

Dec. 13, 1932.

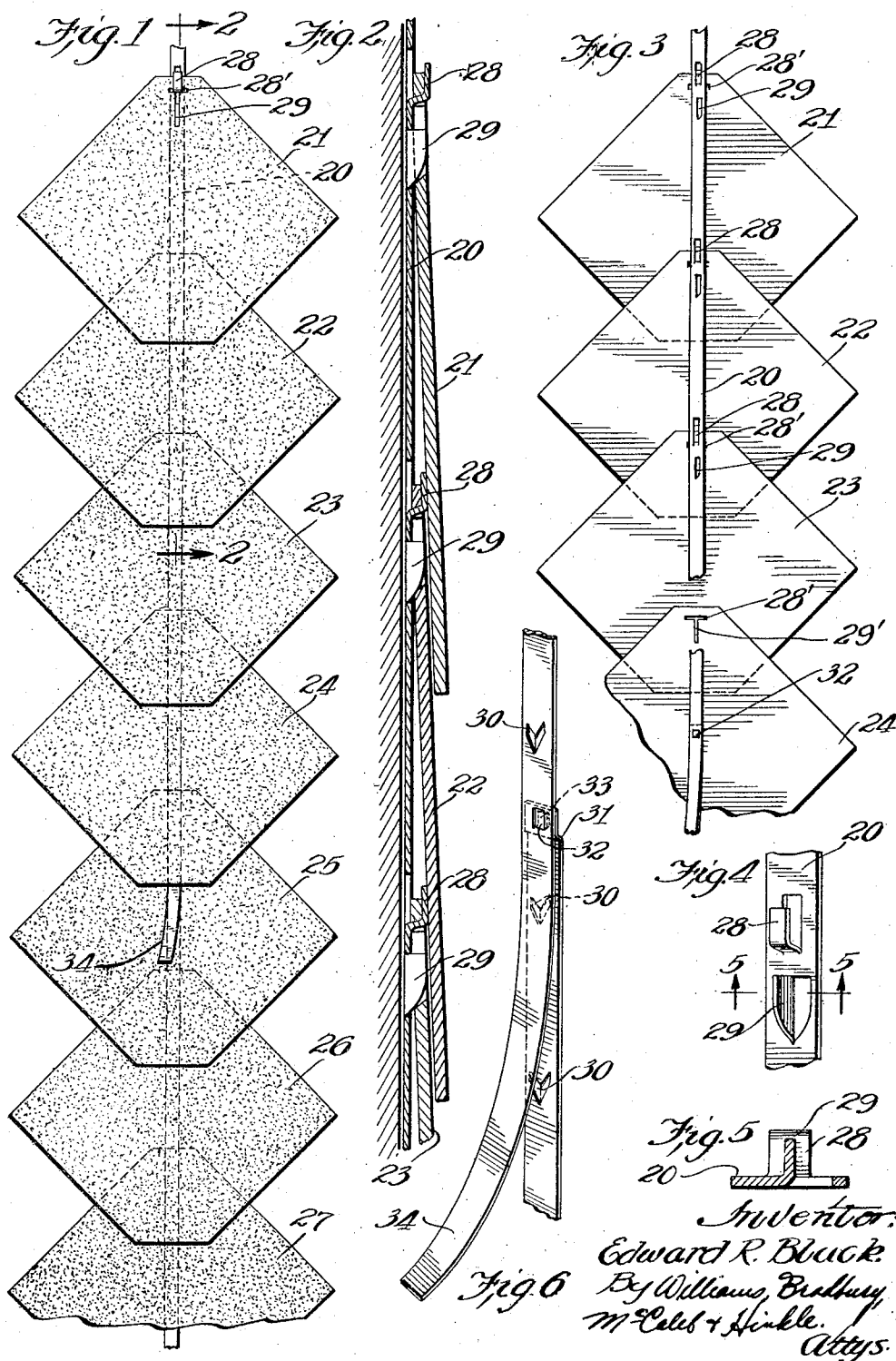
E. R. BLACK

1,890,928

BUILDING COVERING

Filed May 6, 1931

6 Sheets-Sheet 1



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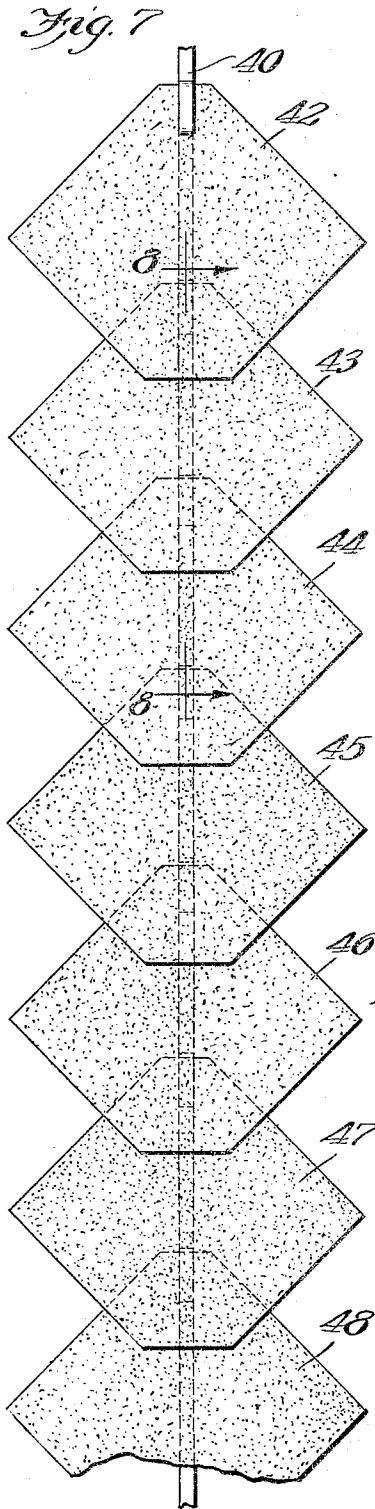
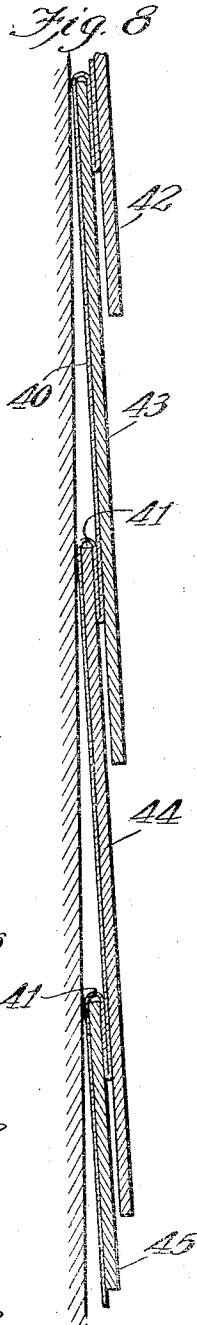
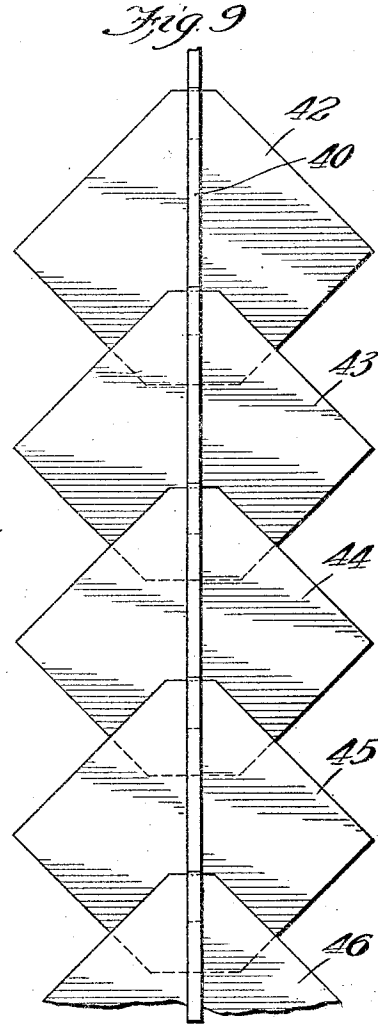
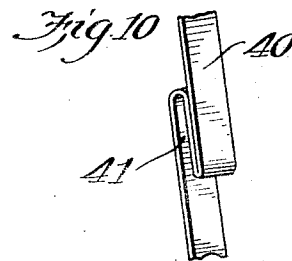
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6 Sheets-Sheet 2



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1,890,928

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Fig. 11

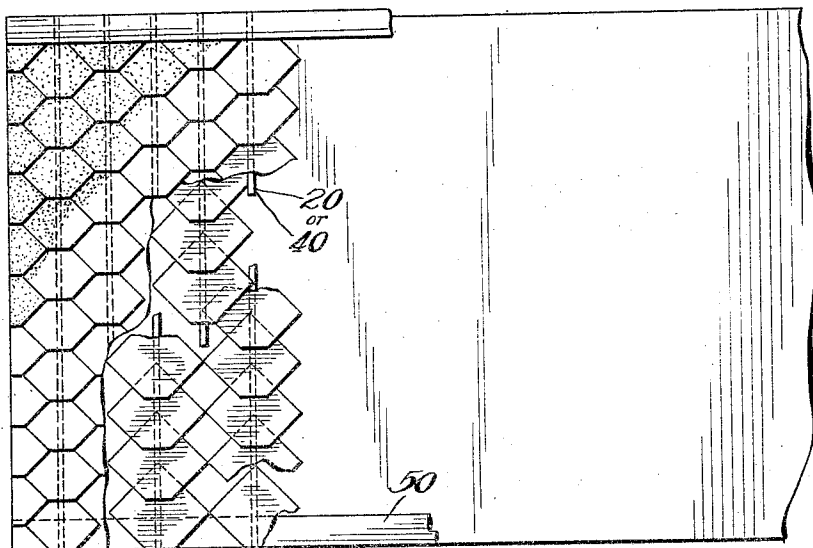
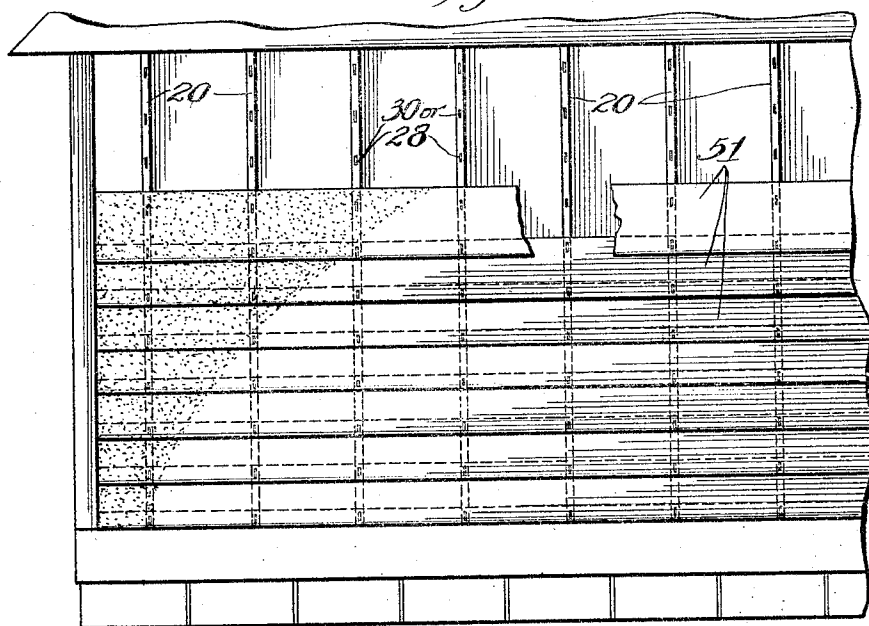


Fig. 12



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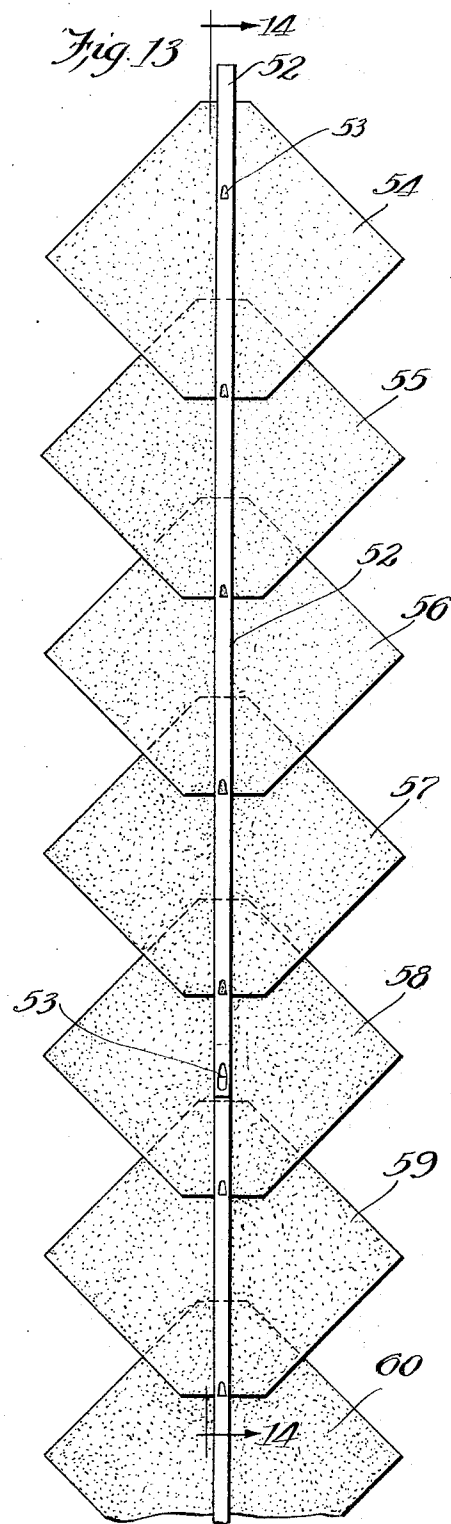


Fig. 14

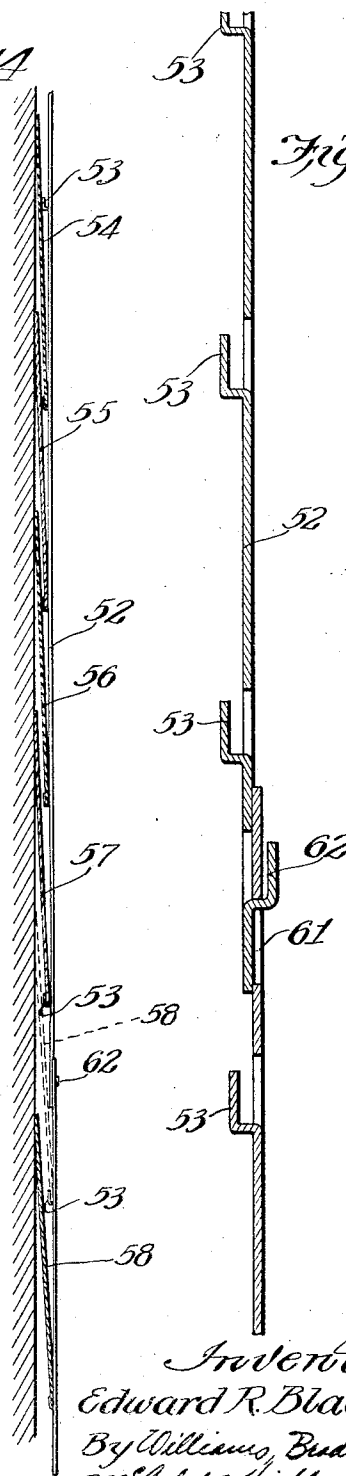
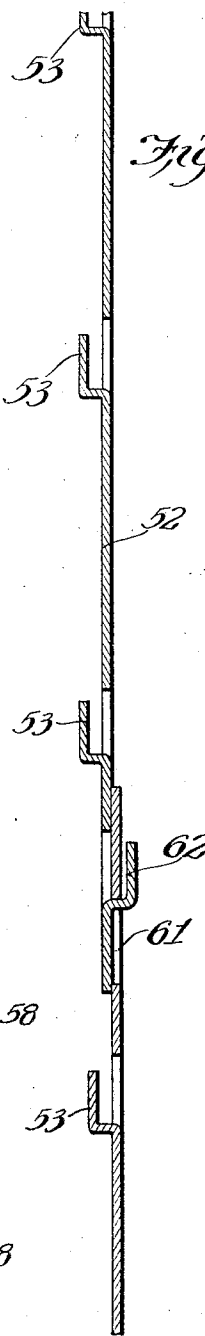


Fig. 15



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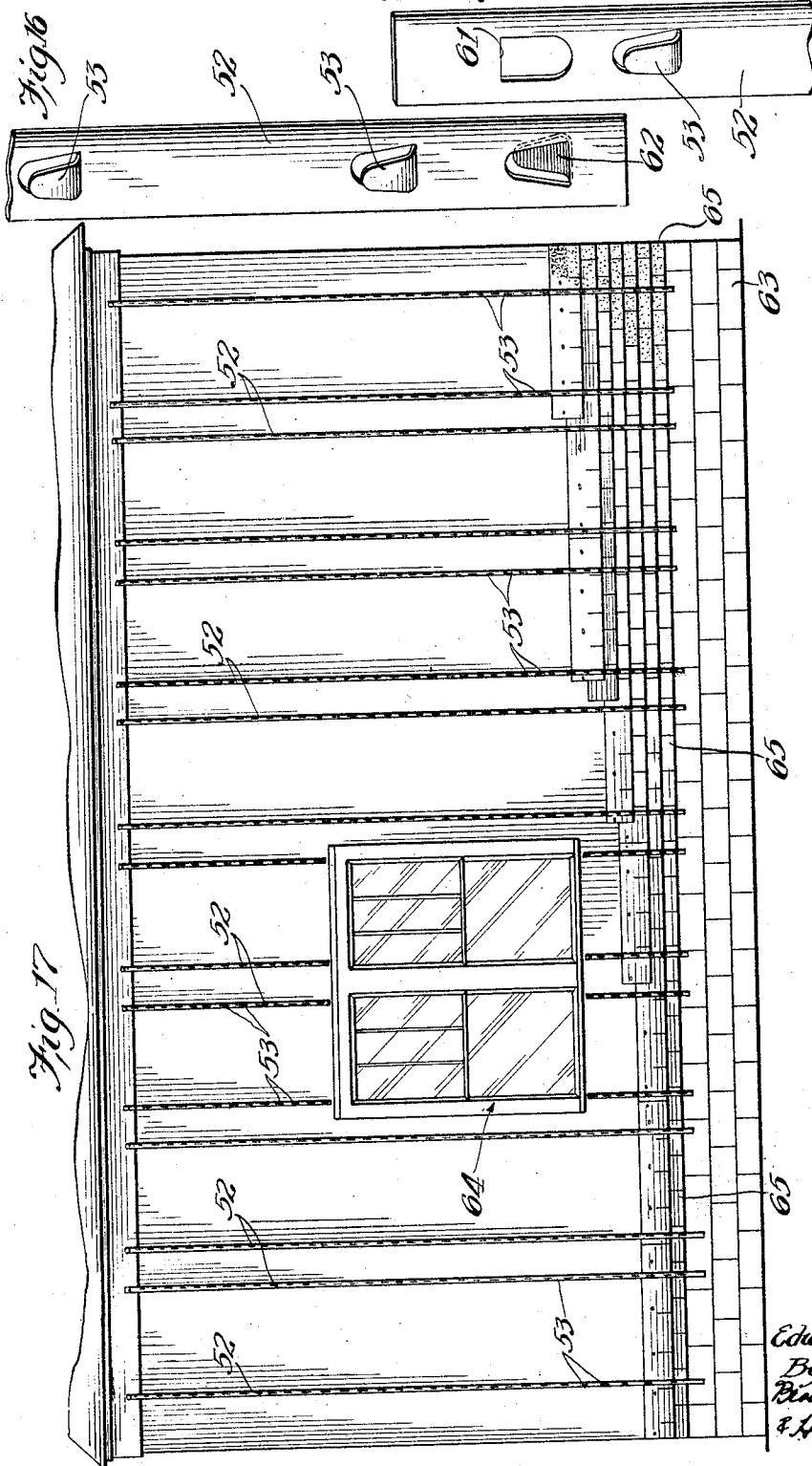
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1,890,928

Filed May 6, 1931

6 Sheets-Sheet 5



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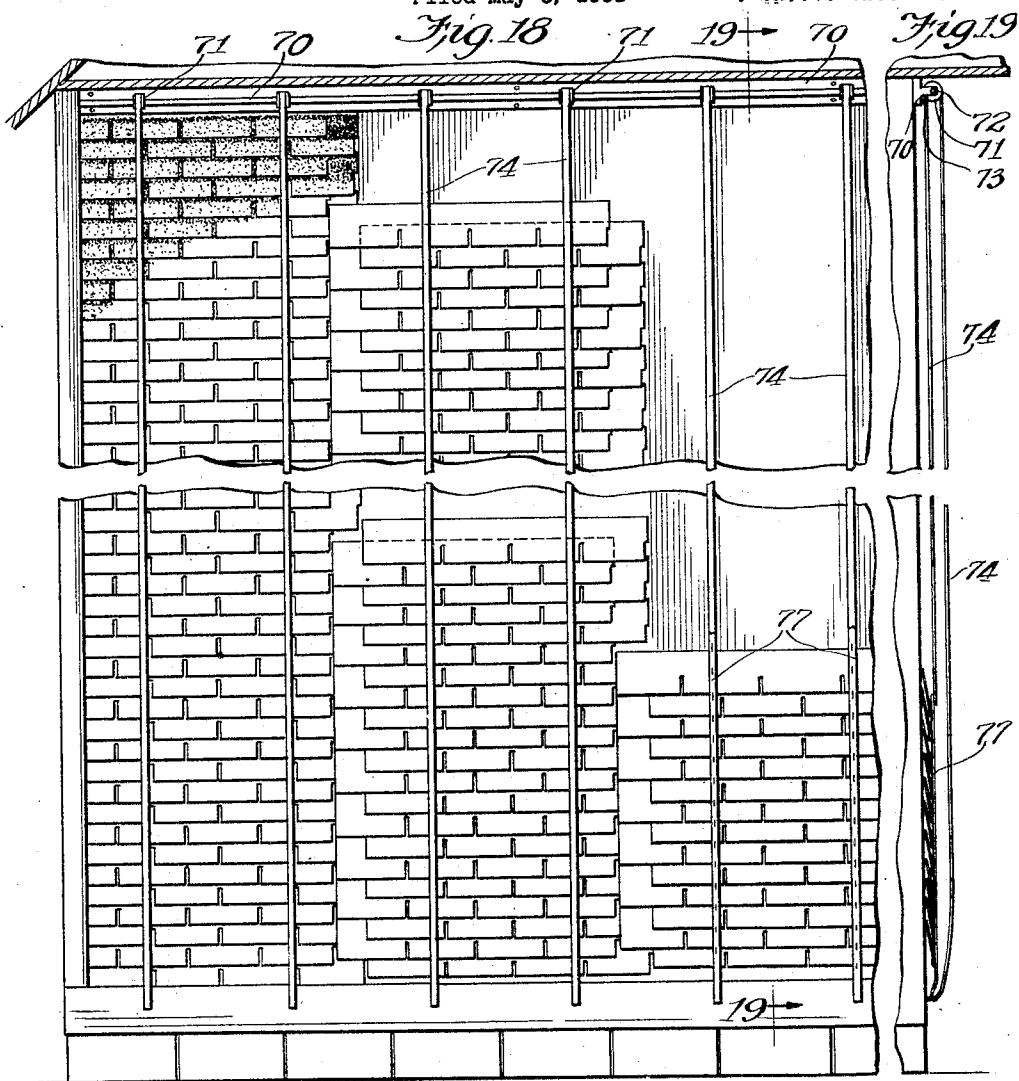
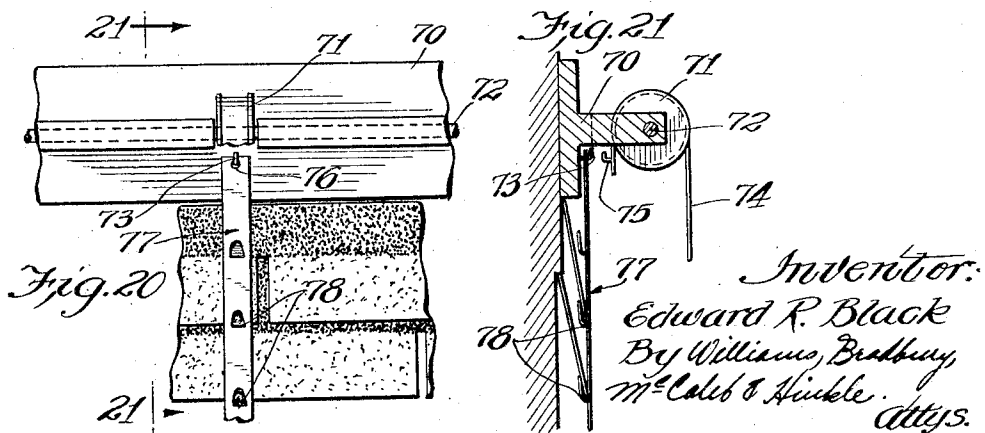
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BUILDING COVERING

Filed May 6, 1931

6 Sheets-Sheet 6



UNITED STATES PATENT OFFICE

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BUILDING COVERING

Application filed May 6, 1931. Serial No. 535,433.

My invention relates to building coverings, that is, to the protective and decorative weatherproof coverings which are applied to the roofs and outer exposed walls of buildings, usually in the form of strips or as individual or multiple shingles. In some forms the strip covering is ordinarily termed "roll roofing".

This application is a continuation in part of my copending application, Serial No. 417,202, filed December 28, 1929.

The types and forms of building coverings heretofore mentioned, usually composed of flexible weatherproof sheet material consisting of asphaltum impregnated paper stock or "felt"—sometimes with and sometimes without a protective and decorative coating of crushed stone or other resistant material—have been in demand and increasing popularity for some years. However, until the advent of the inventions set forth in this and my aforementioned copending applications, the "laying" of such types and forms of coverings has been fraught with difficulties and expense. In fact, the difficulties encountered in trying to apply strip covering to building side walls has been so great that this type of covering has been relatively little used as siding, although, in theory at least, it has long been recognized as particularly admirable for such purpose.

One of the more serious difficulties previously encountered was the inability, even with careful attention and close inspection, to secure the desired and proper leakproof and decorative effects, due, in large measure, to the fact that the progressive application or "laying" of the covering units was gaged or determined wholly or largely by units that had been previously placed and, in consequence, even slight variations in the size or shape of units might, and often did, become cumulative. Thus, for example, the manufacturing tolerances required for economic production of units from the materials ordinarily used are so great that, while individually of no consequence at all, if they cumulate because the position of one unit depends upon that of the unit immediately preceding and that preceding unit upon the

one layed in advance of it, and so on, the final result may be so ineffective or unsightly, or both, that the entire wall or roof may have to be done over.

In applying relatively long units there was the additional difficulty of supporting and keeping in line a unit throughout its length,—a difficulty most pronounced when the units are formed from material which is relatively flexible or weak.

One of the objects of my present invention is to provide methods for more effectively applying or "laying" building covering units of conventional forms and materials.

Another object is to provide equipment adapted accurately to gage or locate the units and temporarily retain them in proper relation and position until they are permanently anchored.

A further object is to provide a method and equipment particularly suited for the proper application of units to large areas.

Another object is to provide a method and equipment whereby the necessity for the use of scaffolding may be largely or entirely eliminated.

Another object is to enable a smaller crew of workmen to apply a greater amount of covering in a given time.

Other objects and advantages will hereinafter appear.

Several typical embodiments of my invention and of equipment for accomplishing the aforementioned results and others are disclosed in the accompanying drawings, wherein:

Fig. 1 is a front elevation of a series of units, in individual shingle form, arranged in proper overlapping relation on a positioning or gaging and temporary retaining strip, the strip being located at the back of the units;

Fig. 2 is an enlarged section on the line 2—2 of Fig. 1;

Fig. 3 is a rear elevation of the arrangement illustrated in Figs. 1 and 2;

Fig. 4 is an enlarged perspective of a portion of the positioning and temporary holding strip of the type illustrated in Figs. 1 to 3;

Fig. 5 is a section on the line 5—5 of Fig. 4; Fig. 6 is an enlarged perspective of a slightly modified construction of strip and illustrating one method of effectively sectionalizing it so that a strip of any desired length may be built up by coupling together the requisite number of shorter sections;

Fig. 7 is a front elevation of a series of units assembled upon and held by another modified form of temporary retaining and gaging strip;

Fig. 8 is an enlarged section on the line 8—8 of Fig. 7;

Fig. 9 is a rear elevation of the modification shown in Figs. 7 and 8;

Fig. 10 is an enlarged perspective of a portion of the strip shown in Figs. 7 to 9;

Fig. 11 shows a plan of a roof, illustrating the application of units in the form of shingles and their appearance when laid;

Fig. 12 is a front elevation showing an application of siding units to a building wall;

Fig. 13 is a front elevation of a series of units, in the form of individual shingles, associated with a gaging and temporary retaining strip located at the front thereof;

Fig. 14 is a section on the line 14—14 of Fig. 13;

Fig. 15 is an enlarged vertical section of the type of gaging strip illustrated in Figs. 13 and 14, showing another arrangement for uniting sections thereof;

Fig. 16 is a fragmentary perspective of this type of gaging strip with the sections separated more clearly to show the construction of the joint elements;

Fig. 17 is a front elevation of a wall in process of being covered by relatively long units in the form of brick simulating siding;

Fig. 18 is a front elevation, parts being broken away, illustrating equipment particularly adapted for elevating groups of units to position on the side wall of a building;

Fig. 19 is a section on the line 19—19 of Fig. 18;

Fig. 20 is an enlarged elevation of a detail of the equipment shown in Figs. 18 and 19, the elevating belt being broken away to show the positioning strip therebehind; and

Fig. 21 is a section on the line 21—21 of Fig. 20 with the elevating belt in position.

The term "unit" as hereinafter employed embraces all of the usual basic forms of building coverings, such as individual, multiple and strip shingles, so called "roll roofing" and siding. The term "aggregate" as hereinafter employed contemplates one or a plurality or series of such units positioned in proper vertical overlapping relationship by one or more gaging strips,—such gaging strips being removed after the units are permanently anchored in place on the building. The forms and styles of units and the embodiments of positioning or gaging strips shown in the drawings and hereinafter described

are merely typical examples illustrative of the underlying principles of my invention and of the applicability of those principles to the solution of building covering problems heretofore considered difficult. From this showing and explanation the applicability of these principles to and their utilization with other styles of covering units and other forms of gaging strips to meet particular conditions will be readily appreciated and understood by those skilled in the art.

Referring first to Figs. 1 to 3, the aggregate comprises a positioning or gaging strip 20 of the back-of-the-unit type and a plurality of covering units 21, 22, 23, 24, 25, 26, 27, etc. shown in the form of individual shingles of generally square shape. These units may be cut from a sheet of ordinary prepared flexible roofing material of the desired thickness, character and finish. In the particular style chosen for illustration, the upper and lower corners of the square are removed.

The unit-positioning or gaging strip 20 is a long, relatively narrow and thin strip, preferably of metal, provided at regularly spaced intervals with means for gaging the position of the associated units to the vertically overlapping relationship to be assumed thereby when finally anchored to cover the building wall or roof. Figs. 4 and 5 show in detail one type of such means for retaining the units to the strip. At the desired regular intervals tongues are sheared from the body of the strip and bent outwardly to form hooks or shoulders 28 on which the units may be hung. Each unit may be provided with a small horizontal slot or slit 28' near its upper edge to facilitate the application thereof to the associated gaging strip. A small longitudinally related tongue 29 may be sheared and bent outwardly from the body of the strip immediately below each hook 28. These tongues 29, which are forced into the shingles or inserted through previously prepared slits 29' therein, serve to insure the units remaining in proper alignment. These slits may be formed together into the general form of a T as shown in the bottom unit of Fig. 3. Fig. 6 shows a slightly different construction wherein the vertical tongues 30 are formed to serve both as a unit retaining hook or shoulder and as a unit aligner, necessitating only a vertical slit adjacent the upper edge of each unit instead of the generally T shaped slit illustrated in Fig. 3. The openings for the retaining hook and aligner should be located close to the upper or tip edge of the unit or, if these openings are not preformed, the proper hook and aligner should be forced through the unit near the tip edge thereof so that they will be overlapped as much as possible by the overlying shingles. The spacing between the unit gaging shoulders or retaining hooks is such that, when units are hung thereon, the units are located or gaged

to the vertically overlapping relationship which they are permanently to assume when finally anchored on the building.

Although the units may be assembled on the associated gaging strips prior to the application of the latter to the building and thereby each aggregate, as such, may be positioned as an entirety, I contemplate that such practice may not be feasible or desirable in many instances. Perhaps in the majority of situations it will be better first to place the gaging strips on the building and then to apply thereto the covering units and permanently to anchor the units in place one by one as they are applied. With either method of procedure, however, it may often if not generally, be desirable to handle the gaging strips in relatively short lengths rather than in a length sufficiently long to reach from the eave to the ridge of a roof or from the bottom to the top of a side wall. If the building is small each gaging strip may be formed in a single piece but otherwise I deem it the better practice to fabricate each strip from two or more standard lengths or sections joined together in any suitable manner.

Fig. 6 illustrates one manner of joining together two sections of gaging strip. Near one end each strip section has a ledge 31 formed therein with an opening 32 there-through. Near the opposite end each strip section has a tongue 33 struck up therefrom. Sections in any desired number may be united end-to-end by hooking the joint-tongue of one section into the ledge opening of the adjacent section. Thus a unit-positioning or gaging strip of any desired or necessary length may be built up merely by hooking together the requisite number of sections. The free or lower end of each section below the joint ledge therein is made long enough to project below the butt of the unit supported from the last hook above the ledge and thereby provide a handle 34 (illustrated also in Fig. 1) whereby the section may, by a downward pull, be unhooked from the section thereabove and withdrawn from beneath the units after they have been permanently anchored to the building.

Figs. 7 to 10 illustrate an aggregate assembly using a modified type of positioning or gaging strip and wherein it is not necessary to perforate the units. According to this arrangement the positioning strip 40 is bent upon itself at regularly recurring and properly spaced intervals to provide shouldered loops or pockets 41 into which the tips of corresponding units 42, 43, 44, 45, 46, etc. may be inserted and frictionally held in proper vertically overlapping relationship until permanently anchored to the building in that relation. In withdrawing strips of this type they are pulled from beneath the units in the direction of the ridge or upwardly rather than in the direction toward the eave as in

the case of the type of strip already described.

Fig. 11 illustrates a method of applying the aggregates having gaging strips of the back-of-the-unit type, such as have been described, and the appearance of a roof after the shingles are laid thereon. The covering is begun by applying an eave or starting strip 50 along the eave of the roof in the usual way. Usually the starting strip is cut from a sheet of material similar to that composing the shingle units and it may be anchored in place by any of the approved methods, such as by roofing nails. If the laying is to progress from left to right as shown, the units of the first or left hand aggregate are cut vertically along or adjacent their median lines so as to present vertical edges of approximately one-half the length of the shingles along the left hand or beginning vertical edge of the roof. Then the workman may lay off properly horizontally spaced gage marks on the starting strip 50 and also adjacent the ridge by placing suitable marks horizontally separated by approximately half the distance between the lateral points of the shingle, i. e., half the maximum lateral shingle width. These marks serve to locate or gage the proper positions of the top and bottom ends of all of the aggregate gaging strips throughout the subsequent laying of each vertical row of units. The workman may then place some or all of the gaging strips 20 or 40, anchoring, with nails or other means, both ends on the proper gage marks at the eave and ridge. The necessary vertical displacement or staggering of the units or adjacent vertical rows is effected by vertically displacing adjacent gaging strips so that the limiting shoulders formed by the hooks or pockets of one strip lie vertically midway between the position determining shoulders of the adjacent strips.

Next, beginning preferably at the eave, the shingles of each aggregate are layed, either by hooking the units on the strip retaining hooks, if strips such as those illustrated in Figs. 1 to 6 are used, or by pushing the tips of the units tightly up into the strip pockets if a type such as shown in Figs. 7 to 10 is employed. Thus the proper vertical relationship between shingles in the same vertical row and the proper horizontal relationship between shingles in the same horizontal course are quickly and quite automatically attained and the positions of the shingle units are not dependent in any way upon the location of any previously layed units. As the shingle units are thus positioned they may be permanently anchored in place by any suitable means, such as ordinary roofing nails driven therethrough in the region which will be covered by a succeeding unit. Of course it is not necessary to complete each vertical row before starting another since it may be convenient and my method and equipment are admirably suited for proceeding simul-

taneously with any desired number of vertical rows. The use of the strips, however, offers an alternative method in which the permanent anchorages need not be applied until after superposed units have been positioned because, the units being held adjacent the upper edges or tips only, the butts can be temporarily raised or moved outwardly from the building sufficiently to expose and permit the permanent anchorages to be applied in that region which overlying units will cover. This method of procedure permits one or more workmen to position the units while others following apply the nails or other appropriate permanent fasteners. Such procedure will be particularly effective and desirable where vari-colored units are to be laid out in designs. Thus the necessary units to produce the designs can be positioned in advance of the permanent anchorage and the correctness of the designs verified while the units are temporarily held by the strips and before they are permanently secured to the building. This method of procedure readily lends itself to greater accuracy and speed in laying a covering because the workmen who position the units and those who nail or anchor them permanently in place may be trained specially for the particular work they perform. The application of the permanent anchorage (i. e., nails) after the positioning of the units and while they are temporarily retained by the gaging strips is an easy matter because the butts of the units may be slightly elevated, the nails driven into the underlying units and then the butts of the overlying units pressed down again.

If, as previously stated, the areas to be covered is relatively small each gaging strip may comprise a single piece; but for the larger areas it probably will be usually more convenient to form the strips from a series of standard length sections hooked together by readily separable joints such as heretofore described.

After the units in all or some of the vertical rows have been permanently anchored to the building the gaging strips may be withdrawn simply by pulling them from beneath the units,—in the direction of the eave if the strips are of the type shown in Figs. 1 to 6 or in the direction of the ridge with the Figs. 7 to 10 type of strip. If the strips are in one piece, each will be thus removed as an entirety. If, however, the strips are made up of standard length sections, each may be removed by successively pulling out the sections beginning with the section nearest the eave. The protruding portion or handle of each section and the separable joint between sections, which may be disconnected merely by pulling downwardly the section of each succeeding pair, renders the withdrawal of the strips from beneath the units an easy matter. When the strips have been

thus withdrawn they may be used again in the same building, if the laying, permanent anchoring and strip withdrawing operations are being carried on at the same time; or when withdrawn they are available for use on a different building or area. If the gaging strips are of the type illustrated in Figs. 1 to 6, the small unit-positioning and aligning projections therein readily slide under the units as the strips are withdrawn, and inasmuch as the small openings or slits in the units are always adequately covered by overlying units they do no harm. Of course, if the open pocket type of strip illustrated in Figs. 7 to 10 is employed there is no such slitting of the units.

Fig. 12 illustrates the application of aggregates having gaging strips of the back-of-the-unit type and wherein the units are lengths of siding. I have here indicated gaging strips of the hook type, such as illustrated in Figs. 1 to 6; but it will be readily understood that the strips may be of other appropriate types, such, for example, as that shown in Figs. 7 to 10, particularly if the units are relatively light in weight so that the friction of the pocket walls may be depended upon to retain the units temporarily in place until the permanent anchorages have been applied. In the placing of siding the gaging strips are properly spaced along and temporarily attached to the wall to be covered. Preferably the siding units are previously provided with small slits near the upper edge to receive the strip hooks or 30, these hooks (or the sockets if the type shown in Figs. 7 to 10 are employed) being so spaced that the units positioned and temporarily held thereby are gaged to their proper vertical overlapping relationship. The placing of the siding units is progressively from bottom to top and the fact that the position of each succeeding unit is, in effect, automatically gaged independently of others and the units are retained in position until the permanent anchorages are applied insures the proper laying of the covering. And the application of the covering is an easy matter, even for one workman, because the relatively long units may be held at proper intervals to insure not only that they are placed in the correct position and relation but also that they so remain until the permanent anchorage is effected. The permanent anchorage may be applied unit by unit as the positioning thereof progresses or after any number or all of the units of an aggregate have been placed, as previously described. After the permanent anchorages are applied the gaging strips may be withdrawn from behind the covering.

While I have heretofore discussed the use of the strips located beneath or behind the units as they are positioned on the roof or wall it will be readily understood that they may be used on the outer or exposed side of

the covering. Such reversal may be preferable under some conditions as the withdrawal or removal of the strips may be easier.

Figures 13 to 16 illustrate the arrangement I prefer to employ when the gaging strips are to be located at the front or exposed sides of the units. As illustrated, the regularly spaced shoulders on the gaging strips 52 are provided with hook-like projections 53 struck out from the body thereof essentially similar to the construction illustrated in Figs. 1 to 5. But in this arrangement the covering units 54, 55, 56, 57, 58, 59, 60, etc. are seated upon the shoulders formed by projections 53 instead of being, in effect, suspended from or hung on the strips as was the case with the arrangements heretofore described. However, the desired amount and proper direction of overlap is secured just as effectively as by the arrangements already explained. If the aggregates are assembled before being positioned they are laid in assembled condition upon the area to be covered, with the strips thereof on the outside or exposed side of the units. If, however, the aggregates are assembled while the units are being positioned on the area to be covered, the gaging strips are first temporarily secured in proper position on the building, the shoulder forming projections lying inwardly toward the building, and the units are slipped behind the gaging strip and seated upon the shoulders thereof.

When the exposed or front-of-the-unit gaging strip method is employed, a slightly different procedure for effecting the permanent anchoring of the units may be found to be advantageous if it is desired temporarily to locate in overlapping relation a series of units. This difference in procedure is, under such conditions, rendered advisable because, when the gaging strips are on the outside or exposed side of the units, it may not be possible to elevate or move outwardly from the building the butts of the units in order temporarily to expose the normally covered area of underlying units so that the permanent anchorages may be applied thereto. In practicing this variation of method for the application of the permanent anchorages to the positioned units, the overlapping units are so associated with the gaging strip shoulders that the lowermost unit of a group or aggregate lies upon the gaging strip shoulders immediately above a set of unoccupied strip shoulders which are in the location properly to position the lowermost unit in its permanent place. In this condition the lowermost unit is disengaged from the gaging strip shoulders temporarily supporting it and slid downwardly so as to be held by the next lowest unoccupied shoulders, as clearly shown at the bottom of Fig. 14. In this condition the upper region of the lowermost unit, which

region subsequently is covered by the succeeding overlying unit, is temporarily exposed and the permanent anchorages may be applied thereto in this temporarily exposed region. When the first unit has been thus permanently anchored the next higher unit is disengaged from the strip shoulders temporarily retaining it and is dropped or slid down to the shoulders which were previously occupied by the unit now permanently anchored. This movement of the second unit places it in proper overlapping relation relative to the first unit covering the permanent anchorages thereof, and, at the same time, exposes its upper or normally unexposed region so that permanent anchorages may be applied thereto. This procedure is repeated until all of the units of the aggregate have been lowered into their final position and permanently anchored.

Instead of using one piece or joined sectionalized gaging strips extending the entire height or vertical length of the area to be covered, the strips may be used in relatively short lengths successively in positioning the units in each vertical row. Thus, for example, a gaging strip of a length and equipped with the requisite number of shoulders to accommodate any desired number of units may be temporarily applied, starting at the bottom of the area to be covered. Units up to the capacity of such strips may be applied and permanently anchored, either progressively one by one or in groups, as previously described. Then the strips may be withdrawn and, using one or some of the lower shoulders thereof in conjunction with units already permanently placed, the sections may be moved upwardly step by step and additional units associated with and gaged thereby and permanently anchored in position until the necessary or desired vertical height has been attained.

Figs. 15 and 16 show in detail an arrangement for sectionalizing gaging strips of the exposed or outside type. Each strip section is provided with an opening 61 adjacent one end and with a tongue 62 adjacent the other end. The tongue of one strip fits into the opening of an adjacent strip to provide a joint which, while normally holding the sections together end to end, may be quickly and easily separated or as easily and quickly put together.

Fig. 17 illustrates the application of aggregates having gaging strips of the in-front-of-the-unit type and wherein the units are in the form of lengths of siding marked in any appropriate manner to simulate brick work. The wall to be covered lies above the foundation 63 and has a window opening 64 there-through. The gaging strips 52 with the hooks 53 thereof facing toward the wall are temporarily secured in place at top and bottom. One good way to secure the bottom

ends of strips is to locate and permanently anchor the units 65 in the bottom horizontal course and then hook the lower ends of a strip thereto by means of one of its unit gaging hooks 53. The upper ends of the gaging strips, as well as both ends of strips which can not be thus secured to an anchored unit, may be temporarily attached to the wall in any other appropriate manner, such as by driving nails therethrough. After the gaging strips have been properly located and temporarily secured in place the laying of the units may proceed from bottom to top by inserting them behind the gaging strips upon the appropriate shoulders thereof. Each unit may be permanently anchored to the wall by applying nails therethrough in the region which subsequently will be covered by the next succeeding higher unit. The gaging strip shoulders not only serve to locate the proper vertical positions of the units to insure the desired vertical overlap but also to insure perfect alignment between units in the same horizontal course, to retain the units in correct position until they have been permanently anchored to the building and to permit the units to be slid along horizontally to bring those in the same horizontal course into proper abutting relation. After all of the units associated with any gaging strip have been permanently anchored that strip may be withdrawn.

Figs. 18 to 21 illustrate a method and typical equipment particularly adapted for applying covering units to large areas. This method and equipment are illustrated and explained in connection with the application of siding (simulating brick work) to the vertical wall of a building. The gaging strips are located on the outer or exposed side of the covering and serve not only to properly position the units in the desired overlapping relationship but also as a means for moving or raising the aggregates to the necessary height or elevation along the wall to be covered.

The equipment shown includes a pulley supporting bracket in the form of a T iron 70. The web of this T iron is cut out or notched at regularly spaced intervals to afford recesses for the accommodation of flanged pulleys 71. These pulleys are rotatably journaled on a common shaft 72 which is carried in a hole or bore extending through the T iron web. In the base flange of the T iron below each pulley there is a projecting hook 73, preferably arranged so that it may be turned to point upwardly or downwardly for a purpose to be presently explained. Pulleys 71 are adapted to receive flexible belts 74 of canvas webbing or other suitable material, the flanges on the pulleys serving to retain the belts in place against lateral movement. Near one end each belt is provided with a hook 75 for accommodating a

hole 76 located near the top of a gaging strip 77. These holes 76 in the gaging strips also serve to receive the hooks 73 in the T iron when the strips have been elevated sufficiently high to bring them into registering position. By pulling downwardly upon the outer or free reach of a belt 74 the inner reach moves upwardly carrying up along the wall the gaging strip attached thereto. The positioning or gaging strip which I prefer to use in this equipment is of the type illustrated in Figs. 15 and 16 having upwardly directed tongues or shoulders 78 struck therefrom at regularly recurring and properly spaced intervals to form upwardly opening pockets. The bottom walls of these pockets provide the gaging shoulders which determine the proper positions of the units and serve to lift them when the strips are raised. The side or shank of the pocket holds the unit therein sufficiently erect to keep it in place on the strip.

In laying siding with this equipment the pulley supporting T iron is secured to the building, by nails, screws or other appropriate means, above the location to be taken by the highest course of siding units. Its location should be such that when gaging strips are hooked to and suspended from the hook 73, the unit supporting shoulders of the gaging strips will hold the units in the relative positions they are to assume on the wall to be covered. Then, starting at the left hand side of the area to be covered, the workman attaches gaging strips to the hooks on the inner reaches of the elevating belts. This is done by passing the hooks 75 on the ends of the belts through the holes 76, in the ends of the first gaging strip sections. Preferably the number of gaging strips thus initially attached to the belts will correspond to the number of strips used to position and raise one vertical row or aggregate of units. In the drawings each vertical row of units is associated with two gaging strips, one in the region of each end. The outer reaches of these two belts are then drawn down until the gaging strips attached thereto have been raised to a convenient height for the workman easily to insert the units therebehind and position the units so that each one is resting upon and being supported by its proper gaging shoulders. The belts may be anchored in any convenient way so as to hold the associated shoulders on the gaging strips in unit receiving position until the workmen have positioned a unit on each horizontal pair of supporting and gaging shoulders within easy reach. Nails driven through the outer reaches of the belts will serve this purpose although it will be more convenient to provide the belts with properly spaced holes which can be buttoned over the heads of nails or other suitable anchors located in the wall below or adjacent the area to be covered.

After the workman has positioned as many units as the initial exposure of the gaging strips will conveniently accommodate without too much stooping the belts are moved so as to raise the strips until the lower unoccupied pockets thereof are elevated about as high as they conveniently can be reached—say about breast high—the outer reaches are again anchored and the placement of units proceeds downwardly as before until this length of the strips is filled with units. Then again the belts are manipulated to pull up the unit loaded gaging strips until sufficient units have been placed to finish the first vertical row or aggregate of covering. If the gaging strips are supplied in the relatively short standard sections, additional sections may be added as the placement of units and the raising of the occupied strip sections require. The joints or connections between strip sections should be of a type affording easy separation, such as that illustrated in Figs. 15 and 16. The addition of covering units and of gaging strip sections in the first vertical row or aggregate continues until the strips hold enough units to cover the vertical height of the area to be covered. Preferably the complete aggregate thus formed is raised high enough so that the first unoccupied gaging strip pocket immediately below the last occupied pocket lies in a position properly to gage the final vertical location of the bottom unit. Then the two gaging strips forming the support for the units of the first aggregate are attached in position by the hooks 73 on the T iron and the belts are unhooked therefrom. In this condition the first or left hand aggregate is suspended from the T iron and every unit thereof is temporarily positioned vertically higher than its final position by the amount of the exposed portion of the units. The workman may now move to the right and proceed in the same way to assemble the second vertical row or aggregate of units.

In permanently securing the units to the building the workman, starting at the lower left hand corner, disengages the lowest unit from the shoulders or pockets supporting it and drops the unit down to the first lower unoccupied set of pockets or shoulders, which as previously explained, are in the necessary location properly to hold that unit in its final position. The upper portion of that lowest unit, which subsequently will be covered by a superposed unit, is now uncovered so that permanent fasteners, such as ordinary roofing nails, may be driven therethrough into the underlying building framework. As soon as the first unit is thus positioned and permanently anchored the next higher unit is disengaged from the shoulders supporting it and dropped down to the unoccupied shoulders or pockets immediately below,—those shoulders which initially held the lowest unit. Now the

lower portion of the second unit covers the anchorages for the first unit while the upper portion of the second is uncovered for the application thereto of its nails. This procedure is continuous until the final or top unit is dropped into its final position and permanently anchored to the building. Care, of course, must be exercised not to drive any of the permanent unit-anchoring nails through the gaging strips so as to prevent or interfere with their withdrawal. This system of placing the units readily lends itself to "team work" since one man or group of men may be assembling and raising the aggregates while another man or group of men is dropping or sliding the units into final positions, permanently anchoring them to the building and withdrawing the gaging strips. The units are hoisted into approximate position by equipment which can afford as frequent supports horizontally as the length and character of the units may require. When thus elevated they are held in perfect horizontal line and, when dropped individually to final position, they are again supported in absolutely correct location until the final anchorage to the building is effected. Thus one workman can easily handle and accurately place units of even relatively great length. After the units associated with any gaging strip are permanently anchored to the building that strip may be withdrawn to be used again.

Having thus illustrated and explained the nature and several typical embodiments of my invention, what I claim and desire to secure by United States Letters Patent is as follows:

1. The method of applying to a building structure a covering of flexible prepared roofing material which includes the steps of forming an aggregate by temporarily applying to a positioning strip a plurality of units of the material in the vertically overlapping relation to be assumed thereby when finally placed on the building, applying such aggregates to the building structure, securing each unit to the building structure, and finally withdrawing the positioning strip.

2. The method of applying to a building structure a covering of flexible prepared roofing material which includes the steps of forming an aggregate by temporarily applying to a positioning strip a plurality of vertically overlapping units of material, assembling on the building structure a plurality of such aggregates side by side so that the units of adjacent aggregates overlap horizontally, securing each unit to the building structure, and withdrawing the positioning strip.

3. The method of applying a building covering which includes assembling over the area to be covered a plurality of aggregates each composed of a positioning strip and a plurality of covering units temporarily held in overlapping relationship by said strip,

permanently anchoring the units to the building in overlapping relationship, and withdrawing the positioning strip after the units associated therewith have been permanently anchored.

4. The method of applying a building covering which includes applying a gaging strip over the area to be covered, positioning and temporarily holding covering units by means of the gaging strip, permanently anchoring the units, and finally removing the gaging strip.

5. A building covering aggregate comprising a temporary holding and gaging strip having a plurality of shoulders occurring at regular intervals therealong, and a plurality of covering units temporarily retained in engagement with the shoulders and thereby located in the vertically overlapping relation to be assumed when in position on the building structure.

6. A building covering aggregate comprising a plurality of covering units, and a gaging strip provided with regularly recurring means for gaging the positions of said units in the overlapping relationship to be assumed by the units when in position on the building and temporarily retaining the units in such positions, said means permitting the withdrawal of the strip after the units have been permanently anchored to the building.

7. A building covering aggregate comprising a strip of metal provided at regularly recurring intervals with shoulders for gaging the positions of covering units associated with the strip and temporarily held thereto against the shoulders in overlapping relationship, said strip being disengageable from the units after the units are anchored to the building.

8. A building covering aggregate comprising a plurality of covering units, and a positioning strip with which the units are temporarily associated and by means of which they are properly located and related relative to each other, said strip being removable after the units are permanently attached to the building.

9. A building covering aggregate comprising a plurality of covering units composed of suitable weatherproof material, and a unit-positioning strip with which the units are temporarily associated to locate the units in proper relationship to each other until permanent fastening means are applied.

10. A gaging strip for forming building covering aggregates, comprising two metal sections, each provided with regular recurring shoulders, and a connection between the sections to prevent separation when one section is pulled and permit separation when the other section is pulled.

11. A gaging strip for temporarily locating the position of and retaining a plurality of building covering units, comprising a plu-

rality of strips of metal each having unit retaining hooks located at regularly spaced intervals therealong, and a separable joint interconnecting the metal strips end to end.

12. A gaging strip for temporarily locating the position of and retaining a plurality of building covering units, comprising a series of sections, each section comprising a strip having unit locating shoulders at regularly spaced intervals therealong, and a separable joint connecting adjacent sections together end to end.

13. A gaging strip for temporarily locating the position of and retaining a plurality of building covering units, comprising a series of strip sections, each section comprising a strip of metal having unit locating shoulders at regularly spaced intervals therealong, a separable joint connecting adjacent sections together end to end, and a handle for uncoupling and withdrawing a section.

14. Equipment for placing building covering units comprising a gaging strip having regularly recurring shoulders for locating the position of and temporarily retaining a plurality of covering units, and means for elevating the strip and units retained thereby.

15. Equipment for placing building covering units comprising a gaging strip having regularly recurring shoulders for locating the position of and temporarily retaining a plurality of covering units, and a belt and pulley for elevating the strip and covering units carried thereby.

16. Equipment for placing building covering units comprising a pulley, a belt trained over the pulley, and a gaging strip carried by the belt, said strip having a series of covering unit retaining shoulders located at regularly spaced intervals therealong.

17. Equipment for placing building covering units comprising a pulley support, a plurality of pulleys carried by the support, a belt for each pulley, and a gaging strip for each belt, each gaging strip having a series of covering unit retaining shoulders located at regularly recurring intervals therealong.

In witness whereof, I hereunto subscribe my name this 24th day of April, 1931.

EDWARD R. BLACK.