June 19, 1962 R. N. JERNIGAN 3,039,196

MASONRY CORNER AND WALL LAY-UP GUIDE

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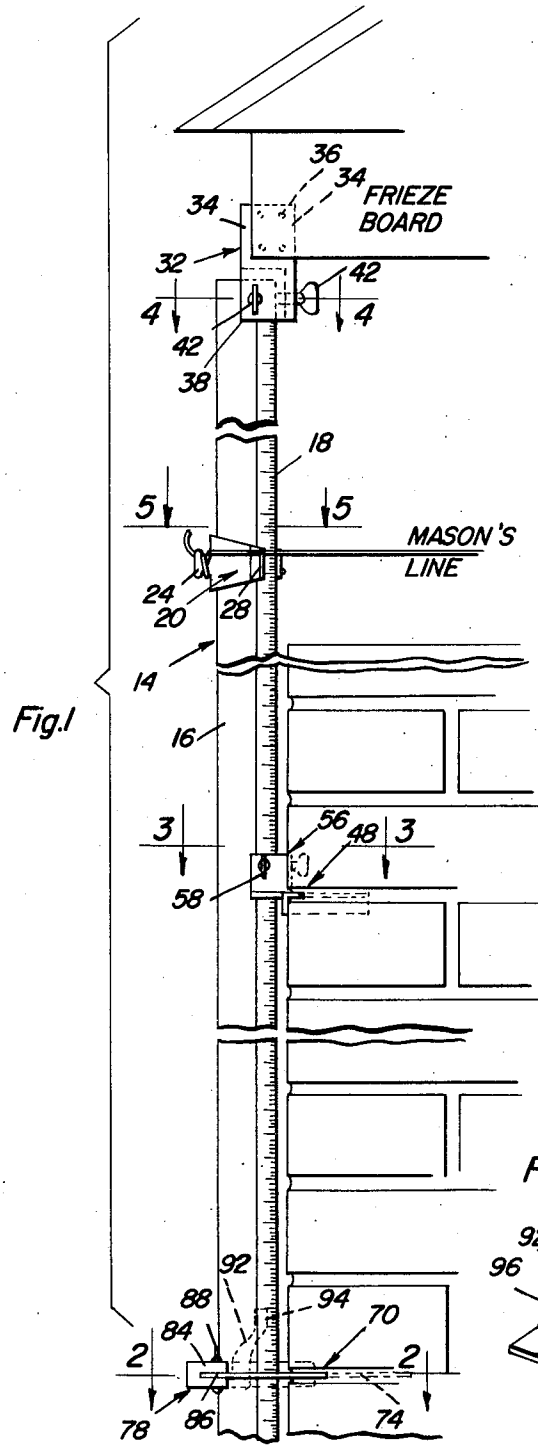


Fig.1

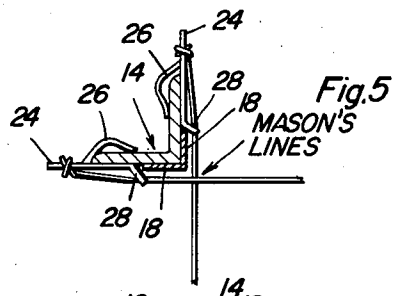


Fig.5

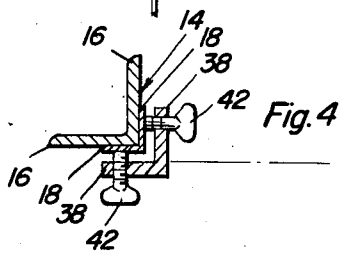


Fig.4

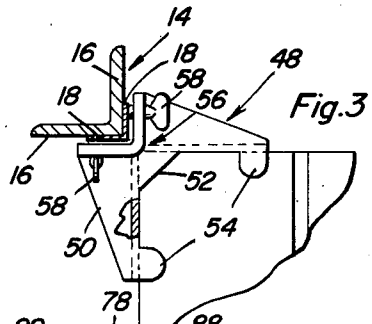


Fig.3

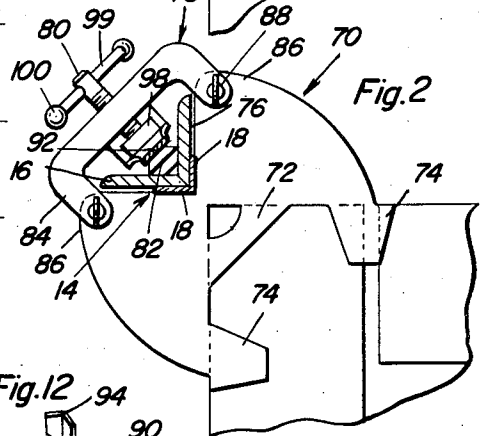
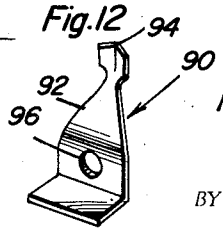


Fig.2

Fig.12



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Fig.6

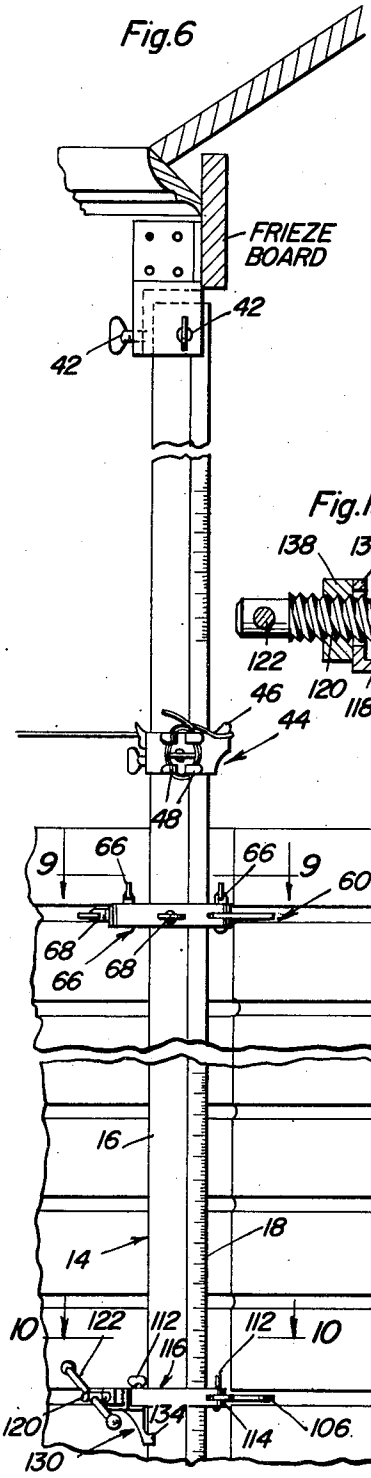


Fig.7

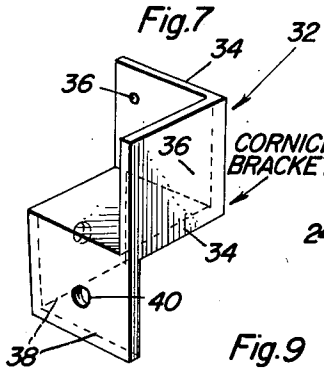


Fig.8

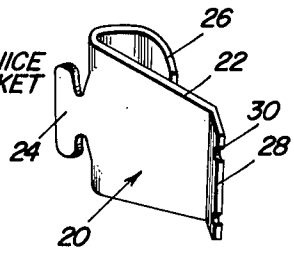


Fig.9

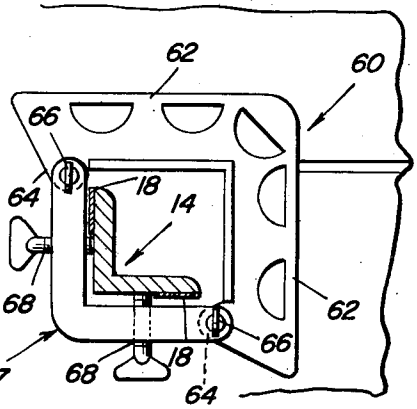


Fig.13

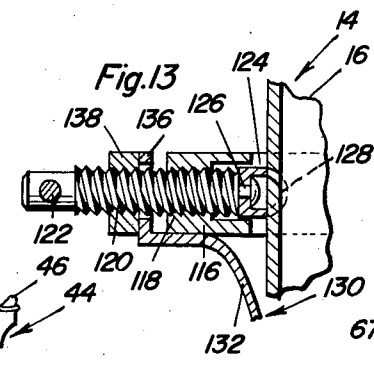


Fig.10

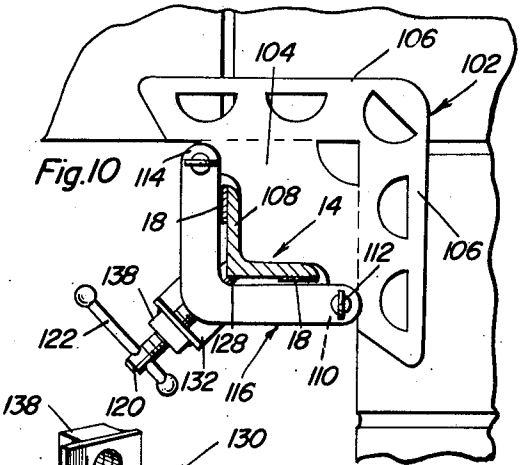
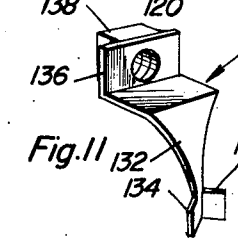


Fig.11



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3,039,196

MASONRY CORNER AND WALL LAY-UP GUIDE

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6 Claims. (Cl. 33—85)

The present invention relates to an improved masonry corner and intervening wall planning and lay-up guide or implement the purpose of which is to enable users thereof to expeditiously and accurately cope with and take care of the three primary steps in masonry work; namely, plumbing of corners (either inside or outside), running of lines, and coursing units to comply with the uniformity required.

Since it may be of help in better understanding the nature of the subject matter under consideration the reader should know that objectives of the concepts are such that the invention in a unitary sense is an extension of and an improvement on a similarly constructed mason's lay-up guide which has been aptly and descriptively referred to as a "story pole," that is, a novel structural adaptation of a knock-down type which serves to assist users in performing the aforementioned primary masonry steps in a reliably effective manner. The prior invention is disclosed in co-pending application Serial No. 774,693 filed on November 18, 1958.

Certain features which characterize the previously filed case are common to similar adaptations present in the instant case involving a corner and wall lay-up means in which a rigid upright for vertical disposition is employed. The upright preferably comprises an angle iron. The visible surfaces of the flanges of the angle iron are provided with mason's coursing scales. A base bracket of a special construction is provided and utilized for securing a complemental lower end portion of the angle iron in the desired vertical starting position. Wall brackets are utilized to cooperate with median portions of the angle iron and adjacent portions of the corner and wall in the course of erection. In the wall bracket a suitably slidable and detachable line clip is provided. In addition and above this a cornice bracket is provided and this bracket is such in construction that apertured flanges embodied therein may be nailed to the frieze board.

The cornice bracket also comprises upstanding attaching flanges at right angles and depending wing-like flanges which have setscrews that may be engaged with the flanges at the upper end portion of the vertically positioned angle iron.

Another improvement has to do with a wall bracket characterized by an anchor which may be embedded in a mortar joint in an elevated portion of the corner and which anchor serves as a mount for a right angular yoke having setscrews to engage the flanges of the angle iron and to assist in holding the angle iron in place.

A highly significant aspect of the invention has to do with the base bracket characterized by a plate with a portion thereof which is adapted to be anchored in a mortar joint and which assumes a horizontal position and to which a suitably shaped yoke is detachably connected. The plate and yoke vary, depending on whether the use is for an inside corner or an outside corner. However, the yoke is provided with bolt means for clampingly engaging the angle iron and setting the angle iron up in a perpendicular plumb position.

Other objects, features and advantages will become more readily apparent from the following description and the accompanying illustrative but not restrictive drawing.

In the drawings wherein like numerals are employed to designate like parts throughout the views:

FIG. 1 is a view showing fragmentary portions of a corner in a masonry structure, illustrating the frieze board

at the top and showing the improved corner and wall lay-up guide and how it is constructed and used.

FIG. 2 is an enlarged horizontal view in section and elevation taken on the plane of the line 2—2 of FIG. 1, looking in the direction of the arrows.

FIG. 3 is a horizontal section on the line 3—3 of FIG. 1.

FIGS. 4 and 5 are likewise horizontal sections on the lines 4—4 and 5—5, respectively, of FIG. 1.

FIG. 6 is a view similar to FIG. 1 but showing the variations or modifications in the construction and arrangement for an inside, as distinguished from an outside, corner construction.

FIG. 7 is a perspective view of the cornice bracket.

FIG. 8 is a perspective view of a line clip.

FIGS. 9 and 10 are sections on the line 9—9 and 10—10 respectively of FIG. 6.

FIGS. 11 and 12 are perspective views of spring tension members usable in connection with the lower or base bracket construction.

FIG. 13 is a fragmentary view in section showing the clamping bolt and accompanying parts seen in top plan in FIG. 2 but too small for examination.

The usual practice in masonry construction is to lay-up what are known as "leads" at exterior and interior corners. These leads serve to support the mason's guide lines, which are used for guiding the laying of the courses of the masonry between the leads. Then additional leads are built and the procedure is repeated. These leads are built by only the most skilled masons, with repeated use of a level, both as a straight edge and for plumbing of corners, and also repeated use of the mason's rule for individual courses and the "story pole" for equality of coursing at all corners of the building. It should be easily understood, that if one tool can be provided that can combine all of these tools, and always be in position and not have to be reached for, it would save the mason considerable time. Furthermore, the guide lines needed to lay up brick between the corners are simply fastened to a line clip and as each course is laid the clip is slipped up the instrument to the next course. No tying and untying of line at each course is necessary, or fastening line in mortar joint, as is the usual procedure. Also, with the use of the new marked mason's line all vertical joints may be laid to the line without fear of shifting the line.

It is a known fact that the running of leads is a costly operation, not only because the most skilled mason and the multiple use of several tools are required but also because the masonry must be laid at two levels at once, or the less skilled mason who fills in between corners must be transferred to another location while the lead is being laid. It can be readily noticed that the laying of two levels of masonry at once on a single wall, presents a scaffolding problem, also the transferring of masons to other locations is time consuming. With this invention, leads are eliminated, therefore, all masonry is laid one course at a time from corner to corner and all masons are working on the same level. Contrary to running of leads unskilled or even apprentice masons may lay-up corners in less time and more accurately than heretofore.

It will be evident from FIGS. 1 to 5 that the subject matter herein shown is tied in primarily with an outside masonry corner construction. On the other hand, FIGS. 6, 9, 10, 11 and 13 are collectively directed to an inside corner construction. For the most part, the essential components are much the same for either the inside or outside corner and for this reason it is believed that like parts should be designated by like numerals so that they will be recognized in whatever figure is being referred to at the time.

Keeping in mind that a single lay-up corner and wall assembly is shown the vertical guide post assembly 14

comprises an angle iron of suitable length and cross-section having right angularly disposed companion flanges 16 and being provided on the exterior surface of each flange with a suitably graduated and mounted mason's coursing scale 18. Each scale-equipped flange is adapted to accommodate a readily attachable and detachable as well as slidably adjustable line clip, for example, the type denoted at 20 and seen in detail in FIG. 8. The clip comprises a suitable body 22 with a T-shaped head 24 at one end with which an end portion of the mason's line is connected in the manner seen in FIG. 1. The spring clip 26 serves to hold the over-all clip in place and the body has a lateral flange 28 at one end with selectively usable keeper notches or seats 30 for the mason's line. The clip can be slid up and down depending on the position determinable by the scale 18. The cornice bracket for inside and outside corners is basically the same and therefore denoted by the numeral 32 in FIG. 7. It is a one-piece casting having flanges 34 with holes 36 therein adapted to be nailed in place as shown in FIGS. 1 and 6 on a frieze board corner or equivalent structure. The depending flange-like skirt portions 38 have a screw-threaded holes 40 to accommodate the setscrews 42 engageable with the flanges of the angle iron of the manner seen in FIG. 4 in particular.

With respect again to the line clip, it will be obvious from FIG. 6 that this clip might be of some other construction for example the construction denoted at 44 and which has a notched flange 46 and struck-out keeper tongues 48 around which the line may be wound and fastened. The clip is of any suitable friction retaining construction.

Since the wall bracket shown in FIG. 3 differs from that shown in FIG. 9 each bracket will be distinguished from the other. With respect to FIG. 3 the numeral 48 designates a wall bracket having a plate-like body 50 with a centralized web 52 and having lugs 54. These lugs 54 will be anchored in the mortar joint to hold the plate 54 projecting beyond the corner to locate the L-shaped angle iron seat 56 provided with setscrews 58 which are turned and set in retaining positions in the manner illustrated. In other words, the angle iron is seated in the stirrup-like seat 56 as will be hereinafter discussed.

The same result is attainable in the inside corner wall bracket construction which is denoted at 60 in FIG. 9. Here again the plate-like body embodies flanges 62 apertured for ready anchoring and having ears 64 with holes therein to accommodate insertable and removable assembling and retaining pins 66. These pins simply drop down through holes in the ears 64 and also through holes in the arms or limbs of the generally L-shaped yoke 67. The limbs are provided with screw-threaded holes to accommodate the clamping screws 68 which are tightened against the flanges of the angle iron 14 as illustrated.

In the base bracket in FIG. 2 this is obviously for the outside corner and it comprises a post positioning plate or body 70 having a web 72 and lugs 74 similarly constructed and arranged to the aforementioned lugs 52 and 54 and which are adapted to be embedded in the mortar bond or joint at the base portion of the corner construction. The projecting part of the plate is here provided with what may be described as an angular notch 76 providing abutments against which the flanges 16 of the angle iron 14 abut as shown. Here the yoke is substantially U-shaped as at 78 and the bight portion has a screw-threaded hole to accommodate the screw-threaded shank of a clamping bolt 80 having a suitably shaped beveled head 82 on the inner end which engages in the crotch of the angle iron to obtain the desired clamping result. Here the arms 84 overlie or straddle the coacting corner portions 86 of the plate which have holes therein to accommodate the insertable and removable assembling and retaining yoke pins 88. To assist in obtaining the desired clamping action a substantially L-shaped spring of the type shown at 90 is employed in this construction and arrangement. The spring has a leg 92 with a V-shaped end 94 which conformably bridges over and rests against the vertex of the angle iron in the manner shown in dotted lines in FIG. 1. The bolt hole 96 serves to permit passage of the bolt which bolt is provided with a suitable take-up nut 98. This novel tensioning spring functions to engage an indented ridge portion of the angle iron and exerts pressure on the angle iron which results in pushing the upper end into proper relationship against the winged bolts or setscrews carried by the cornice bracket 32. It follows that this added feature contributes to the over-all utility of the yoke carried by the plate. The clamping bolt is provided with adjusting handle 99 which is removably mounted in a hole in the shank of a bolt, said handle having a removable ball-head 100 on one end to facilitate applying and removing the handle.

With reference now to the basically similar base bracket for the inside corner construction attention is directed to FIGS. 9, 10, 11 and 13 and also the assembled position seen at the bottom in FIG. 6. Here the bracket is denoted generally by the numeral 102 and there is a plate portion 104 of the shape shown in plan in FIG. 10 and which has a bordering flange 106 for anchoring purposes. An edge portion 108 of the plate serves to accommodatingly support the flanges of the angle iron 14. The lug-like portions 110 have pin holes for reception of the headed connecting pins 112 which pass through holes in the furcations 114 at the ends of the arms of the L-shaped yoke 116. The intermediate portion of this yoke has a screw-threaded hole 118 (FIG. 13) therein to accommodate the shank 120 of the bolt having a detachable turning lever or handle 122 thereon. In this instance the head of the bolt is denoted at 124 and this head is hollow and pivoted in place at 126 providing a swivel head construction. The head is notched to provide jaws 128 which embrace the corner portion of the angle iron in the manner perhaps best shown in FIG. 10.

Here the slack take-up and tensioning spring is denoted at 130 and it has a springy arm or limb 132 with divergent jaws 134 to cooperatingly engage with the angle iron. The flange 136 has a nut 138 welded thereon and the bolt passes through and is operatively connected with a nut so that when the bolt is tightened in the hole 118 the clamping head is pressed into position and the spring is also fed into position by way of the threaded nut connection.

It will be evident that fundamentally or basically a single inventive concept is herein involved since the only variations are special adaptations of similarly constructed and performing brackets varied only because of the necessity of employing the instrumentality or means for planing and laying up corners and walls. An essential characteristic, as before mentioned is the steel or aluminum vertically disposable angle iron this being erected and mounted by a series of brackets and being correctly lined up for plumb usage. Briefly, the directions which have been followed in connection with a brick veneer wall for example would be to first place the base bracket 70 in position on a foundation wall and then lay the first course of masonary in the corner. Secondly, the cornice bracket 32 is nailed in position on the frieze board in the manner shown in FIG. 1 for example. The next step is to place the angle iron in position in the base bracket against the winged setscrews of the cornice bracket 32. By setting the base bracket clamp in position and inserting loose pins 88 and tightening the clamp against the angle iron the fourth step is taken care of. The spring 132 in the base bracket 130 is designed to engage the angle iron slightly before the bolt, therefore exerting a pressure on the angle iron to bear against the winged bolts of the cornice bracket. Manifestly, the angle iron is plumbed by adjustment of the winged bolts 42 on the cornice bracket 32. The line clips 20 are placed and the lines are installed from one corner to the other. Each course of masonry is laid to line according to the mason's scale 18 attached to the angle iron. This same procedural system may be

equally well used for solid masonary construction. In this case one would place the base bracket on the foundation wall or, if starting from a footing, on top of the first course of masonry. A small portion of the corner is laid by conventional methods, and a wall bracket is placed on top of this wall. From this point the procedure is similar to directions given above for brick veneer corner and wall work. Concisely the cornice bracket is used only for brick veneer and the wall bracket for solid masonry or similar construction.

The basic difference between brick veneer construction and solid masonry construction is that in the brick veneer the frame of the building is built and the frieze boards attached before the wall brick are laid. In solid masonry there is monoframe work and therefore no frieze board to work to, before the masonry is laid. My invention is designed to meet the needs of all types of masonry. The base bracket is to be used for all types. The cornice bracket is used only for brick veneer. The corner wall brackets are designed for use in solid masonry.

It is to be further pointed out concerning certain features that with the instant construction no braces protrude from the wall to injure workmen or to be hit and thus accidentally knock the angle iron out of plumb. It will also be evident that all joints of masonry may be jointed without removing the angle iron. The construction lends itself to practical use for all types of masonry brick veneer, solid masonry, brick and the tile cavity wall constructions, and so on. Not only this all parts needed for large building purposes, except the angle irons of course, may be stored in a reasonably small easy-to-carry container.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. For use in plumbing a corner, running lines and coursing units; means for laying up masonry corners and intervening masonry walls comprising, in combination, a base bracket having means to temporarily embody and securely anchor said bracket in a predetermined position in a selected portion of a wall corner and having a plate portion projecting beyond the wall line and embodying abutments at right angles to each other, an elongated angle iron constituting a corner plumbing upright having right angled flanges cooperable with said abutments, a clamping yoke having end portions detachably secured to said plate and a median portion opposed to and bridging said abutments and also straddling the angle iron flanges whereby the angle iron is located for erection and plumbing between the abutments and yoke, and a clamping bolt operatively mounted on the yoke and having a thrust head at an inner end thereof clampingly bound against a ridge surface of the angle iron, a cornice bracket having means for temporarily nailing thereof to and upon a frieze board and also having depending flange-like wings adapted to parallel and embrace the flanges of an upper end portion of said angle iron, and setscrews carried by said wings and contacting said flanges whereby to assist in setting up the angle iron in its desired vertical as well as plumb position, and a tensioning spring clip embodied in the base bracket construction and having a yieldable leg, said leg having a free end portion and said free end portion having a head conforming to and engageable with said ridge surface of the angle iron and nut means operatively connecting said clip and said bolt.

2. A base bracket comprising a plate the major portion of which is adapted to project in a horizontal plane beyond cooperating surfaces of a masonry corner construction, an inner marginal portion of said plate being adapted to fit into a mortar bond and to thus be anchored in place, said plate having abutments at right angles to each other and said abutments being adapted to supportingly contact cooperating surfaces on the flanges of an angle iron, an L-shaped yoke having bifurcated end portions with pin receiving holes, cooperating portions of said plate having pin holes and loose pins passing removably through the respective holes and serving to removably connect the end portions of the yoke to the plate, a median portion of said yoke having a screw-threaded bolt hole, a bolt having a shank screwed into and through said hole with an inner end having a swiveled head to engage a corner portion of an angle iron, and handle means operatively mounted on the outer end of said bolt, and a tensioning spring, said spring having a resilient leg with a V-shaped head on one end adapted to bear against a corner part of the angle iron, said spring also having a flange with a bolt hole, said flange being provided with an integral nut and said nut being lined up with said bolt hole and said bolt hole and the hole in said nut being threaded on the shank of said bolt.

3. For use in fastening a lower end portion of an angle iron to a corner construction in a masonry wall, a base bracket comprising a plate generally flat and adapted to project in a horizontal position beyond right angularly disposed wall lines of the corner, said plate being provided at an attachable end with lugs adapted to be embedded in a mortar joint in the corner construction, said plate also having a notched portion the edges of which are at right angles to each other and provide abutments, said abutments adapted to permit the flanges of an angle iron to seat firmly against the same, a yoke having end portions removably attached to said plate and having a central portion adapted to bridge the space between said abutments, said yoke having in the central portion a screw threaded hole, a clamping bolt adjustably and removably mounted in the screw-threaded hole, said bolt being provided at the inner end with an angle iron engaging head and provided at an outer end with a turning handle, a pressure spring having a leg provided with a bolt hole, said bolt extending through said hole, said leg having a head, and said head being shaped to conform to and bear against a cooperating portion of an angle iron, and a nut on the shank of the bolt engageable with the leg of said spring.

4. A base bracket comprising a substantially flat plate portion designed so that in use it projects in a horizontal plane beyond cooperating surfaces of a masonry corner construction, inner marginal portions of said plate being designed and adapted to fit into a mortar bond for secure anchorage of the plate on the corner construction, marginal central portions of the plate being adapted to overlie a corner and surface portion of a brick in the masonry wall or corner construction, said plate having abutments at right angles to each other and said abutments being adapted to engage and supportingly cooperate with surfaces on coacting flanges of an upstanding angle iron, a substantially U-shaped yoke having end portions bifurcated with the furcations formed with assembling and retaining pin holes, cooperating portions of said plate having ears and said ears having pin holes, and readily insertable pins loosely passing through the respective holes and serving to removably connect end portions of the yoke to the plate, a median portion of said yoke being provided with a horizontal screw-threaded hole, a bolt having a shank screwed into and through said hole and with an inner end thereof provided with a head to engage a ridge portion of the aforementioned angle iron, a slack take-up pressure type spring embodying a leg provided with a bolt hole, said bolt extending through said hole and said leg having a free end and said free end terminating in a head, said head shaped to conform to and directly bear against a cooperating ridge portion of the angle iron, and a nut carried by the shank of the bolt and associated and cooperable with the end of the leg having said bolt hole.

5. For use in fastening a lower end portion of a guide post to a wall corner construction, anchoring base means comprising, embedding means for secure anchoring in the wall corner construction, post positioning means connected to the embedding means in spaced relation to the corner wall construction for receiving said guide post therewithin, straddling means removably connected to the post positioning means in straddling relation to the guide post, clamping means operatively mounted by the straddling means and actuatable to engage the guide post within the positioning means and means operatively connected to the clamping means for yieldably engaging the guide post in spaced relation in direction of the guide post to the positioning means in response to actuation of the clamping means.

6. The combination of claim 5, wherein said last-mentioned means includes a head portion displaceable toward the guide post by the clamping means when actuated to engage the guide post within the positioning means, a guide post engaging portion vertically spaced from the head portion for engagement with the guide post in spaced relation in the direction of the guide post to the positioning means and a yieldable connecting portion connecting the head portion to the post engaging portion.

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