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2,538,970

RETRACTABLE CORNER UNIT FOR INNER FORM SECTIONS

Filed April 19, 1948

2 Sheets-Sheet 1

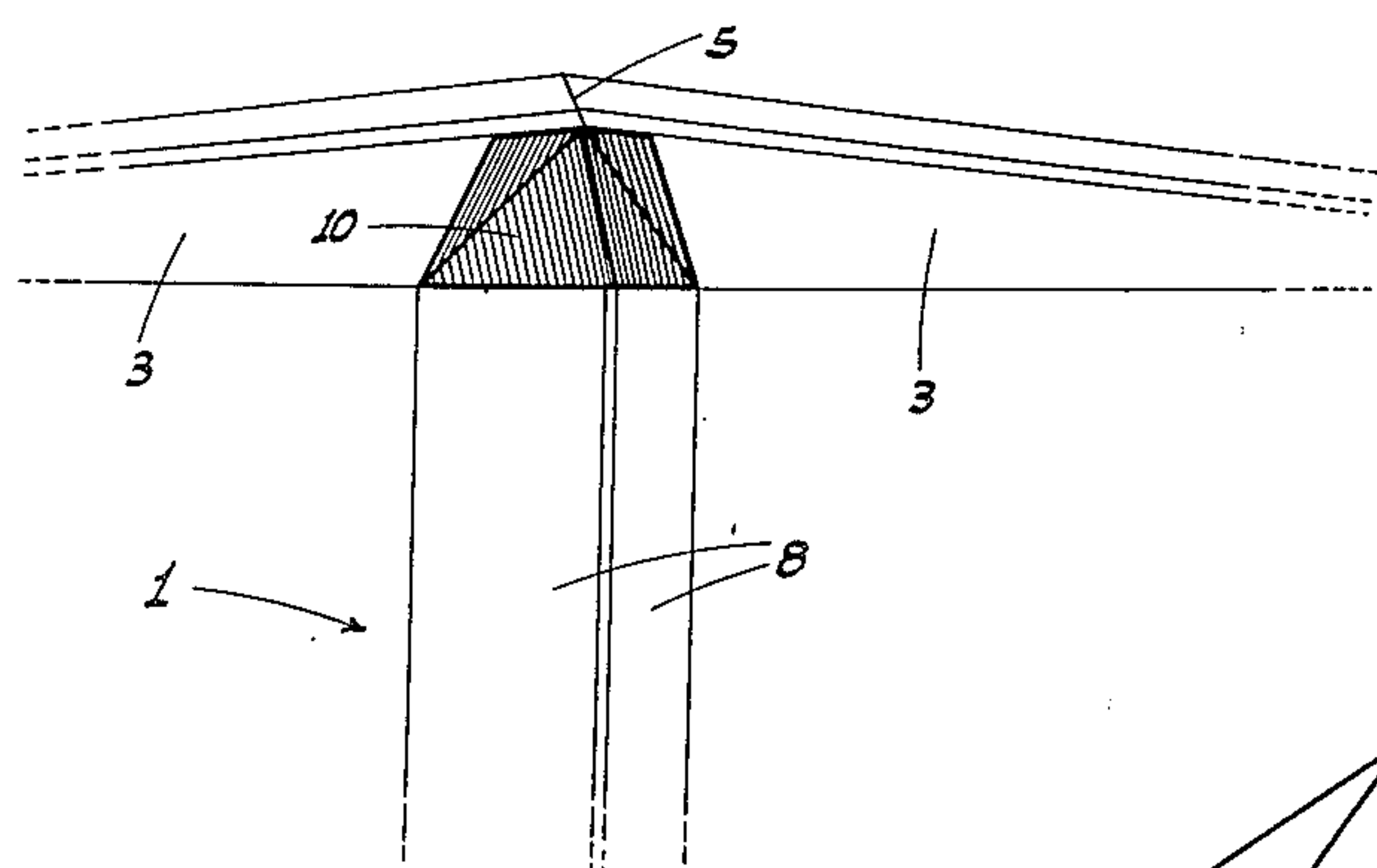


Fig. 1

Fig. 2

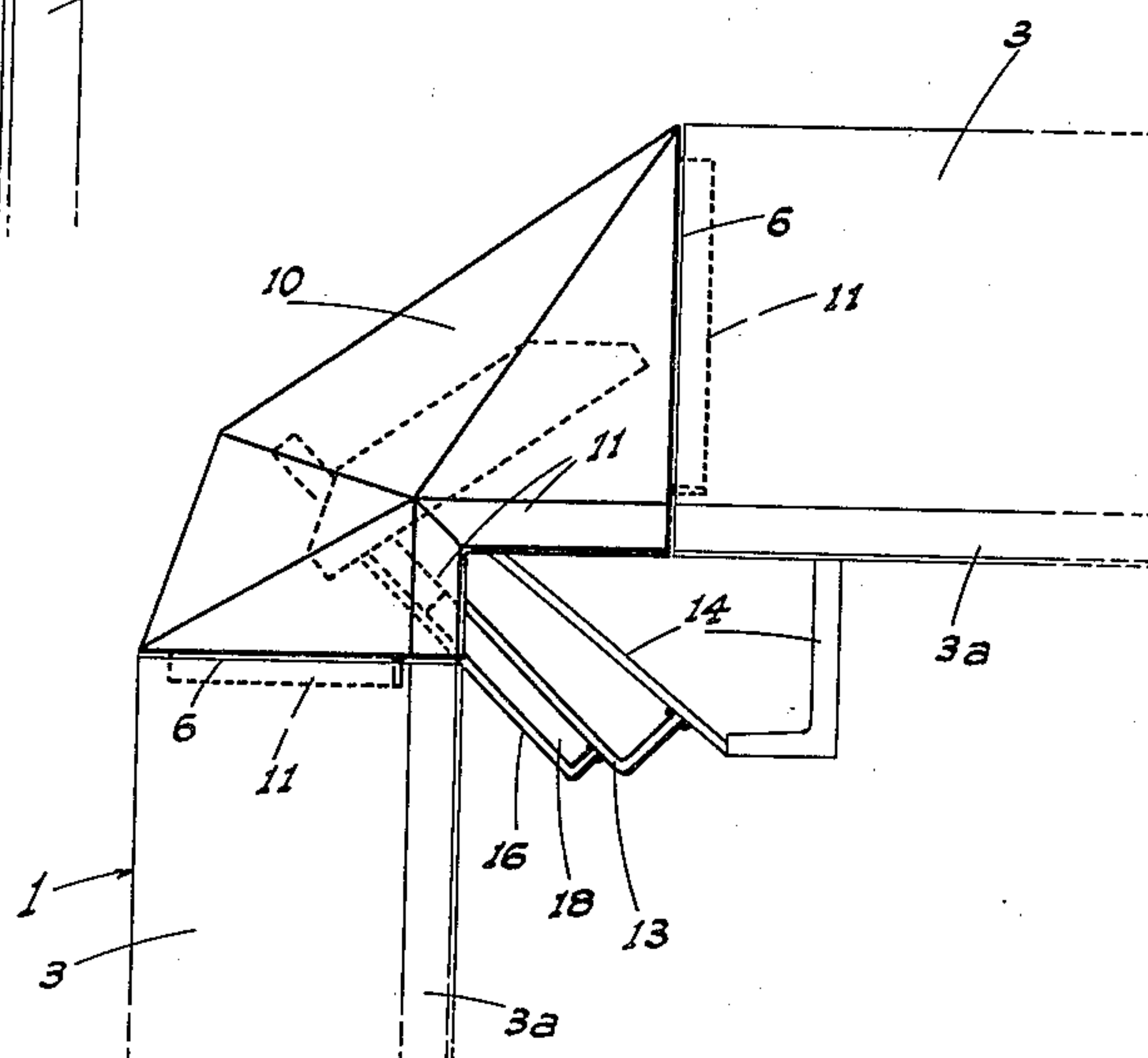
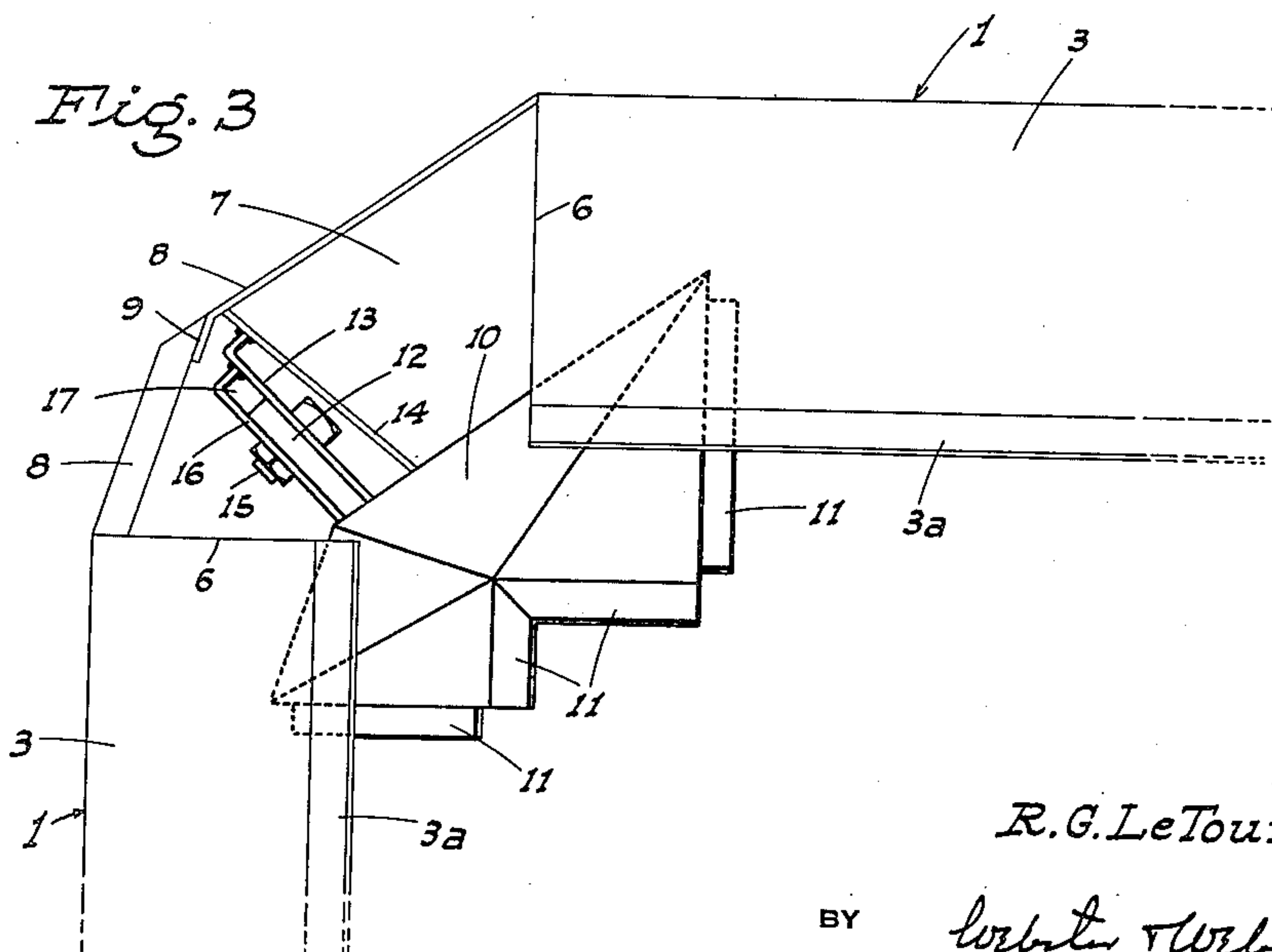


Fig. 3



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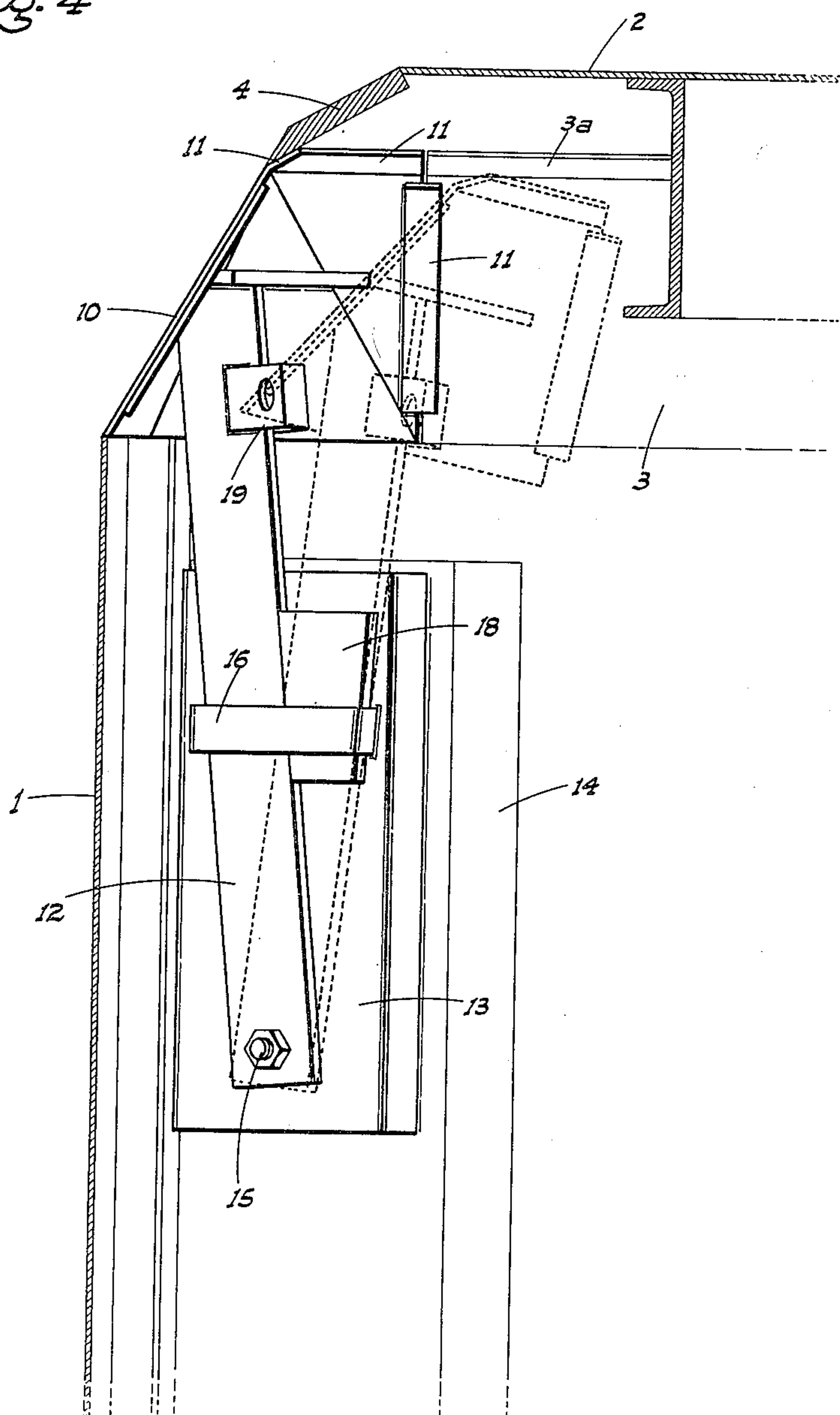
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Fig. 4



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RETRACTABLE CORNER UNIT FOR INNER
FORM SECTIONS

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3 Claims. (Cl. 25—131)

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This invention is directed to improvements in an inner form section of a form assembly adapted for use in the construction of monolithic concrete houses or the like; the invention relating particularly to an inner form section of the type shown and described in copending U. S. patent application, Serial No. 740,046, filed April 8, 1947, now U. S. Patent 2,524,981.

Such inner form section includes a horizontal roof plate, and separate vertical walls; the latter being movable inwardly or retractible from a normally advanced working position, whereby to free the cast structure from said inner form section.

The upper horizontal edge portions of the form section are of bevel configuration and comprise cooperating cove plates along adjacent edges of the roof plate and walls; it therefore being advantageous to provide special upper corner structures to permit the walls to be retracted without interference.

These upper corner structures or units are the subject of the present invention; one object being to provide a unit, for each upper corner, which is normally fixed in advanced working position to provide a corner form, but is readily retractible to thereafter permit the walls and corresponding cove plates to likewise be retracted.

Another object of the invention is to provide an upper corner unit, for inner form sections, which permits of contraction of the latter without damage to the cast structure at said upper corners.

A further object is to provide an upper corner unit, for inner form sections, which produces, in the cast structure upper corners whose inner surface appearance is quite attractive.

An additional object of the invention is to provide an upper corner unit, for the purpose described, which is characterized by simplicity of structure and economy of manufacture; inner form sections embodying the invention being manipulated more readily than otherwise.

A further object of the invention is to provide a practical and reliable upper corner unit for inner form sections which will be exceedingly effective for the purpose for which it is designed.

These objects are accomplished by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings:

Fig. 1 is a perspective view of one of the retractible upper corner units as embodied in an inner form section; said upper corner unit being in its advanced, working position.

Fig. 2 is an enlarged fragmentary plan view of one of said upper corner units in advanced working position; the roof plate of the inner form section being removed.

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Fig. 3 is a similar view, but shows said upper corner unit in retracted position.

Fig. 4 is an enlarged fragmentary sectional elevation of the inner form section showing one of the upper corner units in side elevation; said unit being in advanced working position in full lines, and in retracted, non-working position in dotted lines.

Referring now more particularly to the characters of reference on the drawings, the retractible upper corner unit is here illustrated as embodied in an inner form section, for monolithic concrete structures, which includes a plurality of vertical walls 1 disposed at right angles to each other, and a horizontal roof plate 2.

The upper horizontal edge portions of the inner form section are of generally beveled configuration and comprise longitudinal cove plates 3 affixed to the upper edges of the walls 1, and extending at an upward and inward incline. Upper longitudinal cove plates 4 are affixed to the corresponding edges of the roof plate 2 and extend therefrom at a downward and outward slope, lapping in relatively slidable relation longitudinal lips 3a along the upper edges of said cove plates 3.

The upper longitudinal cove plates 4 extend fully to each corner of the inner form section and are there secured together, as at 5. However, the lower longitudinal cove plates 3 terminate short of each corner of the inner form section, as at 6, whereby to provide a corner opening 7.

Below the corner opening 7 the inner form section includes, at each corner, a generally diagonal corner plate assembly which comprises cooperating vertical corner plates 8. The corner plates 8, while extending generally diagonally of the corresponding corner, project from adjacent edges of the vertical walls 1 in slightly outwardly converging relation to a lapping separable joint 9. The corner plates 8, cooperating as described, terminate at their upper end in the same horizontal plane as the upper edges of the walls 1.

The walls 1 are normally advanced, as shown, for use of the inner form section, but said walls are retractible inwardly by mechanism not here shown, for the purpose of freeing said walls from a structure previously cast thereabout. The cooperating corner plates 8, being vertical and lapping as shown, permit of such inward retraction of the side walls 1 without interference. However, this would not be true if the lower longitudinal cove plates 3 were in abutment at adjacent ends, and for this reason it is requisite that special upper corner units be provided. These units comprise the essence of the present invention, and as each is a duplicate of the others, a showing and description of one is sufficient.

The numeral 10 indicates a corner plate unit formed to symmetrically and matchingly engage

in the corner opening 7 from the rear, in the manner shown in Fig. 1; such corner plate unit including a plurality of plate sections welded together in predetermined angular configuration.

The corner plate unit 10 is maintained in its normal advanced working position in the corner opening 7, and flush with the adjacent parts of the inner form section, by means of inwardly offset stop flanges 11 which extend from the side and upper edges of said plate unit in underlying relation to adjacent edge portions of the lower longitudinal cove plates 3 and the upper longitudinal cove plates 4.

The corner plate unit 10 is mounted for retracting motion in a plane generally diagonal of the corner opening 7 by the following structural arrangement:

An upstanding swing bar 12 is affixed, at its lower end, to a mounting plate 13, in turn secured to the vertical frame structure 14 of one of the walls 1.

The upstanding swing bar 12 is attached, at its lower end, by a pivot bolt 15, to the mounting plate 13; said bar and plate being disposed so that the bar is swingable in a plane to accomplish the aforesaid retraction of the corner plate unit 10; the latter being affixed, as by welding, to the upper end of said bar.

In order to normally maintain the corner plate unit 10 in its advanced working position, the mounting plate 13 is fitted with a retaining strap 16 which spans the upstanding swing bar 12 and is of a length to form an elongated guide slot 17 for such bar.

The strap 16 thus guides the upstanding swing bar 12, and to normally maintain the latter in position with the corner plate unit 10 a holding wedge 18 is driven into the slot 17 between the rear edge of the bar 12 and the rear end of the retaining strap 16.

To retract the corner plate unit 10, the holding wedge 18 is first driven out, and then a pull element, such as a hook, is engaged with a perforated ear 19 on the upper end of said bar, the latter then being pulled rearwardly, carrying the corner plate unit 10 therewith to its retracted position shown in dotted lines in Fig. 4.

When all of the upper corner units have thus been retracted, the walls 1 may be pulled inwardly without interference to clear them from the cast monolithic concrete structure which surrounds the inner form section.

To return the upper corner units to working position requires the simple manual operation of replacing and re-driving the corresponding holding wedges 18.

From the foregoing description it will be readily seen that there has been produced such a device as substantially fulfills the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

Having thus described the invention, the following is claimed as new and useful, and upon which Letters Patent are desired:

1. An upper corner unit for an inner form section having an upper corner opening therein, comprising an initially separate plate unit adapted to engage in said corner opening from within the section, an upstanding swing arm pivotally mounted within the section, the plate unit

being mounted on the swing arm and the latter being swingable in a path to retract the plate unit into the section from said engaged position in the opening, and means to releasably lock the swing arm against swinging; said means including a structure provided with a guide slot through which the arm extends in swingable relation, and a wedge adapted to be driven into the slot between one end thereof and the arm.

2. An upper corner unit for an inner form section which includes a roof plate, retractible walls in angular relation to each other approaching the vertical corners of the section, generally diagonal vertical corner assemblies extending in separable relation between adjacent vertical edges of the walls, and generally beveled horizontal cove assemblies extending in separable relation between adjacent edges of the walls and roof plate, the corresponding vertical corner assemblies and a part at least of the horizontal cove assemblies terminating short of each other to form upper corner openings in the sections; comprising a corner plate unit symmetrical to said opening adapted to matchingly engage in the same from within the section, an upstanding swing arm pivotally mounted within the section, the plate unit being mounted on the swing arm and the latter being swingable in a path to retract the plate unit into the section from said engaged position in the opening, and means to releasably lock the swing arm against swinging; said means including a structure provided with a guide slot through which the arm extends in swingable relation, and a wedge adapted to be driven into the slot between one end thereof and the arm.

3. In combination: vertically disposed side wall plates disposed at substantially right angles to each other, adjacent vertical edges of said side wall plates being spaced apart in a plane diagonal to such edges, a vertical corner plate on each of the adjacent edges of the wall plates, said corner plates projecting diagonally toward each other and lapping, an upwardly and inwardly sloping cove plate on the upper edge of each wall plate, a substantially rectangular roof plate, a downwardly and outwardly sloping cove plate on each edge of the roof plate, the lower edges of such last named cove plates lapping the upper edges of the first named cove plates, such assembly of plates providing an upper corner opening defined by the top edges of the corner plates, the adjacent ends of the first named cove plates and the lower edges of the second named cove plates, a separate corner plate unit matchingly fitted into said upper corner opening to close the same, a vertically disposed swing bar fixed to and depending from the under side of said corner plate unit, the lower end of said bar being pivotally supported outwardly from one of the corner plates, and means to releasably hold said bar in vertical position.

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