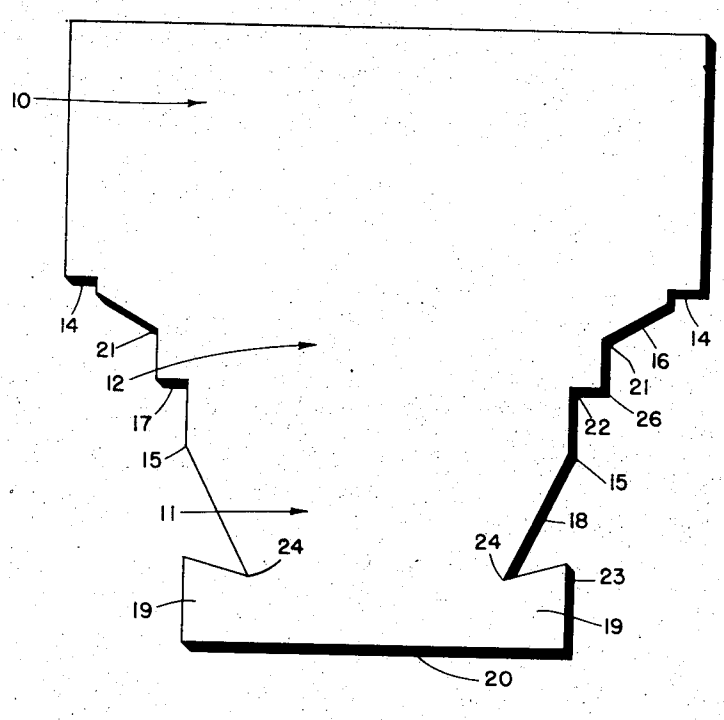
Nov. 17, 1953 E. L. LINCOLN 2,659,321

FLEXIBLE SHINGLE

Filed May 24, 1949 3 Sheets-Sheet 1

Fig. 1



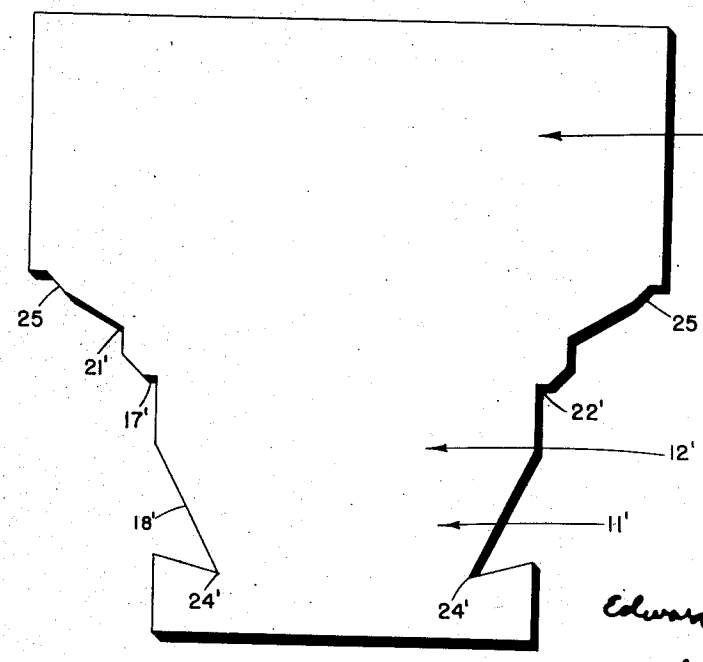


Fig. 2

Edward L. Lincoln
Inventor
by: H. L. Kirkpatrick.
Attorney

Nov. 17, 1953 E. L. LINCOLN 2,659,321

FLEXIBLE SHINGLE

Filed May 24, 1949 3 Sheets-Sheet 2

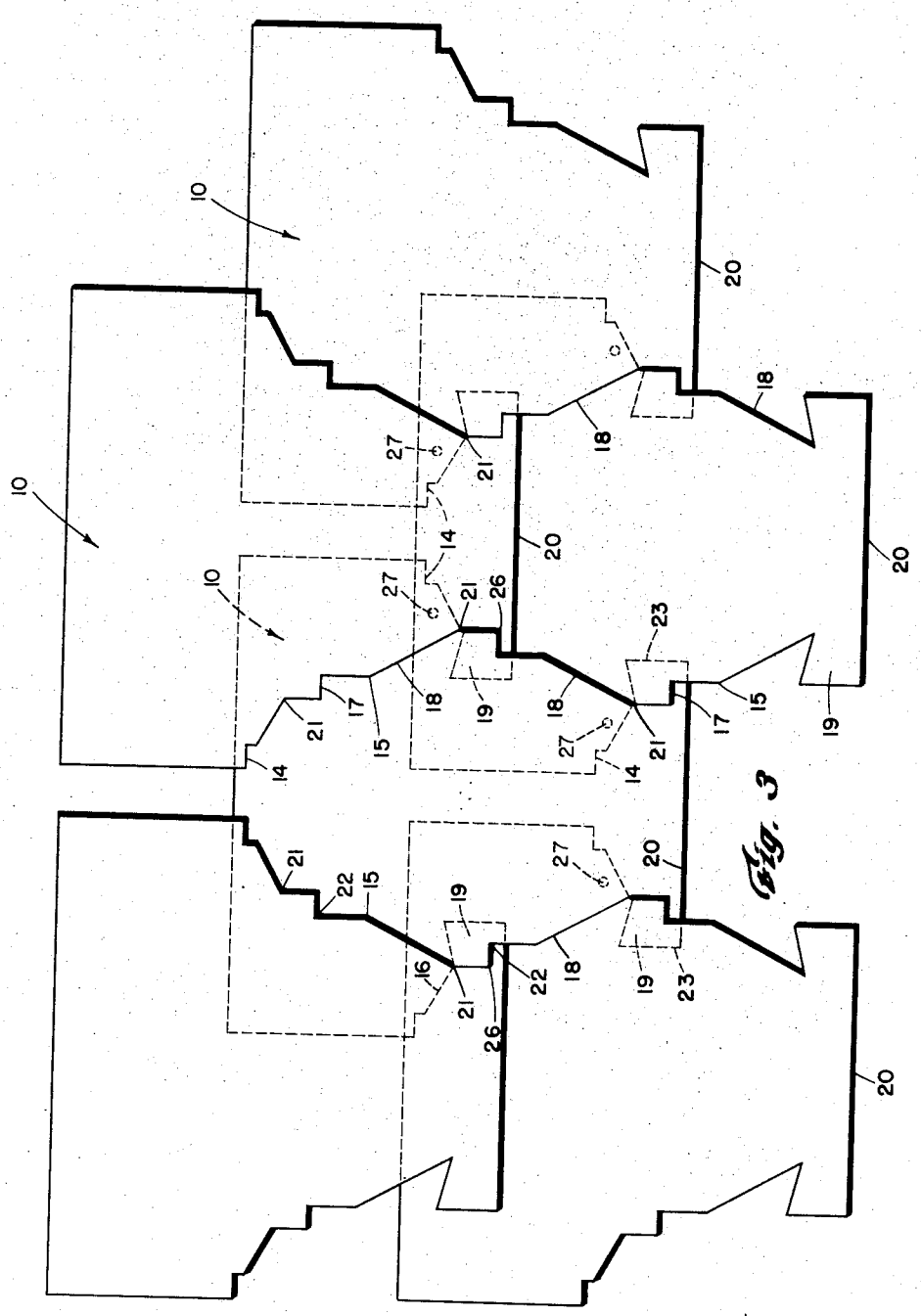


Fig. 3

Edward L. Lincoln
Inventor
by W. P. Kirkpatrick
Attorney

Nov. 17, 1953 E. L. LINCOLN 2,659,321

FLEXIBLE SHINGLE

Filed May 24, 1949 3 Sheets-Sheet 3

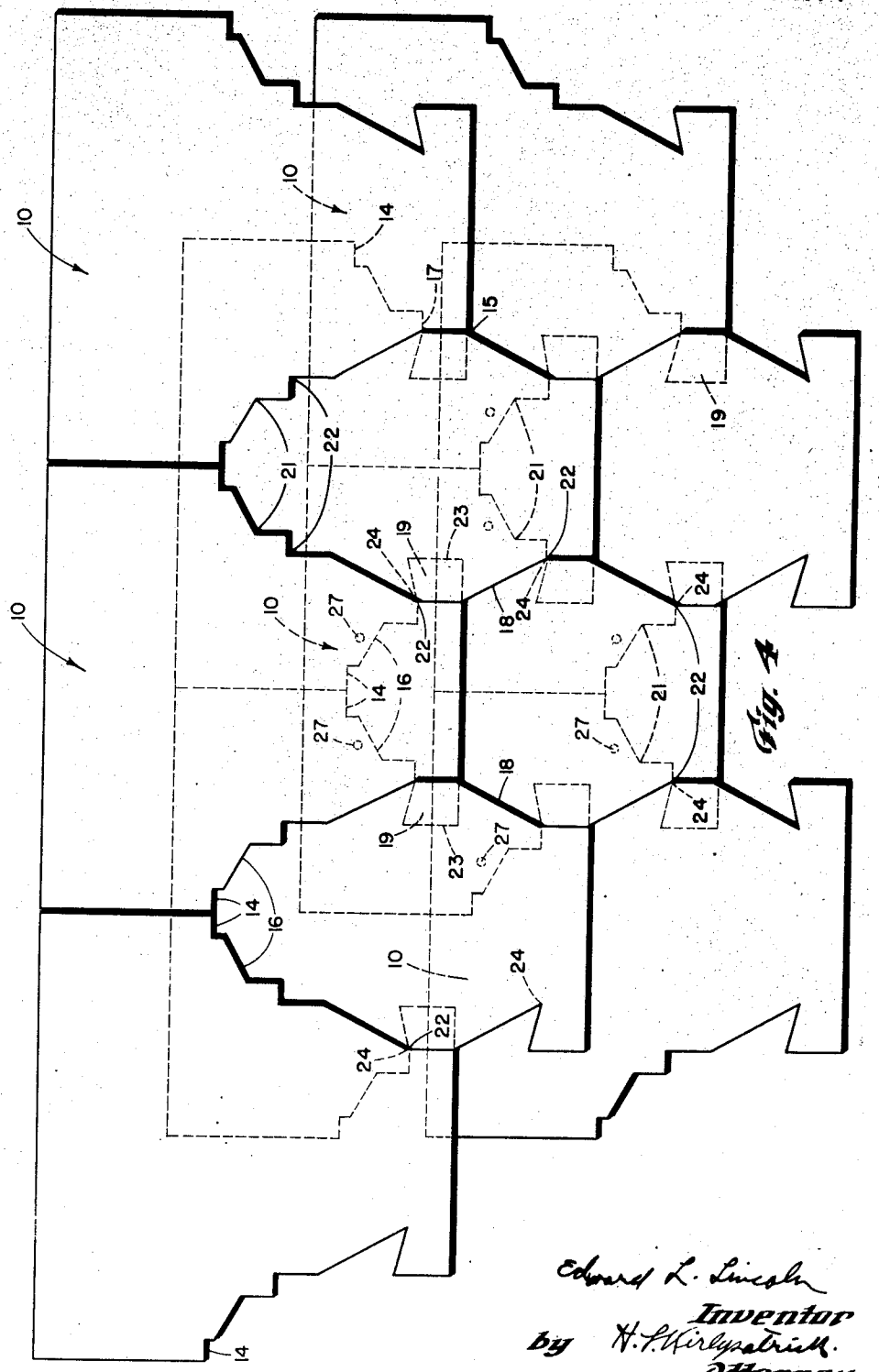


Fig. 4

Edward L. Lincoln
Inventor
by W. F. Kirkpatrick
Attorney

Patented Nov. 17, 1953

2,659,321

UNITED STATES PATENT OFFICE

2,659,321

FLEXIBLE SHINGLE

Edward L. Lincoln, Franklin, Mass., assignor to Bird & Son, inc., East Walpole, Mass., a corporation of Massachusetts

Application May 24, 1949, Serial No. 94,983

6 Claims. (Cl. 108—7)

1

My invention relates to flexible shingles adapted for application to roofs and siding, for example. As preferably manufactured the shingles are cut or stamped from sheets of roofing felt impregnated and coated with asphalt and having a facing of embedded mineral granules.

Shingles of the general type herein are laid in courses, the shingles of one course overlapping and interlocking with two mutually adjacent shingles in a previously laid course.

Such shingles have been manufactured for some time and have enjoyed general acceptance by the public and a wide sale. As presently available, they fall in two categories, viz., those which are adapted for "single coverage" of the roof or other surface and those which are adapted for "double coverage." In the case of "single coverage," certain areas of the surface are protected by but one thickness of the shingle material, whereas in the case of "double coverage," no area is supplied with less than two thicknesses of the material. Single coverage shingles are usually applied over old shingles, while double coverage shingles are generally employed in new construction.

My invention provides a shingle of the character indicated which is suited for either single or double coverage. Thus it is no longer necessary for the dealer to carry two different styles of shingles in stock, and manufacture of the shingles is simplified with resultant reduction in costs.

Generally described, my shingle is constituted of an enlarged head portion, a notched butt portion of lesser area than the head portion having a pair of locking tabs at the base thereof provided by the notching, and an intermediate portion having edges which course inwardly in stepwise fashion from the base line of the head portion to a point of juncture with the side edges of the butt portion. The stepping of the edges of the intermediate portion provides opposed upper and lower shoulders which relate to the locking function of the shingle, the upper shoulders being utilized on single coverage application of the shingle, the lower set on double coverage application.

I shall further describe my invention with the aid of the accompanying drawings in which:

Fig. 1 represents a plan view of a preferred form of shingle;

Fig. 2 represents a plan view of a second preferred form; and

Figs. 3 and 4 show shingles conforming with Fig. 1 as applied for single coverage and double coverage, respectively.

2

Referring first to Fig. 1, the head portion, butt portion and intermediate or stepped portion of the shingle are respectively indicated by the numerals 10, 11 and 12. The base line of the head portion, which is of rectangular configuration, coincides with the abbreviated horizontal edges 14, while the base line of the stepped portion extends between corners 15. The edges of the stepped portion will be noted as coursing first vertically downwardly from the head portion, then inwardly and downwardly to form a sloping shoulder 16, then again vertically downwardly, then inwardly to form a horizontal shoulder 17, and finally once again vertically downwardly to meet the diverging side edges 18 of the butt portion 11 which result from the notching of the butt portion to form the opposed locking tabs or flaps 19.

The vertical distance between either of the shoulders 17 and a line drawn as an extension of the base edge 20 of the butt portion 11 is equivalent to the length of the vertical edges of the head portion 10, while the vertical distance between the base line of the head portion and the base line of the stepped portion is equivalent to one-fourth the length of the top edge of the shingle. The margins of the intermediate portion 12 are carried inwardly by the stepping a distance equal to three-fifths of the vertical distance between the base lines of the head and intermediate portions. The drop involving the sloping edges 16, terminating at the re-entrant corners 21, and the vertical edges immediately thereabove accomplishes three-fourths of the reduction in width of the shingle, the remaining one-fourth being accomplished by the horizontal edges providing the shoulders 17.

Side edges 23, partially delineating the tabs 19, have a length equal to one-half the vertical distance between the base lines of the head and stepped portions of the shingle. The re-entrant corners 24 are spaced from the base edge 20 of the butt portion a distance equivalent to the length of the lowermost vertical edge of the stepped portion. Each is spaced inwardly from a line drawn as an extension of the corresponding vertical edge of the head portion a distance equal to one-half the length of the base edge of the butt portion.

With the relative dimensions as shown and described, it will be noted that the distance between the base line of the head portion of the shingle and the apex of either of the notches in the butt portion is less than the distance between the top edge of the head portion and either of the

locking shoulders for double coverage. Further, it will be noted that the distance between the apex of either of the notches in the butt portion and the level of the locking points of the shoulders for single coverage is less than the distance between such level and the top edge of the head portion.

The modified shingle of Fig. 2 of the drawings conforms with the shingle just described except for a slightly different arrangement of the steps along the margins of the intermediate portion 12'. Thus the initial drop from the base line of the head portion 10' takes the form of diagonal edges 25, while the shoulders 17' are shortened by cutting off the corners 26 (see Fig. 1). The diagonal edges reduce the likelihood of water penetration between contiguous shingles. Moreover, the cutting off of the corners 26 aids somewhat in the placement of the shingles on single coverage application. Just as in the case of the shingle of Fig. 1, three-fourths of the reduction in width of the shingle is accomplished at the points of the first re-entrant corners 21'.

In applying the shingles, the same are laid in overlapping horizontal rows with the narrow part of each shingle extending downwardly from the wider head portion. For single coverage, the shingles in the first row are so spaced that the distance between adjacent shingles at the points of the re-entrant corners 21 or 21', as the case may be, equals the width of the shingle as measured from the re-entrant corners 24 or 24' formed by the notching providing the locking tabs. In applying for double coverage, the shingles in the first row are so laid that the vertical edges of the head portions of adjacent shingles abut.

The shingles, whether applied for single or double coverage, are ordinarily secured by nails, one nail being driven in each side of each shingle at a point below the base line of the head-portion within the area bounded by such base line and a vertical line representing an upward extension of the vertical edge below the re-entrant corner 21 or 21'. In the application of the shingles of the second course, each shingle is laid over two adjacent shingles in the first course, the tab extensions inserted under the underlying shingles, and the shingle drawn upwardly into place. Assuming the first row has been applied for single coverage, the tabs will hook to the underlying shingles at the point of the re-entrant corners 21 or 21'. On the other hand, if the initial course of shingles has been laid for double coverage, the tabs will hook at the point of the re-entrant corners 22 or 22'.

The long diagonally cut edges 18 or 18' of the underlying shingles serve to guide the butts of the second course shingles as they are slid into place so that the locking tabs are easily fitted at the proper locations.

In the nailing of the second course of shingles, the nails are driven as in the case of the first course shingles, each underlying shingle thus being held by four nails. Once the second course has been laid, the remaining courses are self-spacing and self-aligning.

All of the immediate foregoing will be better understood by reference to Figs. 3 and 4 wherein parts of some of the shingles are indicated in dotted lines and in which the numeral 27 indicates nail heads. In the arrangement of Fig. 3 it will be noted that certain areas of the covered surface (equivalent in actual practice to about 17% of the total area of the surface) are protected by only a single thickness of material, whereas in the arrangement of Fig. 4, no area is protected by less than two thicknesses. With either arrangement the assembled shingles provide a pleasing design, not lacking in aesthetic values.

I claim:

1. A flexible shingle adapted for interlocking engagement with similar shingles which comprises a substantially rectangular head portion of a length representing the greatest horizontal dimension of the shingle and of a width accounting for less than one half the vertical dimension of the shingle, a notched butt portion of lesser width and length than the head portion having a pair of opposed locking tabs at the base thereof provided by the notching, and an intermediate portion having edges which course inwardly in stepwise fashion from the base line of the head portion to connect with the side edges of the butt portion and which provide opposed upper and lower shoulders furnishing locking points for said tabs, said shingle being further characterized in that the shortest distance between the base line of the head portion and the apex of either of the notches in the butt portion is not greater than the shortest distance between the top edge of the head portion and the locking points provided by the lower shoulders; in that the shortest distance between the apex of either of the notches in the butt portion and the level of the locking points provided by the upper shoulders is less than the shortest distance between such points and the top edge of the head portion; and in that the apex of either said notch is spaced inwardly of a line drawn as an extension of the corresponding side edge of the head portion a distance substantially equal to one half the distance between the locking points provided by the lower shoulders.

2. A flexible shingle adapted for interlocking engagement with similar shingles which comprises a head portion having straight top and side edges meeting at right angles, the side edges being of like length and being relatively shorter than the top edge, a notched butt portion of lesser width and length than the head portion having a pair of opposed locking tabs at the base thereof provided by the notching, and an intermediate portion having edges which course inwardly in stepwise fashion from the base line of the head portion to connect with the side edges of the butt portion and which provide opposed upper and lower shoulders furnishing locking points for said tabs, said shingle being further characterized in that the shortest distance between the base line of the head portion and the apex of either of the notches of the butt portion is not greater than the shortest distance between the top edge of the head portion and the locking points provided by the lower shoulders; in that the shortest distance between the apex of either of the notches in the butt portion and the level of the locking points provided by the upper shoulders is less than the shortest distance between such level and the top edge of the head portion; and in that the apex of either said notch is spaced inwardly of a line drawn as an extension of the corresponding side edge of the head portion a distance substantially equal to one half the distance between the locking points provided by the lower shoulders.

3. A flexible shingle adapted for interlocking engagement with similar shingles comprising a head portion having straight top and side edges meeting at right angles, the side edges being of

like length and being relatively shorter than the top edge, a butt portion of lesser width and length than the top portion having a straight base edge and like side edges which extend first vertically upward from the base edge, thence inwardly and downwardly, and finally upwardly and outwardly to provide a pair of locking tabs, and a symmetrical intermediate portion having edges which course inwardly in stepwise fashion from the base line of the head portion to meet the diverging edges of the butt portion and which provide opposed upper and lower shoulders furnishing locking points for said tabs, said shingle being further characterized in that the shortest distance between the terminal point of either of the inwardly and downwardly extending side edges of the butt portion and the base line of the head portion is not greater than the shortest distance between the top edge of the head portion and the locking points provided by the lower shoulders; in that the shortest distance between either of said terminal points and the level of the locking points provided by the upper shoulders is less than the shortest distance between such level and the top edge of the head portion; and in that either of said terminal points is spaced inwardly of a line drawn as an extension of the corresponding side edge of the head portion a distance substantially equal to one half the distance between the locking points provided by the lower shoulders.

4. A flexible shingle conforming to claim 3 further characterized in that the vertical distance between the base line of the head portion and the base line of the intermediate portion is equivalent to about one-fourth the length of the top edge of the head portion.

5. A flexible shingle conforming to claim 4 further characterized in that the margins of the intermediate portion are carried inwardly by the stepping a distance equivalent to about three-fifths the vertical distance between the base lines of the head and intermediate portions.

6. A flexible shingle conforming to claim 5 further characterized in that about three-fourths of the reduction in width of the shingle is accomplished at the level of the locking points provided by the upper shoulders.

EDWARD L. LINCOLN.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
1,612,700	Cook	Dec. 28, 1926
1,669,981	Harris	May 15, 1928
1,849,785	Black	Mar. 15, 1932
1,934,831	Sweet	Nov. 14, 1933
2,050,218	Abraham	Aug. 4, 1936
2,460,353	Killingsworth	Feb. 1, 1949