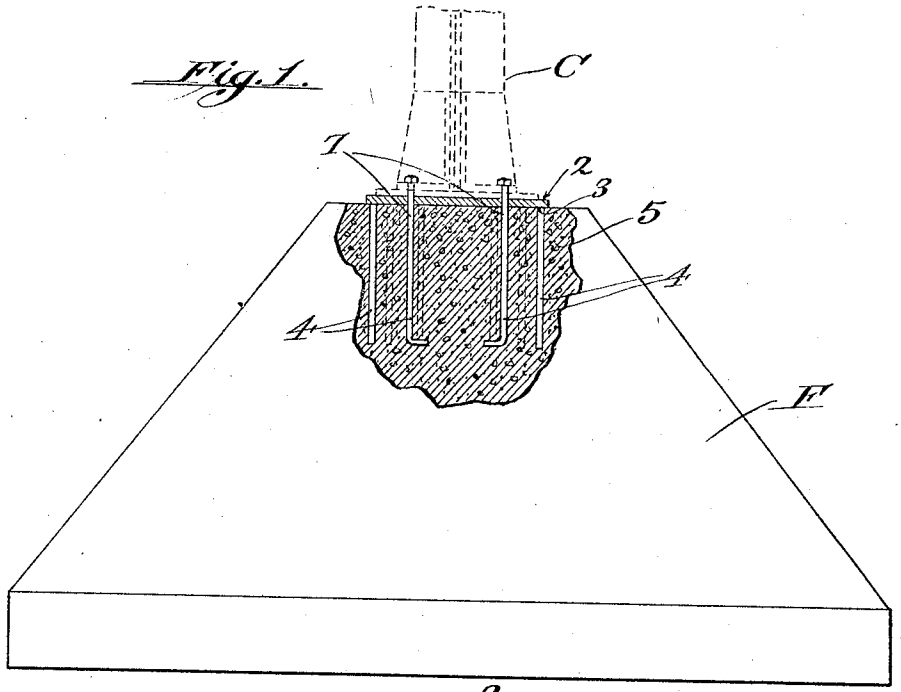
May 18, 1926. 1,585,254

H. A. LUND ET AL

DOWEL BEARING PLATE AND METHOD OF MOUNTING

Filed Oct. 12, 1923

Fig. 1.



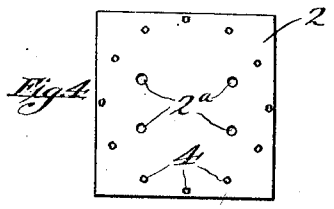


Fig. 4

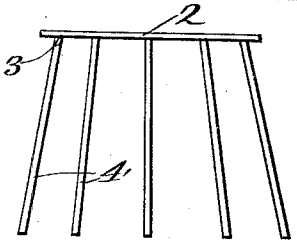


Fig. 5.

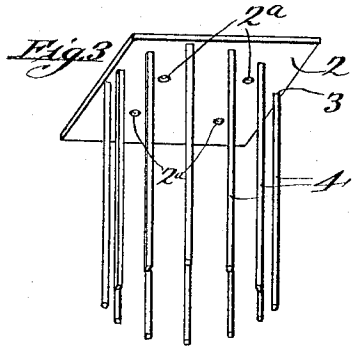


Fig. 3

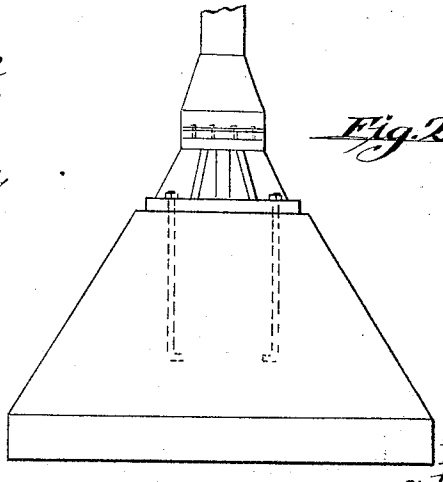


Fig. 2.

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Patented May 18, 1926. 1,585,254

UNITED STATES PATENT OFFICE.

HALVOR ALLAN LUND AND JOSEPH A. BARLOW, OF LOS ANGELES, CALIFORNIA.

DOWEL BEARING PLATE AND METHOD OF MOUNTING.

Application filed October 12, 1923. Serial No. 668,074.

This invention relates to building structures and more particularly to bearing joints and connections between structural elements in the steel frame class.

The invention more particularly relates to a combination structural steel butt and base plate, and a primary object of the invention is to provide a device of this character which will simplify structural butts and bases and will at the same time distribute the stresses of the structural member to the footing or concrete base, and vice versa.

One of the important objects of the invention is to provide an economical means and method for distributing stresses and loads in structural elements and especially to eliminate in column structures the usual cast iron base placed upon the top of a concrete footing or bearing, and at the same time obtain a degree of distribution of the load on the concrete footing such as will be practicable and safe and will pass the ordinances of the various communities.

In good concrete engineering practice, a massive concrete footing, according to the load, is employed, this having a spreading bottom and upwardly converging walls meeting in the plane top upon which is usually placed a cast iron base which, according to the necessities of the case, vary greatly in cost, and in the larger sizes of bases this cost is no inconsiderable factor. The present invention has for one purpose to wholly eliminate the usual cast iron base by which the pressure at the foot of the column is distributed by increase of area as to the foot of the column to the concrete footing.

Other objects and advantages will be made manifest in the following specifications of embodiments of the invention illustrated in the accompanying drawings, wherein:

Figure 1 is a side elevation and partial section showing the improvement as incorporated with a concrete footing.

Fig. 2 is a diagrammatic view showing the usual iron base which the present invention is designed to eliminate.

Fig. 3 is a perspective showing a form of the stress distributing means.

Fig. 4 is a top plan of the same.

Fig. 5 is a side elevation of a slightly modified form of stress distributor.

While the present invention is shown as embodied in combination with a concrete column base, it is to be understood that it can be used in arch centers, at the top of concrete columns, under steel column ends, inverted under a concrete column, on top of a steel column or steel burden, and in many other places and adaptations for concentrating or reducing stresses as desired, according to the design of concrete and structural steel members.

In the adaptation here shown, the invention includes a substantial plate 2 of any suitable material, preferably of plate steel, and to this there is attached permanently, as for instance by welding at 3, a suitable system or arrangement of surface bond or friction bars 4. These bond bars 4 are shown in Figure 3 as being substantially parallel, while in Figure 5 they are disposed divergently. It is to be understood that the device including the plate or body 2 with the bars or rods 4 may be made or built up in any desired manner so long as the rods 4 extend as rigid parts from the plate 2.

In practice, the plate 2 is suitably positioned as determined according to the location or position in a structure in which it is to be employed, with the rods 4 projecting either obliquely, horizontally and vertically up or down, and then the encincturing body 5 of concrete is cast in the usual manner so that the rods 4 are thoroughly embedded in and bonded with the concrete mass, the latter being grouted flush up against the contiguous base of the plate 2. Thus, after the cement body sets, the rods 4 serve to distribute the pressure or the tension stresses to the structural elements which are connected one to the other through the present fastening or attaching means.

In the present case, the device is shown as incorporated with a concrete footing F, upon which there is to be supported a column C, through the foot plates of which extend anchor bolts 7 which are embedded in the concrete body 5 in the usual manner before the column is applied. The anchor bolts pass through apertures 2^a provided in the plate 2, and may be free or attached to the plate 2.

From the above it will be seen that by this system and method the use of the ordinary cast iron column base is entirely eliminated and at the same time the stress is transmitted into the concrete body or footing in the present case in such manner that the footing serves its usual function of divergently dis-

tributing the pressure to an extended area of ground upon which the footing may be planted or cast in the usual manner.

It is to be understood that any reinforcing fabrication common in good concrete engineering may be employed, as for instance by means of wrapping the wire around the rods 4, this being so obvious as to be unnecessary of illustration.

Further embodiments, modifications and variations may be resorted to within the principle of the invention.

What is claimed is:

1. A device of the class described comprising a bearing plate upon which a supporting column is adapted to rest, said bearing plate having a plurality of bond rods rigidly secured thereto and extending downwardly therefrom so that they may be imbedded in the concrete on which the bearing plate is supported, said bond rods being relatively long as compared with their diameters so as to present areas upon their sides sufficiently great that a firm bond may be established between the concrete and the bond rods, whereby a material part of the compressive stresses developed by the load on the bearing plate may be transmitted to and distributed within the interior of the concrete by bond.

2. A device of the class described comprising a flat bearing plate upon which a supporting column is adapted to rest, said bearing plate having a plurality of bond rods of substantially the same size and length rigidly secured thereto and extending downwardly therefrom so as to be imbedded in the concrete on which the bearing plate is supported, said bond rods being relatively long as compared with their diameters so as to present areas on their sides which are great enough to form a bond with the concrete which is strong enough that a material part of the stresses developed upon the bearing plate by the load may be transmitted and distributed within the concrete by bond.

In testimony whereof we have signed our names to this specification.

HALVOR ALLAN LUND.
JOSEPH A. BARLOW.