July 12, 1938. O. MEYER 2,123,310

MEANS FOR SECURING IRON PARTS TO MASONRY OF ALL KINDS

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Fig. 1

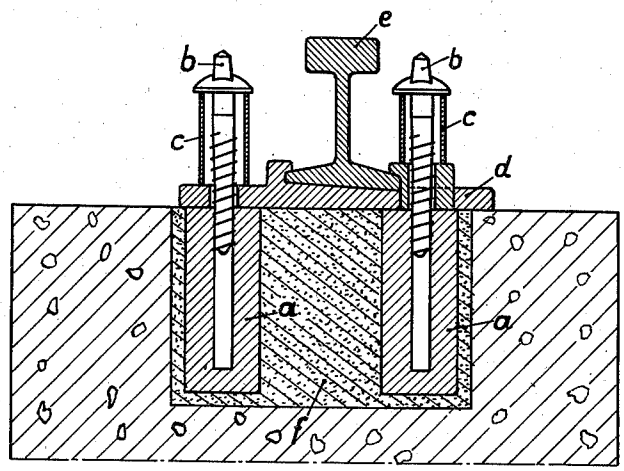


Fig. 2

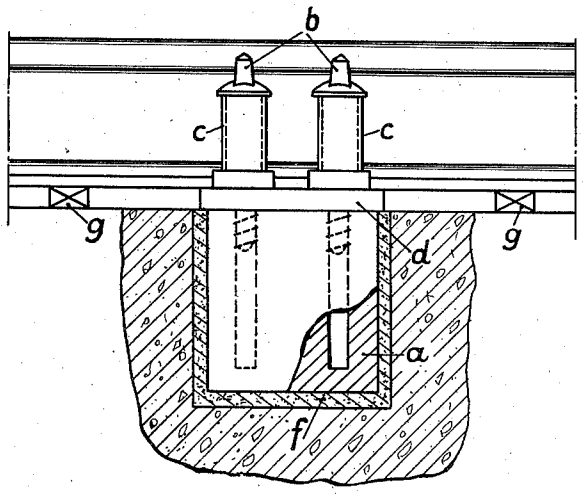
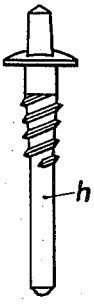


Fig. 3



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MEANS FOR SECURING IRON PARTS TO MASONRY OF ALL KINDS

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2 Claims. (Cl. 72—105)

When iron parts are to be secured to masonry, concrete, stone or the like by means of screws, cramp irons or the like it is necessary accurately to determine the points at which the same are to be secured thereto, as an alteration or movement of the iron parts is impossible or inadvisable as a rule. Considerable difficulty is usually met in applying the screws, cramp irons and the like exactly in the correct positions in the masonry because when they are to be secured in position by means of concrete they are easily displaced from the correct position, for example, when applying the concrete mass to the screws and the like or when pressing in the mass in the vicinity of the screws or the like. It is particularly difficult, however, to place in correct position screws and cramp irons when a number of securing points are provided on the iron parts to be secured, as, for example, in the case of railway rails which are to be placed on concrete or stone without transverse sleepers.

It has been suggested previously to improve the security of the fixture by introducing at the points where the screws, cramp irons and the like are secured, a cement-asbestos mixture, for example the so-called asbestos-beton, capable of being worked into the recesses of the masonry. After the same has set and the iron parts are placed in position, holes are drilled in the mass into which the screws for securing the iron parts can then be screwed. The screw thread in such cement-asbestos bodies capable of being worked, is cut automatically by the act of screwing in the cylindrical screws. In the case of railway rails, for example, the so-called chair bolts and the securing points are fixed directly.

Further, this known method of securing has disadvantages. First of all the mass or bulk of the mixture must set before it is possible to drill the holes therein. The drilling of holes in cementitious ties must not be postponed too long as otherwise the mixture would become too firmly set or too hard and consequently the drills would be broken. The drilling is therefore dependent on a proper timing. This is particularly disadvantageous from an economical point of view when different skilled workmen have to be employed, firstly for inserting the material and then for the subsequent drilling, which incurs double time for travelling and occasions extra expense.

These disadvantages are eliminated by the present improvement, according to which, in order to secure iron parts, rails or the like, completed dowels, manufactured by mass production, from a cement-asbestos mixture or the like are used. The completed dowels are screwed to the iron parts to be secured, for example, rail parts, by the use of separate sleeves and are then placed in the correct positions, together with the iron parts to be fixed, whilst said dowels are fitted into recesses provided for them in the masonry and anchored therein by cement or mortar which is poured around the dowels for the fixing thereof in the recesses. In this manner, the holes which are already formed in the dowels for the reception of the screws are already disposed in the positions at which the securing points are to be located finally. After the setting of the cement, the screws or bolts, for example, in the case of railway rails, the dowel pins, can be easily screwed into position by any workmen without skilled knowledge. The recesses in the masonry must naturally be so large that it is possible to move the iron parts to be secured in any direction when they are being set in position and a cement filling of sufficient thickness and strength can then be filled in around the dowel.

If desired, the material of which the dowel is made may have added thereto a soft additional material, such as slag wool, glass wool, mica, quartz threads or the like, said material being capable of being worked or tooled.

In the accompanying drawing, there is shown, by way of example, how, by means of this invention, a railway rail can be secured to concrete masonry.

Fig. 1 is a cross section illustrating the method of securing rails.

Fig. 2 is a side elevation, and

Fig. 3 is a detail view.

The dowels *a* formed in advance from a suitable mass or material, for example, a cement-asbestos mixture, are constructed of a suitable shape, for example, round or angular. In the dowels the holes for the securing screws have already been been so prepared that, of the screw thread two or three threads have already been completely made in the upper part, whilst the lower part of the hole corresponds with the shaft or shank of the screw so that the sharp edged screw thread of the screw can cut into the body *a* after the latter has been firmly anchored in the recess *f* by mortar or cement. By means of the said two to three screw threads and a normal securing screw *b*, with the interposition of tubular spacing sleeves *c*, the screws are screwed to the iron parts, in this case to the rail parts *d* at the factory. The rail *e* with the necessary hook or ribbed plates *d* and the dowel *a* screwed thereto is by means of the screw *b*

now lowered on to the masonry or concrete so that the dowels dip or depend into recesses *f* provided for them in the masonry or concrete. The iron parts, railway rails, in the example illustrated, are set or placed in position and brought to the correct level by intermediate members or wedges *g*. After the cement-mortar has been poured around the dowels and after the mortar has set, the sleeves *c* which, for example, may consist of paste-board or thin sheet metal or even a spiral spring, can be easily removed and the screws *b* can be screwed completely into the anchored dowels *a*.

As a mould core for the making of the dowel holes there is used a suitable securing screw. In the case of rails, for example, a normal dowel screw, as hereinbefore described, is used, the upper threads being left almost untouched whilst the lower ones are machined down to the shank. Such a dowel pin *h* is shown in Fig. 3. Around the pin *h* as a core there is moulded the material of which the dowel is made. In this manner, only a portion of the screw thread is formed in advance and in the remainder thereof, which has been left plane, the screw nevertheless finds a sufficiently firm hold. It will be understood that the upper screw threads of the holes in the dowels may also be cut by means of a suitable screw tap or a special drill.

I claim:

1. A method of securing iron parts to masonry or concrete, which consists in providing at the securing points for the iron work, holes in the masonry or in the concrete, securing dowels of asbestos-cement with the iron work, placing the iron work with the dowels in the end position and pouring concrete-mortar in the space between the asbestos-cement dowels and the walls bounding the recesses in the masonry or concrete.

2. The method according to claim 1, which consists in securing the dowels to the iron work by means of fastening screws but screwing the fastening screws only for two to three threads into the dowels and bridging the space between the head of the fastening screws and the iron work by sleeves.

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