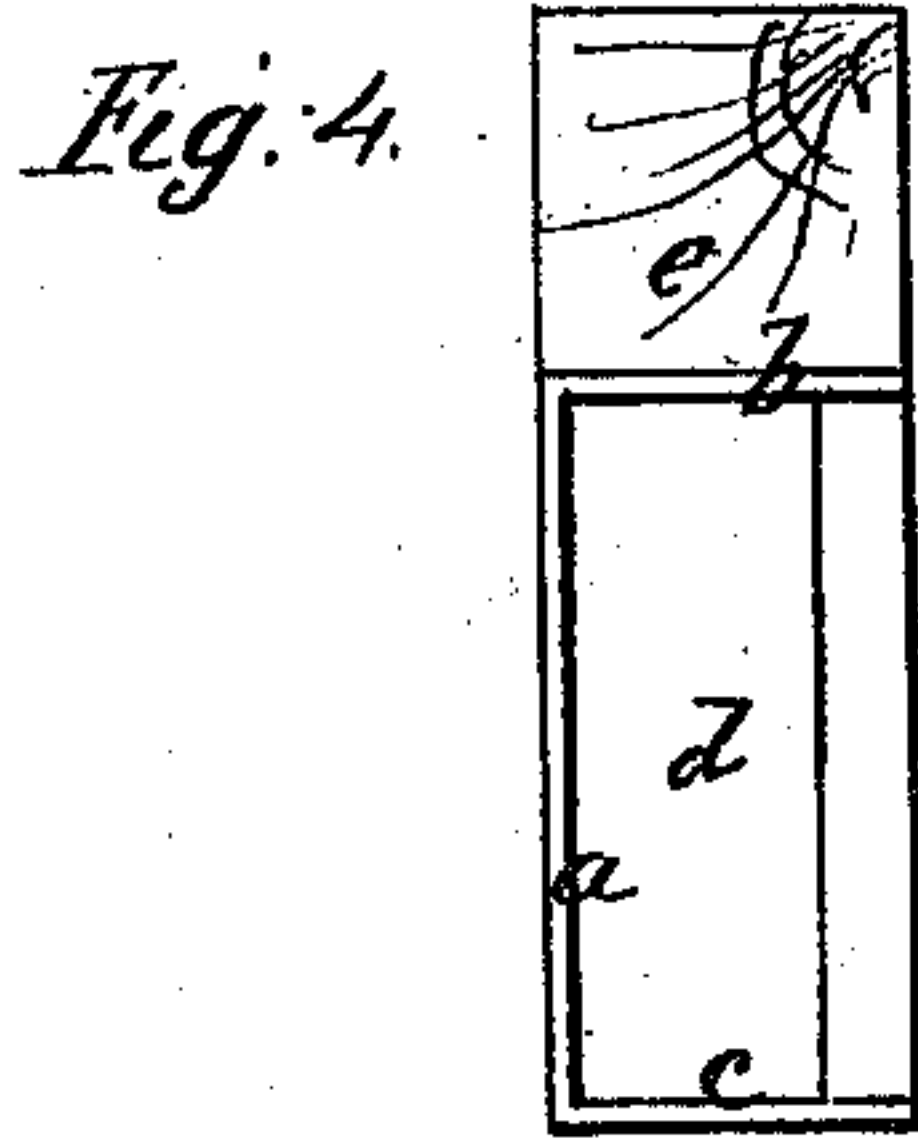
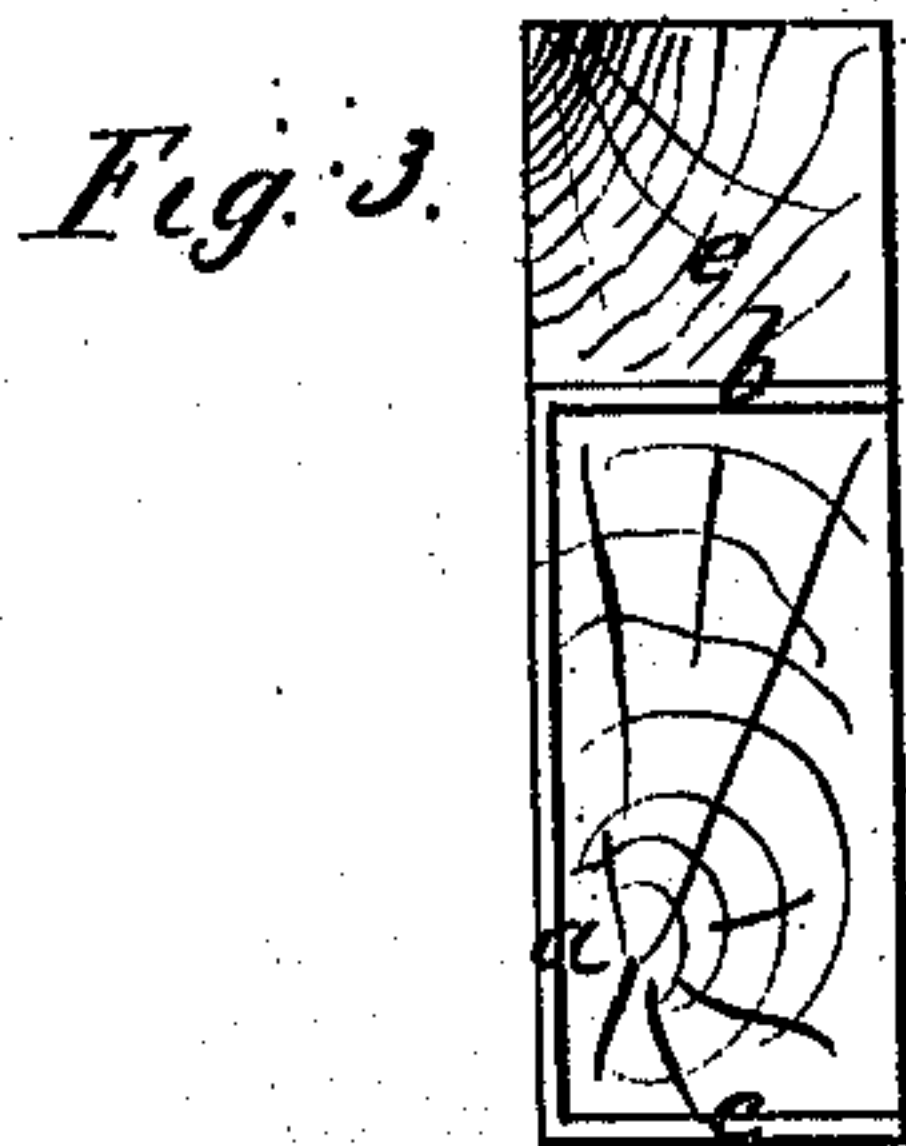
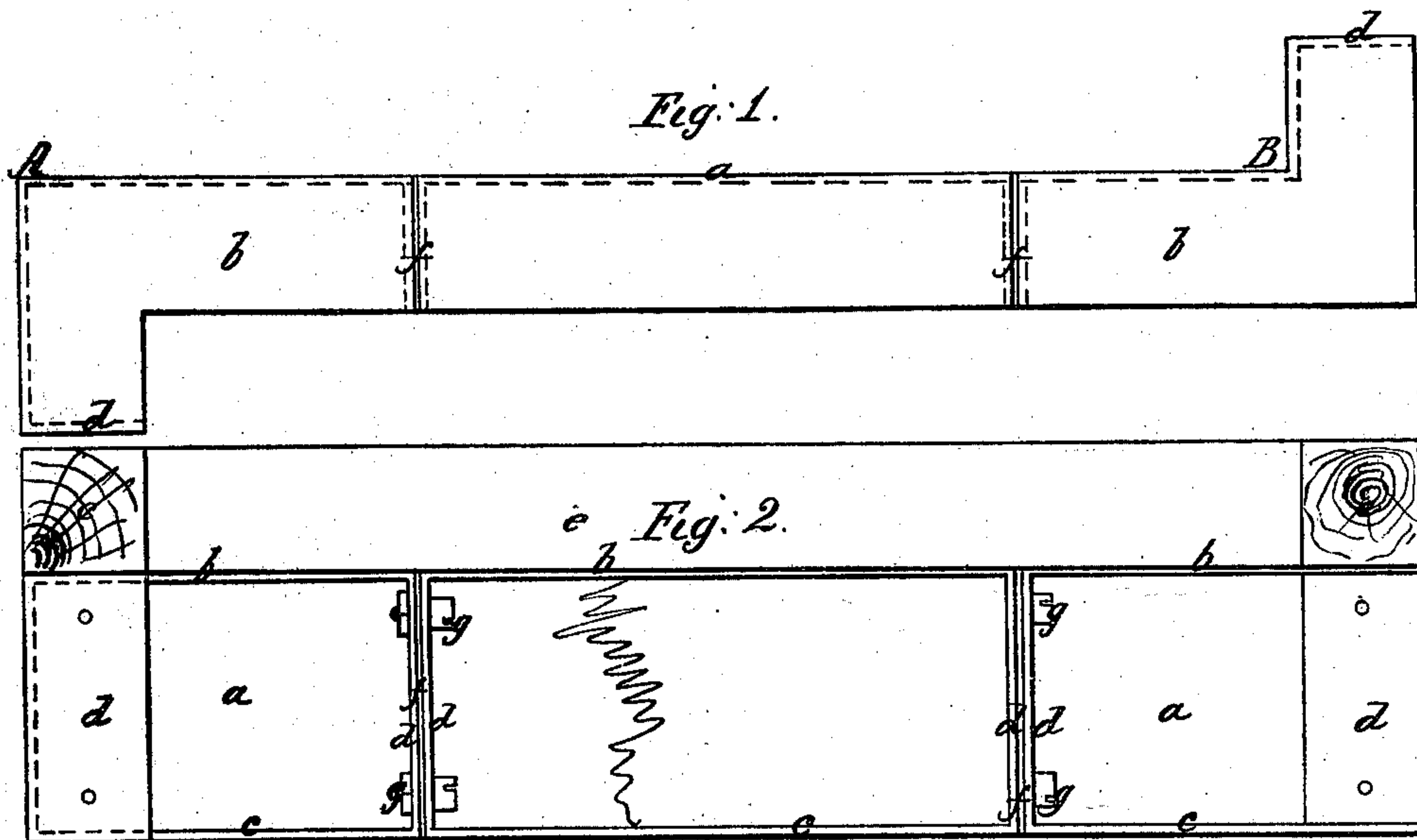


Hill & Burnham.

Underpinning for Buildings.

N^o 89,995.

Patented May 11, 1869.



Witnesses;
S. B. Kiddle
M. W. Frothingham.

Inventors;
J. S. Hill
Andrew Burnham
By his Atty
Horly Helsted & Ince

United States Patent Office.

INCREASE S. HILL, OF BOSTON, AND ANDREW BURNHAM, OF
NORTH CHELSEA, MASSACHUSETTS.

Letters Patent No. 89,995, dated May 11, 1869.

IMPROVED UNDERPINNING FOR BUILDINGS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that we, INCREASE S. HILL, of Boston, and ANDREW BURNHAM, of North Chelsea, all in the county of Suffolk, and State of Massachusetts, have invented an Improved Underpinning for Buildings; and we do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of our invention, sufficient to enable those skilled in the art to practise it.

For wooden buildings, especially, it is the practice to place, beneath the sill of the frame and the rough rubble wall of the cellar, a course of ashlar, sometimes rough and sometimes dressed, and generally called the underpinning, its purpose being to raise the wooden sill from the ground, to prevent its decay.

This stone underpinning is expensive, and heavy to handle and transport, and often can be obtained only of distant quarrymen, after long and vexatious delays.

The object of our invention is to provide a durable and cheap substitute for such underpinning, which, like builders' hardware, can be constantly kept on hand at foundries and hardware-stores, from which it can be ordered according to any given schedule of sizes.

Our invention consists in a new article of manufacture, the same being an underpinning of cast-iron, having a vertical web, and upper and lower flanges of about the width of the sill, which is to rest upon the upper flange, the pieces being made with end flanges, which are pierced with holes, so that the pieces can be united by bolts.

For forming the outer corners of the underpinning, the castings are made with salient angles, and for breaks in the building, as where wings join the main building, the castings are made with re-entering angles.

The drawings illustrate an embodiment of our invention—

Figure 1 showing a portion of our improved underpinning, in plan;

Figure 2 exhibiting a rear elevation thereof; and
Figures 3 and 4, cross-sections of the same.

a is the front vertical web, or plate of the casting.
b, the upper, and *c* the lower horizontal flanges, ex-

tending from the outer boundary of the building toward its interior.

d d are vertical flanges, cast at the ends of each separate piece entering into the formation of the entire underpinning, said vertical flanges being cast integral with the pieces to which they appertain.

Through adjacent flanges *d d* pass bolts *g*, which unite the parts of the underpinning together.

At A, in fig. 1, is shown a salient-angled piece of our underpinning, and at B, a re-entering-angled piece, the angles of such pieces being commonly right angles, though they may, of course, be made to any desired angle.

The sill which is to rest on the upper flange of our underpinning is denoted by *e*.

Where the pieces of the underpinning are bolted together, we prefer to introduce into the joints sheets of soft or yielding material, such as rubber, tarred paper, &c., as seen at *f f*.

Where windows or doors break the continuity of the underpinning, the frames thereof are easily united to the underpinning by the use of wood-screws, which are passed through holes made in the flanges *d*, the threads of the screws holding in the wood of the frames.

If it is desired to keep the cellar warm in winter or cool in summer, the space in the underpinning, bounded by the front plate *a* and the flanges *b* and *c*, may be filled with any good non-conductor, such as wood, for example, as seen in fig. 3; or, as seen in fig. 4, a board may be fitted between the flanges *b* and *c*, and an air-space may be left behind the board, or the space may be filled with tan, or sawdust, or other suitable substance.

To prevent rusting, the castings should be well coated with red-lead paint, and then the outer surface of the underpinning may be painted and sanded, in imitation of stone.

We claim the system of metal underpinning, consisting of the straight and angular castings, arranged and connected together substantially as described.

INCREASE S. HILL.
ANDREW BURNHAM.

Witnesses:

J. B. CROSBY,
FRANCIS GOULD.