(No Model.)

J. C. ANDERSON.

HOLLOW BRICK WALL.

No. 467,491. Patented Jan. 26, 1892.

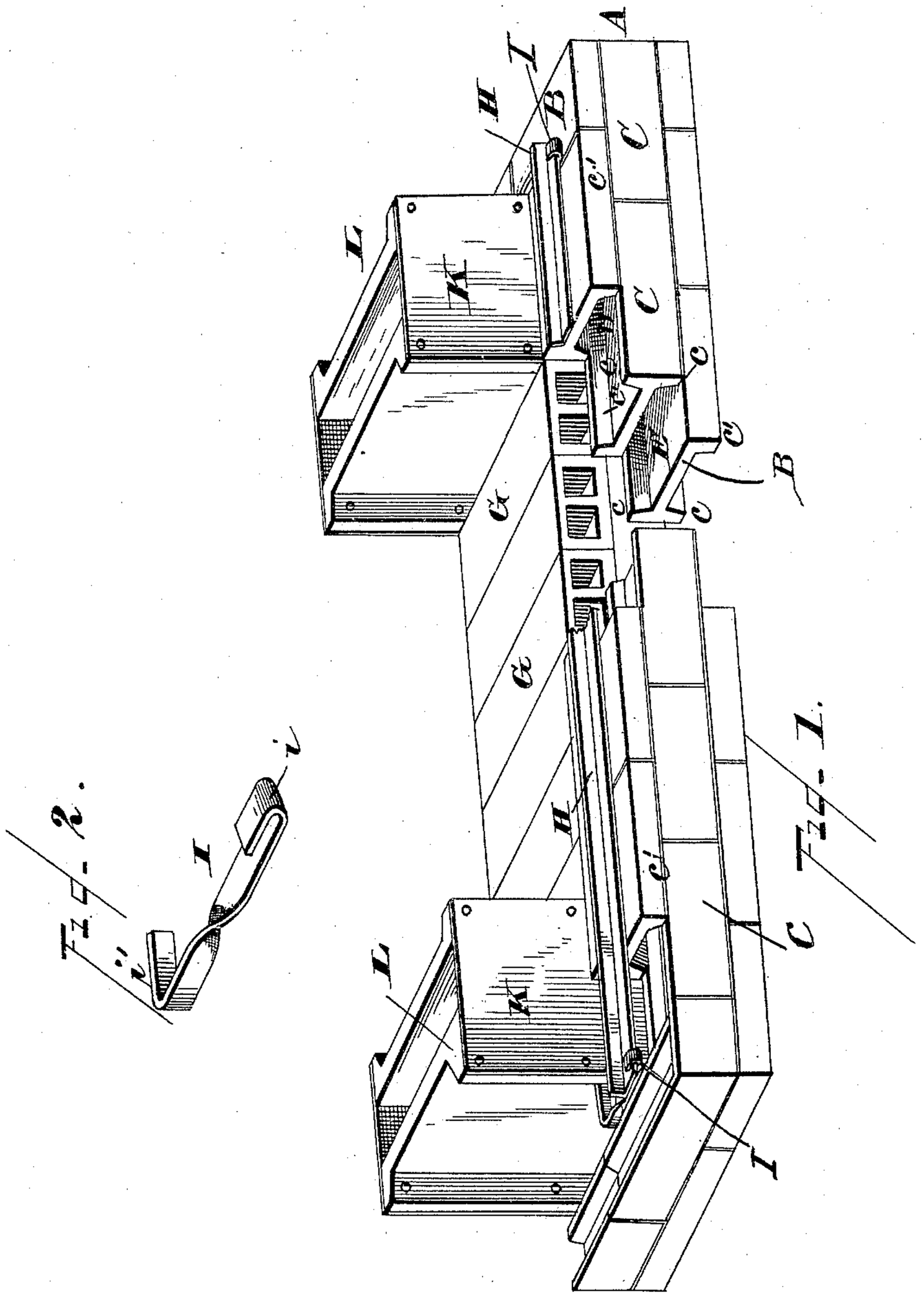

Fig. 1.

Fig. 2.

WITNESSES
F. L. Durand.
W. M. Clayton

INVENTOR
J. C. Anderson
by D. McGunsabaugh
Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JAMES C. ANDERSON, OF HIGHLAND PARK, ILLINOIS.

HOLLOW BRICK WALL.

SPECIFICATION forming part of Letters Patent No. 467,491, dated January 26, 1892.

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To all whom it may concern:

Be it known that I, JAMES C. ANDERSON, a citizen of the United States, and a resident of Highland Park, in the county of Lake and State of Illinois, have invented new and useful Improvements in Hollow Brick Walls; and I do hereby declare the following to be a full, clear, and exact description of said invention, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to the construction of the outer walls of buildings, and more particularly to high fire-proof buildings where great strength, solidity, and close surface texture is a requisite. In order to obtain a more concise view of the state of the art in this connection, I will first explain that the rapid advancement in the art of production of steel channel-beams suitable for the construction of the skeletons or frame-work of high buildings and the great demand for them in the larger cities in the utilization of ground-space for buildings has brought us face to face with a new requirement for a suitable outer wall-covering which shall afford the proper weather-surface not only to act as a barrier against the storms, rains, snows, and freezings, but also to protect the steel skeleton from the action of fire, essential in this kind of structure, and at the same time to present a surface to the general atmosphere of the city that will in the most effectual manner shed the moisture of the atmosphere and resist the constantly-increasing smoke and noxious gases incident to a growing city. It will be understood, also, in this connection that these buildings for the most part under the present state of the art must be constructed of terra-cotta or burnt clay in various forms, for the reason that such material is necessary to render this kind of structure fire-proof, and in order to reduce the weight of the structure to the minimum and to properly distribute the load of these high buildings upon the steel channels of the skeleton or metal frame-work it is highly desirable that the terra-cotta of the various kinds be as light as possible. This is fairly met so far as relates to the inner partition-walls and to the building in between the joist-spaces of the various floors; but the ordinary hollow-tile and terra-cotta products thus employed and made by what is known as the "wet process" are too frail and porous and are entirely inadequate for the main outer walls of such buildings.

Various patents have been granted to me from time to time for the production of clay bodies for the outer walls of buildings, with the main object in view of producing these bodies with the closest possible body-texture, so as to resist the osmotic action of the atmosphere and at the same time give to the walls of the building solidity, strength, and durability, and in which I have explained the difficulties met with in pressing large clay bodies into form out of dry clay powder and alleged the advantages to be gained in the compactness and solidity of these clay bodies where a uniform pressure could be brought upon the dry clay-powder in the production of thin slabs. I have also shown products for which patents were granted to me for hollow brick having a body of ribs or thin slabs, but such latter-named bodies have been exceedingly difficult of production in a practical way, owing to their peculiar shape and to the difficulties then met with in molding such articles, which are necessarily formed in high relief without corresponding depressions, and no means have been heretofore provided for pressing articles from dry clay in high relief without depressions—*i. e.*, having their flanges standing well outward therefrom.

To these ends my invention consists in the novel construction, arrangement, and combination of parts, substantially as hereinafter disclosed.

In the drawings, Figure 1 is a broken perspective view of a section of a wall with parts removed embodying my improvements. Fig. 2 is a view in perspective of a binding-clevis detached from the binding-bar and wall.

The main body of the brick A is formed by the longitudinal slab or web B, this slab or web being located centrally for the whole length and width of the brick and of a thickness equal to the one-third of a brick. A double high relief flange C is formed along one edge of the web B and located centrally thereto so as to form upwardly and downwardly projecting flanges *c*, each of which flanges projects in relief equal to the thick-

ness of the web B. A single relief-flange *c'* is formed along the other edge of the brick, extending upwardly or downwardly to a like distance in relief on one side only of the web B, so as to form a channel-space on one side of the brick and a rabbeted space on the other side thereof, which spaces provide hollow alternating spaces or ducts in the wall construction. In laying up this wall the first course of these brick A is laid upon a suitable bed (not shown in this application) as stretchers, with the double-flanged edge C of the brick laid inward toward the common brick part of the wall G, with the single-flanged edge *c'* thereof laid outward to form part of the face of the wall and with the channel side of the brick downward upon the bed. The next course is then laid as stretchers with the double-flanged edge C faced outward and with the channel side thereof upward, so as to permit the downwardly-projecting flange *c* of the edge C of the brick in the second course to rest on the front edge of the main body or web B of the bricks of the course beneath and the rear edge of the body or web B to rest on the upwardly-turned flange *c* of the brick of the lower course. The third course in forming the wall is then laid with the double flange or channel side of the brick laid downward and the double-flanged edge C turned inward, which gives a bearing on each of the flanges *c c'*. The fourth course is laid the reverse of this, or like the second, with the channel side up, and so on alternately throughout the wall, thus forming the hollow parts or channels D E and providing the flanges along the rear part of each course of the bricks A, permitting the insertion of a series of binding-bars H in said channels. These binding-bars are preferably made of steel angles of suitable base width and rise to have a flat bearing upon the main body or web of the bricks A, and a full bearing against the shoulder formed by the flanges *c* or *c'* for the full length of the wall, as clearly shown in the drawings. These angle-bars H, as before indicated, are made, preferably, of angle-steel rolled out to the proper form and cut in suitable lengths to span the full-post spaces of the building, and as these spaces will vary somewhat in the spanning it is necessary to provide means of adjustment in applying the binding-bars to the wall, which will be more fully explained hereinafter.

I is a steel or iron binding-clevis made to conform to and fit over the web-base of the angle-bar. The clevis is so formed as to extend backwardly beyond the rear part of the brick A and to hook over the flange of the post K of the frame-work of the building by means of the hook *i'*, which is made to conform to the flange L of the posts.

It will be seen that the binding-clevis I is so formed that one may be readily slid over each end of each of the binding-bars H while these are being placed in the wall, so as to bring the hook *i'* snug up to the flange L of the post, and thus permit a variable length of space to the bars H, so as to be readily adjusted without special hand-work in cutting and fitting the same, and that by this method the full course of the facing-brick A is firmly and securely bound to the posts of the frame-work of the building without the use of intermediate binders between the posts and the rear portion of the wall of the common brick G.

What I claim is—

1. The right-angled bar, in combination with the bricks adapted to permit the arrangement of said bar interiorly thereof and means for effecting connection between said binding-bar and the post of the structure, substantially as set forth.

2. The combination, with the post and the binding-bar, of the binding-clevis having at its ends hooks adapted to engage the flange of the post and bar, respectively, and adjustable with the bar, substantially as set forth.

3. A wall comprising a series of upright posts, intermediate masonry, a facing of pressed brick, binding-bars H, connected with the facing, and clevises I, connecting the binding-bars with the posts, substantially as set forth.

4. A facing composed of three flanged pressed brick A, bar H, binder I, post K, and common brick G, substantially as set forth.

In testimony whereof I affix my signature in presence of two subscribing witnesses.

J. C. ANDERSON.

Witnesses:
I. J. SHUART,
J. C. CUSHMAN.