

2 Sheets—Sheet 1.

No. 435,017.

Fig. 1. Patented Aug. 26, 1890.



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(No Model.)

2 Sheets—Sheet 2.

K. A. GRAVES.
SHEET METAL MANTEL.

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Fig. 4.

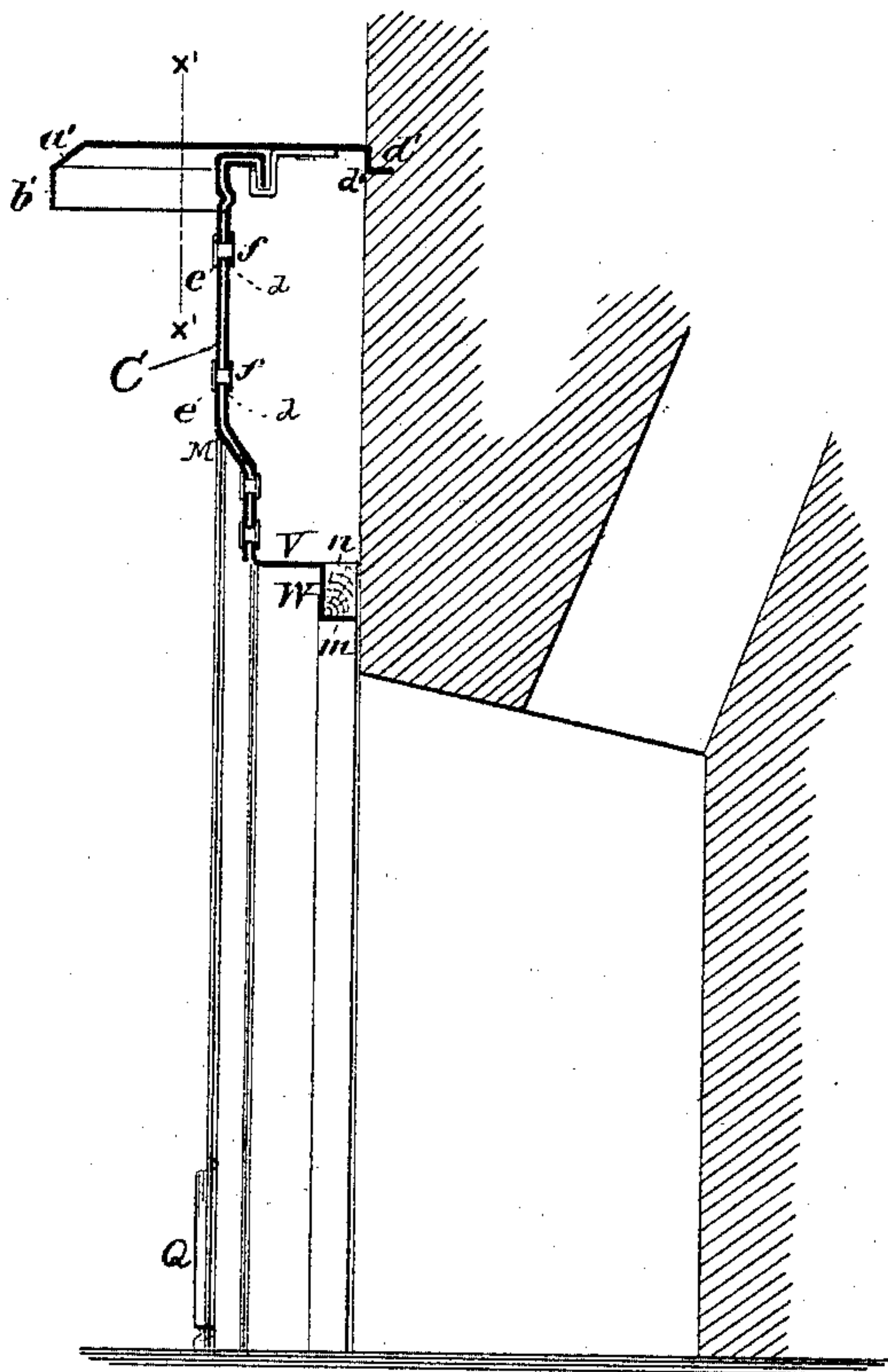


Fig. 5.

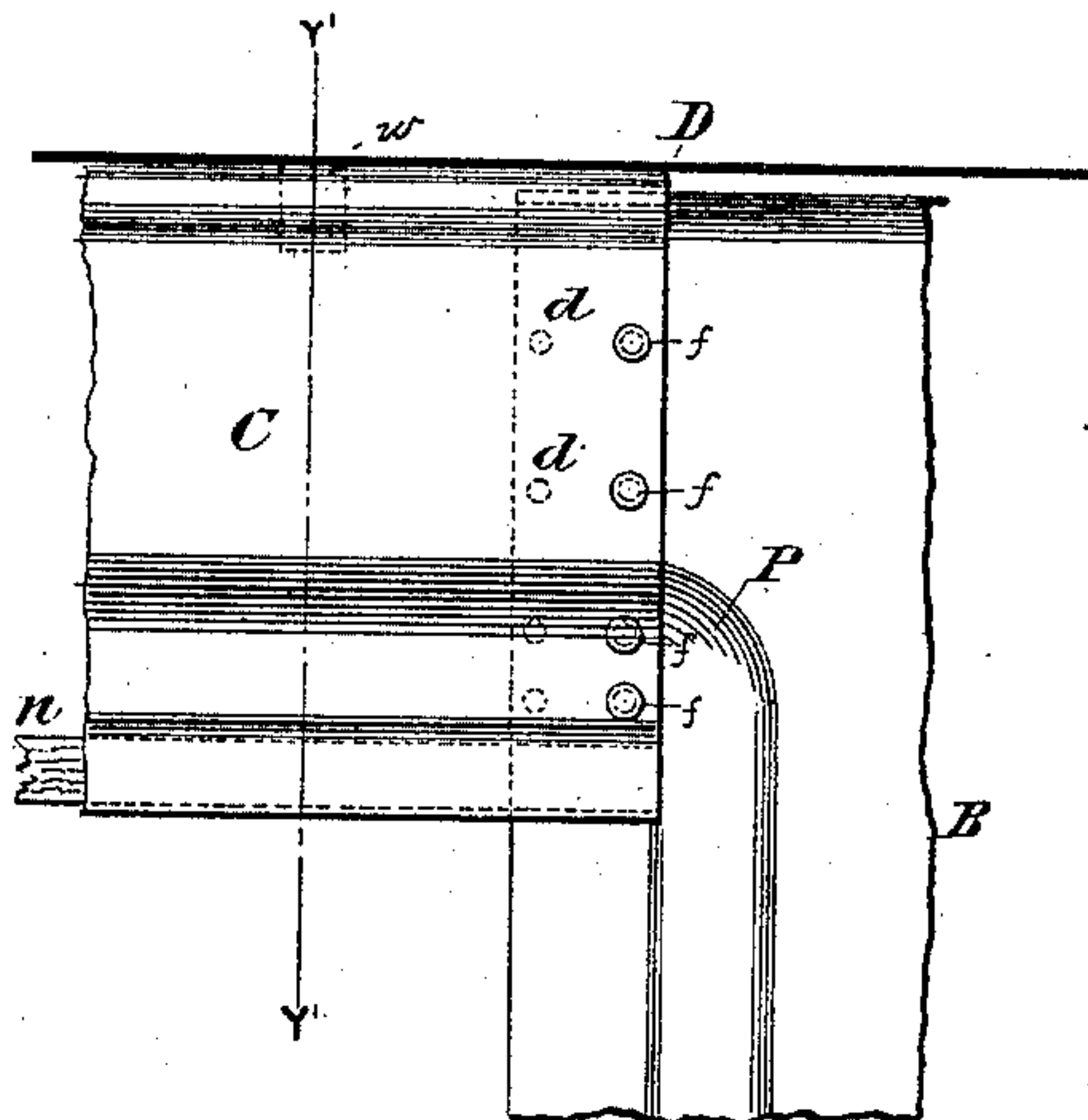
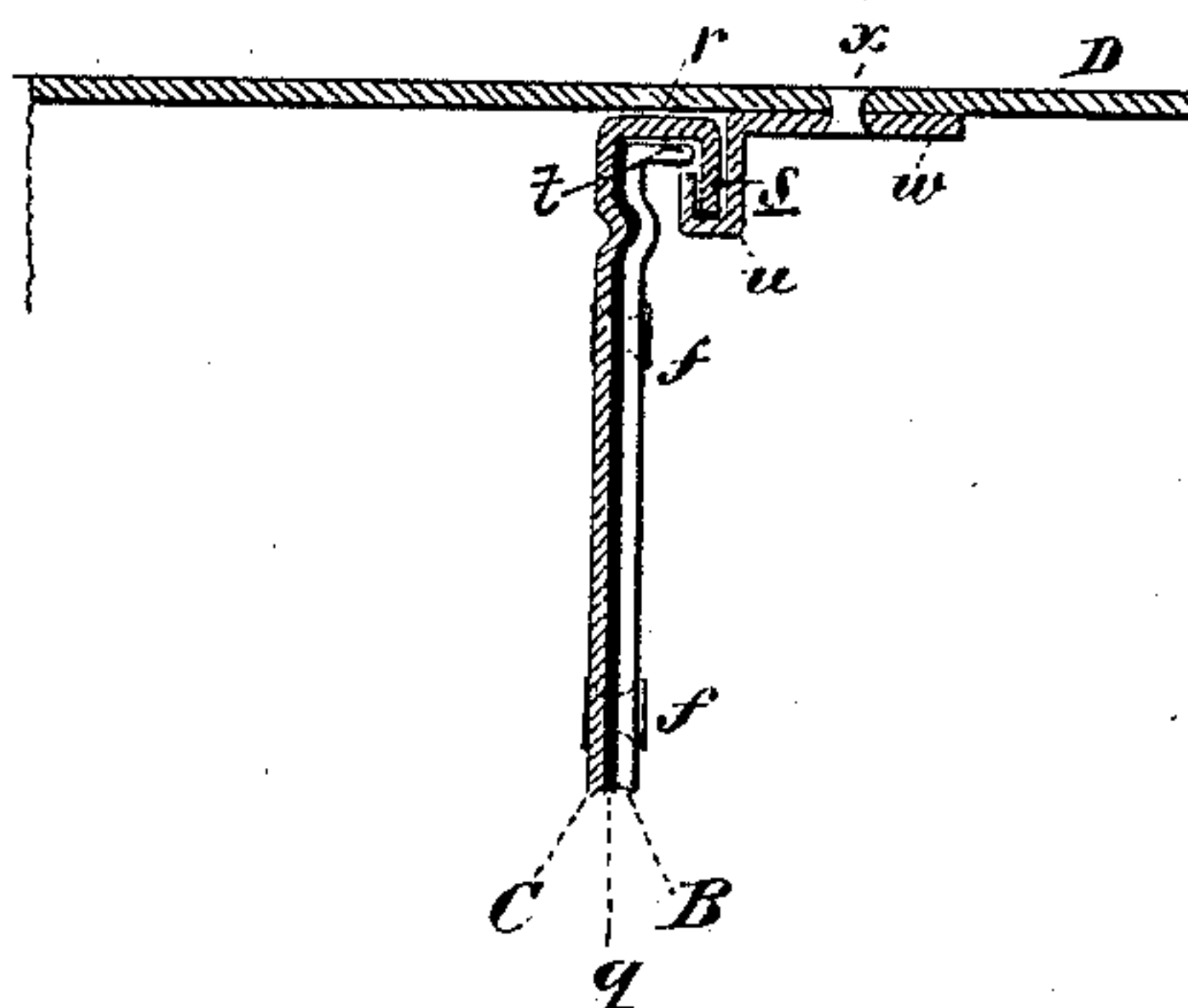


Fig. E.



WITNESSES:

WITNESSES.
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INVENTOR

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UNITED STATES PATENT OFFICE.

KATHARINE A. GRAVES, OF NEW YORK, ASSIGNOR, BY MESNE ASSIGNMENTS,
TO THE GEO. VAN WAGENEN COMPANY, OF BROOKLYN, NEW YORK.

SHEET-METAL MANTEL.

SPECIFICATION forming part of Letters Patent No. 435,017, dated August 26, 1890.

Application filed December 1, 1888. Serial No. 292,375. (No model.)

To all whom it may concern:

Be it known that I, KATHARINE A. GRAVES, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Sheet-Metal Mantels, of which the following is a specification.

The invention relates to improvements in mantels; and it consists in a novel construction whereby I am enabled to manufacture the entire mantel from sheet-steel in such manner that there will be no buckling or bending of the parts, and that the mantel when produced may be sold at a price very much less than the mantels now in use. The mantel which is the subject of this application is composed of pilasters, one for each side of the fire-place, a frieze connecting the upper portions of these pilasters, and a shelf which is secured upon the upper edges of the pilasters and the frieze, the whole, when constructed as hereinafter described and put in position, forming a substantial structure having all the necessary characteristics to insure rigidity and durability.

The details of construction will be fully understood from the description hereinafter presented, and the novel features are pointed out in the claims.

Great difficulty has been experienced in the manufacture of sheet-metal mantels from the fact that the metal after leaving the dies is liable to buckle and present an unsightly appearance, and in addition the securing of the parts of the metal together and their proper formation for use have been attended with considerable expense and difficulties. By the present invention I have effectually overcome all known objections to sheet-metal mantels, and have embodied the invention in a mantel which may be constructed at a reasonable cost, and in the manufacture of which the parts of the mantel after leaving the dies will retain the form given to them without buckling.

My invention embodies also certain novel features of construction, which, as above mentioned, will be described hereinafter.

Referring to the accompanying drawings, 50
Figure 1 is a face view of the mantel constructed in accordance with my invention. Fig. 2 is a horizontal section of the same on the dotted line X X of Fig. 1. Fig. 3 is a like section of same on the dotted line Z Z of Fig. 1. Fig. 4 is a vertical section on the dotted line Y Y of Fig. 1. Fig. 5 is a vertical section on the dotted line X' X' of Fig. 4, looking at the face of the mantel, the grooves or corrugations being omitted from Fig. 5 for clearness of illustration; and Fig. 6 is a vertical section on the dotted line Y' Y' of Fig. 5.

In the drawings, A' denotes the fire-place, of usual form, around which is secured the mantel composed of the pilasters (lettered A B, respectively) connected by the frieze C, the whole being supplemented by the mantel-shelf D. The pilasters A B are identical in form and construction, and they extend from the floor to the mantel-shelf, one being on each side of the fire-place. The pilasters A B have upon their face suitable ornamental scrolls or grooves *a*, which possess the quality of strengthening the structure, in addition to that of rendering the same more ornate in character. Upon the outer edges of the pilasters A B are provided the facings E, which extend inward to a point near the wall and there meet the laterally-extending facings F, which are provided with the vertical corrugations *b* and constitute wall-plates, as illustrated in section in Fig. 2. The outer edges of the wall-plates F are bent inward and impinge the wall and form an angle in which are the wooden standards G, which afford means of attaching the pilasters in position and at the same time prevent any substantial portion of the mantel from being affected by contact with the plaster of the wall, thereby preventing the corrosion of the mantel. The vertical grooves or corrugations *b* in the wall-plates F increase the strength of the pilasters and prevent them from buckling. At the same time they, by entering grooves formed in the wood G, as illustrated in Fig. 2, aid in maintaining the parts of the mantel in position.

Upon the inner edges of the pilasters A B

are formed the returns H, extending inward toward the wall and uniting with the facings I, at the inner edges of which the metal is bent directly inward to the wall, as shown at K, forming an angle to receive or fit over the wooden standards J, as shown in Fig. 2, the purpose of these latter standards being the same as that of the standards G, above referred to. The facings I and wall-plates F extend from the top to the bottom of the pilasters, as shown in Fig. 1, the upper portion of the facings I, however, being inclined outward and upward at L, (see Fig. 1,) and then passing upward, forming flanges to receive the ends of the frieze C. In the upper ends of the facings I, forming such flanges, are provided the rows of apertures *d*, as shown in Fig. 5, which correspond with the apertures *e*, (see Fig. 4,) formed in the frieze C, the purpose of the apertures being to receive the rivets *f*, whereby the frieze and pilasters are secured together. I provide more than one row of apertures in the upper ends of the facings I in order that the pilasters may be adjusted toward or from each other in order to suit the different widths of fire-places; and this feature is important, since it obviates the necessity of providing mantels of different sizes for the different fire-places, one mantel with the means of adjustment between the frieze and pilasters answering for all ordinary sizes of fire-places.

The upper portion of the frieze C is about on the same vertical plane as the pilasters A B, while the lower portion is bent inward, forming the incline M, fitting the outward bend in the facings I at L, from which the lower portion of the frieze C extends vertically downward, as shown in Fig. 1, forming a wall-plate N, which is provided with the corrugations *g*, and connected, as above mentioned, by the rivets *f f* to the facings I.

The inclined surface M of the frieze C is provided with the vertical corrugations *h*, as shown clearly in Fig. 1, which prevent the frieze from being indented or injured at this point by external knocks or contact with other objects. The opposite ends of the upper portion of the frieze C are provided with the vertical corrugations *i*, which not only beautify the mantel, but strengthen those portions, and combine with the corrugations *h* in rendering the frieze rigid and of sufficient stability to enable the successful construction of the mantel from sheet-steel.

At the points L of the pilasters A B are formed the rounded corners, (illustrated in Figs. 1 and 5 and denoted by the letter P,) which permit the formation of the lower part of the facing I on a plane less projecting than the upper portion thereof, leaving said upper portion on the same vertical plane as the pilasters A B, in position to receive the ends of the frieze C, as above described. The lower ends of the pilasters A B are formed with the base-blocks Q, projecting outward beyond the

vertical plane of the pilasters, as indicated in Figs. 1 and 4. Along the lower edges of the pilasters are formed the horizontal grooves R and along the upper ends of said pilasters are formed the horizontal grooves S, which meet and form a continuation of the horizontal groove T in the upper edge of the frieze C, said grooves arranged in the manner described operating to prevent the raised parts of the mantel from being bent inward by contact with objects thrown against them. If the elevated portions of the mantel—such as the pilasters and frieze—could be readily bent inward by pressure applied against them, the effect would be to spread the wall-plates F and facings I outward, and hence the necessity of employing the grooves R S T or some equivalent grooves for preventing the effect specified. At the lower edge of the lower portion N of the frieze C the metal is bent inward, forming a return V, as shown in Fig. 4, which meets the downwardly-extending flange W, whose lower edge is bent inward to the wall, forming a flange *m*, which forms a space to receive or fit over the transverse bar of wood *n*, as illustrated in Fig. 4, which prevents the contact of the metal with the wall and avoids corrosion.

Along the lines of contact between the ends of the frieze C and the inner portions of the pilasters A B are provided layers *q* of oil-paper, sheet-brass, or other material which will not be liable to corrode.

In riveting the pilasters and frieze together in the ordinary course of events the enamel on the sheet metal might become broken or rubbed, and in the absence of the layer *q* corrosion might set in at these points; but to avoid all such difficulties and to enable the manufacturers to quickly rivet the parts of the mantel together the layers of material *q* have been provided. The upper edge of the frieze C is bent inward, forming a flange *r*, (see Fig. 6,) and at the inner edge of this flange the metal is bent directly downward, forming the flange *s*, the flange *r* fitting over the horizontal flange *t*, formed on the upper edges of the pilasters A B, while the flange *s* is engaged by the flange *u*, formed on the ends of the straps *w*, secured to the under surfaces of the mantel-shelf D. Any number of the straps *w* may be provided; but usually two will be enough, one adjacent to each end of the mantel. These straps *w* will be riveted at *x* to the mantel-shelf, and when thus secured they will effectually hold the upper edges of the frieze C in position and lock the parts of the mantel together. The mantel-shelf D is formed from sheet-steel stamped up in dies, and its front and end edges are provided with the flanges *a' b'*, as shown in Fig. 4, forming double angles, which prevent the shelf from buckling or being bent by ordinary usage. The inner edge of the mantel-shelf is provided with the right-angled flange *d'*, which is secured in the wall, as shown in

Fig. 4, and aids in sustaining the shelf in rigid position upon the upper portion of the pilasters and frieze.

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

1. The sheet-metal mantel consisting of the shelf, frieze C, and pilasters A B, the pilasters being each of a single piece of sheet metal extending from the floor to said shelf, and the frieze C being also of a single piece of sheet metal and connecting said pilasters, the ends of said frieze and the inner vertical sides of the upper ends of said pilasters overlapping and conforming with each other to permit the adjustment of the pilasters toward or from each other without leaving the ends of the frieze, substantially as set forth.

2. The sheet-metal mantel consisting of the pilasters, frieze, and shelf, the pilasters being each pressed up from sheet metal with the returns H and facings E and extending from the floor to said shelf, and the frieze being also pressed up from a single piece of sheet metal and connecting said pilasters, the ends of said frieze and the inner vertical sides of the upper ends of said pilasters overlapping and conforming with each other to permit the adjustment of the pilasters toward or from each other without leaving the ends of the frieze, substantially as set forth.

3. The sheet-metal mantel consisting of the pilasters, frieze, and shelf, the pilasters having corrugated wall-plates F and facings I, combined with the wooden standards G J, substantially as and for the purposes described.

4. The sheet-metal mantel consisting of the pilasters, frieze, and shelf, the inner edges of

the pilasters having facings, the upper portion of which is left about on the same vertical plane as the pilasters forming the depressed corners P, and the frieze being conformed to said facings at its ends, substantially as and for the purposes set forth.

5. The sheet-metal mantel consisting of the pilasters, frieze, and shelf, the inner edges of the upper portion of the pilasters having flanges to receive the ends of the frieze, layers of non-corrosive material *q* being provided between the contact parts of said frieze and said flanges, substantially as and for the purposes set forth.

6. The sheet-metal mantel consisting of the pilasters, frieze, and shelf, the frieze being provided with the incline M, having corrugations *h*, and the lower portion N of the frieze having flanges V W, while the adjacent portions of the pilasters correspond in outline with and receive the ends of the frieze, substantially as shown and described.

7. The sheet-metal mantel consisting of the pilasters, frieze, and shelf, the upper edges of the frieze being bent to form the flanges *r s*, and the upper edges of the pilasters being bent to form the flange *t*, combined with the straps *w*, riveted to the shelf D and clutching the flange *s* of the frieze, substantially as and for the purposes set forth.

Signed at New York, in the county of New York and State of New York, this 17th day of November, A. D. 1888.

KATHARINE A. GRAVES.

Witnesses:

CHAS. C. GILL,
R. A. PORTEOUS.