This invention relates to a strap for supporting metal lath suspended ceilings or the like and method of applying the same and is more particularly directed to such straps which form a permanent part of the building structure and are used in supporting a metal lath suspended ceiling from the next succeeding higher floor, the intervening space being used for pipes, electric wiring and other conduits.

One of the principal objects of this invention is to provide such a strap which is made of two parts, one part being anchored in the floor and depending therefrom and the other part being secured to the anchored part when the ceiling is being fabricated.

A further object is to provide such a strap in which the supported part of the strap is quickly and easily applied and when applied forms a reliable and strong support for the ceiling and will not loosen so as to permit the ceiling to sag or fall.

A further purpose is to provide such a connection in which the supported strap can be positively locked in engagement with the anchored part of this strap and in which this locking is effected quickly and easily and in the shortest length of time.

A still further object is to provide such a two part strap for supporting ceilings or the like in which the strap used as the supported member can be cut to length and formed on the job, thereby avoiding a waste of material. This is particularly important in sloping ceilings where each strap is of different length, the anchored straps in the present invention being all of the same lengths and the supported straps being each individually cut to the necessary length.

Still further objects are to provide such a strap and method of applying the same which is simple and inexpensive in construction, is quickly applied and which forms a permanent and reliable part of the building structure.

In the accompanying drawings:

Fig. 1 is a cross section of a poured concrete reinforced floor showing a ceiling suspended therefrom by straps made and applied in accordance with my invention.

Fig. 2 is a fragmentary side elevation of the straps shown in Fig. 1 showing the connection between the two parts and the supported strap locked against displacement.

Fig. 3 is an edge view thereof.

Fig. 4 is a section taken on line 4—4, Fig. 1 showing the supported strap being applied to the anchored strap.

Similar characters of reference indicate like parts in each of the several views.

In its general organization this invention proposes a strap for supporting ceilings or the like which consists of an L-shaped anchoring strap, one arm of which is embedded in a concrete floor and the other arm of which depends from the floor and is provided with a pair of headed rivets and a laterally extending lip and a supported strap which is provided with a pair of inverted keyhole slots, these slots being adapted to receive the headed rivets and the lip being adapted to be hammered down so as to engage the end of the supported strap and prevent its upward displacement. The supported strap is cut to length on the job and its lower end is formed into a hook which is adapted to receive one of the load bearing members of the ceiling.

The floor is shown as composed of poured concrete having reinforcing bars embedded therein and being formed to provide beams which strengthen the floor. While a poured concrete floor is shown it will be understood that the invention is also applicable to other types of floors such as hollow tile floors in which the tiles are placed in position with concrete poured around them. Before the concrete is poured and while the form boards, indicated by dotted lines are in place, the anchoring straps are set in position. These straps are generally of L-form having a short leg and a long leg. The short legs are hung over one of the reinforcing rods and the long leg is passed through the crack or opening between the form boards so that the long leg is suspended from the form boards. These anchored straps are, of course, uniformly spaced in rows.

The concrete is then poured in the form
and after it has set the short leg 10 and the bend of each anchoring strap 9 is firmly embedded in the concrete.

At its lower end this anchoring strap 9 is provided with a pair of rivets 12 arranged one above the other, each of these rivets having an enlarged head 13. These rivets can be of any suitable form but preferably comprise an enlarged shank 14 which engages the side of the anchoring member 9 and a reduced neck 15 which extends through an opening provided in the anchoring member and is turned or peened over so as to hold the rivet in place. Above these rivets a lip 16 is punched outwardly from that side of the anchoring member on which the heads of the rivets 12 are disposed. This lip is punched out a substantial distance to the position indicated in Fig. 4.

The supported strap 17 is made of strap metal and is cut to approximately the desired length. The supported strap 17 is then punched so as to provide a pair of inverted keyhole slots 18 at one end, the reduced parts 19 of these keyhole slots extending toward the adjacent end of the strap. The workman then slips this end of the supported strap 17 up over the lip 16 as indicated in Fig. 4. In this position the heads 13 of the rivets 12 are in a position to pass through the large parts of the keyhole slots 18. The supported strap is then swung inwardly against the side of the anchoring strap 9 and is dropped so that the shanks 14 of the pair of rivets 12 enter the reduced parts 19 of the keyhole slots. In this position the supported strap is reliably suspended from the anchoring strap and to lock these parts against displacement the lip 16 is hammered down until its end engages the upper end of the supported strap 17. This positively prevents upward displacement of the supported strap, as indicated in Fig. 3 and thereby provides a permanent connection between the straps.

The lower ends of the supported straps 17 are then all marked off to the same length. This is done by means of a water level in the usual and well-known manner. These lower ends are then bent into hook form, as indicated at 20, the marks being used to determine the initial bend of the hook 20. The upper channel bars 21 of the suspended ceiling 22 are then placed in these hooks 20 and, if desired, can be firmly wired thereto. The lower channel bars or load bearing members 23 are then placed against the under sides of the upper channel bars or load bearing members 21 and at right angles thereto and can be secured to the upper load bearing members 21 in any suitable manner, as by wires 24 which pass around all of the load bearing members at their places of junction. The metal lath 25 is then applied to the under side of the lower load bearing members 23 in any suitable manner and the plaster 26 is applied to the under side of this lath.

While in the form of the invention shown the rivets 12 are shown applied to the anchored hanger 9 and the keyhole slots 18 in the supported strap 17, it is apparent that these can be reversed if desired. That is, the headed rivets 12 can be applied to the supported strap 17 and the keyhole slots 18 punched in the anchored hanger 9 if conditions warrant.

From the foregoing it is apparent that the present invention provides a simple and inexpensive strap which can be easily and quickly applied with a minimum waste of materials and in very short time and in which the connection between the anchoring strap and the supported strap is strong and reliable and the supported strap is positively held against displacement thereby providing a permanent connection between these parts.

I claim as my invention:

1. A strap for supporting ceilings or the like, comprising an anchoring strap, a supported strap, means for suspending said supported strap at one side and from the lower end of said anchoring strap, and a lip formed to extend outwardly from the side of said anchoring strap, said lip being adapted to be bent to a position across the upper end of said supported strap to prevent displacement thereof.

2. A strap for supporting ceilings or the like, comprising an anchoring strap, a supported strap, means for suspending said supported strap at one side and from the lower end of said anchoring strap, and a lip formed to extend outwardly from the side of said anchoring strap, said lip projecting outwardly a substantial distance to permit said supported strap to be attached to said suspending means and being adapted to be bent inwardly to a position across the upper end of said supported strap to prevent upward displacement thereof.

3. A strap for supporting ceilings or the like, comprising an anchoring strap, at least one headed lateral projection at the lower end of said anchoring strap, a supported strap having an inverted keyhole slot at its upper end receiving said headed projection, and means carried by one of said straps and movable into coacting relation with the other strap to prevent upward displacement of said supported strap.

4. A strap for supporting ceilings or the like, comprising an anchoring strap, a pair of headed rivets projecting outwardly from one side and at the lower end of said anchoring strap, a supported strap having a pair of inverted keyhole slots at its upper end receiving said headed rivets and a lip formed to project outwardly from the lower end of said anchoring strap, said lip being adapted.
to be bent to a position across the upper end of said supported strap to prevent upward displacement thereof.

5. A strap for supporting ceilings or the like, comprising an anchoring strap, a pair of headed rivets projecting outwardly from one side at the lower end of said anchoring strap, a supported strap having a pair of inverted keyhole slots at its upper end receiving said headed rivets and a lip formed to project outwardly from the lower end of said anchoring strap, said lip being initially bent outwardly a substantial distance to permit said supported strap to be moved to engage said rivets in said key hole slots and being adapted thereafter to be bent inwardly to a position across the upper end of said supported strap thereby to prevent upward displacement thereof.

6. A method of making a strap for suspending a ceiling from a floor of concrete or the like which consists of bending an anchoring strap into L-shape, providing a lateral projection at one side of the end of one arm of said anchoring strap, embedding the other arm in said concrete floor, cutting a supported strap to the desired length, punching said supported strap to provide an opening to receive the projection on said anchoring strap, suspending said supported strap from said anchoring strap and forming a hook at the lower end of said supported strap to receive the load bearing members of said ceiling.

7. A method of making a strap for suspending a ceiling from a floor of concrete or the like which consists of bending an anchoring strap into L-shape, providing a laterally projecting headed rivet at one side of the lower arm of said anchoring strap, punching said anchoring strap to provide a lip above said rivet and projecting in the same direction, embedding the other arm of said anchoring strap in said concrete floor, cutting a supported strap to the desired length, punching an inverted keyhole slot at the upper end of said supported strap, passing the upper end of said suspended strap up under said lip and engaging its keyhole slot with said headed rivet, hammering said lip inwardly to a position over the end of said supported strap to prevent upward displacement thereof and forming a hook at the lower end of said supported strap to receive a load bearing member of said ceiling.

In testimony whereof I hereby affix my signature.

RAYMOND E. KELLEY.