

(No Model.)

2 Sheets—Sheet 1.

J. E. DONALDSON & E. C. ELDER.

ROOFING TILE.

No. 465,364.

Patented Dec. 15, 1891.

FIG. 1.

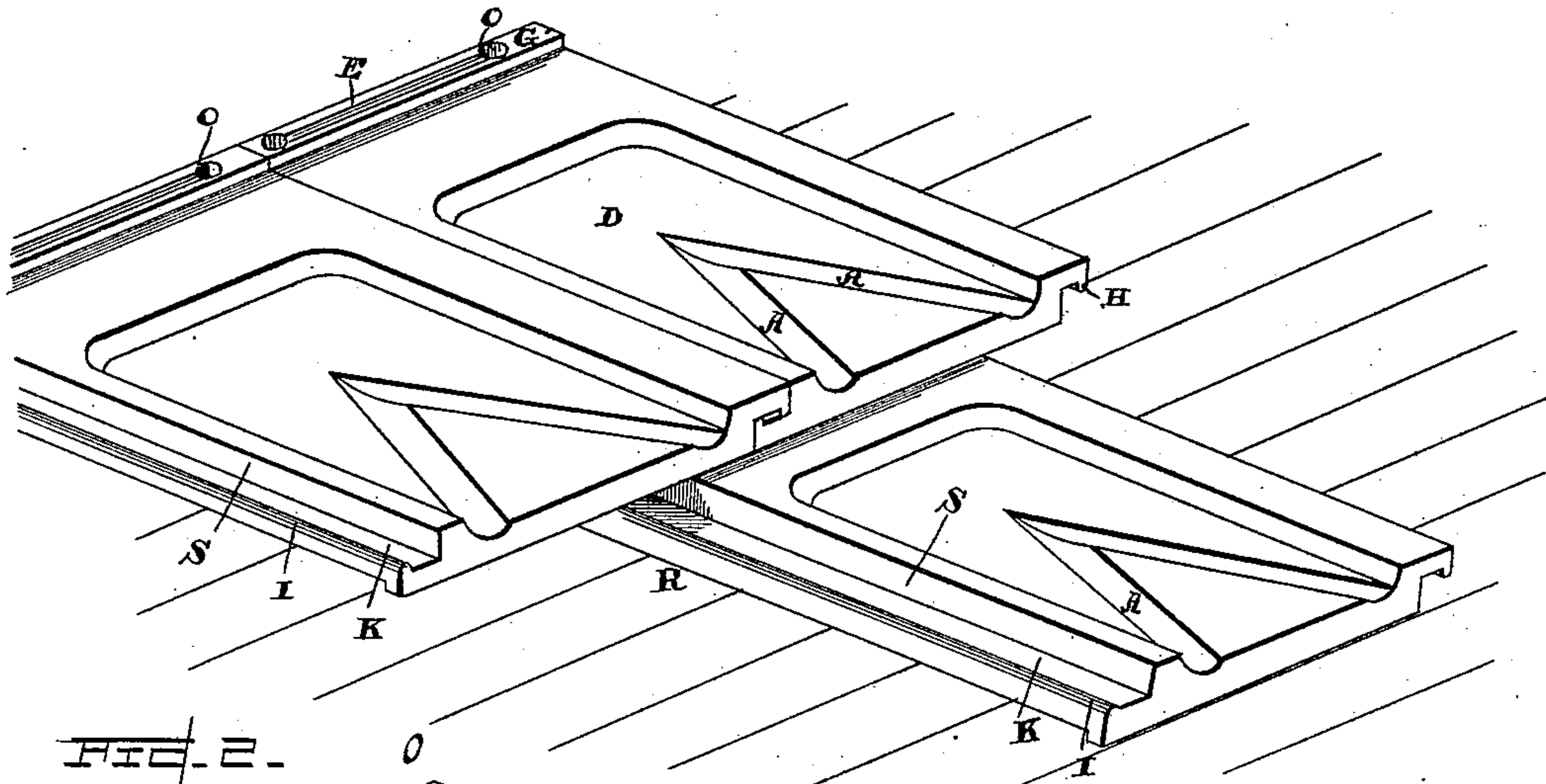


FIG. 2.

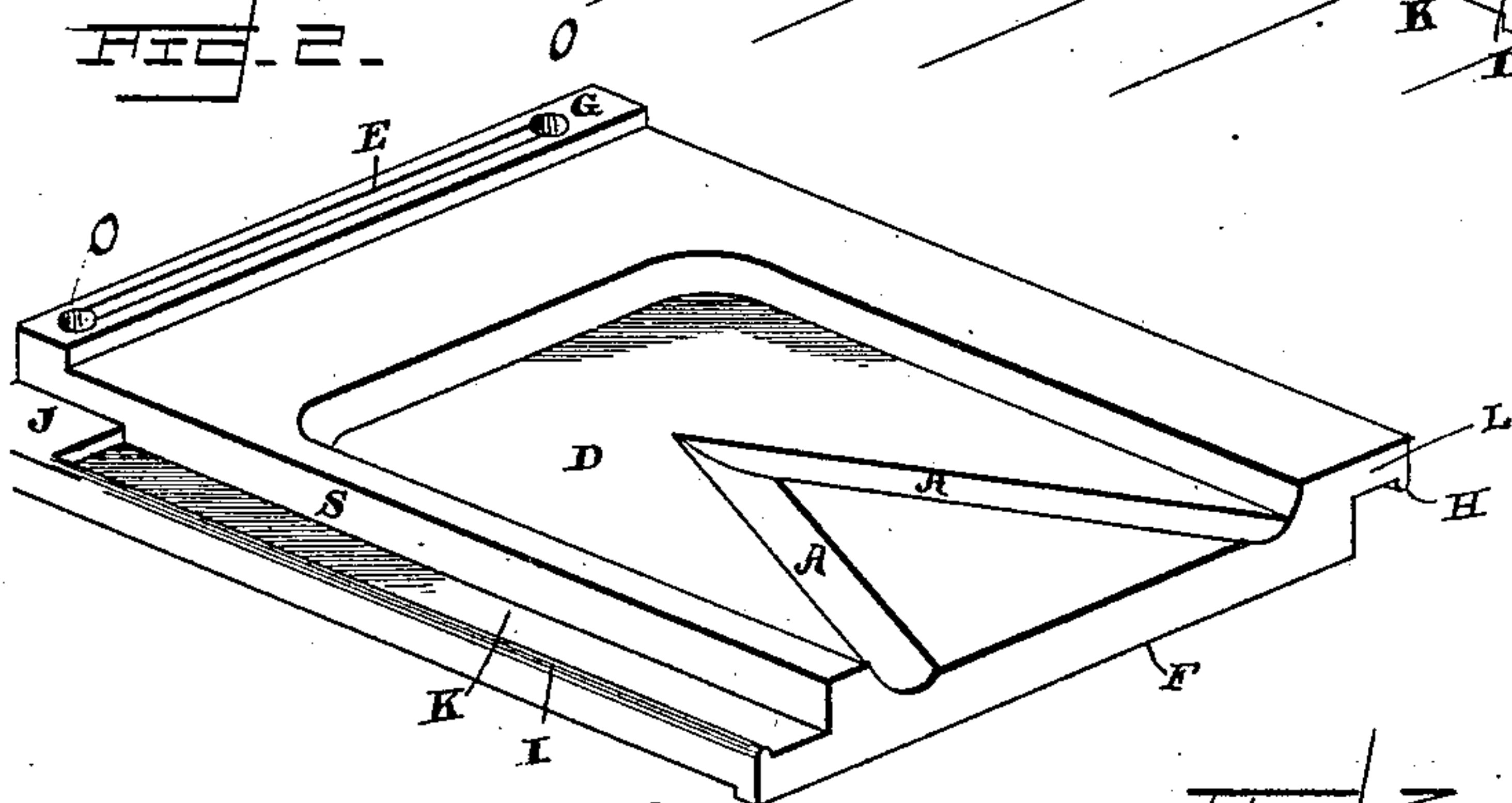
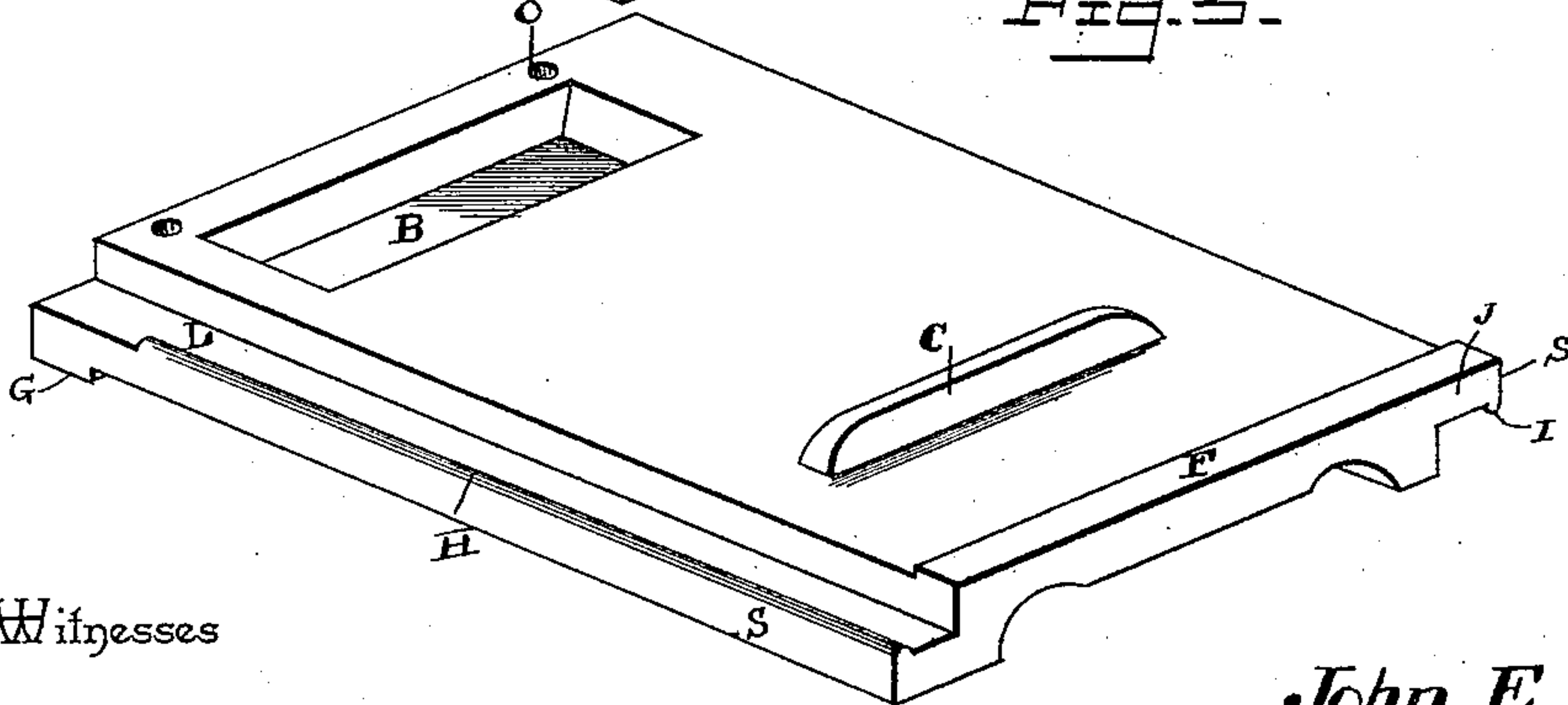


FIG. 3.



Witnesses

E. S. Duwall Jr.
A. L. Collamer.

By their Attorneys,

Inventors
John E. Donaldson.
and
Edward C. Elder.

C. A. Snow & Co.

2 Sheets—Sheet 2.

ROOFING TILE.

Patented Dec. 15, 1891.



Inventors

John E. Donaldson.

Edward C. Elder.

By their Attorneys,

E. S. Duvall Jr.
N. L. Collamer.

Chas. Snow & Co.

UNITED STATES PATENT OFFICE.

JOHN E. DONALDSON, OF MONTEZUMA, AND EDWARD C. ELDER, OF
INDIANAPOLIS, INDIANA.

ROOFING-TILE.

SPECIFICATION forming part of Letters Patent No. 465,364, dated December 15, 1891.

Application filed March 18, 1891. Serial No. 385,509. (No model.)

To all whom it may concern:

Be it known that we, JOHN E. DONALDSON, of Montezuma, Parke county, Indiana, and EDWARD C. ELDER, of Indianapolis, in the county of Marion and State of Indiana, citizens of the United States, have invented a new and useful Roofing-Tile, of which the following is a specification.

This invention relates to roofing, and more especially to the tiles used for this purpose, which are generally made of burnt clay or similar material.

The object of the invention is to produce certain improvements in the construction of such tiles whereby they will fit together in stacking, yet leave sufficient space for burning, whereby they have a certain degree of transverse and longitudinal adjustment when applied to the roof, whereby means are provided for preventing snow from beating up under the lower edge of a tile or the tile from slipping downward if its fastening devices break, and whereby the water running down the roof will be directed away from the longitudinal joints between the tiles. These objects we effect by our improved tile, which is constructed substantially as hereinafter more fully described and claimed, and as illustrated on the two sheets of drawings, wherein—

Figure 1 is a perspective view of a portion of a roof, showing several tiles secured thereon in position. Fig. 2 is a perspective view of the face, and Fig. 3 of the back, of a single tile. Figs. 4 and 5 are elevations of the lower ends of two tiles when connected, showing the transverse adjustment. Figs. 6 and 7 are longitudinal sections of two tiles when connected, showing the longitudinal adjustment. Fig. 8 is a longitudinal section of several tiles as stacked for burning in the kiln.

Referring to the said drawings, the letter R designates the sheeting of a roof which is covered with our improved tiles, each of the latter being of the following construction:

Fig. 2 shows the face of our improved tile, which has a depression D, thereby saving considerable material, and near the lower end of the bottom of this depression is located a pair of channels A A, completing an Λ -shaped figure, whereby the water running down the depression D will fall into the channels and be

guided thereby to either side of the joint between the two tiles next below in the roof. At the upper end of the face is a raised transverse rib G, near each end of which is a hole O for fasteningscrews or nails, and these holes are preferably connected along the face of the rib G by a groove E, whereby when the tiles are to be secured upon the metallic sheeting of a roof wire lacings may be employed, which shall pass through the tin, upwardly in one hole O, along the groove E, downwardly through the other hole O, through the tin, and along beneath the same transversely of the roof to a point below the first hole of the next tile.

J is a flange extending along the lower half of one side S of the tile, the upper face of the flange standing about flush with that of the depression D. The upper end of this flange is plain; but the main portion of its body is provided with a groove or depression K, leaving a small bead I along its outer edge, all for a purpose to appear hereinafter.

Fig. 3 shows the back of our improved tile, which has a cavity B near its upper end, extending nearly across the tile, and a raised web C near its lower end, which is slightly shorter in length than said cavity. Across the lower end of this back is a rib F, of equal thickness with and similar to that lettered G at the upper end of the face, except that it has no holes or groove.

In stacking the tiles together in a pile, as for burning in a kiln, as seen in Fig. 8, every alternate tile is reversed, as is the center one in this figure, and such reversal brings the cavity B beneath the web C of the tile above and also brings its own web C on the upper face, so as to extend upwardly into the cavity B of the tile above. As the reversal is lengthwise of the tile, the rib G, which was at the upper end on the face, exchanges places with the rib F, which was at the lower end on the back, and the result is that there is an upwardly-projecting rib at the upper end and a downwardly-projecting rib at the lower end of each tile in the stack. These ribs hold the faces of the tiles slightly separated, as shown, and greatly facilitate burning. At the left-hand edge of the back (when it is inverted) is formed a flange L, which extends from the

(then) lower half of this side; and said flange has a plain face, except that a small bead H rises above such face along the outer edge thereof and extends nearly to the upper end.

5 A roof composed of these improved tiles is of course made by applying the lower row first—that is, the row along the eaves—and securing them to the roofing-board by wire, as above described, or by screws or nails. The
10 lower ends of the tiles in this row should appear as in Fig. 4, with the flange L of one tile overlapping the flange J of the next to the right and the side edges S S in close contact. It sometimes occurs, however, that the roof
15 may not be in width exactly a multiple of the width of a tile, and in order to adjust the same transversely, so as to bring the last upright row of tiles flush with the edge of the roof the flanges J and L may be moved slightly
20 upon each other, which will cause the beads H and I to stand somewhat closer, as seen in Fig. 5, and the result will be that the air-space M between these beads will be smaller than when the sides S were in close contact. An-
25 other result which will follow is that there will be a slight opening Q between the flange L of one tile and the side S of the next; but the A-shaped grooves of the tile next above will direct the water to either side of this
30 opening, as above described. Still such water as will fall into the opening will simply run down and out of the lower end thereof into the eaves or onto the tile next below, and the beads H and I, with the interposed
35 air-space M, will prevent the water leaking through. These parts may be considerably larger in proportion than shown, or their shape may be somewhat changed, without departing from the spirit of our invention; but we con-
40 sider it always advisable that a certain transverse adjustment of the tiles be permissible, not only for the purpose before described, but also to allow for the variations in size due to contraction and expansion.

45 In the same manner as above described, as the rows of tiles are secured upon and across the roof, it may be found that the height of the roof is not a multiple of the length of the tile. In order to allow for a certain longi-
50 tudinal adjustment of the tiles, so as to bring the upper row flush with the ridge-pole of the roof, we have located the web C at some distance above the lower rib F. As the lower end of each tile is placed over the upper end
55 of the tile below, the downwardly-projecting rib on the former strikes the face of the latter and the upwardly-projecting rib G at the upper end of said tile strikes the back of the upper tile, these ribs being ordinarily such
60 distance apart that considerable space N is left between them and the upper end of the lower tile comes flush against the lower face of the web C on the upper tile. In this position said web obviously stands across the up-
65 per end of the longitudinal junction between the two tiles in the row next below, and hence if said two tiles have the opening Q above

mentioned this web C will prevent snow or sleet from beating upwardly in said opening and under the lower end of the tile above, 70 because the web C covers the upper end of that opening, as will be clear. However, near the ridge-pole of the roof the tiles may be longitudinally expanded a little as they are laid, as shown in Fig. 7, the result being that 75 the space N will be slightly reduced in size and that the web C will not come in contact with the upper end of the tiles in the row below. This web is also useful for preventing any tile whose fastening may have become 80 broken or rusted away from slipping down and out of place, because in such event the web would strike the upper end of the tiles below, whereby it would be positively held in position. 85

It will thus be seen that a tile constructed in accordance with the above description may be easily stacked in a close pile, which will yet possess the necessary passage-ways, so that the whole can be burned thoroughly, may 90 be secured to the roofing-boards by screws or by wire, is susceptible of a certain amount of transverse and longitudinal adjustment, which not only facilitates its application to the roof, but also allows of contraction and 95 expansion after application, is provided with channels to direct the water away from the longitudinal joints, has interlocking beads within said joints, so as to prevent water leak- 100 ing through onto the roofing-boards; has a transverse web, which prevents the water beating up under the tile, and also prevents the tile from slipping out of place if its fast- 105 ening devices become broken, and is still of a size and configuration which is easy to mold and to burn, but yet which economizes the material without sacrificing strength.

The thickened edges of the tile give it considerable strength to resist a tendency to crack it transversely. The portion thereof 110 through which the wires or screws are passed and which is therefore subjected to the greatest strain is the full thickness of the material, so as to be less likely to break, and the portion thereof which is depressed at its cen- 115 ter and which is farther reduced in size by the inclined grooves A, so that it is the weakest part of the tile, is strengthened against longitudinal cracking or cracking up one of the grooves, which should be most likely to 120 occur by a good-sized web C on the under side.

What is claimed as new is—

1. The herein-described tile, having a depression in its face and in said depression grooves forming an A-shaped figure, the lower 125 ends of said grooves extending to points near the lower corners of the tile, as and for the purpose set forth.

2. The herein-described tile, provided with a cavity in its back near its upper end, hav- 130 ing interlocking flanges along its sides, and having a transverse depending web on its back adapted to stand above the upper ends of the flanges of two tiles in the row next be-

low when on the roof, said web being the same distance from the lower end as is the cavity from the upper end, whereby the web is adapted to enter said cavity when the tiles are stacked, all as and for the purpose set forth.

3. The herein-described tile, having an upwardly-projecting rib across the upper end of its face, a downwardly-projecting rib across the lower end of its back, said ribs being of equal thickness, interlocking flanges along its sides, and a transverse depending web on its back adapted to stand above the upper ends of the flanges of two tiles in the row next below, the back being provided with a cavity as far from its upper end as is the web from its lower end, all as and for the purpose set forth.

4. The herein-described tile, having an upwardly-projecting rib across the upper end of its face and provided with a depression in its face at some distance below said rib, and also having a downwardly-projecting rib across the lower end of its back, said ribs be-

ing of equal thickness and of a width to permit some longitudinal adjustment between the tiles in two rows, as and for the purpose set forth.

5. The herein-described tile, the same having interlocking flanges across its upper and lower ends, said flanges being of equal thickness, a depending transverse web on the back adapted to stand across the meeting edges of the two tiles in the row next below, and a cavity in said back at a point to receive said web when the tiles are stacked, as and for the purpose set forth.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in presence of two witnesses.

JOHN E. DONALDSON.
EDWARD C. ELDER.

Witnesses:

BENJAMIN F. HUDSON,
ROBERT O. JONES.