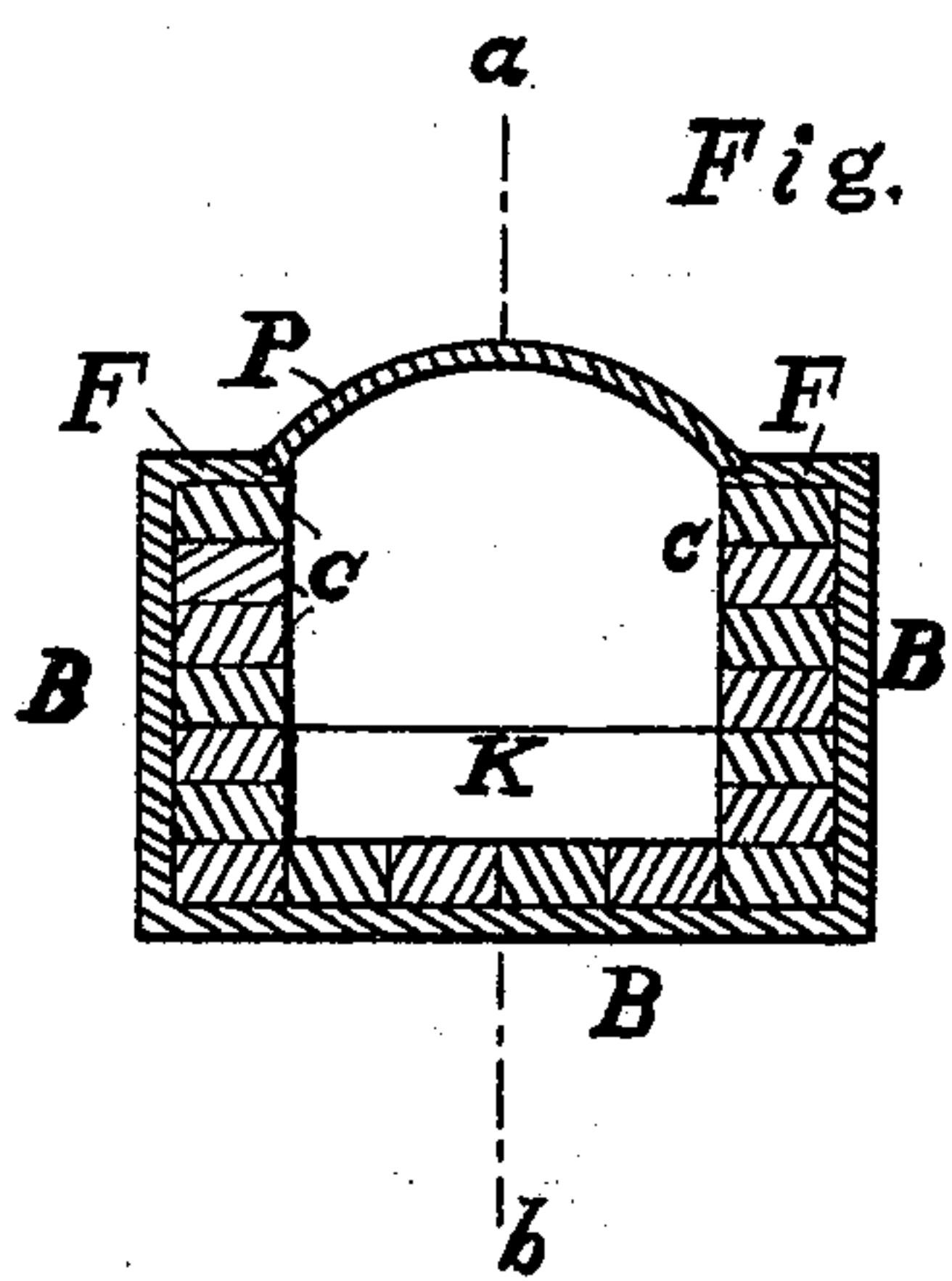
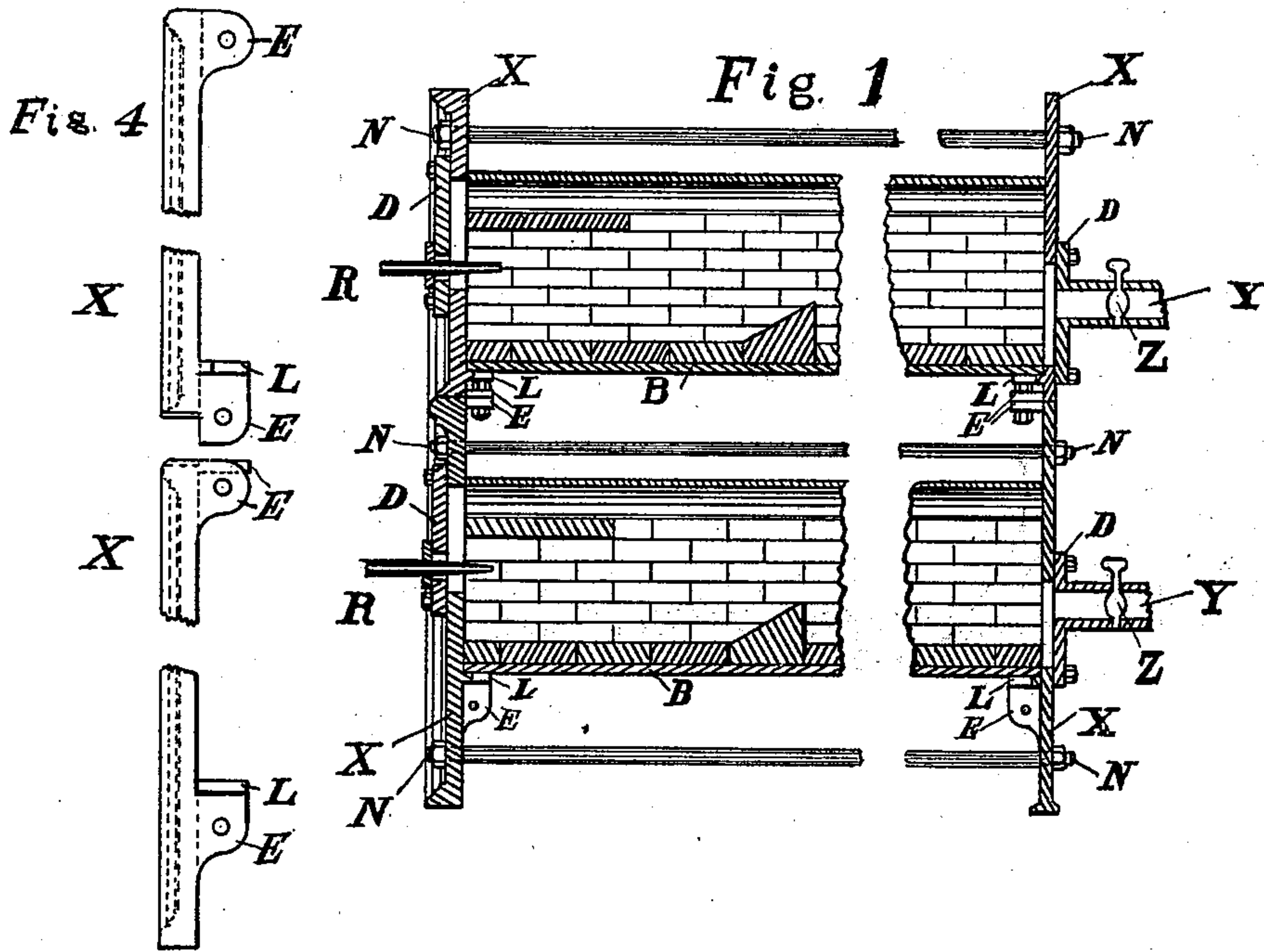
(No Model.)

2 Sheets—Sheet 1.

W. S. GRANGER.  
DEVICE FOR SINGEING CLOTH.

No. 506,395.

Patented Oct. 10, 1893.



**WITNESSES:**

Frank A. Foster  
Charles E. Paine

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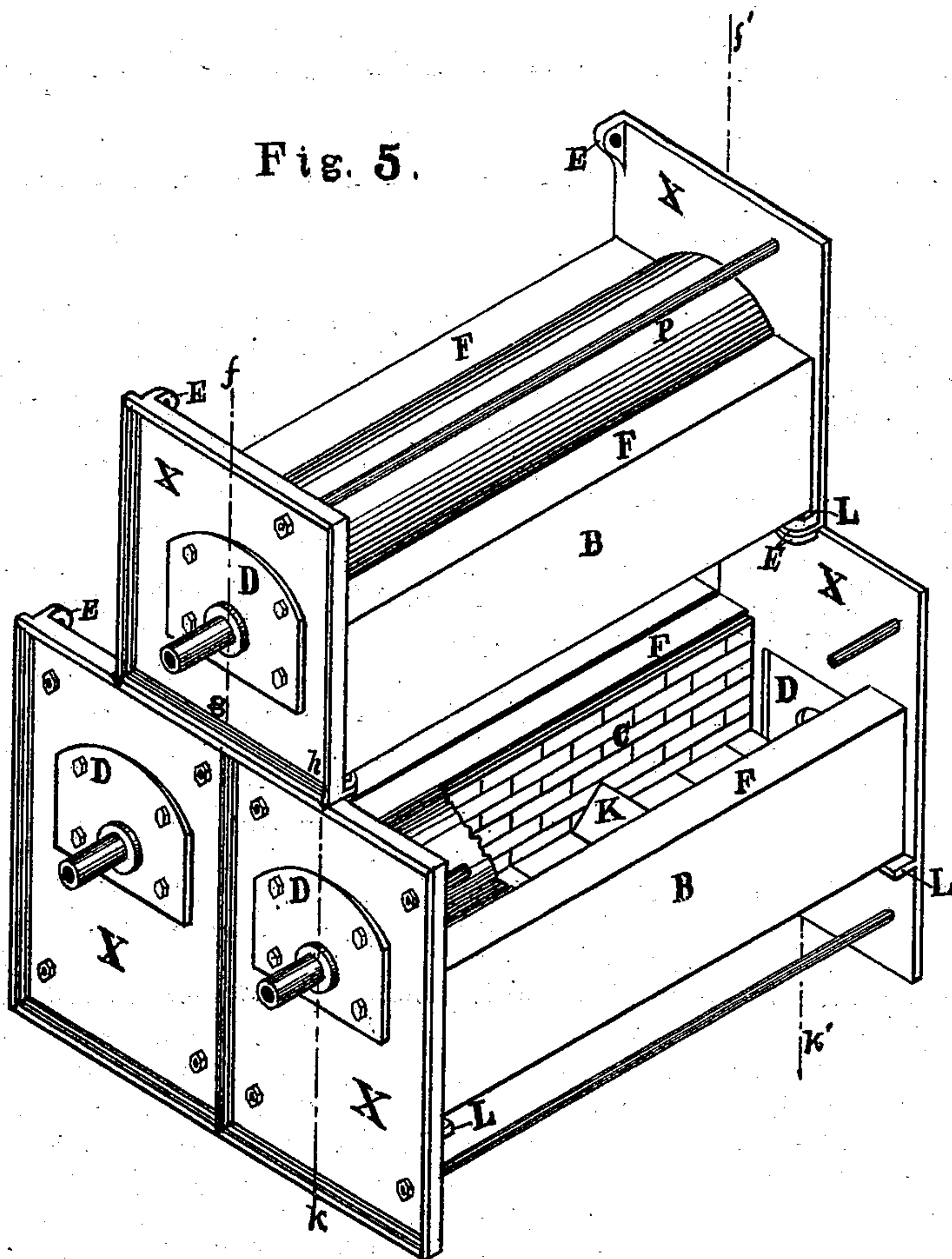
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By his attorney  
Wm. R. Tillinghast.



# UNITED STATES PATENT OFFICE.

WILLIAM S. GRANGER, OF PROVIDENCE, RHODE ISLAND.

## DEVICE FOR SINGEING CLOTH.

SPECIFICATION forming part of Letters Patent No. 506,395, dated October 10, 1893.

Application filed March 9, 1893. Serial No. 465,320. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM S. GRANGER, a citizen of the United States, residing in Providence, in the State of Rhode Island, have  
5 invented a new and useful Improvement in Devices for Singeing Cloth, of which the following is a specification.

There have heretofore been known two distinct forms of singeing devices; the one, known as the gas singer, in which the cloth in being singed runs through the flame of the gas; and the other and more common form, known as the plate-singer, in which the cloth runs over hot plates of copper or other suitable material, the heat being supplied by coal fires built in suitable furnaces under the plates. My invention relates to the latter form. As heretofore constructed they have  
10 been necessarily built of solid masonry, costly in price and permanent in form; so that in making any changes in the works or bleacheries in which they are used, it has been impracticable to change their position, the expense of doing so being nearly equal to that  
20 of a new machine. I have found however that great advantage results from the substitution of petroleum oils for fuel in the place of the coal heretofore used, it requiring only about twenty minutes to heat the plates sufficiently to begin the singeing of the cloth  
30 when oil is used, whereas it has heretofore required about two hours when coal was employed; and by using such oils or gas, burned in a properly constructed chamber, by means of any successful burner, of which there are  
35 a number well known upon the market, I am enabled to so reconstruct the singeing device as to greatly lessen the first cost of the machine, and at the same time render it possible  
40 easily to move it in case it becomes desirable to do so. My invention consists in the proper construction of the chamber for this purpose and the means by which they are properly supported and assembled to form a proper  
45 singeing device.

In the annexed drawings, which are hereby made a part of this specification, Figures 2 and 3 show the construction of the chamber, and Figs. 1, 4, and 5, the construction of the  
50 frame-work in which the chambers are placed.

The same letters indicate the same parts in all, so far as used.

Fig. 3 is a transverse sectional view, and Fig. 2 a longitudinal sectional view of the combustion chamber, consisting of a box B, 55 B, B, made of cast iron or other suitable metal, constructed with the flanges F, F, at its upper edges, and without ends, the frame-work in which it is afterward placed supplying the place of ends. The plate P, which is an ordinary singe-plate, well known to those skilled  
60 in the art, rests upon the flanges and forms a cover for the box. The length of the box (Fig. 2) depends upon the length of the plate P, and the length of that upon the width  
65 of the cloth to be singed. The transverse dimensions of the box, the width and height, Fig. 3, are such that it may be lined with fire-brick C, C, C, &c., and yet leave the internal chamber between them of about nine-  
70 teen inches by seventeen inches. When lined with fire-brick, one of the bricks or some other deflecting object, K, Figs. 2 and 3, is inserted across the chamber, a little less than half way of its length from the end at  
75 which the burner enters the chamber, and a piece O, Fig. 2, of soap-stone or other suitable material is placed across the same end of the chamber above the burner and extending into  
80 it about twelve inches. The object of these pieces is to cause the heat to be properly distributed throughout the singe-plate. One of these chambers thus formed of the metal box and fire-brick with the singe-plate for cover,  
85 is then placed in side-frames shown in Figs. 1, 4, and 5, Fig. 4 being an enlarged end view of portions of the plates X, X, &c. This frame-work consists of the plates X, X, made of cast iron or other suitable metal, and are  
90 designed to hold the chambers at a convenient elevation from the floor, and when more than one tier is used, to furnish a suitable space between them for the working of the ordinary apparatus used in "threading" the  
95 machine to keep the cloth off the hot plates. The plates at each end of the chamber are very similar. On the inside of these plates X, X, &c., are cast or otherwise formed, lugs  
100 L, L, Figs. 1, 4, and 5, upon which the box B, B, B, sets. The two sides of the frame-work when the box is placed therein are held together by rods or other ties passing through or fastened to the plates X, X, and the corresponding ones on the other side, which rods



or ties may have nuts upon their ends, some of which are shown in Fig. 1 at N, N, N, &c., or they may be held together by bolting them directly to the metal box B, B, B. Each of these plates also has an opening, which in the drawings, (Figs. 1 and 5,) is covered by the plates D, D, &c., giving access to the interior of the chamber. Through each of these latter plates, D, D, &c., when placed on that side are holes of about three inches in diameter through which the burners R, R, Fig. 1, for the gas or oil project into the chambers; and through those intended to cover the ends of the chambers at the other side of the singer, are holes of a suitable diameter to allow the pipes Y, &c., Fig. 1, to be attached for the escape of any smoke or gas to the chimney, which pipes are also fitted with dampers to regulate the draft. These plates D, D, are not in any way a necessary part of the device; the plates X, X, could as well be made without the openings which they cover, but their use forms a ready means of access to the interior of the chambers by removing one or more of them, and they are therefore useful.

Ordinarily it is necessary to use more than one singe-plate to properly singe the cloth, and a number of these chambers and their supporting side-plates are assembled together to form a complete singeing device. Fig. 5 gives a general view of one in perspective having several chambers with a part of one singe-plate cut away, and Fig. 1 is a sectional elevation through the dotted line *f, k*, Fig. 5. Fig. 5 shows only one of many possible arrangements of these chambers, there being two in a lower tier and one in an upper, the cloth to be singed first passing over the lower and then back over the upper, thus singeing both sides.

The varying conditions of different users of these machines require varied arrangements of the chambers, and it is one of the great merits of this invention that these varying requirements may be so easily met by combining the chambers and their supporting framework in various ways. For the purpose of thus combining them, there are cast or otherwise formed on the inner side of the plates X, X, &c, Figs. 1, 4, and 5, ears shown at E, E, E, &c., through which pass bolts to join together those placed side by side, and also the first or lower and the second or upper

tier of plates; or in place of these ears, the overlapping flanges, which are ordinarily added merely for the purpose of giving a finished appearance to the machine, may be made sufficiently large to admit of the bolts being passed through them for this purpose. The entire device is then fitted with the ordinary apparatus for feeding, winding, &c., the cloth, none of which is shown in these drawings.

Having thus described my invention, what I claim as new, and desire to obtain Letters Patent for, is—

1. A singeing device chamber composed of a suitably lined metal trough open at the top, a singe-plate arranged to close the top of said trough, and end pieces detachably secured in place to the ends of said trough, and provided with means for attaching said chamber as a whole to another chamber of similar construction substantially as described.

2. A singeing device constructed in two or more similar sections detachably connected together, said sections being composed of suitably lined metal troughs, open at the top, singe-plates arranged to close the tops of said troughs, and end pieces detachably secured in place to the ends of said troughs, substantially as described.

3. A singeing device constructed in two or more similar sections detachably connected together, said sections being composed of suitably lined metal troughs, open at the top, singe-plates arranged to close the tops of said troughs, end pieces detachably secured in place to the ends of said troughs, and provided with burners suitable for the burning of oil or gas for heating said singe-plates, substantially as described.

4. A singeing device constructed in similar sections detachably connected together, and arranged in two or more tiers, said sections being composed of suitably lined metal troughs, open at the top, singe-plates arranged to close the tops of said troughs, and end pieces detachably secured in place to the ends of said troughs substantially as described.

WILLIAM S. GRANGER.

Witnesses:

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