C. J. O'BRIEN.

BAR SPACER.

APPLICATION FILED JUNE 3, 1920.

1,427,316. Patented Aug. 29, 1922.

Fig. 1.

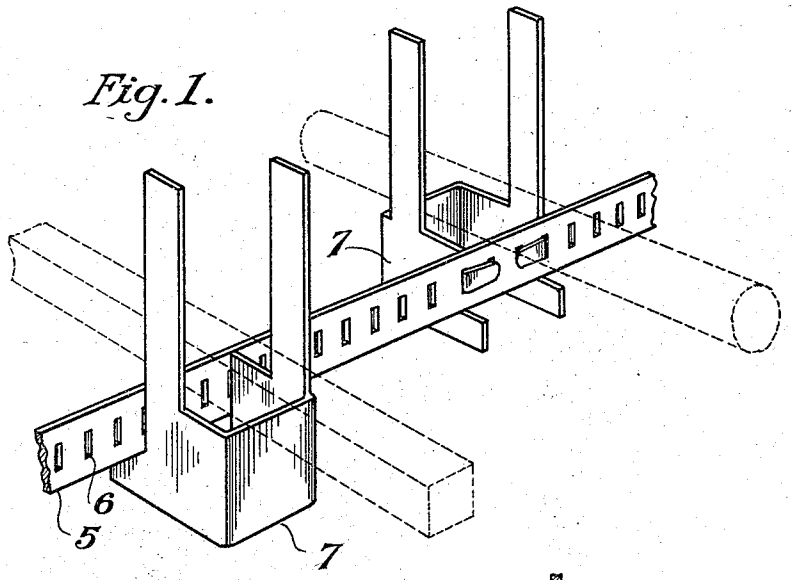


Fig. 2.

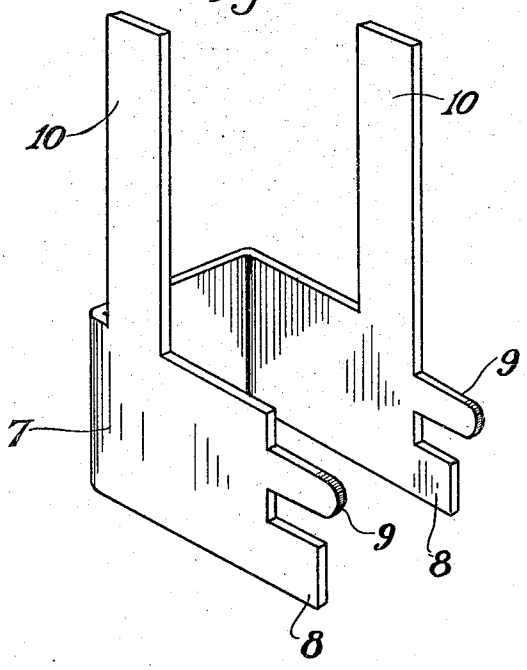
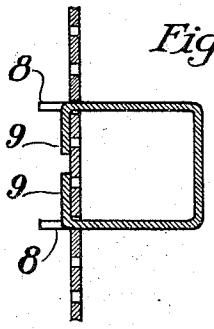


Fig. 3.



Inventor.
Chester J. O'Brien.
By Kent W. Howell
Attorney.

UNITED STATES PATENT OFFICE.

CHESTER J. O'BRIEN, OF CHICAGO, ILLINOIS.

BAR SPACER.

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To all whom it may concern:

Be it known that I, CHESTER J. O'BRIEN, 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 a Bar Spacer, of which the following is a specification.

This invention relates to concrete reinforcing construction, and more particularly to the means for spacing apart and supporting the bars and rods usually steel which are used for reinforcing concrete work in building construction. The principal object of the invention is to provide a new and improved construction of this kind which has great stability in use. Other objects are to make the device more easily adjustable; to provide longer locking arms; to provide greater strength with the minimum amount of material, to simplify the construction of the individual pieces, and to allow one of the parts to be galvanized; and to provide a construction in which the parts can be closely nested for packing or shipping, and for greater facility in handling them. The invention consists in the novel construction, combination and arrangement of the several parts.

In the accompanying drawing, Fig. 1 is a perspective of a spacer constructed in accordance with the principles of this invention; Fig. 2 is a perspective of one of the supports; and Fig. 3 is a section of one of the supports in position.

There are a number of bar spacers in use at the present time, but they are subject to many objections which the present invention is designed and intended to overcome. Most of them are liable to spread and are incapable of variable spacing. Another objection frequently met with is that the spacer parts are bendable so that they will flatten out under the weight of the bars letting the latter rest upon the concrete forms between the spacers. This will expose the reinforcing bars at the surface of the concrete, or will allow the reinforcing bar to approach the concrete form so closely that not enough concrete will flow under the reinforcing bar to insure fireproofing of the steel. In the present invention this is overcome by placing the spacer strip upright on its edge so that it cannot be flattened out and by securely supporting it in place above the form so that the concrete will not be divided by it, but will flow freely under it and around the supports.

Referring now more particularly to the present invention it is understood, of course, that this spacer construction is applied to concrete forms usually made of wood or sheet metal into which the concrete is poured and allowed to set. The bar spacer comprises a spacing strip 5 preferably rectangular in cross section with a plurality of apertures 6 spaced along its entire length at intervals as frequent as desired. A plurality of supports 7 are provided which are separately formed of sheet material, preferably U-shaped in cross section, and adapted to be spaced apart on opposite sides of the strip 5, supporting the bar and securely but detachably attached thereto. Each support is formed at the lower side of each leg of the U with the foot 8, which extends under the strip 5 actually supporting it and holding the lower edge thereof upwardly away from the form in which the bar spacer is used. The width of the strip 5 is preferably the same as the remaining distance from the top of the foot 8 to the upper sides of the U-shaped support, so that the upper edge of the bar 5 is flush with the top of the support. Projecting from the ends of the U-shaped member are bendable ears 9 which are adapted to be inserted through the apertures 6 of the spacing bar and then bent over, as clearly shown in Fig. 3 to bind the support firmly against the bar and resting upon the feet 8 thereof.

Extending upwardly from the opposite portion of each support 7 are arms 10 which are bendable in opposite direction over any kind of a reinforcing bar disposed between them. These arms are of sufficient length to engage and secure a bar of any shape or size which is supported by the spacer, and the arms are simply bent over the reinforcing bar in opposite directions thereby holding the bar in place.

It is obvious that this construction is capable of great variation and adjustment for the supports may be spaced at regular intervals along the bar 5, or the intervals may be varied for each one. By disposing of the supports alternately on opposite sides of the bar 5, great stability is produced and there is little tendency for the bar 5 to become bent or displaced in any way, and in fact, as the supports directly uphold the re-

inforcing bars, very little strain of any kind is imparted to the spacing bar 5, so that the chief function of the latter is rather as a spacer than as a support for the reinforcing bars.

It will also be observed that the spacing bar 5 does not engage the concrete form in which it is placed, but is spaced above it by the legs 8 so that the concrete can run freely under the bar 5, and in fact, only the lower edges of the supports 7 will show at the surface. These lower edges may be galvanized or otherwise treated so that they will not rust. If desirable, they may be made of non-corrosive metal, but usually galvanized edges are sufficient.

This construction is also readily adaptable for shipping or packing either in completely assembled form, as indicated in Fig. 1, or by casing the supports separately by bending the legs of the U-shaped members slightly outward, or by packing them flat before they are bent.

I claim:

1. In a concrete reinforcing bar spacer, an upright strip with spaced perforations therein, and means engaging the perforations disposed alternately and entirely on opposite sides of the strip and resting on edge for supporting it in an upright position with the lower edge of the strip at a distance above the bottom of the concrete form.

2. A bar spacer for concrete forms comprising an upright strip with spaced perforations therethrough, and separate means engaging the perforations extending entirely from opposite sides of the strip and resting on edge for supporting it in an upright position with the lower edge of the strip at a distance above the concrete form.

3. A concrete reinforcing bar spacer comprising a strip, and means for supporting the strip in an upright position upon one edge, said means comprising a detachable rectangular support resting on its rectangular edges and extending entirely from one side of the strip with a base extending below the lower edge and supporting the strip.

4. The combination of a strip having spaced apertures therein, and means for supporting the strip in upright position upon one edge, said means comprising a lateral extending support with ears insertable through the apertures and bent over on the opposite side, the support being disposed entirely at one side of the strip and having a base which extends below the edge of the strip and raises it from the form.

5. A bar spacer of the class described comprising a strip with spaced perforations longitudinally thereof, a plurality of supports extending on alternate sides thereof, each support having feet upon which the lower edge of the strip rests, and having means engageable with the perforations for holding the strip in an upright position upon the feet.

6. In a reinforcing bar spacer, a strip with a series of perforations, a plurality of supports U-shaped in cross section each disposed entirely at one side of the strip for holding it on edge in upright position, each support having upwardly extending bendable arms at opposite corners foldable over the bar to be spaced, and ears which are insertable through the perforations to attach the support to the strip entirely at one side thereof.

7. In a bar spacer, a rectangular metal strip with a plurality of perforations spaced longitudinally thereof, in combination with a plurality of supports adapted to hold the strip in an upright position and having projecting feet upon which the lower edge of the strip rests, means in connection with each support for attaching it laterally to the strip at regular and irregular distances and on opposite sides thereof.

8. A reinforcing bar spacer comprising a rectangular strip with spaced perforations therein, a plurality of supports each substantially U-shaped in cross section, and having bendable ears at the extremities insertable through the perforations of the strip so that the support will extend at one side of the strip therefrom, and means in connection with the support for engaging and holding the reinforcing bar in position on top of the support.

9. In a reinforcing bar spacer of the class described, the combination with a rectangular spacing strip having perforations at intervals throughout its length, in combination with means for supporting the strip at a distance above a concrete form in which it is to be spaced and in an upright position, the said means comprising a plurality of supports each substantially U-shaped in cross section, with feet adapted to extend below the lower edge of the strip, and with bendable ears insertable through the perforations of the strip to hold the strip against the free ends of the U-shaped member and upon the feet thereof in upright position, the upper edge of the strip being substantially flush with the upper edge of the U-shaped member, and arms extending upwardly from angularly opposite corners of the U-shaped member and bendable inwardly over a reinforcing bar placed upon the support between them.

10. In a bar spacer, a metal strip with spaced openings disposed uprightly on edge, in combination with a plurality of detachable supports each having ears engageable in the openings to hold each support extended entirely at one side of the strip and the supports having upwardly extending

arms at their opposite corners bendable inwardly over a reinforcing bar placed upon the support between them.

11. A concrete reinforcing bar spacer, comprising a strip disposed on edge with perforations spaced longitudinally thereof, a plurality of supports extending on alternate sides thereof, and means in connection with each support engageable with the perforations for holding the strip in an upright position.

12. A bar spacer of the class described, comprising a strip with perforations spaced longitudinally thereof, and a plurality of supports disposed alternately along the strip with each support entirely at one side of the strip, and means in connection with each support engageable with the perforations for holding the strip in an upright position, and with arms extending upwardly from the support bending over a reinforcing bar placed upon the support between them.

13. A bar spacer of the class described, comprsing a strip with perforations spaced longitudinally thereof, and a plurality of U-shaped supports placed alternately along the strip, each support having bendable ears at the extremities of the U-shaped portion insertable through the perforations of the strip, so that the support will extend from the strip entirely at one side thereof, and having arms formed integrally with the upper side of each support which are adapted to be bent over a reinforcing bar carried by the strip and the support.

CHESTER J. O'BRIEN.