No. 797,950. PATENTED AUG. 22, 1905.

O. FÖRSTER.

HOLLOW BUILDING BRICK.

APPLICATION FILED MAY 26, 1904.

*Fig. 1.*

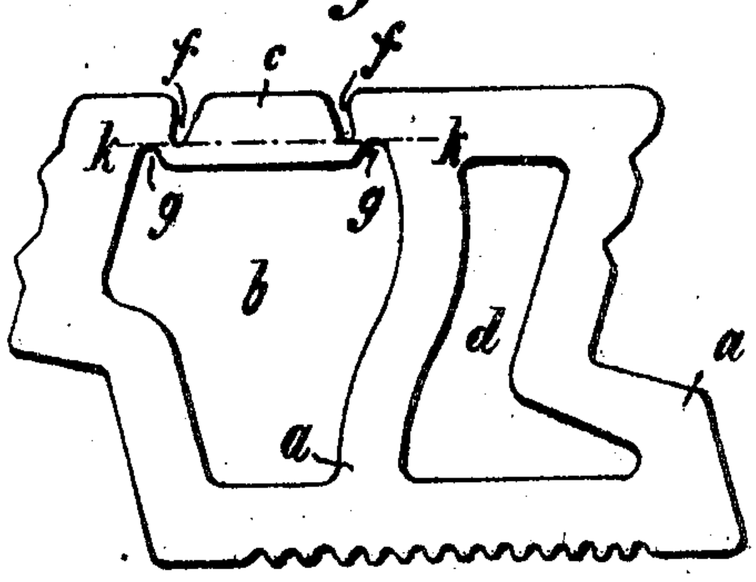
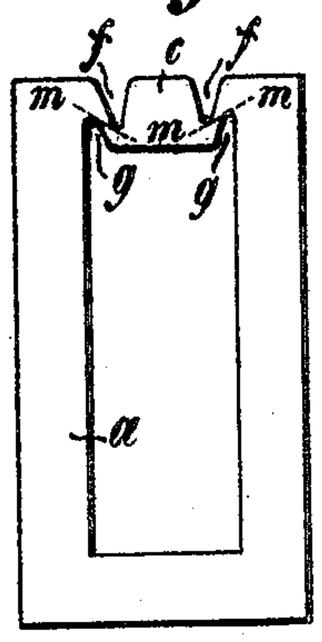



*Fig. 2.*

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# UNITED STATES PATENT OFFICE.

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## HOLLOW BUILDING-BRICK.

No. 797,950. Specification of Letters Patent. Patented Aug. 22, 1905.

Application filed May 26, 1904. Serial No. 209,917.

*To all whom it may concern:*

Be it known that I, OTTO FÖRSTER, architect, a citizen of the Empire of Germany, and a resident of 36 Hubertus Allee, Grunewald, near Berlin, Germany, have made certain new and useful Improvements in Hollow Building Bricks or Stones, of which the following is a specification.

This invention relates to hollow building stones or bricks having a break-away stay-piece provided at its junctions with the body of the brick with separating-grooves formed on the inside and outside surfaces for the purpose of facilitating the breaking away of the said stay-piece.

It has already been proposed to make one-sided hollow bricks with a break-away stay-piece for the purpose of holding the body of the brick together with the object of preventing distortion or deformation of the brick in drying or burning, the breaking away of the stay-piece being facilitated by the provision of separating-grooves in the same; but that kind of brick has not proved successful in practice, because by reason of the wrong arrangement of the separating-grooves the bricks were mostly destroyed in breaking away the stay-piece. The reason of that drawback was that in breaking away the stay-piece the latter exerted a pressure upon the sides of the body of the brick, and consequently the brick split on the side opposite to the stay-piece. Now that drawback is obviated according to this invention by arranging the separating-grooves in such a manner that no lateral pressure can arise in breaking away the stay-piece. With this object the inner separating-grooves are arranged between the outer separating-grooves and the body of the brick, and they extend so far into the stay-piece that their ends are situated almost in the same plane or may even overlap each other in the case of thick stay-pieces, so that the stay-piece is suspended, as it were, and in being broken away does not exert any pressure upon the sides or walls of the brick, but exerts merely a downward pull. This arrangement may be employed in bricks of special sections, as well as in bricks of standard section. Bricks having break-away stay-pieces have a great industrial value in many respects. Thus solid ceilings can be made of special-section bricks by arranging the cavities of the bricks to form passages extending over the whole ceiling, said cavities after the stay-pieces have been broken away and iron cores have been inserted being filled in with cement or concrete, so as to thereby produce beams of cement or concrete extending from wall to wall.

Bricks of standard section formed with a break-away stay-piece may be employed with advantage for the purpose of fixing dowels in walls or ceilings. After the stay-pieces have been broken away the dowels are fixed in the brick by means of a suitable waterproof binding medium, such as tar asphalt. The new brick may also be used for surrounding the iron bars and girders of iron-framework buildings in order to prevent them from getting rusty and to give the building the appearance as if it were built throughout from bricks.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a brick of special section provided with a break-away stay-piece. Fig. 2 is a side elevation of a brick of standard section.

The body *a* of the brick is formed with the cavities *b* and *d*, of which the cavity *b* is closed in by the break-away stay-piece *c*. Obviously, instead of the two cavities a single cavity or more than one cavity may be provided. At the junctions of the stay-piece with the body of the brick outer separating-grooves *f* are provided extending inward, and inside the brick inner grooves *g* are provided extending outward between the outer grooves *f* and the inner sides or walls of the body of the brick. The grooves *f* and *g* extend into the stay-piece to about the same horizontal plane *k k*, Fig. 1. In the case of very thick or very narrow stay-pieces the grooves *f* and *g* may overlap each other for the purpose of facilitating the breaking away of the stay-piece.

The provision of the stay-piece has for object to protect bricks of special and standard sections not only from becoming deformed during manufacture, but also from becoming broken during transport. The improved brick may be used either as a closed brick or as an open brick. In the former case the stay-piece is not broken away.

From Figs. 1 and 2 it will be perceived that in breaking away the stay-piece it breaks away in a downward direction at the line *k k*, connecting the ends of the grooves *f* and *g* with each other, and that sufficient space is provided to obviate the possibility of the

parts of the stay-piece or the stay-piece itself exerting pressure upon the sides or walls. In the case of the brick of standard section shown in Fig. 2 the brick breaks away in the direction of the lines *m m*.

The special-section brick according to Fig. 1 having a break-away stay-piece may be employed with advantage in the construction of solid ceilings. These are constructed by arranging the bricks as headers upon a lining of boards in such a manner that the cavities of the bricks will form passages that extend across the span of the ceiling. When the bricks have been laid in position, the stay-pieces are broken away and the said passages are filled up with cement or concrete after the insertion therein of iron skeletons of suitable section.

Standard-section bricks with a break-away stay-piece are particularly suitable for the purpose of fixing dowels in walls or ceilings. For this purpose the hollow bricks are built or let into the wall or ceiling, and after the stay-pieces have been broken away the dowels are inserted into the said bricks with the aid of suitable binding agents, especially such as will also prevent the dowels from absorbing moisture, and thereby obviate the brick being burst through this cause. This manner of fixing wooden dowels by means of bricks having a break-away stay-piece has great advantages over the means of fixing wooden dowels hitherto used. Hitherto such fixing was effected by bricking up the dowels in holes provided in the walls, so that the cross-grain of the dowel lay exposed to the atmosphere. This method is bad, because, first, the dowels have not a sufficiently firm hold, and, second, because the nails driven into the cross-grain of the dowel cause the wood of the dowel to split and do not get a sufficiently firm hold therein. The first drawback has been attempted to be remedied by employing wooden wedges as dowels, which were driven into the wall; but in this case also no sufficiently firm hold could be obtained. It has further been proposed to employ for the fixing of dowels bricks provided on their front faces with recesses into which the dowel was inserted and in which it was fixed by means of several wires. This method of fixing is tedious and is unsatisfactory. The dowel does not get a sufficiently firm hold and when the wire has rusted the dowel comes loose.

Now according to this invention there is employed as a dowel a wooden block cut to the shape of the cavity in the brick. The said block is then so inserted that the cross-grained end of the dowel is situated in the wall, and the longitudinal grain end lies in front, so that screws, nails, and the like will get a firm hold therein. The fixing of the dowel itself in the brick is effected by means of a suitable binding agent. For this purpose tar asphalt is especially suitable, whereas water-absorbing binding agents should be avoided, because they lead to a swelling of the wood and consequent splitting of the brick. When the hollow bricks have been built in their places, the stay-pieces are broken away and the dowels dipped in asphalt are pressed into the cavities in the bricks.

Having now particularly described and ascertained the nature of the said invention and in what manner the same is to be performed, I declare that what I claim is—

1. A hollow brick having inner and outer grooves to form a breakable stay-piece, said grooves arranged to extend into the stay-piece to the same plane or overlap each other at distances apart, the inner grooves arranged between the outer grooves in the body of the brick.

2. A hollow brick or stone having inner and outer grooves in the body thereof forming a break-away stay-piece and for facilitating the shearing of the latter, said grooves extending into the body to the same plane, and the outer grooves arranged at a distance from the inner grooves.

In witness whereof I have hereunto set my hand in presence of two witnesses.

OTTO FÖRSTER.

Witnesses:

WOLDEMAR HAUPT,

HENRY HASPER.