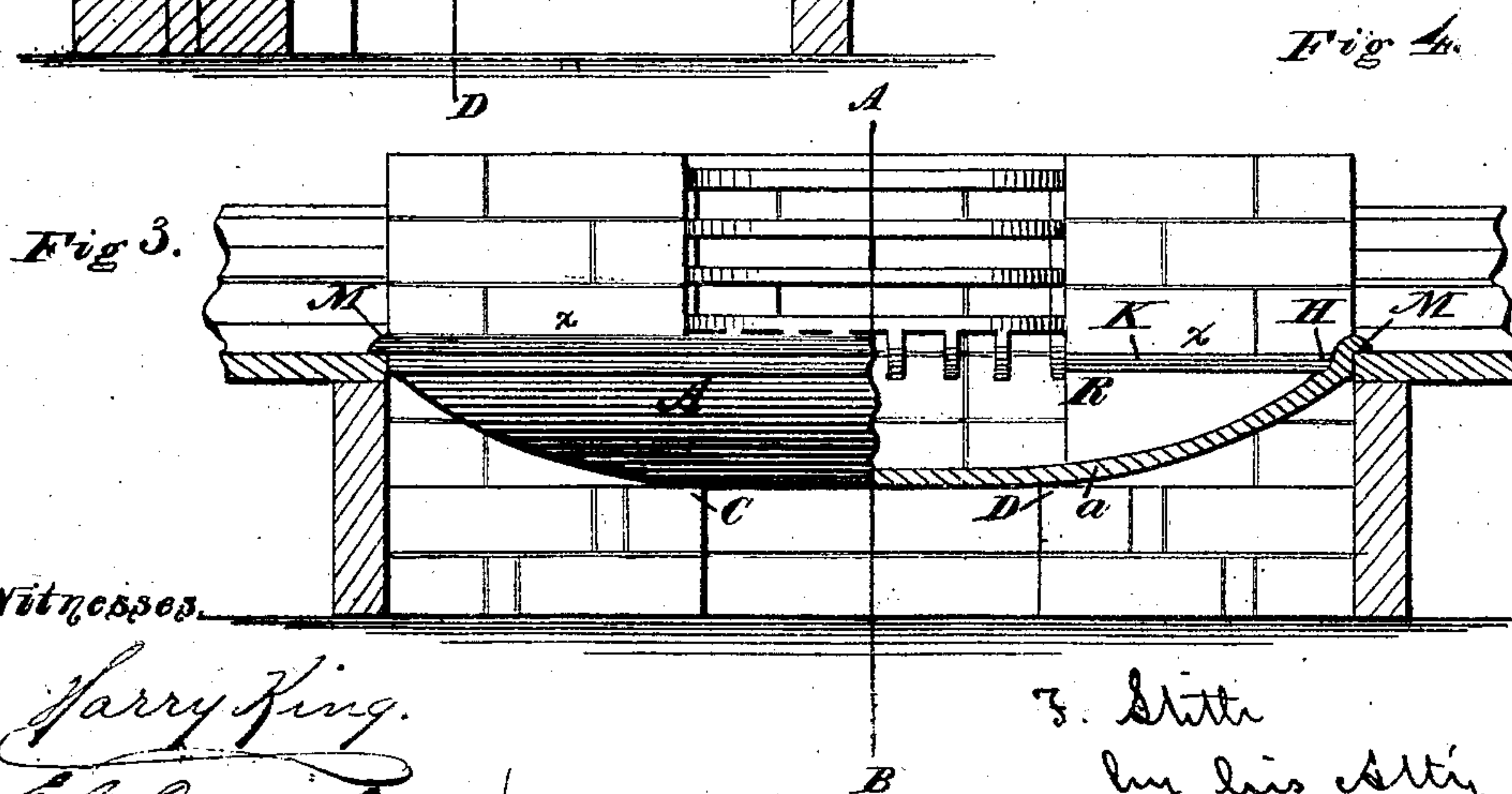
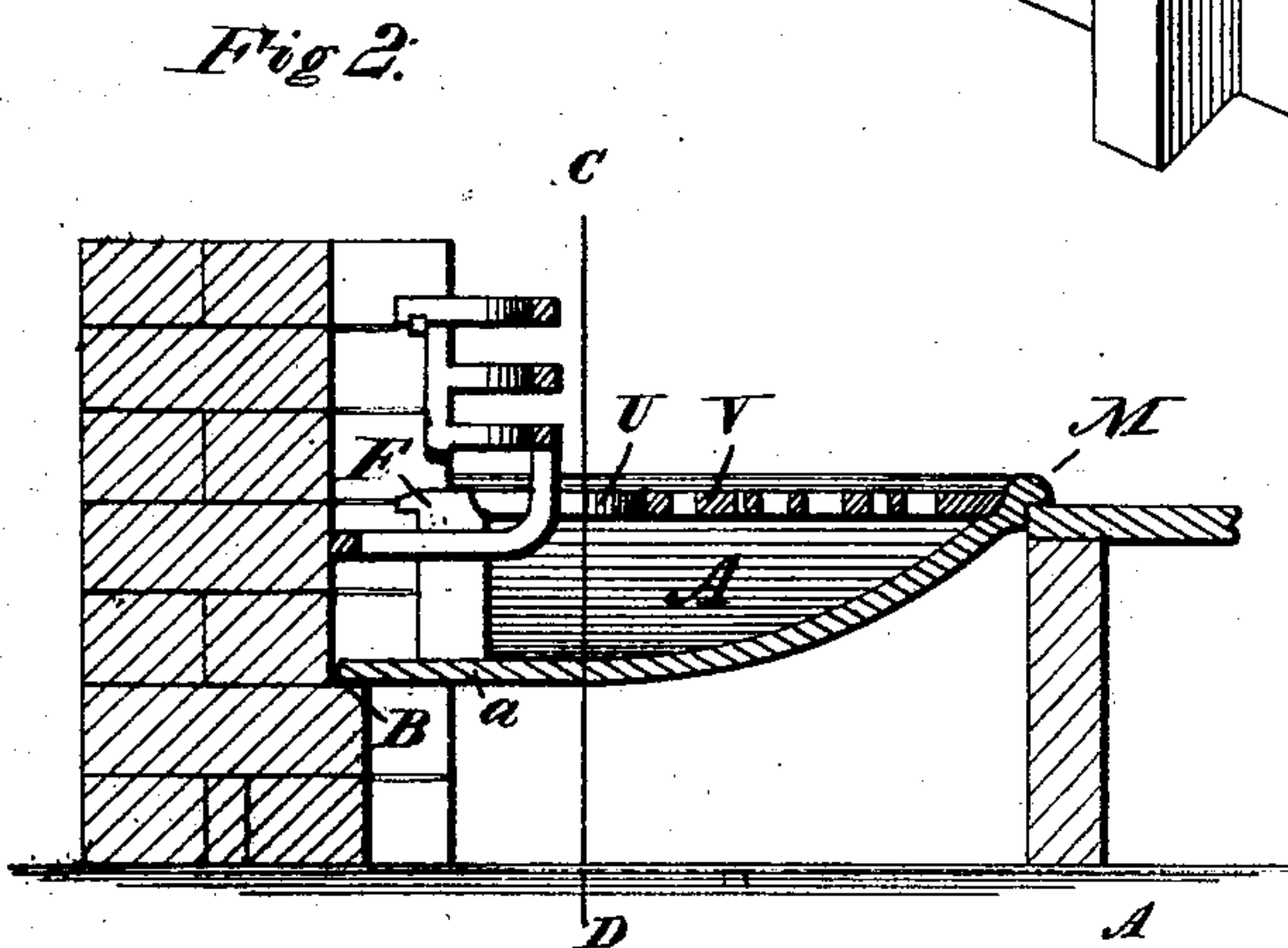
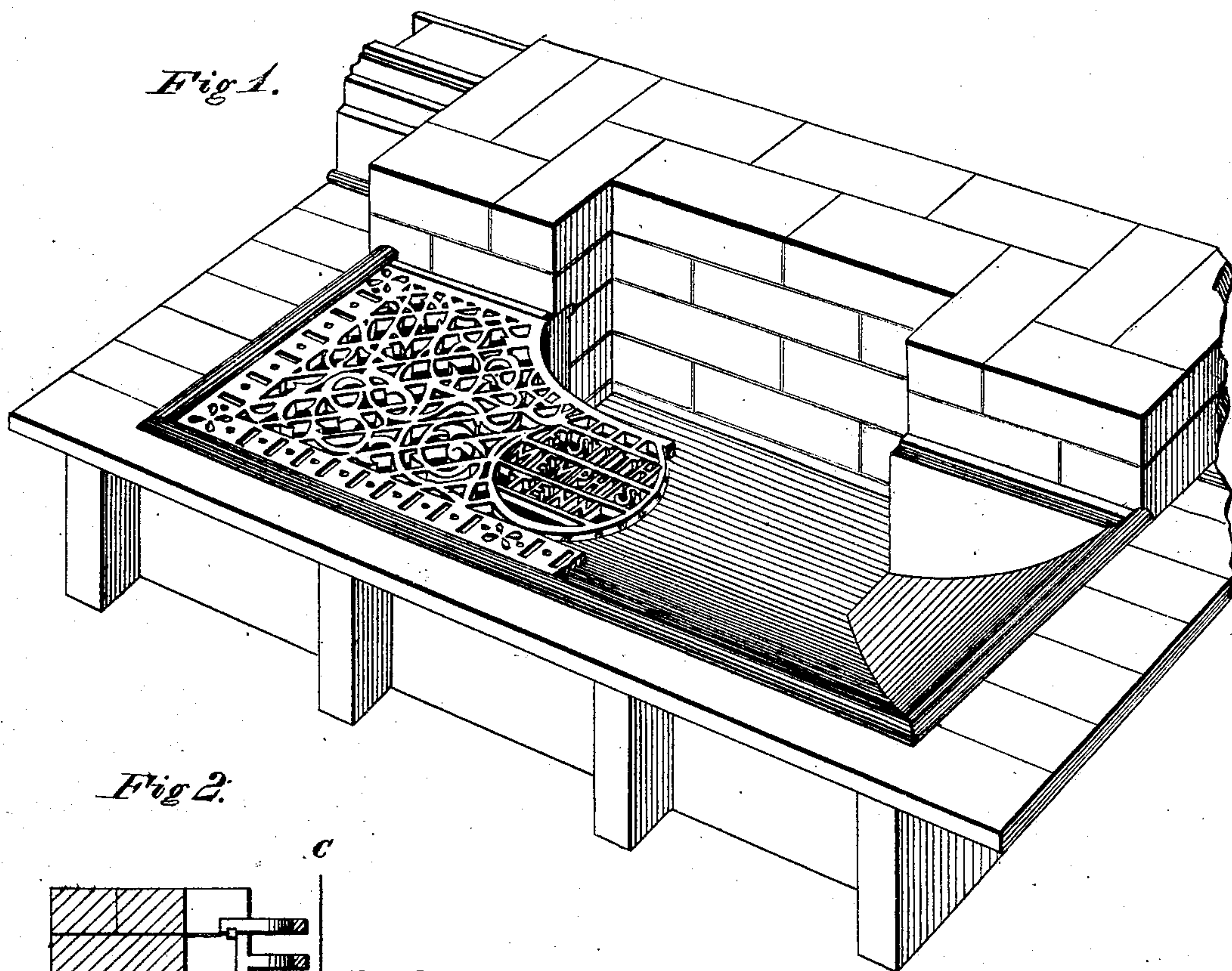


F. STITH.  
Fire-Place Grates and Hearths.

No. 151,726.

Patented June 9, 1874.



Witnesses.

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# UNITED STATES PATENT OFFICE.

FERDINANDO STITH, OF MEMPHIS, TENNESSEE.

## IMPROVEMENT IN FIRE-PLACE GRATES AND HEARTHES.

Specification forming part of Letters Patent No. 151,726, dated June 9, 1874; application filed June 19, 1872.

*To all whom it may concern:*

Be it known that I, FERDINANDO STITH, of Memphis, in the county of Shelby and State of Tennessee, have invented certain new and useful Improvements in Hearths, of which the following is a specification:

The object of my invention is to produce a hearth which shall dispense with the ordinary trimmer-arch or hearth-sustaining arch and sand-box, and enable the grate-basket of open fire-places to be set low down without the excessive complication and great cost attending the present method, and which shall as well be simple, safe, durable, permanent, comfortable, cleanly, ornamental, portable, and easily set, and incidentally to dispense with the dirt-accumulating and heat-obstructing fender, which is an indispensable accessory of the present or ordinary hearth, both to conceal the ash-pan and cover the accumulated ashes and sweepings, and to guard from falling and rolling coals the floor and other adjacent combustible parts of the building.

In the accompanying drawings, Figure 1 is a perspective view of my hearth with its surroundings as set, a portion of the cover being removed to show the inside and bottom of the basin more clearly. Fig. 2 is a vertical transverse section, taken on the line A B of Fig. 3-4, through the middle of the fire-place, the basin, and the lid, and showing also a grate-basket as it may be set low down with my hearth. Fig. 3-4 is a front view of the entire outline of my hearth and of a grate-basket as it may be set low down therewith, and is divided by the line A B into two figures, of which Fig. 3 is a front view of one-half of my hearth-basin. Fig. 4 is a vertical longitudinal half-section of my hearth-basin without the lid, taken on the line C D of Fig. 2.

A cast-iron tray-shaped hearth-basin, A, is made with its sides at the front and ends curving easily into its bottom, so as to radiate into the apartment the light and heat reflected from the lower portion of the fire, and about five inches or the thickness of two bricks, as laid, in depth, or of such depth as may be desired, provided, however, the bottom be not so low as to endanger or in any way injure the

ceiling or other work beneath it, and is generally about one-half inch thick, and is of such dimensions horizontally as to conform to the hearth-hole and the fire-place, by and in which it is embraced, and its measurements throughout are made preferably to agree naturally with the brick-work, or, as technically expressed, "to work to even brick," thereby to obviate the cutting of brick. The bottom of the basin extends rearward beyond the general body of the basin, and into the fire-recess or fire-place proper, and where it rests on a ledge, B, of the brick-work projecting from the chimney-back, and on ledges C and D projecting from the jamb-sides of the recess. The basin is further supported by a lug, F, extending from the back of each side of the basin, and inserted into mortar-lines of the jamb-fronts, as *xx*, Fig. 3-4; or, instead of a lug on each side of the basin, it may be supported by flanges or lips resting on ledges projecting from the jamb-fronts. It will be seen that this basin, being simply placed or set in and on the hearth-hole and the masonry, may be readily removed, if for any reason desired. The sides of the basin are returned at F toward the rear end, so becoming a continuation of the lug R, or of their substituted flange, as the case may be, and serves, by being sufficiently in close contact with the jamb-side, to prevent the passage of fire from the basin and between it and the brick-work to any combustible part below or outside the basin, so as to endanger the building, the passage of fire from the hold of the basin around the edges of its extended bottom being prevented by its bearing on the supporting-ledges projecting from the rear of the recess and from the jamb-sides. The basin is further supported and held in place by a lip or rim, M, extending along the front and ends of the hearth-hole, and resting on the flooring on the framing-timbers. This lip, rising above the floor-surfaces, serves to guard the carpet-edge from fire and excessive wear, and, being rounded on its upper side, permits sweeping to be easily made over it. A continuation downward of the inner side of this lip forms, with the upper edge of the basin-side, a rabbet, H, of Fig. 4, continuing



also along the rear side of the basin, as at K, in which rabbet rests a lid or cover.

The usual method of preparing for the setting or laying of hearths, either of brick or stone or of other slab, is to either build within the hearth-hole and the fire-recess a trimmer-arch or sustaining-arch of masonry, or to fit there a wooden bottom, so as to make, with the framed sides of the hearth-hole and with the chimney and fire-recess, a sand-box, to be filled or partly filled with sand, or clay, or earth, as a bed to bear the hearth itself, of whatever material made. This arch, either from faulty workmanship, or as a chance result of shocks or severe usage acting on it, or on the parts by which it is sustained, or sometimes even as a result of unequal settling of the building and the chimney, is liable to some slight fracture or parting, and the wooden bottom, from the protracted drying and consequent shrinkage to which it is exposed, is liable to open at its joints and connections, when in either case the filling, having become deprived of its moisture by the inevitable heat and drying to which it is subjected, is diminished in bulk, so as to fail of the support it was intended to give, and so also such infinitesimal particles as may have been held in coherence by the inherent moisture of the filling, reduced now to impalpable dust, passes of itself or influenced by sudden jars from the box through minute and imperceptible fissures, aided in its escape by the operations of mice, roaches, and other vermin who there find accessible and acceptable harbor, until the displacement of the hearth-bearing filling permits the slab to break, or warp, or settle, for want of continuous support, or the brick hearth to settle in unsightly and dirt-gathering inequalities, either defection irremediable except by an entire removal of the hearth itself, and a renewal of the sand-box and its filling; or, finally, the passage of fire is admitted to some combustible part exposed by such giving way, and which, by the nature of its surroundings, is practically inaccessible for extinguishment. It is true that this escape of the sand-box filling might be to some extent obviated by using some composition of plaster or cement to solidify it, and so keep it in place, but such is not the practice. A movable lid or cover, V, of open-work, preferably of cast-iron, having its upper surface about level with the floor-surface, and about one-half inch in its general thickness, thickened, if need be, at its edges for increased strength, resting in the rabbet or groove K H, and covering the main body of the basin, concealing the unsightly ash-pan and the sweepings, which fall through the interstices of its open-work and into the hearth-basin. These interstices, in addition to their faculty of giving an ornamental character to the lid, so becoming open-work, and of effecting a decrease of its weight,

desirable for better facilitating its removal, and also of the allowance of unrestricted expansion when heated, so as to prevent its cupping or warping from shape, or its tightening in its rabbet, serve the more essential purpose of allowing ready passage into the apartment of the light and heat radiated from the lower portion of the fire into the body of the basin, and of admitting full supply of air to the fire, the basket being set as preferred, either considerably above the floor-level, as now with the ordinary flat hearth is necessary to insure below its supply of needed air, or, as shown in Figs. 2 and 3-4, with its bottom bars near or below the floor-line in the low-down manner, obviously preferable, because so locating the heat at the feet, where most needed, and so retarding, to some extent, the heat evolved in its natural tendency to rise, and so escape utilization. To admit the free dropping of ashes and cinders into the hold of the hearth-basin, and also to facilitate the dislodgment of accumulating ashes clogging the lower grate-bars, the rear side of the lid, instead of extending into the fire-recess or of continuing directly across its front, is in front of the grate and of the recess U, curved outward and forward, so as to leave about two inches of open space between the front line of the grate and the rear line of the lid, where may be made ready insertion and free use of a bent poker for clearing away the ashes between the bottom grate-bars, and so the whole fire-recess and that portion of the basin underneath and in the immediate front of the basket being left free of lid, the falling ashes, coal, and cinders are received into the hold of the basin or in the ash-pan placed in it. By slightly raising from the rabbet in which it rests the front edge or side of the lid, it may be drawn forward so as to give ready access to the hold of the basin for the removal of its contents, and so in like manner, on leaving a too-full grate, the lid being drawn forward, any falling coals will be received more surely and securely into the hold of the basin.

The combination of my depressed or tray-shaped hearth-basin with its air-permeable lid gives a facility of setting and a certainty of the satisfactory operation of the preferable method of low-down grates, and in a manner more simple and inexpensive and free from the need of attention while in use than by the usual complicated under-draft system, with its necessary hearth and accessories of pipes and registers and fittings, or than has been heretofore otherwise attained.

I do not broadly claim a metal hearth, or a low-down or base-burning grate supplied with air from below, or a receptacle for ashes and sweepings below the floor or the fire-place, for all these are of common use; nor do I claim the lid design shown, nor confine myself in my lid shown to any special design or character



of design, or of open-work, or to any specific form or dimensions or proportions, either in my hearth-basin or in its lid.

I claim as my invention—

1. A depressed metallic hearth formed by a concave plate, A, extending from the front of the hearth, with a curve to the horizontal bottom under the grate, in combination with a detached open-worked hearth-plate, which, when laid, shall be flush or nearly flush with the floor, substantially as set forth.

2. In combination with the concave hearth A and low-down grate, a detached hearth-plate, recessed as described, to leave a space in front of the grate, substantially as and for the purpose set forth.

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Witnesses:

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W. B. BUTT.