

(No Model.)

3 Sheets—Sheet 1.

P. H. JACKSON.

AREA, FLOOR, ROOF, OR SIDEWALK CONSTRUCTION.

No. 370,625.

Patented Sept. 27, 1887.

FIG. 2.

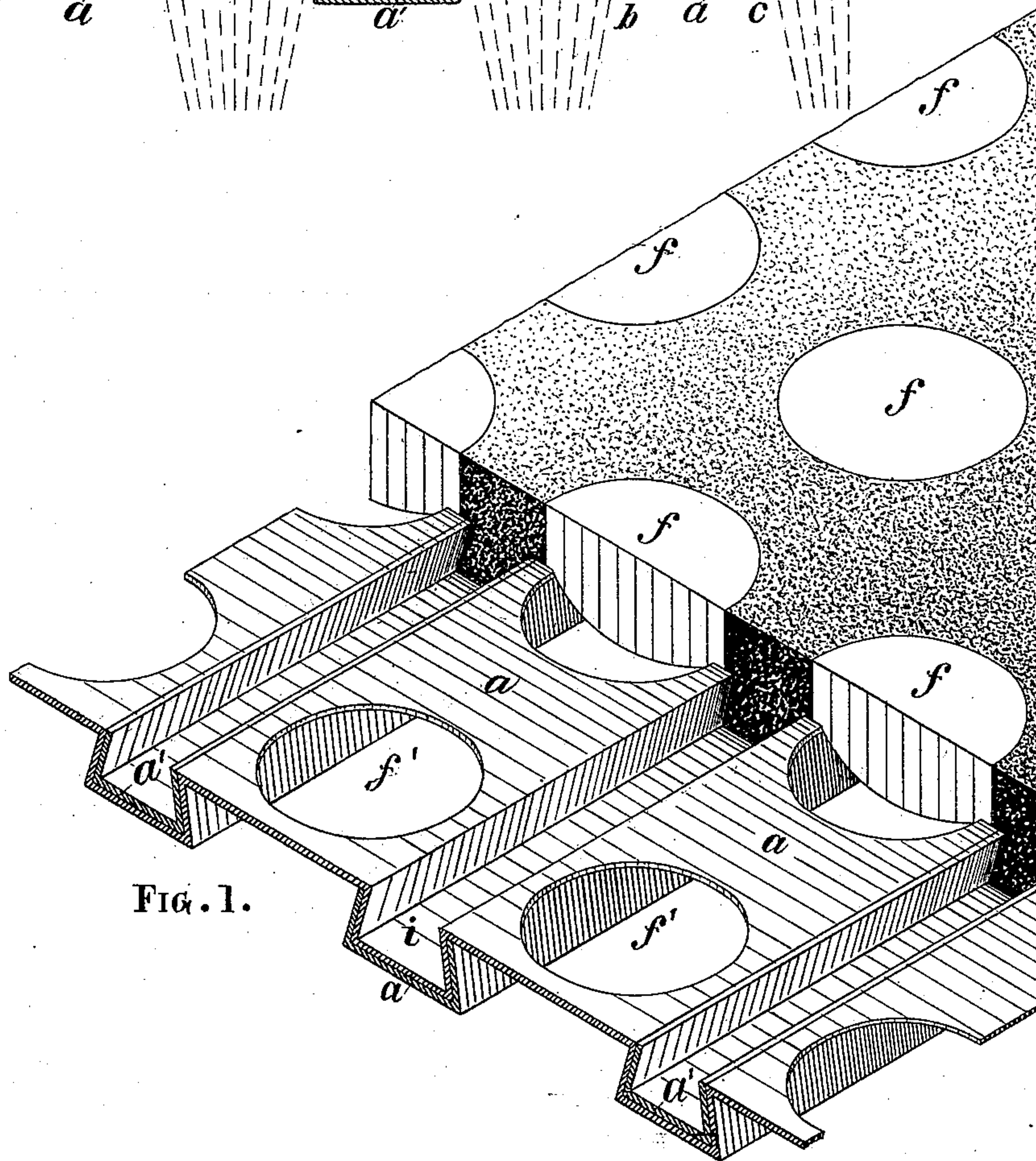
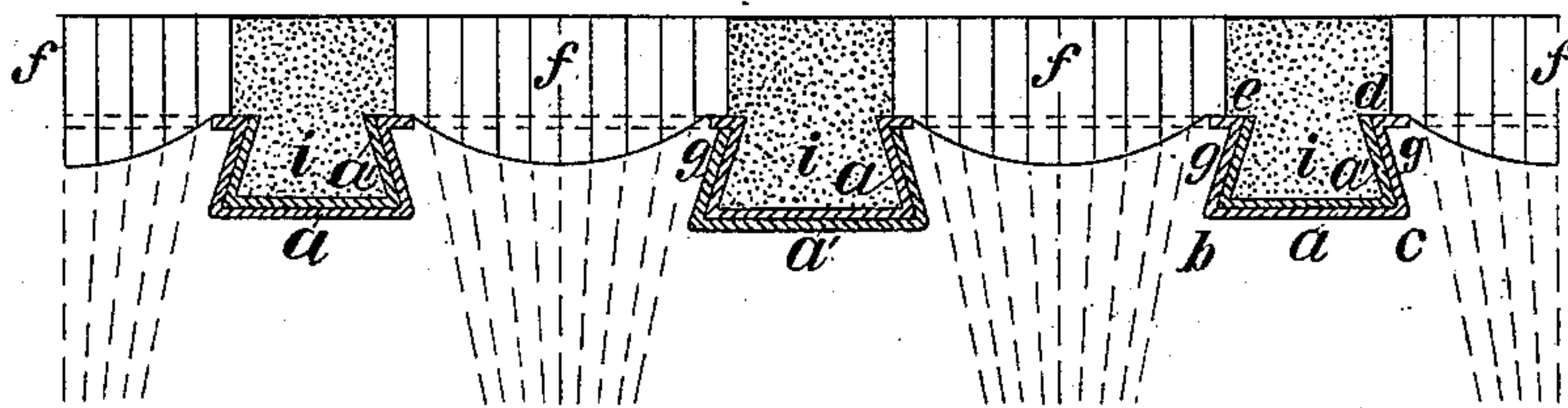


FIG. 1.

Witnesses.
Chas. E. Gerlach.
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(No Model.)

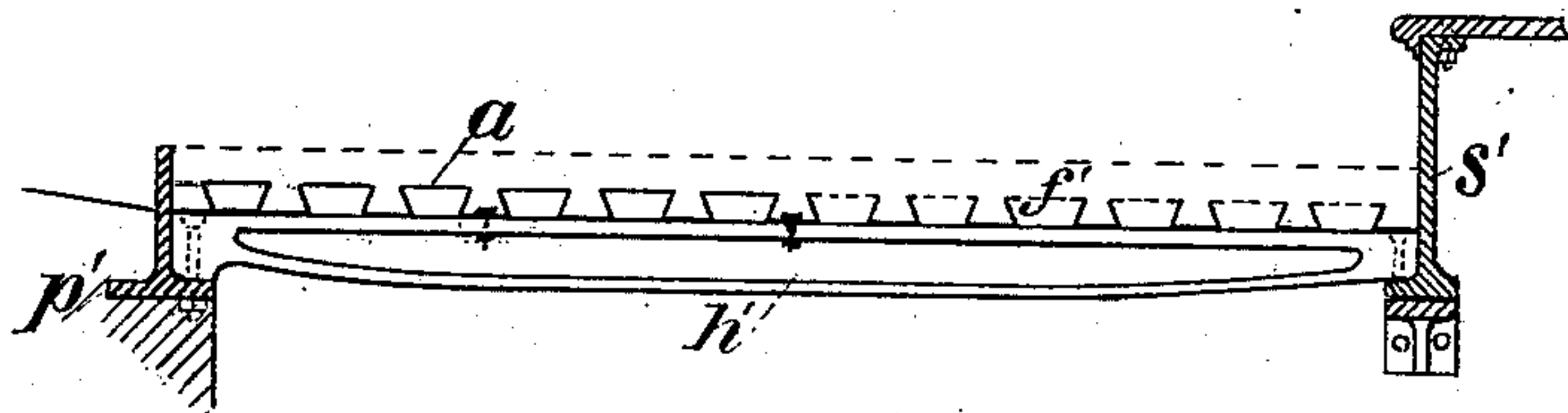
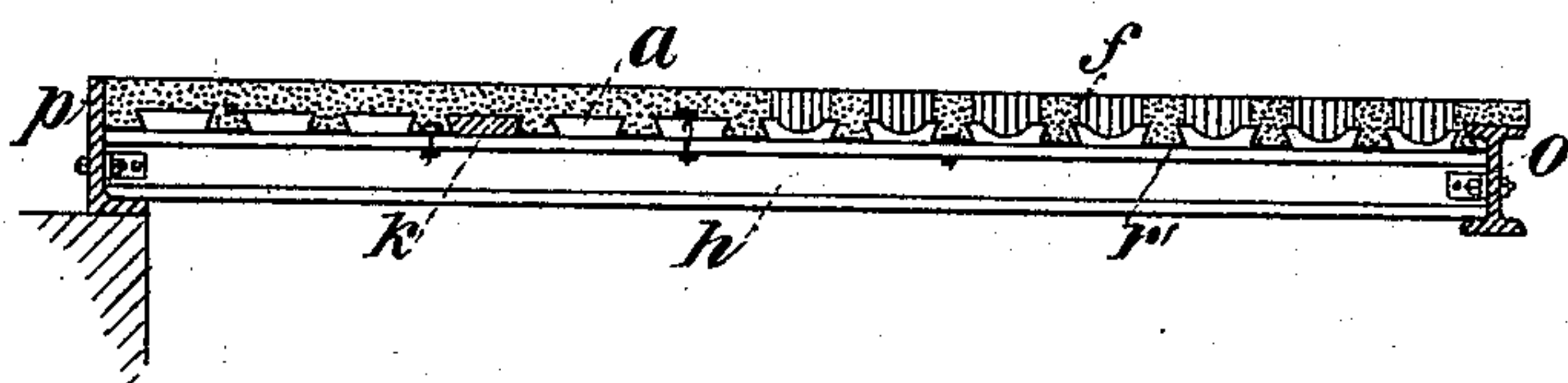
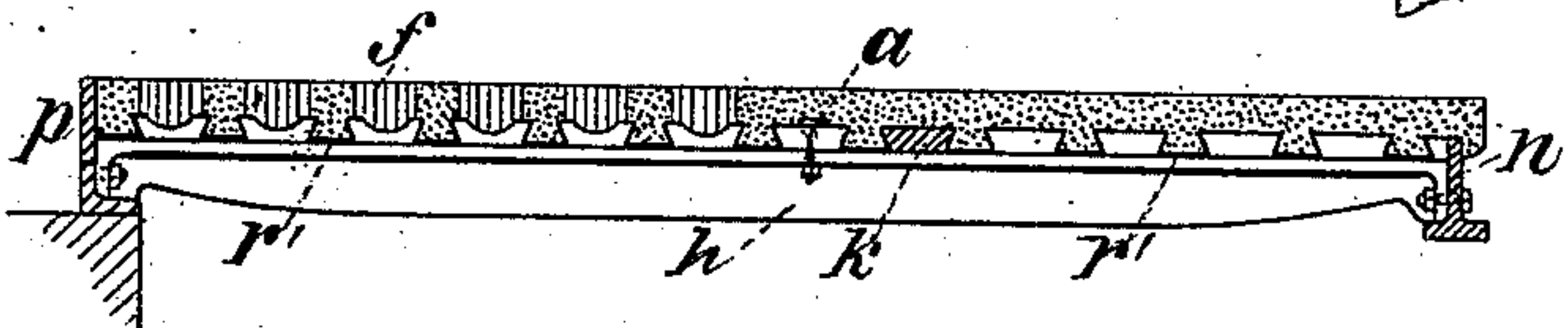
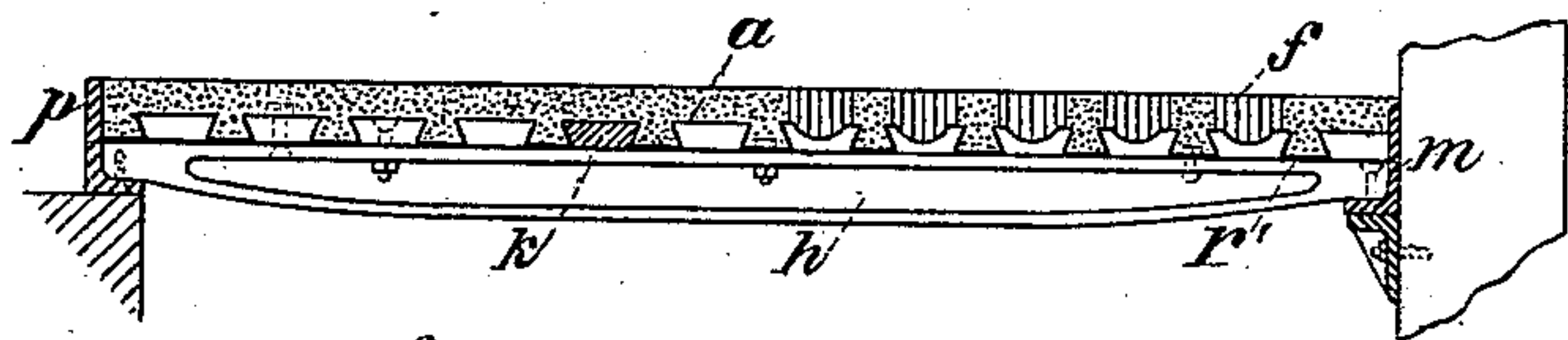
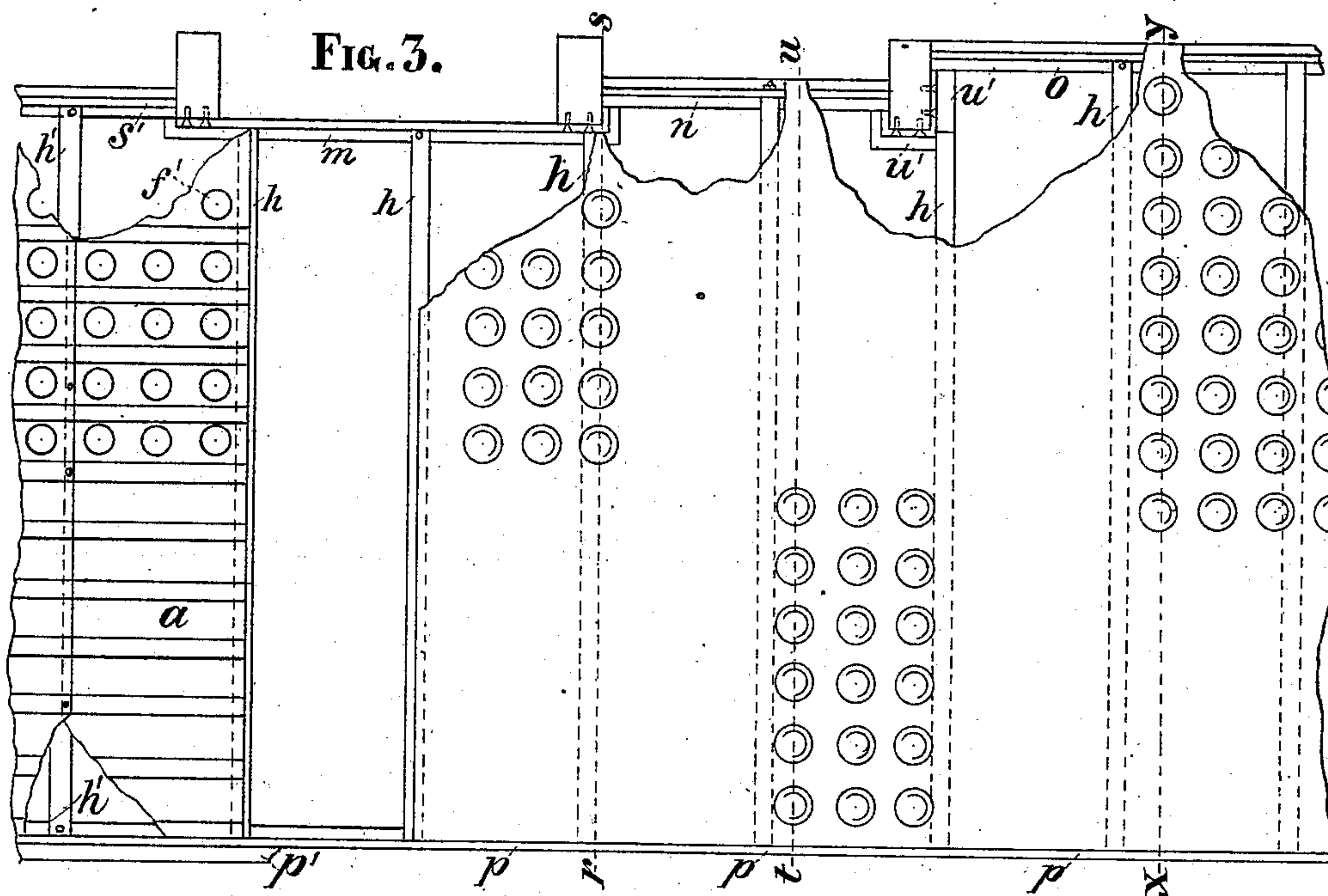
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FIG. 8.

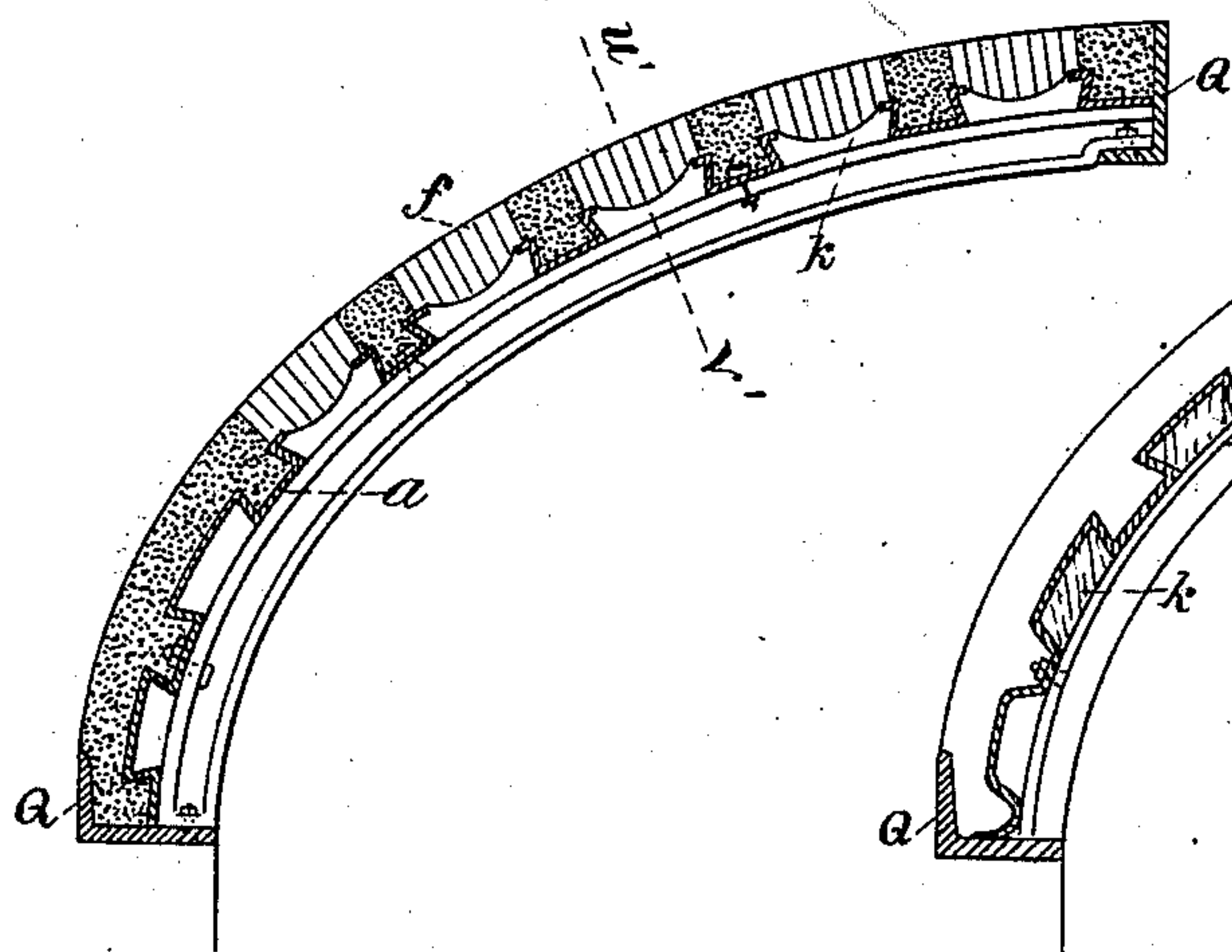
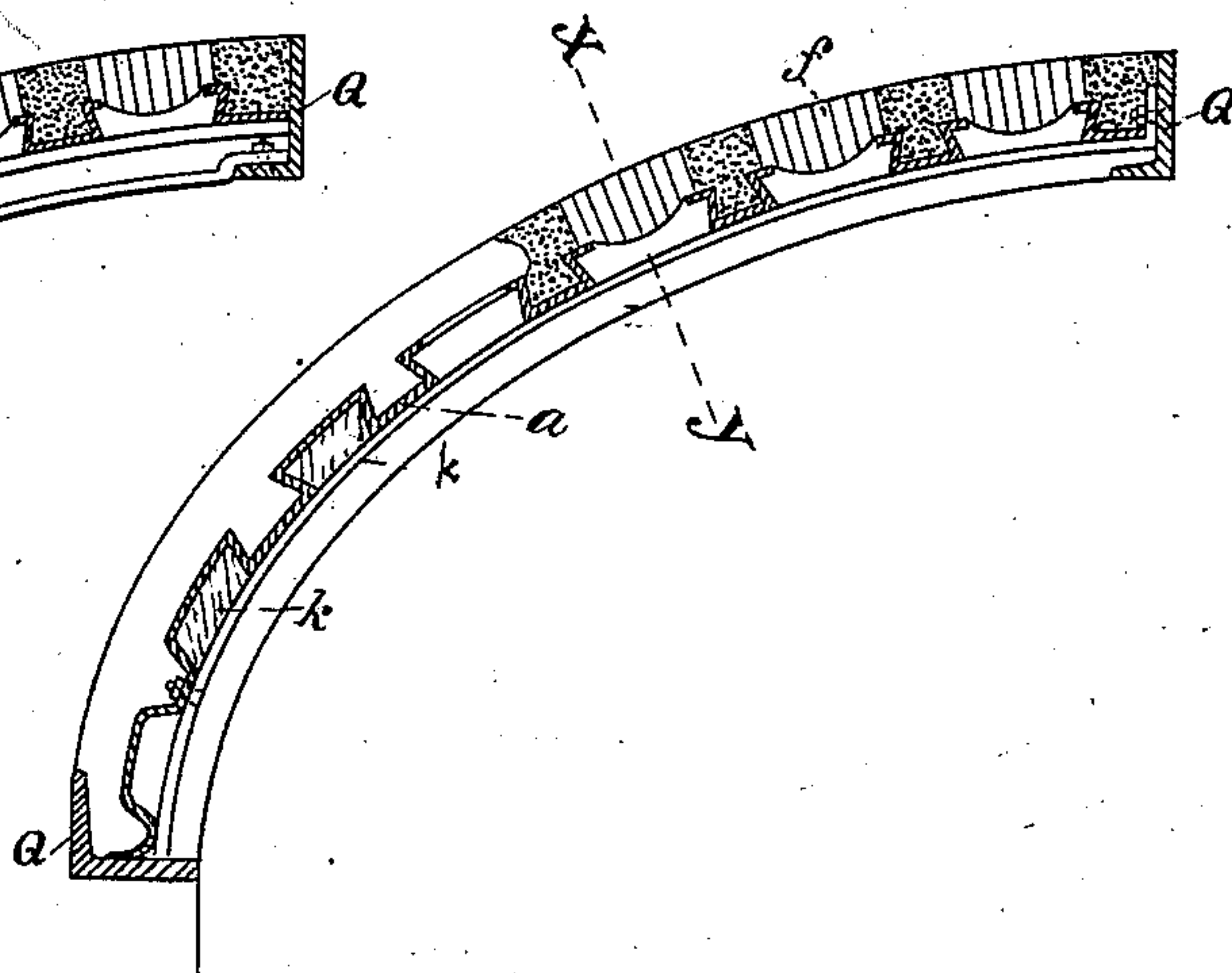


FIG. 9.



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UNITED STATES PATENT OFFICE.

PETER H. JACKSON, OF SAN FRANCISCO, CALIFORNIA.

AREA, FLOOR, ROOF, AND SIDEWALK CONSTRUCTION.

SPECIFICATION forming part of Letters Patent No. 370,625, dated September 27, 1887.

Application filed December 24, 1885. Serial No. 186,652. (No model.)

To all whom it may concern:

Be it known that I, PETER H. JACKSON, of the city and county of San Francisco, State of California, have invented an Improvement in
5 Area, Floor, Roof, and Sidewalk Constructions; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to certain improvements in area, floor, roof, and sidewalk construction; and it consists of a surface of artificial
10 stone, concrete, or like material, with or without glass set therein, with a peculiar form for strength of corrugated metal plates at the bottom to be of any thickness; also an improved
15 method for sustaining the parts, all of which will be more fully explained by reference to the following drawings.

Figure 1 is a perspective view of my area, floor, roof, or sidewalk covering, with glass in
20 for illumination. Fig. 2 is a cross-section of of Fig. 1 transversely to the corrugations. Fig. 3 is a plan view of a sidewalk and area covering with glass in, or it may be partly with glass and the remainder without. This shows
25 its application to the front of a building. Fig. 4 is a section through *vs* of Fig. 3. Fig. 5 is a section through *tu* of Fig. 3. Fig. 6 is a section through *xy* of Fig. 3. Fig. 7 is a section through the extreme left of plan view,
30 Fig. 3, with the inner end resting on a beam-riser. Figs. 8 and 9 represent sections of a curved roof.

In my present construction I employ corrugated metal plates of any thickness, with the
35 grooves of a dovetailed or reversed wedge form—that is, they are wider across the bottom of the groove at *b c* than at the top at *c d*. (See Fig. 2.) This form of groove is a retaining-channel for the artificial-stone or concrete
40 filling, solidly holding it within the folds of the metal, thereby uniting the iron bottom to the top surface and largely increasing the strength of the construction as compared to wedge shaped grooves in the corrugated metal, which
45 have no holding power when the adhesiveness of the filling to the metal has been destroyed by severe transverse strains. The tendency in all cases of these constructions is for the metal plate at the bottom to break away in a downward direction when employed in sustaining
50 heavy loads on the top; but when the grooves

are in the form of reverse wedges the adhesiveness of the filling to the metal with the holding power of the metal on account of its form act in concert to hold the bottom to the
55 top. The increased width across the bottom of the reversed wedge-shaped groove, compared to the wedge shaped groove which is widest at the top, increases its strength to resist tensile strain. The bottoms being the place of the
60 greatest severity, the wide bottoms may be compared to the bottom flange of a metal beam in its power to resist such strains.

In this construction, as in that patented by me on March 31, 1885, No. 314,677, the grooves
65 in the corrugated metal plates form the bottom surface and resist the tensile strain. The grooves shown in that patent are of wedge form—widest at the top; but in these, metal plates resist the tensile strain, which is greatest at the
70 extreme bottom, and the artificial stone or concrete at the top resists the compressive force. The corrugated metal bottom forms the roof to the chamber vault, basement, or excavation beneath, resting on end bearings or beams,
75 and has to resist the tensile strain, while the top of the artificial stone or concrete forms a pavement and has to resist the compressive force. This improved construction forms a strong durable combination of roof and pave-
80 ment or floor at less cost than others. These corrugated metal plates *a* are formed of any thickness, and when necessary to illuminate the chamber below, of which this forms a roof or covering, thick glass or lenses *f* are fixed in
85 the top part of *a*.

Above the corrugated metal plates *a* and around the glasses *f*, I fill Portland or other hydraulic cement, concrete, artificial stone, or other like plastic material, which enters the
90 depressed part in the reversed-wedge retaining-channels *i*, (shown in Fig. 2,) and fills up to the surface and is smoothed off, which hardens in time and becomes solid and strong and suitable for bearing heavy loads or traveling over.
95

In connection with that part of the construction described I employ the following as a frame-work for its support: Metallic beams
100 *h h'*, consisting of deep vertical ribs having horizontal projecting ledges or shoulders on the top of the rib, or on both top and bottom, as shown in Figs. 4, 5, and 6. At the end of

these beams and extending in a transverse direction are the beams or angle-irons *m*, *n*, and *o*. (Represented on plan view 3 and sectional views 4, 5, and 6.) These are shown attached to the front of a building, or may be attached to any other part. Fig. 7 shows the inner end of beam *h'* resting on a beam-riser and the outer end resting on a T-beam, which may form the curb to the gutter. These various figures represent the frame-work to support the corrugated metal plates, as described, either with or without glass lenses and concrete, artificial-stone, or like filling, with its top forming the top surface.

Figures 8 and 9 represent sections of a curved-roof light or skylight, part with and part without glass, sustained on arched beams or bearers on the sides. The bottom glass and filling is the same as described for the others.

By reason of the corrugations extending transversely they are easily bent on any circle or angle while retaining their full strength to resist strain. In this case the groove may be of any form, requiring no patterns for different curves or angles and no expense to make them conform to the shape of the roof. In other constructions of this kind or for this purpose expensive patterns have to be made for every different curve required, it being usual to make patterns of a mixture of block-tin and lead and bend them to the curve or angle and then chase and finish up the soft metal and then cast from that the iron patterns and finish them.

The expense of patterns in a small skylight is so much that in some cases the expense prohibits its use.

Figure 1 of my patent of August 7, 1883,

No. 282,641, shows an iron skylight of the kind where the illuminating-tile is all of iron and glass, of which special patterns have to be made for every different curve. The present construction is also of less expense for flat skylights than others.

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

1. In an area covering, floor, or sidewalk, metallic supporting-beams and transverse corrugated metal plates with grooves or channels made widest at the bottom, the elevated horizontal or curved parts between the grooves perforated and fitted with glass, in combination with a filling between the glass of artificial stone or concrete, which is supported in the plates and fixed to the floor or surface, substantially as herein described.

2. In a roof, curved metallic supporting beams or bearers with transverse corrugated metal plates, in combination with a filling of artificial stone or concrete, which forms the top surface, substantially as herein described.

3. In a roof, curved metallic supporting-beams with transverse corrugated metal plates, the elevated horizontal or curved parts between the grooves perforated and fitted with glass, in combination with a filling between the glass of artificial stone or concrete, which is supported by the plates and fixed to the floor or surface, substantially as herein described.

PETER H. JACKSON.

Witnesses:

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HENRY HAUSTEIN.