E. D. SMITH.

BUILDING CONSTRUCTION.

APPLICATION FILED AUG. 10, 1917.

1,280,320. Patented Oct. 1, 1918.

Fig. 1.

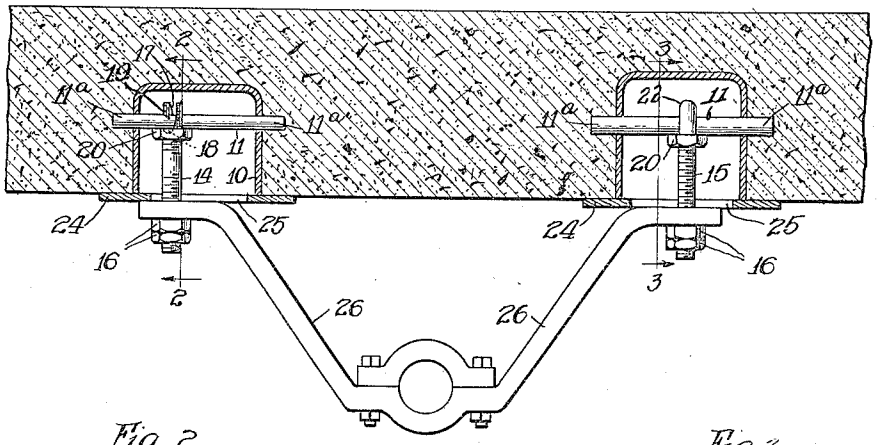


Fig. 2.

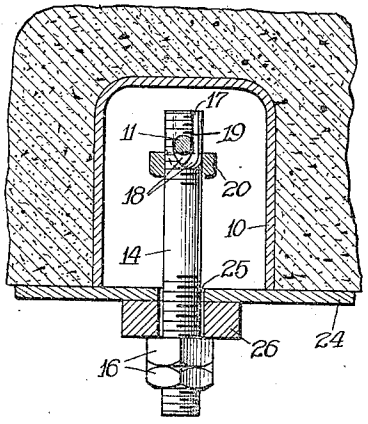


Fig. 3.

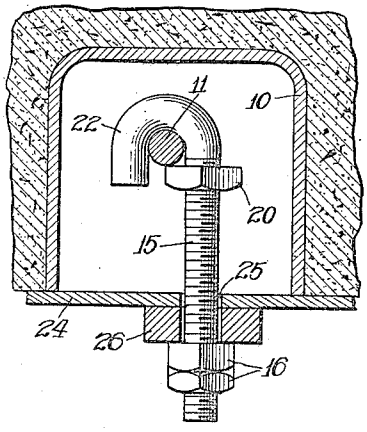
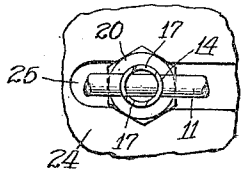


Fig. 4.



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BUILDING CONSTRUCTION.

1,280,320. Specification of Letters Patent. Patented Oct. 1, 1918.

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To all whom it may concern:

Be it known that I, EDWARD D. SMITH, a citizen of the United States, and a resident of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Building Construction, of which the following is a specification.

My invention relates to building construction. Its principal object is to provide simple, strong, cheap and easily operable means for readily securing various kinds of objects in rigid or substantially rigid position on or adjacent to a wall, and whereby they may be readily removed therefrom. Also to provide holding means of the character described having a feature of adjustability whereby objects may be held without requiring an exact location of the relatively fixed portion of the holding means in the wall, and to provide for situations where the object or objects to be held vary in lateral dimensions or proportions, and also to provide a holding device in which simple substitution of one size of holding member for another may be made while utilizing the same anchoring means for holding objects of various kinds, sizes and proportions. Other objects and advantages will appear hereinafter.

In the accompanying drawings, which form a part of this specification, I have illustrated these improvements in a preferred and a modified form showing one application of the same in use. In these drawings, Figure 1 is a vertical section through a horizontal concrete wall showing in substantially medial section both the preferred and the modified form in connection with a shaft hanger held thereby;

Fig. 2 is an enlarged sectional view of the preferred form of the device taken substantially at right angles to the left-hand portion of Fig. 1, as on the line 2—2 thereof;

Fig. 3 is a view similar to that of Fig. 2 showing the modified form at the right hand portion of Fig. 1, as on the line 3—3 thereof; and

Fig. 4 is a top view of the bolt-like member, etc., and a fragment of the anchoring rod of the preferred form.

These improvements may be employed in various wall structures. In the form shown in the drawings they are particularly adapted for use in connection with concrete walls or walls of mortar of sufficient strength to withstand the retractive strains intended to be applied to the device. For such use, I preferably provide a housing 10 which may be of light sheet metal stamped or otherwise formed cup-like, or having a pocket open at one side or end. An anchoring bar or rod 11 passes substantially medially across the open interior of the casing 10 and projects materially through and beyond the walls thereof, as at 11^a, whereby retractive strains applied to the rod or bar 11 are communicated directly to the concrete in which these ends 11^a are embedded, as well as indirectly through the casing 10, which will be understood as being also cementitiously held by the concrete of the wall.

In locating the anchoring device the casing 10 with the bar 11 therein is temporarily held to the woodwork defining the surface of the wall whereby after the concrete has been poured, becomes set, and the defining woodwork has been removed the casing 10 and bar 11 will be embedded with the hollow interior of the casing opening into the surface of the wall. Thus a very rigid anchoring element is provided flush with the wall surface and easy of access for the purpose intended.

I shall denominate the bolt-like members 14 and 15 holding members for the object which is to be secured in a desired position. The holding member 14 is suitably made of iron pipe threaded exteriorly for the nut or nuts 16 and having a transverse recess 17 extending inward from an end enlarging into the radially opposite eye portions 18, thus providing a pair of oppositely disposed hooks 19. The hook end of the holding member 14 may be threaded from either end for a distance sufficient to accommodate the nut 20 in substantially the position shown. In suspending electrical fixtures from ceilings the tubular member 14 may itself constitute the fixture "stub" required for standard construction.

In applying the holding member 14 in operative position upon the bar 11 it is only necessary to advance the member 14 so that the slot 17 receives the bar 11 until the bar reaches the eyes 18 when by rocking the bolt 14 slightly the hook portions 19 engage the rod 11 and prevent retraction of the member 14. When so held the element 14 may be adjustably moved from side to side within the casing 10 on the bar 11, and when it is in its desired position the nut 20 may be turned

until the rod 11 is tightly bound between the hooks 19 and the nut whereupon the holding member 14 is held rigidly upon the bar 11. It is not necessary to employ the nut 20 in many uses of the device. Its use, however, avoids all possibility of the elements 14 or 15 becoming disengaged from the bar 11 while applying or removing the nut or nuts 16.

The holding member 15 is provided with a simple hook 22 adapted to engage the bar 11. In this instance I have shown the rod 11 as materially larger in diameter than in the preferred form, affording greater strength. In either form, however, the size of parts will be made according to requirements, and the present illustrations need not be followed as to details of construction to obtain the desired results. This member 15 is threaded to accommodate the nuts 16 and 20 for the same purposes as in the case of the member 14.

The casing 10 may be of various dimensions according to the work in hand. Where the object to be held would not otherwise secure a firm seat upon the surface of the wall, owing to the opening into the casing, I provide a plate, as 24, having an opening or openings, as 25, for the holding member 14 or 15, the object to be held being thus bound against the plate 24.

In the drawings I have shown the application of these improvements to supporting a shaft hanger 26 to a concrete ceiling. In many kinds of work, well illustrated by the shaft hanger, the distances apart of the bolt holes, as in the foot portions of the hanger, may vary considerably, or it may not be easily practicable to arrange an anchoring element in the concrete with precision, as for instance in a straight line from one end of a building to the other, as for a line of shafting or a line of chandeliers or other electrical connections. The housing 10 and rod 11 provide a feature of adjustability of the holding members 14 or 15 whereby a considerable latitude is had for the easy and ready securing of the parts notwithstanding marked departures from the desired location of the casings themselves or marked variations in different lateral directions of the holes in the parts to be held, and like considerations. These improvements are peculiarly important in their adaptability for use in connection with a large variety of objects to be held. Thus the holding elements, as 14 or 15 or their equivalent, may be made longer or shorter as desired, whereby by simple substitution of such elements the same anchoring means 10—11 may be employed alternately for holding one object and then another as occasion may suggest. Several elements 14 or 15 may be employed within a single casing 10.

At any time it is desired to remove elements 14 or 15 it is only necessary to retract the binding nut, as 20, when the element 14 or 15 may be readily removed from its interlocked relation with the rod 11.

The invention is not limited to the specific details of construction or arrangement illustrated and described, and I contemplate all such modifications and departures therefrom as fall within the scope of the appended claims.

I claim:

1. In building construction, the combination of a bar adapted to be positioned in the building wall, a tubular bolt adapted to project from the wall and havin hook means thereon formed by cutting away wall portions of the tubular bolt, said hook means being adapted readily to be interlocked with said bar while the bar is in holding position in the wall, said bolt being adapted to hold an object in a desired position beyond the surface of the wall.

2. In a holding device of the character described, the combination of a bar adapted to be inserted in a wall, and a holding member formed of a pipe section having a pair of oppositely disposed hooks formed thereon by cutting away wall portions of the pipe section and being adapted to engage said bar for holding said holding member readily removably yet firmly against retraction on said bar.

3. In a holding device of the character described, the combination of a bar adapted to be inserted in a wall, and a threaded bolt member having a pair of oppositely disposed hooks adapted to engage said bar for holding said bolt member readily removably yet firmly against retraction on said bar, and a nut on said threaded member for holding the object to be secured.

4. In a holding device of the character described, the combination of a bar adapted to be inserted in a wall, a threaded bolt member having a pair of oppositely disposed hooks adapted readily to engage said bar while the bar is in the wall for holding said bolt member readily removably yet firmly against retraction on said bar, and a nut on said bolt member adapted to bind upon said bar and hold the bar and bolt member rigidly together.

EDWARD D. SMITH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."