

(No Model.)

P. L. SIMPSON.
SECTIONAL MOLD FOR BRICK PRESSES.

No. 520,455.

Patented May 29, 1894.

Fig. 1

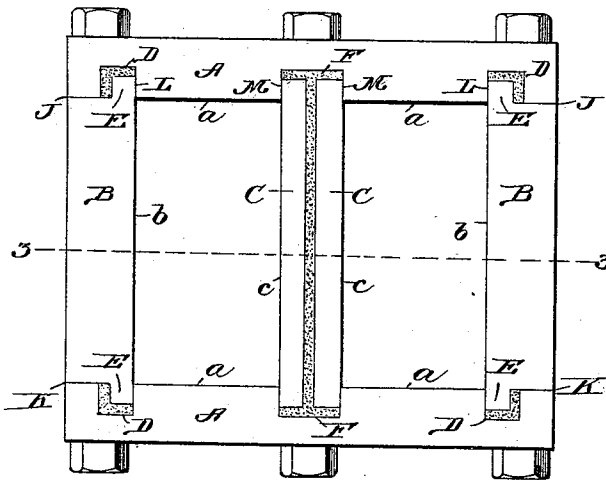


Fig. 2

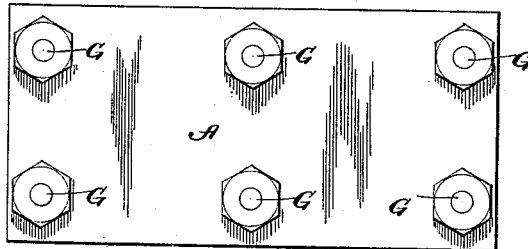
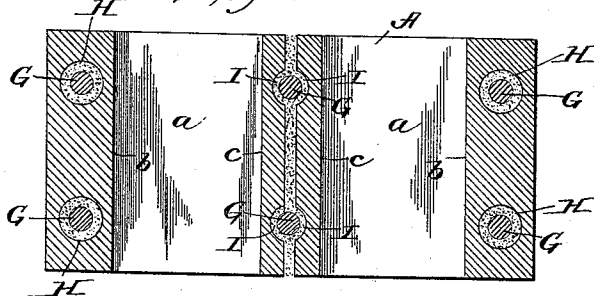


Fig. 3



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UNITED STATES PATENT OFFICE.

PETER L. SIMPSON, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE SIMPSON BRICK PRESS COMPANY, OF SAME PLACE.

SECTIONAL MOLD FOR BRICK-PRESSES.

SPECIFICATION forming part of Letters Patent No. 520,455, dated May 29, 1894.

Application filed September 24, 1892. Serial No. 446,847. (No model.)

To all whom it may concern:

Be it known that I, PETER L. SIMPSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Sectional Molds for Brick-Presses, of which the following is a full, clear, and exact specification.

My invention relates to sectional molds such as are used in brick-presses, and in various other similar kinds of work, and among the primary objects of my invention is to produce a sectional mold the several component parts of which may be readily separated from each other when desirable, and in which the working-faces of such parts shall always maintain unchanging distances of separation and unaltered parallelism to each other irrespective of any single or repeated dressings of the wearing-surfaces of the parts for the purpose of neutralizing the operative wear upon such faces; thus always maintaining the original form and dimensions of the molding-space even after repeated dressings of the wearing-surfaces of the mold.

A further primary object of my invention is to render wholly unnecessary the use of any shims, wedges, or filling-pieces of any kind such as have heretofore been ineffectually employed for restoring the mold-sections to their original positions of separation and parallelism after the working surfaces of the mold-sections have been dressed down to remove the irregularities produced by wear.

A still further primary object of my invention is to produce a sectional mold the members of which shall be so constructed as to permit of the ready introduction of practically continuous masses of filling-material such as will expand upon cooling, and thus to insure great rigidity and strength in the mold due to the expansive action of the filling in various directions.

To the above purposes, my invention consists in certain peculiar and novel features of construction and arrangement, as hereinafter described and claimed.

The more precise nature of my invention will be better understood when described

with reference to the accompanying drawings, in which—

Figure 1, represents a top plan view of a sectional mold embodying my invention; Fig. 2, a side elevation thereof, and Fig. 3, a transverse vertical section on the line 3—3, of Fig. 1.

Previous to my present invention, sectional molds for brick-presses and for various similar classes of work, have been so constructed that, as soon as the working-faces of the mold sections or members have been planed or dressed off to remove the irregularities resulting from wear, the relative distances between the actually contacting parts of the mold sections are necessarily changed, and the result is that when the mold sections are again assembled the original dimensions of the molding space are altered, and cannot be restored without the use of separate devices. Inasmuch as it is primarily important that bricks and other similar articles shall conform precisely to standard measurements, various expedients have been devised for neutralizing the changes in the dimensions of the molding-space; such expedients involving the use of shims, wedges, and filling-pieces of various kinds interposed between the actual contacting portions of the mold-sections. These shims, wedges and filling-pieces are objectionable because they detract from the rigidity of the mold, but a more serious disadvantage arises from the impossibility, in the majority of instances of planing or dressing down the wearing-faces of the mold sections to just such an extent as will be precisely counteracted by the addition or removal of any particular number of filling-pieces and at the same time economically remove the irregularities due to wear.

For the above reasons, after the wearing-surfaces of the mold sections have once been dressed, the restoration of the original dimensions of the molding-space is largely a matter of chance, and is frequently impossible, and much seriously undesirable variation results, in the product, from the standard requirements. As will be clearly seen from the ensuing description, I have produced a sectional mold in which the dressing or planing off of

the wearing surfaces of the mold-sections has no effect whatever upon the actual contacting surfaces or parts of such mold sections, which determine the size of the mold and the result is that no matter how many times the wearing-surfaces may be dressed, the molding-space always conforms to its original dimensions. Moreover, it will be seen that I produce a sectional mold the members or sections of which are capable of being properly assembled and secured together even without the use of any filling of any kind; although I have shown a filling-material which may be used, if desired, with much advantage.

Referring by letter to the accompanying drawings, A, A, designate the side-plates, B, B, the end plates, and C, C, the middle or partition plates, when the mold is of the usual double character, illustrated in the drawings. Obviously, however, the mold might be a single mold or it might have any desired number of division or partition plates, according to the number of compartments desired in the mold.

The side plates, A, A, are provided, near each end, with grooves, D, into which project tongues E, on the side edges of the end plates, while the side-plates are also provided with grooves F, on their inner sides, at the center of length thereof, for receiving the ends of the partition or dividing plate C. These side, end and division plates, are bound together by means of screw-bolts G, passing loosely through longitudinal holes H, in the end-plates, and also through semi-circular grooves I, in the opposing faces of the division plates, the heads of the bolts bearing against the outer faces of the side-plates.

The length of the bricks is determined by the distance of separation of the side-sections A, A, from each other, while the width of the bricks is determined by the distance of separation either of the end-sections B from the partitions C, in the case of a double mold, or by the distance of separation of the end-sections B from each other, in the case of a single mold. On the other hand, the distance of separation of the side-sections A is permanently fixed by the contact of the end-portions of the inner surfaces *a* of the side-sections with the shoulders J and K of the end-sections B. The dressing or planing tool operates, of course, through the entire length of the inner surfaces of the end and side-sections, including the extreme ends of the inner surfaces of all of said sections, and such is likewise true of the extent of operation of the dressing or planing tool upon the outer surfaces of the partitions C. But it is to be particularly noted that such dressing-operations do not in any way affect either the shoulders J and K of the end-sections B nor the inner walls L of the grooves D of the side-sections A, nor the outer walls M of the grooves F of said side-sections. Consequently it will be apparent that no matter how much or how little the wearing-surfaces of the side,

end, or partition sections may be dressed, their described distances of separation will always remain as originally determined, when the parts or sections are again assembled. For example, the inner faces of the side-sections A will abut as before directly against the shoulders J and K of the end-sections B, whether said inner sides have been dressed down much or little, and the distance of separation of said side-sections will therefore be precisely as before. So with the end-sections B; their inner faces *b* will abut directly against the inner sides L of the end grooves D in the side-sections A whether said side-sections have been dressed down much or little, and the distance of separation between the end-sections (in the case of a single mold) will be precisely the same as before. In the case of a double mold, the outer surfaces *c* of the partitions C will abut directly against the outer walls or sides of the grooves F, whether such outer surfaces have been dressed down much or little, and the distances of separation of the partitions from the end-sections will remain precisely as before. Of course, it is obvious that the grooves D and F are to be originally of sufficient depth to allow for the successive settings inward of the pieces after dressing, or said grooves may be easily deepened after successive dressings, if necessary. In any event, no shims, wedges, or filling-pieces are required, and the parts or sections of the grooves may be effectively connected together by the bolts alone.

It will be understood, that the inner or working faces, *a*, *b*, and *c*, of the side, end and division plates, are the only surfaces or parts which are subjected to wear in the pressing of the bricks in the molds, and when these become worn to such a degree as to require dressing or planing, the mold can be taken apart and the faces of each plate be dressed and planed smooth and even and the sections again put together without any adjustment, for, no matter how many dressings the plates may have, the length and width of the bricks will remain the same, for the shoulders J, K, on the end plates and the shoulders L, M, on the side-plates, will also remain the same and fixedly determine the dimensions of the brick. In this way, the dressing of the plates is rendered comparatively easy, as the entire inner surface of each plate may be dressed so as to render the plates absolutely smooth and even throughout such surface for such dressing does not affect the shoulders, which, as before stated, serve as an absolute and unvarying gage for determining the length and width of the brick, by permanently fixing and determining the distances of separation of the side, end and division plates, or sections from each other, the operating or working faces of all of which plates always come to the same line, notwithstanding any number of dressings thereof.

The working faces of the various plates of the molds, are preferably chilled in casting,

so as to render them hard enough to withstand in the maximum degree, the wear thereon.

When the sections or plates of the mold are put together and firmly united by the bolts G, as before described, the space between the division plates and between the tongues and grooves of the end and side-plates, is desirably (although not necessarily) filled with sulphur, which, when poured therein, runs in a continuous mass through the grooves, and also through the holes or perforations H and I, in the said plates, surrounding the bolts G, as shown in Figs. 1 and 3, so that the sulphur which expands in cooling, acts uniformly in various directions, and effectively co-operates with the bolts to firmly unite the mold into a practically solid form. While I have mentioned sulphur for the purpose of filling the grooves and spaces in the mold, any other substance or substances that expand in cooling, may be employed for the same purpose.

I am aware, that prior to my invention, sectional molds have been employed, but in all such cases, it has been necessary to use thin shims or plates, or strips of metal, or else wedges, which are intended to either take up the wear upon the plates or sections of the mold, or to adjust the mold back to its original dimensions after each dressing of the sections or plates thereof, in order to enable the production of a uniform size of brick. I therefore do not desire to claim broadly, a sectional mold, nor one in which shims or wedges are or can be employed, for such construction is objectionable, first, because of the constant liability of misplacement or loss of the shims or wedges, and next, because of the necessity for constant adjustment of the mold, and further, because of the great difficulty experienced in adjusting the mold to a perfect oblong, which is a necessity, in order to produce marketable bricks thereby. With my device, all of these objections are overcome, the employment of the shims is avoided, and uniform and perfect bricks are produced without the necessity of any adjustment whatever.

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

1. In a sectional mold for brick-presses, the combination with the side-plates whose inner faces are in the same plane throughout the length of said plates, and have transverse grooves therein near the ends thereof, of the end-plates abutting directly against the inner faces of the side-plates, and tongues on said end-plates entering the grooves in the side-plates, substantially as described.

2. In a sectional mold for brick-presses, the combination with the side-plates whose inner faces are in the same plane throughout the length of said plates and have transverse grooves therein near each end thereof, and also at one or more points intermediate of said end-grooves, of end-plates abutting directly

against the inner faces of the side-plates and provided with tongues entering the end-grooves in the side-plates, and a pair of division-plates each of whose ends project into the intermediate grooves in the side-plates, substantially as set forth.

3. In a sectional mold for brick-presses, the combination of side and end plates, the inner faces of said side-plates being in the same plane throughout the length of said plates and having transverse grooves therein near the ends thereof, to receive tongues on the ends of the end-plates, and the end-plates being provided with shoulders against which the side-plates abut, perforations extending longitudinally through said end-plates and the side-plates, bolts passing through said perforations and of less diameter than the perforations in the end-plates and also binding said plates together, and a filling of sulphur or equivalent material for said perforations, substantially as set forth.

4. In a sectional mold for brick-presses, the combination with the side-plates whose inner faces are in the same plane throughout the length of said plates, and have transverse grooves therein near the ends thereof and also at one or more points intermediate of said end-grooves, end-plates abutting directly against the inner faces of the side-plates and provided with tongues entering the end-grooves in the side-plates, a pair of division-plates whose ends project into and loosely fit within each of the intermediate grooves in the side-plates, perforations extending through the side-plates and longitudinally through the end and division plates, bolts of less diameter than said longitudinal perforations and grooves and passing through the same and also binding the plates together, and a filling of sulphur or equivalent material for said perforations and grooves and also for the transverse grooves in the side-plates, substantially as set forth.

5. A sectional brick-mold, comprising a plurality of separable external walls engageably tongued and grooved at their contiguous end-portions, the grooves being wider than the tongues, openings formed longitudinally through certain of the walls and also communicating with the grooves when the walls are in proper relative position, retaining-bolts of less diameter than the longitudinal openings and extending removably through the same, and continuous masses of expansible filling within the grooves and extending from the latter into the longitudinal openings, substantially as set forth.

6. A sectional brick-mold, comprising a plurality of separable external walls engageably tongued and grooved at their contiguous end-portions, the grooves being wider than the tongues, and also having grooves at one or more points intermediate of their ends, a pair of intermediate partition-walls having an intervening space communicating with the intermediate grooves, openings formed lon-

gitudinally through the partition-walls and also through certain of the external walls and communicating respectively with the intermediate and end grooves, retaining-bolts of
5 less diameter than said openings and extending through the same, and continuous masses of expansible filling within the grooves and space and longitudinal openings, substantially as set forth.

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Witnesses:

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