Aug. 26, 1930. L. WILSON 1,774,121

METAL JOINT

Filed Dec. 4, 1926 4 Sheets-Sheet 1

Fig. 1.

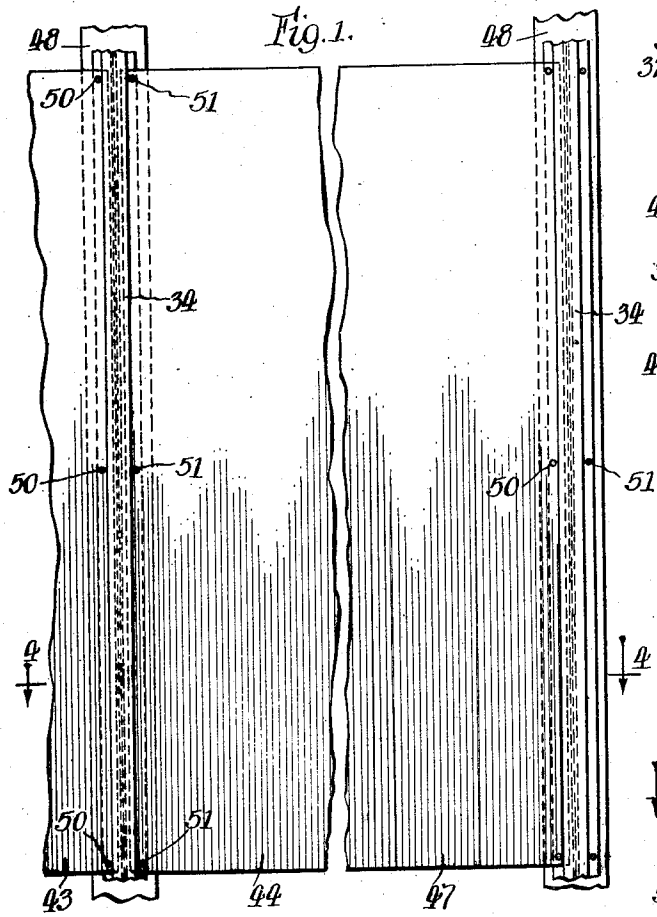


Fig. 2.

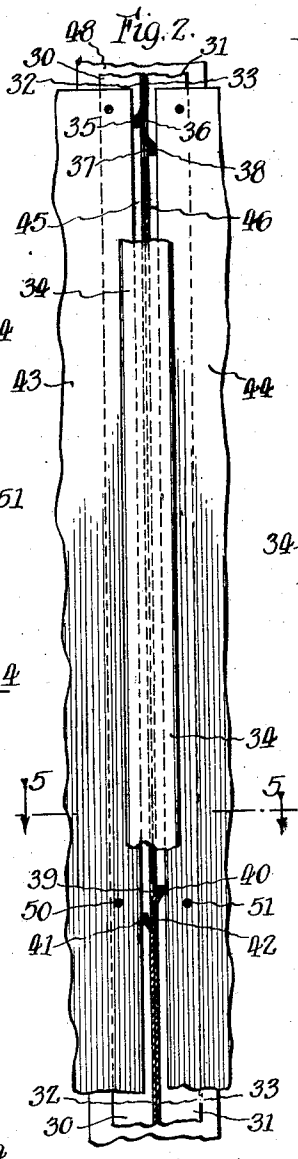


Fig. 3.

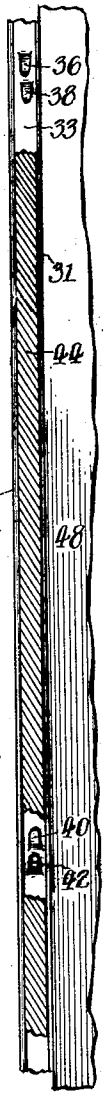


Fig. 4.

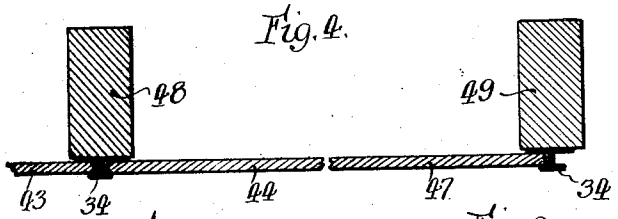


Fig. 5.

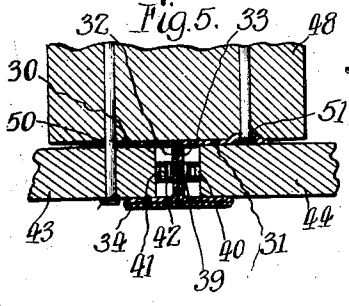


Fig. 6.

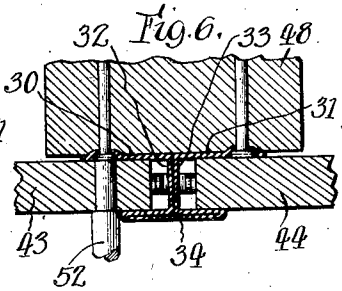
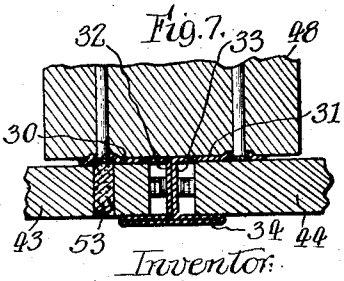


Fig. 7.



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Aug. 26, 1930. L. WILSON 1,774,121

METAL JOINT

Filed Dec. 4, 1926 4 Sheets-Sheet 2

Fig. 8.

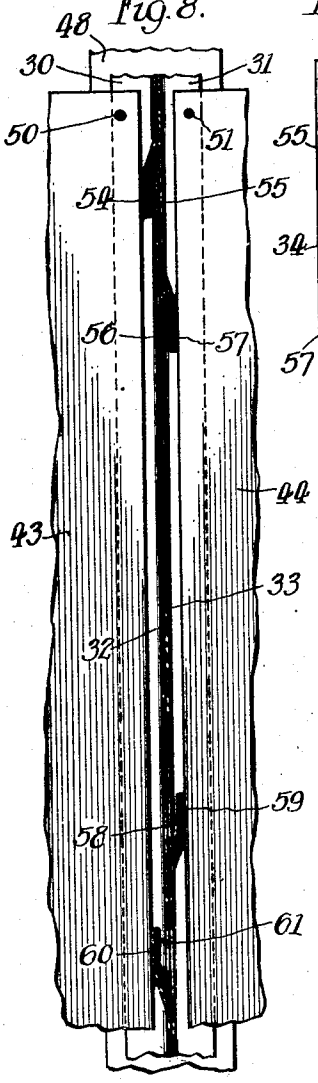


Fig. 9.

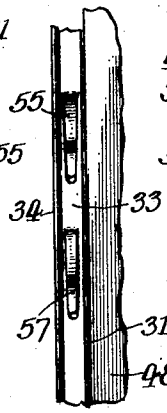


Fig. 10.

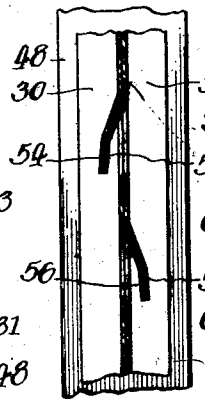


Fig. 11.

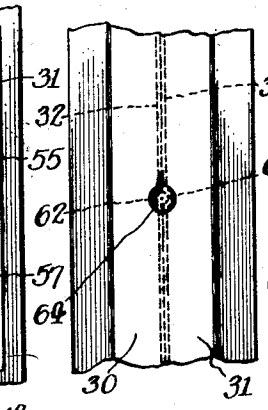


Fig. 12.

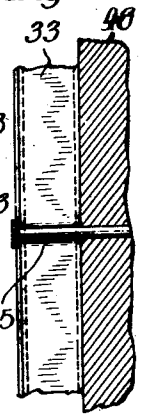


Fig. 13.

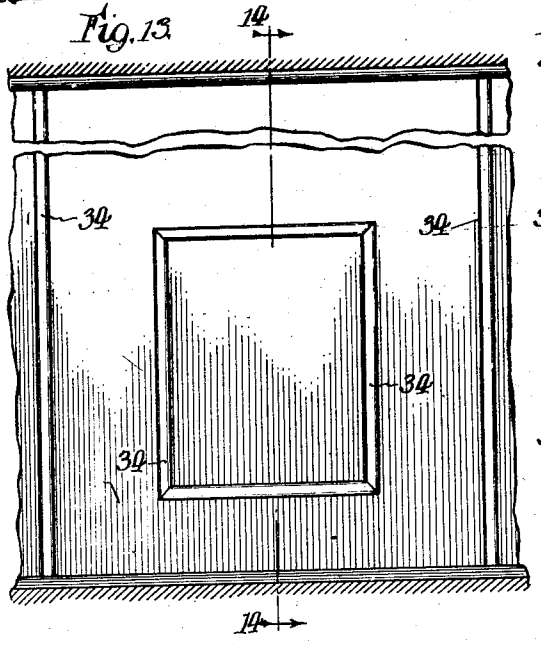


Fig. 14.

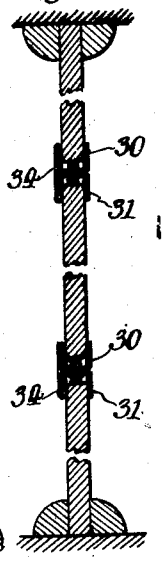


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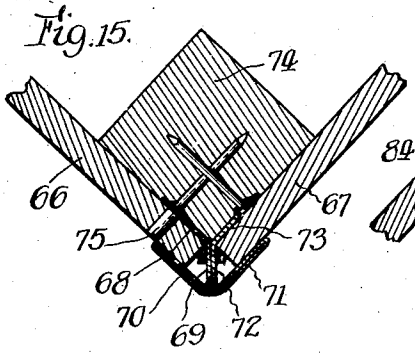
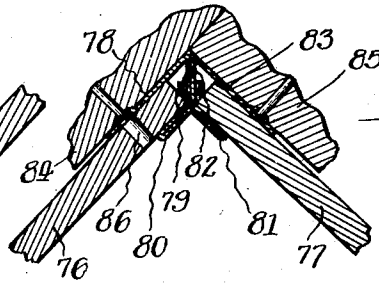


Fig. 16.



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Aug. 26, 1930. L. WILSON 1,774,121

METAL JOINT

Filed Dec. 4, 1926 4 Sheets-Sheet 3

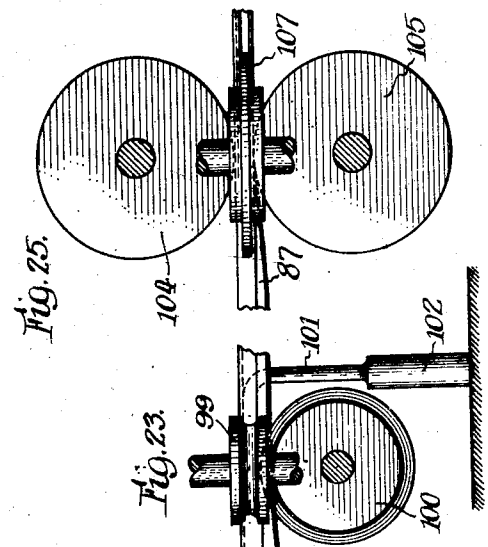


Fig. 25.

Fig. 23.

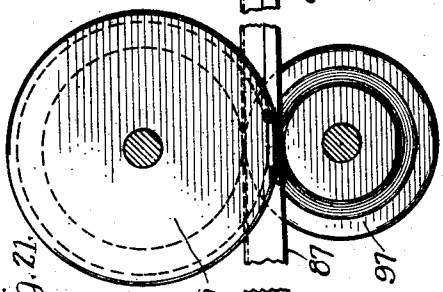


Fig. 21.

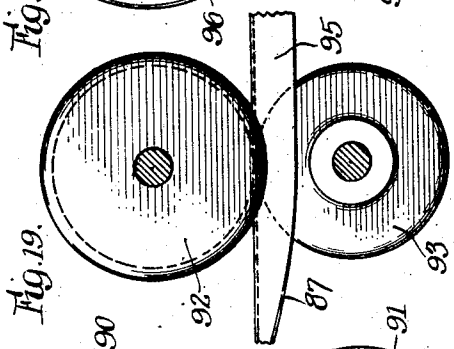


Fig. 19.

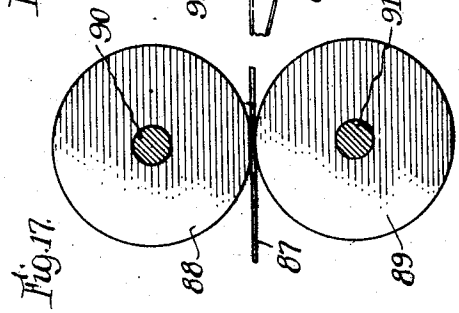


Fig. 17.

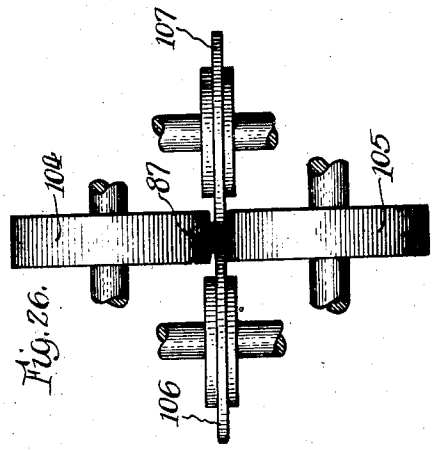


Fig. 26.

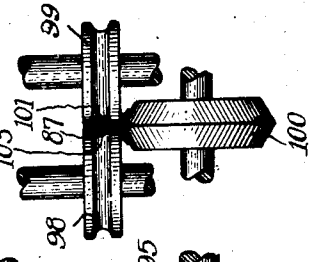


Fig. 24.

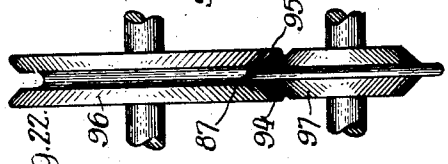


Fig. 22.

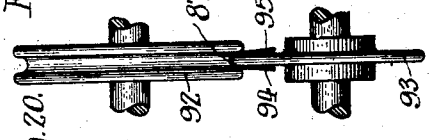


Fig. 20.

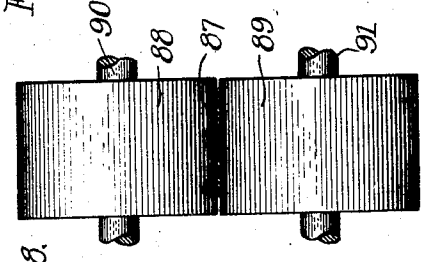


Fig. 18.

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Aug. 26, 1930. L. WILSON 1,774,121

METAL JOINT

Filed Dec. 4, 1926 4 Sheets-Sheet 4

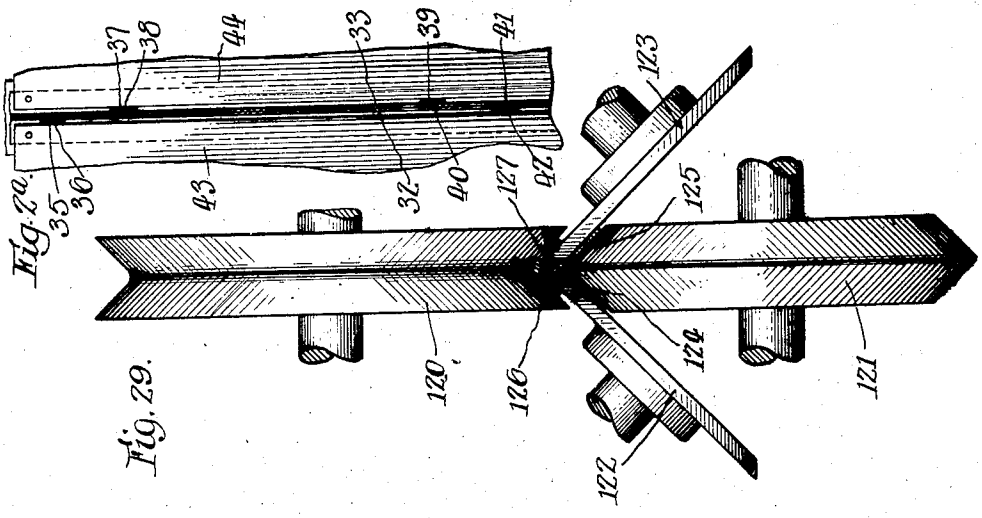


Fig. 29.

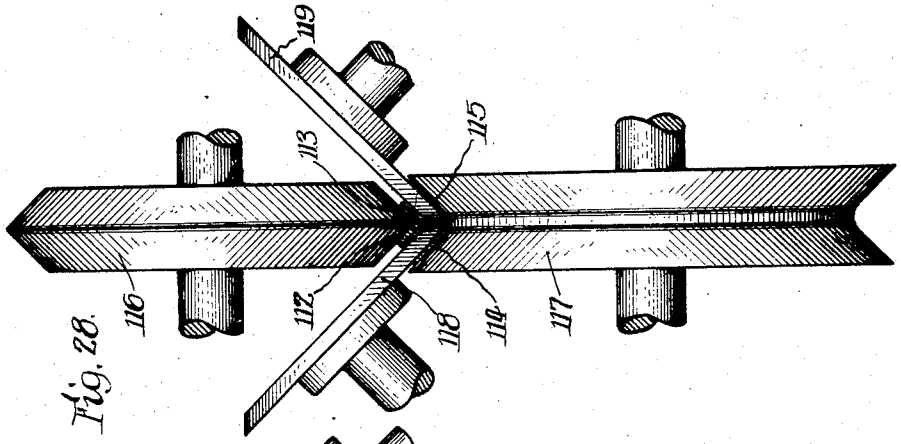


Fig. 28.

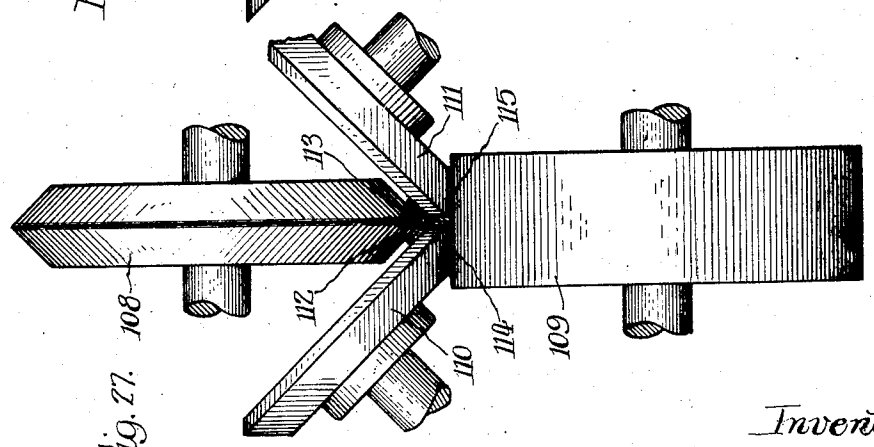


Fig. 27.

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Patented Aug. 26, 1930 1,774,121

UNITED STATES PATENT OFFICE

LULOFF WILSON, OF CHICAGO, ILLINOIS

METAL JOINT

Application filed December 4, 1926. Serial No. 152,563.

The invention relates to a metal joint and process of making same, and particularly a joint formed from a single strip of relatively thin metal, which, when formed and placed in position, supports and maintains adjacent sections of wall boards, partition boards, plaster boards, blackboards, tiles and other products.

It is one of the objects of the invention to so form the metallic joint from the strip of metal that two portions of the strip, destined to form the web of the metallic joint, shall contact with each other to form a stiff and rigid web.

A further object of the invention is to form the flanged portions, which extend in opposite directions and at right angles from each of the ends of the central doubled web portions, so that the terminations of the respective flanges with the central web portion, shall be as sharply defined as possible, in order to give great strength to the structure and particularly, great rigidity to the double central web portions. It has been found that since the junctions of the flanges with the central web are sharply defined and not rounded too much, the various flanges and web portions of the unitary strip are not easily separated from each other, and therefore a desirable joint between adjacent edge portions of boards, tiles, or the like is obtained.

Another object of the invention is to provide spacers or tongues in the metallic joint which permit expansion and contraction of the adjacent boards or other material, which tongues are struck or punched out of the web portions of the metallic joint.

An additional object of the invention is to have the spacers or tongues in the web portions of the joint relatively flexible, spaced apart, and extending outwardly on opposite sides of the web portion of the joint, and also extending in two directions on the same sides of the web portions, that is to say, one pair of tongues on one side of the web extends downwardly, and the next pair of tongues on the same side of the web extends upwardly, and one pair of tongues on the opposite side of the web extends downwardly, and the other pair of tongues on the same side of the web extends upwardly, the pairs of tongues on both sides of the web being in different transverse planes.

It is another object of the invention, while securing the benefit and advantage of the punched out tongues or spacers which permit expansion and contraction of the boards in the air space longitudinally of the web portions, to secure the longitudinal locking of the two web portions of the metallic joint in a plurality of places, and thus, in fact, strengthen the central web of the joint by having the tongue from one web portion pass through its own opening, and through the immediately adjacent opening in the adjoining web portion. Further locking of the web portions is secured by means of the passing of another tongue through its own opening, and that of the adjoining web portion, but in a direction opposite to that of the tongue first described. By this means the two web portions forming the central web are free from the danger of separation and bending.

Another object of the invention is to provide the metallic joint with combined tongues and spacers which will lock the webs of the metallic joint not only longitudinally in both directions, but laterally as well, and at the same time provide the metallic joint with spacers between the webs and the adjoining ends of the wall board sections. As in the case of the tongues and spacers which lock the web portions of the metallic joint longitudinally, this form is provided with tongues in a plurality of places, similarly strengthening the central web of the joint by having the tongues from one web portion pass through its own opening and through the immediately adjacent opening in the adjoining web portion. The tongue which has been struck out from the adjoining web portion is pressed back against its own web portion. The first mentioned tongue which passed through its own opening and through the immediately adjacent opening in the adjoining web portion is pressed back against the tongue of the adjoining web portion. Further longitudinal and lateral locking of the web por-

tions is secured by means of the passing of another tongue through its own opening and that of the adjoining web portion, but in a direction opposite to that of the tongue first described. The tongues last mentioned are pressed back against the web portion of the metallic joint on the opposite side thereof, but in a manner similar to the first mentioned tongues.

A further object of the invention is to provide the strips with nail holes, which are placed in flanges at one side of the web portion in registry with the outer edge of the head placed at the opposite side of the web portion, so that the boards or other products may be readily secured in position.

An additional object of the invention is to provide the web portions of the metallic joint with semi-cylindrical transverse extensions, and apertures at each end of the adjoining semi-cylindrical extensions in the flanged portions at each end of the web portion, to permit securing means to be passed through the tubular space formed by the proximity of the two semi-cylindrical extensions.

Another object of the invention is to provide integral metallic joints of the character described, which have been formed for use in connection with the exterior and the interior of corners of walls, or corner portions of the boards, tiles, and the like.

It is also an object of the invention to form the metallic joint from the single unitary strip of metal by passing the strip through various rolls in successive operations from the initial flat strip of metal to the finished product, either for the straight wall joint, or the corner joints, the rolls, idlers, and other apparatus being of suitable formation to accomplish the desired purpose. It will also be understood that the metallic joints of the invention may be formed by means of the dies or other suitable methods of manufacture.

The invention will be more readily understood when read in conjunction with the accompanying drawings which illustrate various embodiments of the invention, it being obvious that changes and modifications thereof may be made without departing from the spirit of the appended claims forming a part hereof.

In the drawings:

Figure 1 is an elevational view of the metallic joints of the invention in position with sections of wall board and studding.

Figure 2 is a front view of the metallic joint with portions of the head of the joint broken away to reveal the flexible tongues or spacers.

Figure 2ª is a front view of the metallic joint with the head of the joint broken away to reveal the flexible tongues or spacers, which tongues or spacers are turned back against the web portions on opposite sides thereof to form combined longitudinal and lateral locks of the web portions.

Figure 3 is a side view of the metallic joint as shown in Figure 2, showing an elevational view of the spacers in the web portions of the joint, and showing a part of the wall board in section.

Figure 4 is a transverse sectional view of the structure shown in Figure 1 on the line 4—4 of Figure 1.

Figure 5 is a full sized transverse sectional view of the metallic joint illustrating the manner in which the parts are held together, and showing how the nails to secure the joint are placed in position.

Figure 6 illustrates a view similar to Figure 5, except that it shows one of the nails driven into place through the end portion of one of the wall boards by means of a nail-set.

Figure 7 is similar to Figures 5 and 6 except that it shows the nails driven into place, and the nail hole in the end portion of one of the wall boards plugged.

Figure 8 is a longitudinal cross section of a modified form of metallic joint with adjacent end portions of wall boards in position and pressing against the extending tongues on both sides of the central web portion.

Figure 9 is a side view of the modified metallic joint of Figure 8.

Figure 10 is a longitudinal section of the modified form of metallic joint shown in Figures 8 and 9, showing the tongues in position prior to placing of the wall board ends in position.

Figure 11 is a view of a portion of a metallic joint showing a modified form of construction employed for fastening the metallic joint in position.

Figure 12 is a side view partly in section, of the structure of Figure 11.

Figure 13 is an elevational view of a section of wall or ceiling illustrating metallic joints in position, and also illustrating a panel constructed of metallic joints.

Figure 14 is a cross sectional view of a section of wall or ceiling, such as is shown in Figure 13, employing metallic joints.

Figure 15 is a cross sectional view illustrating the invention, adapted for the exterior corner of a structure embodying wall boards placed at right angles to each other.

Figure 16 is a cross sectional view of the invention adapted for the interior corner of sections of wall board placed at right angles to each other.

Figure 17 is a side elevational view of rolls between which the original strip of material from which the metallic joint of the invention is to be formed, has been placed.

Figure 18 is a front elevational view of the rolls and strip of Figure 17.

Figure 19 is a side elevational view of another set of rolls used, and showing the strip

of material in the process of being formed into the metallic joint.

Figure 20 is a front elevational view of the rolls and the strip being formed, as shown in Figure 19.

Figure 21 is a side elevational view of another set of rolls showing the strip from which the metallic joint is to be formed in a further state of progress.

Figure 22 is a front elevational view of the rolls and the strip of Figure 21.

Figure 23 is a side view of another set of rolls, an idler roll, the strip in a further state of progress, and an arbor employed in connection with forming the strip into the metallic joint.

Figure 24 is a front view of the rolls, idler roll and strip, and a sectional view of the arbor, as shown in Figure 23.

Figure 25 is a side view of another set of rolls, idler rolls and strip showing the final operation in connection with making the metallic joint of the invention.

Figure 26 is a front view of the rolls, idler rolls, and finished metallic joint illustrated in Figure 25.

Figure 27 is a front view of rolls and idler rolls in connection with forming metallic joints used for interior corners, such as are shown in Figure 16.

Figure 28 is a front view of another set of rolls and idler rolls, and a sectional view of the completed metallic joint used for an interior corner, such as is illustrated in Figure 16, and,

Figure 29 illustrates another set of rolls and idler rolls employed to form the completed metallic joint shown in section, which is to be used for the exterior corner, as illustrated in Figure 15.

The improved construction of metallic joint is shown in the various figures of the drawings for wall or ceiling sections, and for the corners of walls and ceilings, both exterior and interior. The views for the ordinary wall sections are well illustrated in Figures 5, 6 and 7, while the corner sections are well illustrated in Figures 15 and 16.

The metallic joint, which is made and formed from a single strip of relatively thin metal, is formed with the flanged portions 30 and 31, the central web portions 32 and 33, and the head 34. It will be observed that the flanges 30 and 31 are at right angles to the central webs 32 and 33, and that the head 34 also forms right angles with the webs 32 and 33. The lines of junction between the flanges, the head and the webs are relatively sharp and the two central web portions 32 and 33 are formed so that they will be in the closest contact and be practically a single web for the metallic joint. It will be observed that although the material is relatively thin, its formation into the form shown with the double thickness of material forming the web makes a rigid and strong joint.

At intervals and separated such distances as may be required the web portions 32 and 33 are provided with oppositely extending and oppositely facing pairs of tongues or spacers which have been punched or struck out of the web portions. These are shown in Figures 2 and 3, and other figures of the drawings. The uppermost of the top pairs of tongues comprises the tongue 35 and the tongue 36, which have been punched in one direction from the web portions 32 and 33, respectively. The tongues 37 and 38 have been punched from the web portions 32 and 33 in the opposite direction from the tongues 35 and 36. The free or lower ends of each of the tongues 35 and 36 on one side of the central web portions, and the free ends of the tongues 37 and 38 on the other side thereof project downwardly. The next adjacent set of punched out tongues will also be more readily seen in Figures 2 and 3. The tongue 39 is punched out from the web portion 32, and the tongue 40 is punched out from the web portion 33. The tongues 41 and 42 are also punched out from the web portions 32 and 33 respectively. It will be noted, however, that the tongues 39 and 40 are on one side of the web portions 32 and 33, similar to the tongues 37 and 38, and that the tongues 41 and 42 are on the opposite side of the web portions 32 and 33, similar to the tongues 35 and 36. It will also be observed that the free ends of the pairs of tongues 39, 40 and 41, 42 project upwardly or in the direction opposite to that in which the pairs of tongues 35, 36 and 37, 38 project. It will also be observed that in the upper pair of punched out tongues the tongue 36, punched from the web portion 33, extends through the apertures made in the web portions 32 and 33 by the punching out of the tongues 35 and 36, and under the tongue 35, punched from the web portion 32, thus serving to longitudinally lock the web portions 32 and 33. Likewise the tongue 37 in the other or lower pair of tongues on the opposite side, and which is punched from the web portion 32, extends through the apertures made in the web portions 32 and 33 by the punching out of the tongues 37 and 38 and under the tongue 38, punched from the web portion 33, thus more firmly locking the web portions 32 and 33, longitudinally.

In addition to the function of longitudinally locking the web members of the metallic joint, the punched out tongues have the function of acting as spacers for the end portions of the adjacent wall boards 43 and 44. Since the end portions 43 and 44, respectively, do not abut directly against the web portions 32 and 33, but are held from the web portions by the projecting and extending tongues, air spaces 45 and 46 are

formed between the inner ends of the wall boards and the webs. It will be apparent that since the projecting and extending tongues are more or less flexible, allowance is thereby made for the expansion and contraction of the wall boards. The head 34 of the metallic joint is, of course, made wide enough so that its extending portions will, at all times, cover the joint between the adjacent ends of the wall boards, so that, at all times, a neat and finished joint will be presented. It will be understood that the spaces or distances between the pairs of tongues, such as 35, 36 and 37, 38 may be as great as is necessary or desirable. The same is true of the spaces or distances between the pairs of tongues 39, 40 and 41, 42. It will also be understood that as much space or distance as may be necessary or desirable between the sets of pairs of projecting tongues may be made, and it will further be understood that as many sets of projecting tongues as may be desired may be formed in the whole length of the metallic joint.

As shown in Figure 2ª the punched out tongues 35, 36 and 41, 42 on one side of the web portion of the metallic joint have been turned back and pressed against the web portion 32. As so pressed against the web portion 32 it will be noted that they extend away from each other and in opposite directions. The tongues 37, 38 and 39, 40 are on the opposite side of the web portion and are also pressed back against the web portion 33 of the metallic joint. The tongues which are pressed back against the web portion 33 also extend away from each other or in opposite directions. By means of the construction of the webs and tongues as shown in Figure 2ª not only is longitudinal locking in both directions secured but lateral locking of both web portions, as well.

As shown in Figure 2ª the tongues in each of the sets of tongues are spaced apart to provide sufficient metal between the tongue opening so that when the tongues are turned back against the web portions they will have sufficient metal with which to make contact. It will be noted that because of the turning back of the tongues against the web portions 32 and 33 air spaces are provided on opposite sides of the web portion since the adjacent ends of the wall boards 43 and 44 abut against the sets of tongues, but, because of the tongues being turned back, cannot abut directly against the web portions.

In the drawings the metallic joints have been shown in connection with wall board sections and studding. In addition to the wall board sections referred to above, there are the additional wall board 47 and the studding 48 and 49. It will, of course, be understood that the metallic joints of the invention in use with the wall boards, partition boards, plaster boards, blackboards, tiles and the like, are so stiff and rigid that relatively long sections of the boards with metallic joints, such as are shown and described, may be used without studding or other forms of support. It will also be understood that the metallic joint may not only be used for partitions and other forms of walls or boards, but may be used for ceilings and other division work.

In cases where it is desired to construct a wall employing the metallic joint where nails are to be driven through the metallic joint into studding, furring, or other support, nail holes are made in the flanges 30 and 31, as at 50 and 51. As many nail holes as may be desired may be made in the flanges 30 and 31, but they are preferably placed in alignment with the ends or edges of the head 34 of the metallic joint. The row of nail holes on one side of the head 34 serves as guides for finding the nail holes on the other side of the head 34. For instance, when the metallic joint is held in position to receive the sections of wall board to fit within the grooves formed by the flange 30, web 32 and head 34, and the flange 31, web 33 and head 34, the wall board 43 is fitted into the first-mentioned groove, and covers the nail holes 50. The location of the nail holes 50, however, can be ascertained, and the nails be driven through the wall board 43 into the nail holes 50 because it is known that they are directly opposite the nail holes 51, which are in the flange 31 on the opposite side of the metallic joint. The section of the wall board 44 not having been inserted in place in the groove formed by the flange 31, web 33 and head 34, the nail holes 51 are visible. When the wall board section 44 is next secured in place the driven nails in the wall board section 43 serve as guides for the nails to be driven in the wall board section 44. The exterior edges of the head 34 of the metallic joint serve as guides for the initial perforation of the nail holes in the flanges 30 and 31.

In Figures 5, 6 and 7 the nails are shown as having been driven into the hole 51 in the flange 31, and into the studding 48, but without passing through the end portion of the wall board section 44. The nail on the opposite side of the metallic joint is shown passing into the hole 50 in the flange 30 and into the studding 48, having also passed into the end portion of the wall board section 43.

In Figure 6 the nail is shown driven through the end of the wall board section 43, having been driven by means of the nail-set 52, forcing the head of the nail against the flange 30. Upon removal of the nail-set from the end portion of the wall board section 43, the aperture made by the nail-set is plugged and filled with plaster 53, or other suitable material.

In Figures 8, 9 and 10 a metallic joint similar in construction to that heretofore

described, except for the tongue which is struck out of the web portions, is shown. The modified form of tongues 54, 55 and 56, 57 are illustrated at the top portions of these figures, and tongues 58, 59 and 60, 61 are shown at the lower end of Figure 8. Each of these tongues is longer, and therefore more flexible than the tongues struck from the webs, and particularly shown in Figure 2. In case it is thought that the tongues of Figure 2 are too rigid, and do not give upon movement of the wall boards 43 and 44, the more flexible tongues of Figure 8 may be employed.

In Figures 11 and 12 there is shown a modified form of means for fastening the metallic joint to the studding or other suitable support. This consists in forming the webs 32 and 33 with semi-circular depressions 62 and 63, respectively, transversely of the webs. When the webs 32 and 33 are pressed together the depressions 62 and 63 form a channel 64 for the reception of a nail or screw 65, which may be driven into the studding or other support.

In Figures 13 and 14 there are shown in elevation and section respectively, a means whereby the metallic joint may be used in sections of wall board for paneling and the like, wherein the metallic sections may extend either vertically or horizontally, and be suitably mitred at the corners.

In Figure 15, wherein is shown the metallic joint adapted to be used for the exterior corner of a structure, the single unitary metallic strip is shown as being bent in such a way as to receive on one side the wall board 66 and at right angles thereto the wall board 67. The inner flange portion 68 of the metallic joint extends parallel to the wall board 66 on the inside thereof. The web 69 extends outwardly at an angle to the flange 68, and the head portion 70 extends parallel to the flange portion 68 to receive the end portion of the wall board 66. The head portion 71, the web portion 72 and the flange portion 73 form a pocket on the opposite side of the metallic joint to receive the end portion of the wall board 67. Nails may be driven into the studding 74 and the nail hole made in the end portion of the wall board 66 may be filled with the plug 75.

It will be noted that the web portions 69 and 72 are pressed against each other in contact so as to form substantially a single web of double thickness, which is at an angle of 45° to the inner flange and outer head portions on opposite sides of the metallic joint. The ends of the wall boards, which meet within the metallic corner joint, are usually cut square, and this leaves a pocket, which, if it did not contain the rigid transverse web portion of the joint to brace against the outer head portion of the joint, would tend to allow the straight longitudinal line of the corner to be marred and bent. The web portion back of the head of the metallic joint preserve the straight and uniform line of the corner. In order that the nails which secure the joint to the studding shall pass each other, the holes in the flanges 68 and 73 are not in the same plane, or they may be driven at an angle to avoid each other.

In Figure 16 there is shown another form of corner metallic joint. This form is for the interior of the corner, and the portions of the metallic joint are reversed from those shown in Figure 15. The wall board section 76 is arranged at right angles to the wall board section 77. The flange 78 of the metallic joint is placed on the exterior of the wall board section 76 and parallel thereto. The web section 79 extends inwardly at an angle of 45° to the flange 78. One portion 80 of the head of the metallic joint extends on the interior of the wall board 76 parallel to the flange 78. The opposite portion 81 of the head is at right angles to the portion 80 and is parallel to the wall board section 77 on the interior face thereof. The web portion 82 extends from the head portion 81 of the flange 83. The web portion 82 is pressed tightly against and contacts with the web portion 79 and the two web portions form a substantially integral web for the joint and have the same characteristics of rigidity and support that the web portions 69 and 72 have, described in connection with Figure 15. The flange 83 extends at an angle of 45° to the web portion 82, and lies parallel to the head portion 81, thus forming a groove within which the end of the wall board 77 may be fitted. Nails may be driven into the studs 84 and 85 and the nail hole in the end of the wall board 76 may be filled with the plug 86.

The mechanism for forming the integral relatively thin metallic strip into the metallic joints of the invention are shown in Figures 17 to 29, both inclusive. These figures are more or less diagrammatic and no effort has been made to show all of the attendant mechanism, and it will be understood that it may be necessary to have further operations and further mechanism in order to secure the results desired. The principal steps in the method of making the metallic joints have been shown and described, however, and any steps not shown, and mechanism therefor, would be intermediate of those shown and described, and substantially like those which have been shown and described.

In Figures 17 and 18 the sheet or strip 87, which is to ultimately become the metallic joint of the invention, is passed between rolls 88 and 89. The rolls 88 and 89 have shafts 90 and 91 respectively, which rotate in suitable bearings which are not shown. For convenience the shafts of other rolls and idler rolls in subsequent figures of the drawings will not be numbered.

In Figures 19 and 20 power forming rolls 92 and 93 roll the integral strip 87 so that the central portion of the strip is rounded and the side portions 94 and 95 are extended downwardly.

In Figures 21 and 22 a different set of power rolls 96 and 97 are used to further form the strip 87 to raise and bend the side portions 94 and 95.

In Figures 23 and 24 power rolls 98 and 99 and an idler roll 100 are used in forming the metallic joint. In forming the metallic joint with the mechanism shown in Figures 23 and 24 it is necessary to employ the arbor 101, which has a base 102 of the required dimensions, which is suitably supported. The arbor 101 is constructed with a right-angled portion, which is used to assist in forming the curved central portion of the strip 87 into the substantially circular portion 103 of the strip. The final operation of forming the metallic joint is performed by the mechanism shown in Figures 25 and 26. This mechanism includes the rolls 104 and 105, and the idler rolls 106 and 107. The rolls 104 and 105 form the strip 87, after the strip has passed through the preceding operations, into the form shown between the rolls in Figure 26, which is like the form shown in Figures 4, 5, 6 and 7, except as to the punched tongues. The punched tongues are punched in the web portions of the metallic joints by subsequent operations.

The mechanism for forming the corner metallic joints is shown in Figures 27, 28 and 29. In order to form the metallic joints for the corners it is first necessary to perform the operations on the unitary metallic strip 87, as illustrated in Figures 17 to 26, both inclusive. The strip, which has now been formed into the completed metallic joint, is passed between the power rolls 108 and 109 and the idler rolls 110 and 111. By means of these rolls the head portions 112 and 113 are rolled and bent away from the flange portions 114 and 115.

In Figure 28 the power rolls 116 and 117, and idler rolls 118 and 119 are used to complete the formation of the corner joint. In this operation the flanges 114 and 115 have been rolled and bent so that they lie parallel to the head portions 112 and 113. The metallic joint shown in Figures 27 and 28 is for the interior corners, and is a structure which is identical with the metallic joint shown in Figure 16.

In Figure 29 there is shown mechanism which is used to form the metallic joint into the form used for the exterior corner. In this operation power rolls 120 and 121 and idler rolls 122 and 123 are used. In forming the metallic joint the flanges 124 and 125 are extended downwardly rather than upwardly, as they are in Figure 28, and the head portions 126 and 127 are also extended downwardly and parallel to the flange portions 124 and 125.

With reference to the corner metallic joints, it will be understood that the head portions 80 and 81, as shown in Figure 16, and the head portions 112 and 113, as shown in Figure 28, are on the inside corner of adjoining sections of wall board, and are visible. On the other hand the head portions 70 and 71, as shown in Figure 15, and the head portions 126 and 127, as shown in Figure 29, are on the outside corner of adjoining sections of wall board, and are the surfaces of the metallic joint which are visible.

With reference to the power rolls and the idler rolls, as shown in Figures 17 to 29, both inclusive, it will be understood that the rolls, the shafting and bearings therefor will be placed in the most advantageous positions in order to secure the most economical and efficient operations upon the strip which passes through the rolls from the initial flat strip into the finished metallic joint.

Having thus described the invention, what I claim and desire to secure by Letters Patent is:

1. In a metallic joint for wall boards, a sheet of relatively thin metal formed with flanges, web portions and a head, said head and web portions being formed with double thicknesses of metal, said head and web portions each having their respective thicknesses tightly compressed against each other and contacting their entire distances and in continuous straight lines, the lines of termination of said flanges, web portions and head portions being sharply defined.

2. In a metallic joint for wall boards a single unitary strip of relatively thin material with a web formed of two thicknesses of the material, a flange, a head portion extending therefrom at right angles thereto, web portions being formed with double thicknesses of metal, said head and web portions each having their respective thicknesses tightly compressed against each other and contacting their entire distances and in continuous straight lines, the web portions having tongues therein longitudinally locking said web.

3. In a metallic joint for wall boards a single unitary strip of relatively thin material with a web formed of two thicknesses of the material, a flange, a head portion extending therefrom at right angles thereto, the web portions having struck-out tongues therein, said struck-out tongues being on opposite sides of said web portions and extending in opposite directions.

4. In a metallic joint for wall boards a single unitary strip of relatively thin metal embodying flange, web and head portions, the web and head portions being of double thickness and closely pressed together, struck-out tongues disposed at various points in said

web portions, said struck-out tongues being on opposite sides of said web portions, said tongues being in pairs, the pairs being formed from portions of each of the web portions.

5. In a metallic joint for wall boards a single unitary strip of relatively thin metal embodying flange, web and head portions, the web and head portions being of double thickness and closely pressed together, struck-out tongues disposed at various points in said web portions, said struck-out tongues being on opposite sides of said web portions, said tongues being in pairs, the pairs being formed from portions of each of the web portions, one tongue of each of the pairs of tongues crossing through the apertures in said web portions made by striking out the tongues and extending beyond the adjacent web portion and with the other tongue of the pair longitudinally locking both web portions.

6. In a metallic joint for wall boards a single unitary strip of relatively thin metal embodying flange, web and head portions, the web and head portions being of double thickness and closely pressed together, struck-out tongues disposed at various points in said web portions, said struck-out tongues being on opposite sides of said web portions, said tongues being in pairs, the pairs being formed from portions of each of the web portions, one tongue of each of the pairs of tongues crossing through the apertures in said web portions made by striking out the tongues and extending beyond the adjacent web portion and with the other tongue of the pair longitudinally locking both web portions, the free ends of each set of pairs of tongues on opposite sides of the web portions extending toward the free ends of another set of pairs of tongues in said web portions.

7. In a metallic joint for wall boards a single unitary strip of relatively thin material with a web formed of two thicknesses of the material, a flange, a head portion extending therefrom at right angles thereto, the web portions having struck-out tongues therein, said struck-out tongues extending on opposite sides of said web, said tongues extending beyond said web sufficiently far to maintain space between said web and the inner edges of the wall boards on either side of said web.

8. In a metallic joint for wall boards a single unitary strip of relatively thin metal with a web formed of two thicknesses of the metal, flanges and head portions extending from said web at right angles thereto, the web portions having struck-out tongues therein, said tongues being relatively long and flexible.

9. In a metallic joint for wall boards a single unitary strip of relatively thin metal with a web formed of two thicknesses of the metal, flanges and head portions extending from said web at right angles thereto, the web portions having pairs of relatively long and flexible tongues struck out on opposite sides thereof, the free ends of which pairs extend toward each other.

10. In a metallic joint for the adjoining corners of wall boards consisting of a single unitary strip of relatively thin metal, wherein the flange portions are disposed at obtuse angles to the web portions, the head portions are disposed at acute angles to the web portions, and the intermediate web portions are in contact with each other.

11. In a metallic joint for the corners of adjoining wall boards, a single unitary strip of relatively thin metal forming pockets or grooves for their reception, the end sections of said wall boards placed at right angles to each other, the flanges and head portions of said metallic joint each being in parallel relation to the respective end section of the wall board, and the web portions of the metallic joint being in contact with each other and extending from said flanges to said head portions at an angle of 45° to the ends of said wall sections.

12. In a metallic joint for wall boards a single unitary strip of relatively thin metal embodying flange, web and head portions, the web and head portions being of double thickness and closely pressed together, struck-out tongues disposed at various places in said web portions, said struck-out tongues being on opposite sides of said web portions, said tongues being in pairs, the pairs being formed from portions of each of the web portions, one tongue of each of the pairs of tongues crossing through the apertures in said web portions made by striking out the tongues and extending beyond the adjacent web portion, each of the free ends of the tongues of each of the pairs of tongues being bent outwardly and against their respective opposite sides of the web portions, said tongues simultaneously longitudinally and laterally locking said web portions.

13. In a metallic joint for wall boards a single unitary strip of relatively thin metal embodying flange, web and head portions, the web and head portions being of double thickness and closely pressed together, struck-out tongues disposed at various places in said web portions, said struck-out tongues being on opposite sides of said web portions, said tongues being in pairs, the pairs being formed from portions of each of the web portions, one tongue of each of the pairs of tongues crossing through the apertures in said web portions made by striking out the tongues and extending beyond the adjacent web portion, each of the free ends of the tongues of each of the pairs of tongues being bent outwardly and against their respective opposite sides of the web portions, said free ends of each set of pairs of tongues pressed against opposite

sides of the web portions extending toward the free ends of another set of pairs of tongues in said web portions, said tongues simultaneously longitudinally and laterally locking said web portions.

In witness whereof, I hereunto subscribe my name this 2nd day of December, A. D. 1926.

LULOFF WILSON.