Nov. 3, 1931. D. A. MILLER 1,829,754

STOVE PIPE SEAM

Filed April 5, 1927

Fig. 1.

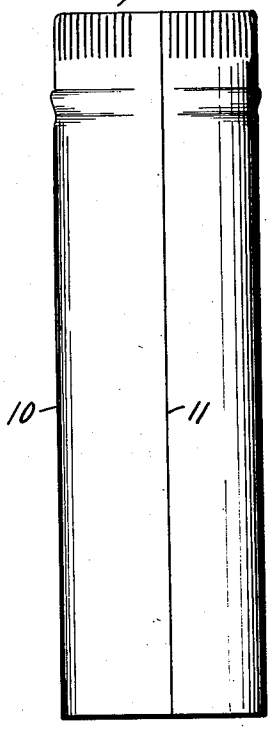


Fig. 4.

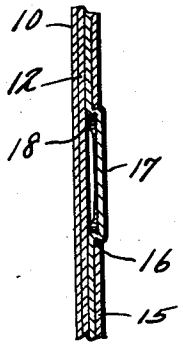


Fig. 2.

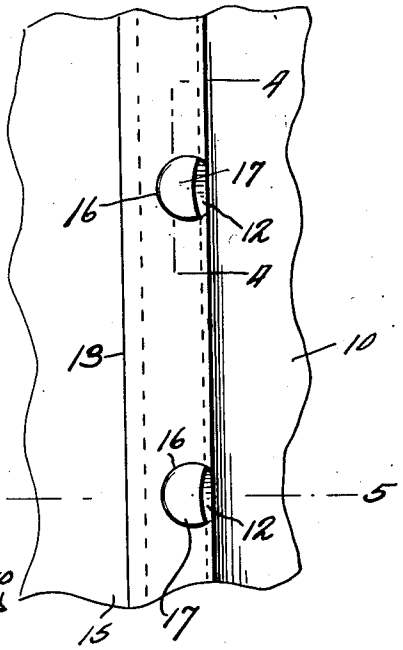


Fig. 7.

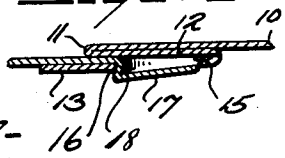


Fig. 3.

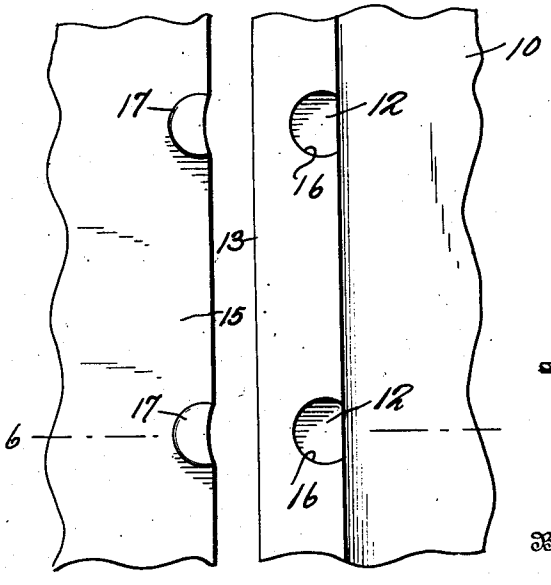


Fig. 5.

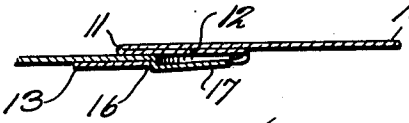
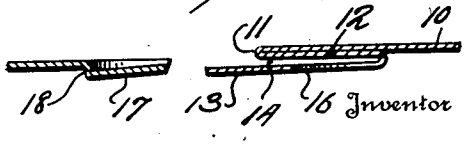


Fig. 6.



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UNITED STATES PATENT OFFICE

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STOVE PIPE SEAM

Application filed April 5, 1927. Serial No. 181,252.

This invention relates to stove pipes and particularly to the seam or joint whereby the free edges of a sheet of metal forming the pipe are connected.

The general object of this invention is to provide means for interlocking one margin of the sheet with the other. This general object has been accomplished by a stove pipe on the market where the seam is formed by folding one edge of the pipe section and inserting the other edge or margin into the groove or fold thus formed. This seam, however, is open to the objection that the outer wall of the groove is formed of two thicknesses of metal, these two thicknesses being apertured for engagement by a boss or button formed upon the other margin of the section or sheet. This renders the seam unsightly because the aperture and the boss are both disposed upon the exterior of the pipe. Furthermore the button or "boss" is disposed so close to the free edge of the metal and must be so deep in order to pass through the two thicknesses of metal forming the outer wall of the groove, that the metal is likely to break or tear away at these buttons under strain. Again, in this form of seam, pressure tending to compress the pipe into a somewhat elliptical cross section is likely to disengage the seam, or in other words, disengage the button from the opening in which it is interlocked. Furthermore, while the two margins are held against strain tending to pull them apart, yet they may be quite readily shifted longitudinally on each other under pressure which will cause the buttons or protuberances to slip out of engagement with the apertures and the stove pipe becomes disengaged.

The specific object of my invention is, therefore, to improve upon the construction above described by forming a seam in which the interlock is entirely concealed on the interior of the pipe; in which there can be no tearing out of the slots nor of the buttons or protuberances and in which, once the device is locked, there can be no detachment of the parts without the use of tools and considerable effort.

My invention is illustrated in the accompanying drawings, wherein:—

Figure 1 is an elevation of a stove pipe constructed in accordance with my invention.

Figure 2 is a face view of the seam of the stove pipe looking toward the inside face thereof.

Figure 3 is a like view of the parts, but with the two margins of the pipe separated.

Figure 4 is a detailed section on the line 4—4 of Figure 2.

Figure 5 is a transverse section on the line 5—5 of Figure 2.

Figure 6 is a sectional view on the line 6—6 of Figure 3.

Figure 7 is an enlarged sectional view through the boss on the same line as Figure 5, but to show the overhanging of the boss.

Referring to these drawings, 10 designates a section of a stove pipe having the usual circular shape when the edges or margins are interlocked, this section of pipe being formed of a sheet of metal bent in a circular form and having its margins interlocked as will be later described. One end of the stove pipe section 10 is contracted so that it may enter the adjacent end of another stove pipe. This is a common construction and, of course, does not form part of my invention. One margin 11 of the metal forming part of the stove pipe section 10 is inwardly bent upon itself as at 12 and then again refolded and extended longitudinally as at 13, thus defining between the walls 12 and 13 the groove 14 into which the margin 15 of the sheet metal forming the stove pipe section is to be inserted. The folds or flanges 12 and 13 are disposed upon the inner face of the pipe section. The flange 13 has at spaced intervals apertures 16. These apertures are approximately segmental and intersect the fold or bend at the inner margin of the flange 13. Thus these apertures open away from the outer edge of the flange 13. The margin 15 is formed at intervals with protuberances or bosses 17 which are approximately semicircular in form and are struck out from the sheet metal so as to provide, as shown in Figures 4 and 5, the relatively sharp corners or steeply angled peripheral sides 18. It will be seen

that not only is the metal of each boss or button formed with a relatively steep side face, but that the ends of the boss or button adjacent the edge of the metal are also formed with this steep side face and that the outer face of the boss is inclined slightly toward the edge of the metal.

With this construction, when the margin 15 is inserted into the groove or space 14, the bosses or buttons 17 will act to lift the flange 13 until the bosses or buttons are sprung into place in the apertures 16. When this occurs, the two margins are interlocked with each other and cannot become unlocked unless the flange 13 is deliberately lifted away from the flange or fold 12 so as to disengage the bosses 17 from the apertures 16 and permit the withdrawal of the margin 15. Unless such deliberate unlocking is done, however, the two sections will remain interlocked with each other against all strains to which the stove pipe can be subjected. There will be no tendency of the parts to unlock when the margin 11 is shifted in one direction and the margin 15 in the relatively opposite direction whether this relative movement be transverse to the pipe or longitudinally thereof.

In the other seam, previously referred to, a shearing or bending strain which will tend to shift one margin longitudinally with relation to the other margin will cause the disengagement of the interlock. This cannot take place with my construction and the interlock secured between the buttons 17 and the apertures 16 will hold the pipe against any such deformation. Furthermore with this construction a compression of the pipe from the outside which would tend to make it elliptical in cross section will cause the interlock to be even more effective as it will tend to force the protuberances 17 inward with relation to the flange 13, whereas with the construction heretofore described as on the market, a compression of this kind tends to disengage the interlock between the two margins of the pipe section. Furthermore, inasmuch as the buttons and apertures are on the inside of the pipe, they are not visible and the pipe has a much better appearance.

Another advantage of my construction is that the raw edge which defines the aperture 16 is confronted by the circumferential face of the corresponding protuberance and one raw edge does not come against or bear against another raw edge. Where this occurs the edges are liable to cut each other and the metal of the sections be torn away or become broken at this point.

While I do not wish to be limited to this, preferably the peripheral edge or wall of the boss or protuberance 17 is slightly re-entrant as shown in Figure 7 so as to more thoroughly interlock with the wall of the opening 16 than it otherwise would do, so as to prevent any pull in any direction from causing the detachment of the parts.

I claim:—

1. A stove pipe section comprising a metallic sheet, one margin of which is folded rearward flat against the inside of the sheet and then refolded to form a flange spaced from but parallel to the first named fold and defining a groove, said flange being apertured between the junction of the flange with the first named fold and the edge of the flange, each aperture having a curved edge extending from the junction of the flange and fold, the other margin of the sheet being insertible into said groove and formed with a boss fitting the aperture, the boss being formed with a steep peripheral arcuate face adapted to confront the arcuate edge of the aperture, the upper face of the boss being inclined toward the edge and inner face of the sheet.

2. A stove pipe section comprising a metallic sheet, one margin of which is folded rearward flat against the inside face of the sheet and then refolded to form a flange spaced from but parallel to the first named fold and defining a groove, said flange being formed with a segmental aperture intersecting the junction of the flange with the first named fold, the curved edge of the segmental aperture extending toward the edge of the flange, the other margin of the metal sheet being insertible into said groove and formed with an approximately semicircular boss intersecting the edge of the sheet and fitting said aperture, the peripheral edge of the boss being steeply angled throughout its entire extent and the outer face of the boss being inclined inward and toward the edge of the sheet.

In testimony whereof I affix my signature.

DONALD A. MILLER.