Sept. 5, 1967 J. L. KOVALCIK 3,339,333

BACK-UP TAB FOR SIDING

Filed April 5, 1965 2 Sheets-Sheet 1

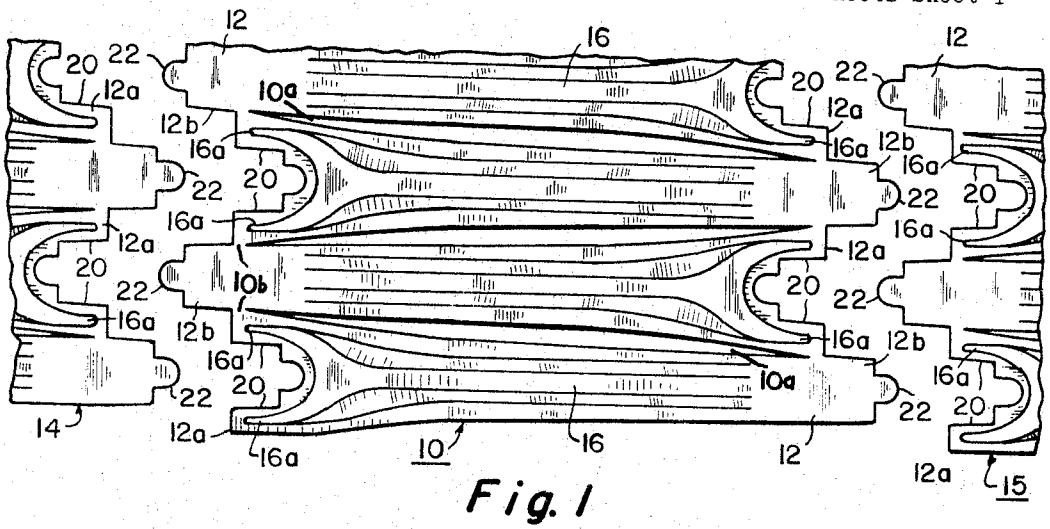


Fig. 1

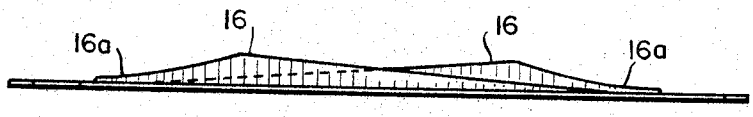


Fig. 2

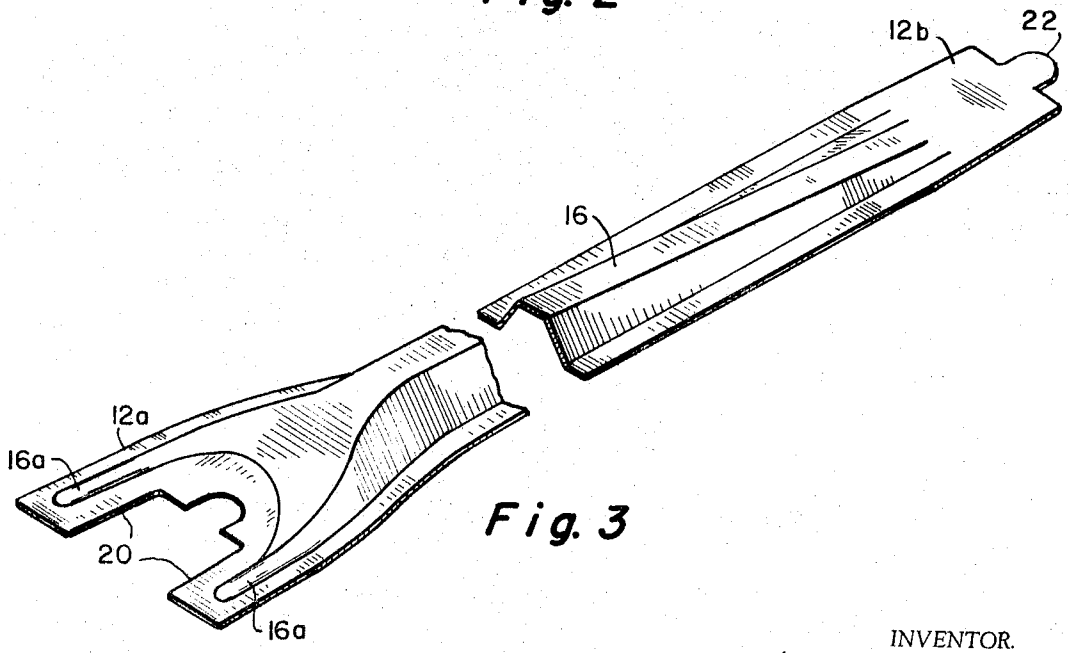


Fig. 3

INVENTOR.
James L. Kovalcik

BY
Webb, Burden, Robinson + Webb

HIS ATTORNEYS

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Filed April 5, 1965 2 Sheets-Sheet 2

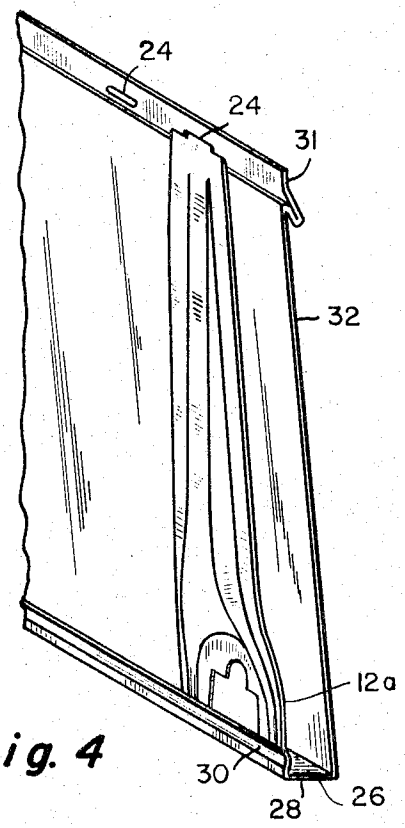


Fig. 4

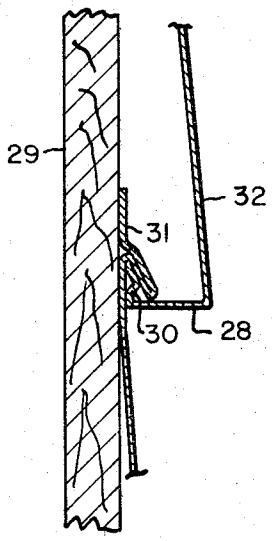


Fig. 5

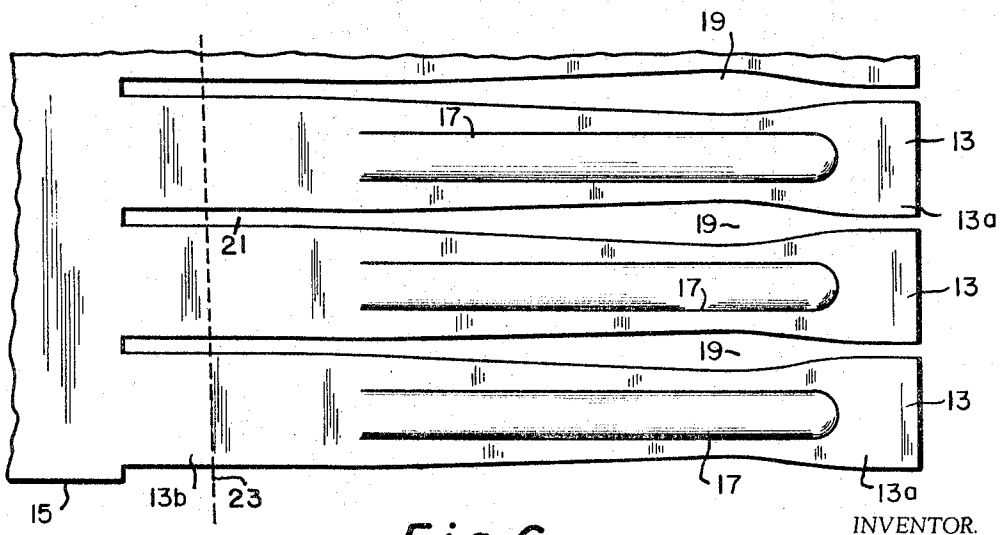


Fig. 6

INVENTOR.
James L. Kovalcik

BY
Webb, Burden, Robinson & Webb

HIS ATTORNEYS

United States Patent Office

3,339,333

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BACK-UP TAB FOR SIDING

James L. Kovalcik, % Metcom Products Co.,
P.O. Box 325, Blairsville, Pa. 15717

Filed Apr. 5, 1965, Ser. No. 445,802
6 Claims. (Cl. 52—672)

This invention relates to improvements in the installation of metal siding and relates in particular to an improved back-up tab for use with metal siding.

Metal siding, such as aluminum siding, employed in the home building trade is of relatively thin gauge. Such siding is generally constructed of formed elongated strips of sheet or strip metal that are horizontally nailed or otherwise attached to wooden house siding. The thin gauged sections extend outwardly from the wall to which they are fastened leaving a void area between the wall structure and the thin gauged sheet or strip metal. It is frequently necessary to employ vertical back-up tabs particularly around windows, at splices, at corners, etc., where some resistance or stiffening of the thin gauged metal panel is necessary to prevent collapsing of the siding against the wall to which it is attached. Since the extending face or surface of the siding tapers outwardly from top to bottom to provide proper drainage, back-up tabs are constructed of strips of metal having extending tapering ribs which match the tapering surface of the siding when these tabs are vertically positioned between the walls to which the siding is attached and the siding.

The conventional back-up tab is made on a progressive die (multi-station die). A coil of metal strip or sheet is automatically fed through the progressive die wherein the tab is formed in the following manner:

In Station #1 longitudinal parallel slots are formed in the strip leaving longitudinal parallel elongated members. In Station #2 longitudinal tapering ribs are formed in each of the longitudinal parallel elongated members. In Station #3 the elongated members are cut off to complete the tabs. The detached tabs fall separately into a shipping container. Each stroke of the die preforms all three steps at each station simultaneously on progressing sections of the strip.

Instead of manufacturing individual tabs in the manner described above, I manufacture panels of parallel rows of tabs that are connected to one another by a minor quantity of metal so that individual tabs may be removed from the panel by simple bending by workmen on the job of installing metal siding. By employing my tab design and method, panels of tabs are sheared so that they fall vertically into a shipping container and stack or nest within the container for more efficient and economical packaging than the prior method of packaging individual tabs. My new tab design permits the manufacture of tabs from less sheet or strip metal than is required for conventional tabs. Wasted and non-utilized metal at both sides and at the ends of each tab is eliminated without any sacrifice of functioning in rigidity or the "back-up" function of the tabs. Furthermore, my preferred tab construction provides a means for holding the individual tabs securely within the siding so that it will not move or fall from place during or after installation.

In manufacturing my tab, I also employ a progressive die (multi-station die). A coil or strip of material is automatically fed through a progressive die having two opposing vertical slides wherein panels of tabs are formed in the following manner:

In Station #1 the top slide moves down to shear elongated rows of slits into the strip. These slits, though generally longitudinally positioned, are neither parallel nor perfectly longitudinal but alternately taper towards and away from one another to define alternately tapering (in width) elongated members. While still in Station #1,

the bottom slide moves up to form tapered ribs, the deepest portion of each rib being at the widest portion of each elongated member. Both slides then retract. During the down stroke of the top slide, Station #2 cuts off the previously formed tab panel. The cut off panel falls as a unit into a shipping container where it nests within like panels.

With each successive stroke of the machine, work is done simultaneously at both stations of the progressive die and with each stroke a panel of eight tabs is completed.

I have shown the presently preferred embodiment of my invention in the accompanying drawings in which:

FIGURE 1 is a partial plan view of a stamped panel of tabs formed in accordance with the present invention.

FIGURE 2 is a side elevation view of the stamping of FIGURE 1.

FIGURE 3 is a perspective view of an individual tab shown as separated from the panel of FIGURE 1.

FIGURE 4 is a perspective view showing a tab such as that depicted by FIGURE 3 as assembled within a building panel.

FIGURE 5 is a cross-sectional fragmented view showing the conventional installation of metal siding.

FIGURE 6 is a plan view of a section of the end of a roll of metal partially formed in accordance with conventional practice.

Referring to the drawings, in FIGURE 6 there is shown a portion of strip **15** of back-up tabs **13** before completion. Strip **15** consists of six partially formed tabs **13** (three and a fraction of which are shown). Tabs **13** are formed by progressing the strip of material **15** onto the first station in a progressive die wherein the slots **21** are simultaneously formed by stamping. The slotted sheet is then advanced to the second station of the progressive die where the tapering ribs **17** of each of the six tabs **13** are simultaneously formed. It should be noted that the rib **17** or drawn portion of each tab has utilized a portion of the width of each tab at **19** resulting in increased spacing between the tab. The end of the strip material **15** now in the form shown by FIGURE 6, is sheared along the dotted line **23**. The shipping container is positioned beneath so that each tab **13** falls separately into the container.

Turning to FIGURES 1 and 2, there is shown part of a panel **10** of back-up tabs **12** constructed in accordance with the present invention. Panel **10** consists of eight tabs **12** of which three and a fraction are shown. Panels of tabs **12** (see panel **10** and parts of panels **14** and **15** in FIGURE 1) are formed by progressively stamping metal sheet or strip with a die designed to substantially simultaneously form slits **10***a* and tapering ribs **16**. Each formed stamping or panel is then advanced to a second station of complementary geometrical configuration where it is sheared from the preceding panel by a stamping operation which forms the ends **12***a* or **12***b* of each tab, depending on its alternating position at the sheared end of the panel. The other ends of the tabs of each panel are sheared to proper configuration when the subsequent progressively stamped panel is advanced to the second station and stamped.

Slits **10***a* do not completely separate tabs **12**, but a small area of connecting metal **10***b* remains at each end of each tab connecting it to the adjacent tabs of the panel. The connecting metal **10***b* is sufficient to hold the panel of tabs together for packing, shipping, or handling but also enables the tabs **12** to be removed from the panel by bending along slits **10***a*.

Tabs **12** each taper in width from a wide end **12***a* to a narrow end **12***b* and each tab is alternately positioned so that the wide end **12***a* of each tab is next to the nar-

row end **12***b* of the adjacent tabs. Tapered ribs **16** alternately taper in opposing directions in accordance with the alternating position of each tab **12** (see in particular FIG. 2).

Such alternating construction effects a savings in the use of metal because the deepest drawn portion of each tapering rib **16** is at the wide end **12***a* of each tab **12** where more metal is available to meet the requirements for forming the deep portion of rib **16**, and as the depth of rib **16** diminishes, the tab becomes narrower where less metal is needed to form the shallower portions of ribs **16**. By alternating the tabs **12**, the metal saved by tapering the width of each tab is utilized by the adjacent tabs. This arrangement makes it possible to produce eight tabs from the same width of strips from which six tabs were produced by the method employed in conjunction with the structures of FIGURE 6.

During fabrication when each panel is sheared from the preceding panel to form the configurations of the ends **12***a* and **12***b* of each tab **12**, the preceding panel overhangs the die in cantilever fashion. When stamping is completed, this panel falls vertically into a packing container positioned below. The panels of tabs nest and stack in the container in a fashion that reduces the size of the container to one-fourth the size of that required for packaging the separated tabs.

The end **12***b* of each tab **12** is shown to extend beyond the end **12***a* of the adjacent tab and is actually extended about one inch beyond the end of the adjacent tab. This section **12***b* is removed from the wider end portion **12***a* of the in-line tab of the next progressively stamped panel **14** or the preceding stamped panel **15**. This results in a void area **20** in the end **12***a* of each tab that corresponds in shape to the end **12***b* of each tab. Thus, this construction makes use of excessive metal in the center of the wide end of each tab.

The above designed features have proved to result in a 37% savings in the material used in these parts. The formed rib extensions **16***a* of rib **16** extend around void **20** of end **12***a* and serve to rigidize and strengthen this end which would otherwise be weakened by void **20**. This feature permits the use of lighter gauge material and effects a savings of over 50% on the metal used.

FIGURES 1–4 show a preferred embodiment of the present invention which consists of a projecting finger **22** that is provided at the end **12***b* of each tab **12**. In the use of the conventional tab, such as tabs **13** of FIG. 6, the tabs are vertically positioned between the metal siding and the structure to which it is attached with the end **13***a* supported by a horizontally extending flanged portion of the siding. The top portion or end **13***b* of these tabs extends upwardly between the metal siding and the wall to which it is attached and such tabs may fall or move out of place during and after installation. In the present preferred embodiment of my invention, finger **22** is inserted into a nail hole **24** (see FIGURES 4 and 5) provided for nailing the metal siding **32** to the wall **29** of the house to which it is attached. The end **12***a* may be slid into the slot **26** formed by the flanged extensions **28** and **30** of the metal siding **32**.

Flanges **28**, **30** and **31** of metal siding **32** overlap in the attachment of the metal siding **32** to wall **29** of a house or other structure in the manner shown in FIGURE 5.

Finger **22** is an optional embodiment that need not be employed in conjunction with tab **12**. Where finger **22** is not utilized, the top or end **12***b* of tabs **12** may be rounded or of any desired shape.

For the purposes of the present specification and particularly the claims, the terms "sheet metal" and "strip metal" shall be regarded as synonymous.

While I have described the presently preferred embodiments of my invention, it is to be understood that it may be otherwise embodied within the scope of the following claims,

I claim:

1. A back-up tab for metal siding comprising, an elongated strip of metal formed with an elongated embossed reinforcing rib extending lengthwise in said strip of metal, said rib tapering in depth from its deepest point adjacent one end of said strip to its shallowest portion adjacent the other end of said strip and said strip tapering in width from its widest portion at said one end to its narrowest portion at said other end, a finger at the narrowest end portion of less width than said narrowest end portion, and a section of metal removed from said one end of said strip to form a recess that conforms in configuration with said other end of said strip.

2. A back-up tab as is set forth by claim **1** wherein said metal siding is formed with a flange along one edge and nail holes along an opposite edge for nailing said siding to a wall and said projection disposed to fit into said nail holes so that said tab may be attached to said siding by inserting said projection into a a nail hole and sliding the said one end of said tab onto said flange.

3. A back-up tab as set forth by claim **1** formed with projections of said rib extending around either side of said recess.

4. A panel of back-up tabs for metal siding comprising:

(a) a rectangular sheet of metal formed with a plurality of elongated slits positioned to divide said sheet into a plurality of elongated segments positioned side-by-side and separated by said slits, said slits falling short of completely separating said segments so that each said segment is connected to adjacent segments by solid metal at each end of said slit;

(b) each said segment tapering in width from a wide end to a narrow end;

(c) each said segment being formed with an elongated rib extending lengthwise and tapering in depth from its deepest portion at said wide end to said narrow end;

(d) said segments being alternately positioned in said sheet so that the wide end of each segment is next to the narrow end of adjacent segments;

(e) a finger extending from each said segment at its narrow end and of less width than the width of said narrow end; and

(f) each said segment having a section of metal removed from its wider end to form a recess that conforms in configuration with the narrow end of said segment.

5. A panel as set forth in claim 4 wherein said narrow ends of said segments extend beyond said wide ends so that said panel may be manufactured by progressive stamping while utilizing metal from a preceding panel to form the narrow ends at one end of the panel and from the succeeding panel to form the narrow ends at the other end of said panel while giving up like metal to said succeeding and preceding panel from the said wide ends of said panel.

6. A panel such as set forth in claim **5** wherein the ribs of each said segment extend around said recesses so as to strengthen and rigidize said wide end.

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FRANK L. ABBOTT, *Primary Examiner.*

R. S. VERMUT, *Assistant Examiner.*

UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 3,339,333 September 5, 1967

James L. Kovalcik

It is hereby certified that error appears in the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 2, line 40, for "tab" read -- tabs --; column 4, line 17, for "projection" read -- finger is --; line 19, for "projection" read -- finger --; line 20, for "tab" read -- strip --.

Signed and sealed this 24th day of September 1968.

(SEAL)
Attest:

Edward M. Fletcher, Jr.
Attesting Officer

EDWARD J. BRENNER
Commissioner of Patents