April 24, 1934. C. J. LEMONT 1,955,816

GALVANIZING KETTLE

Filed May 5, 1930

Fig. 1

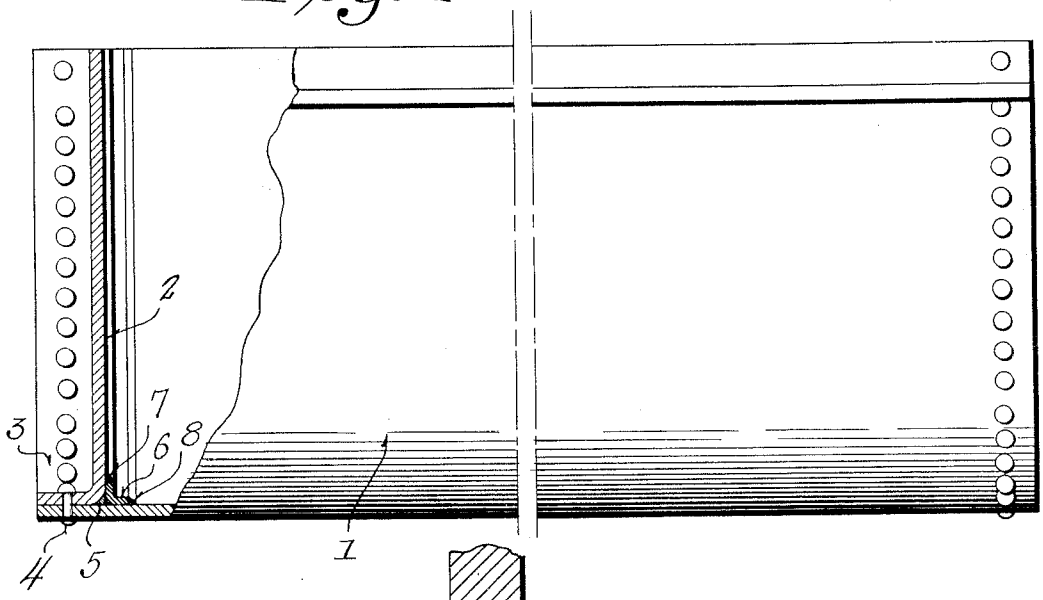


Fig. 2

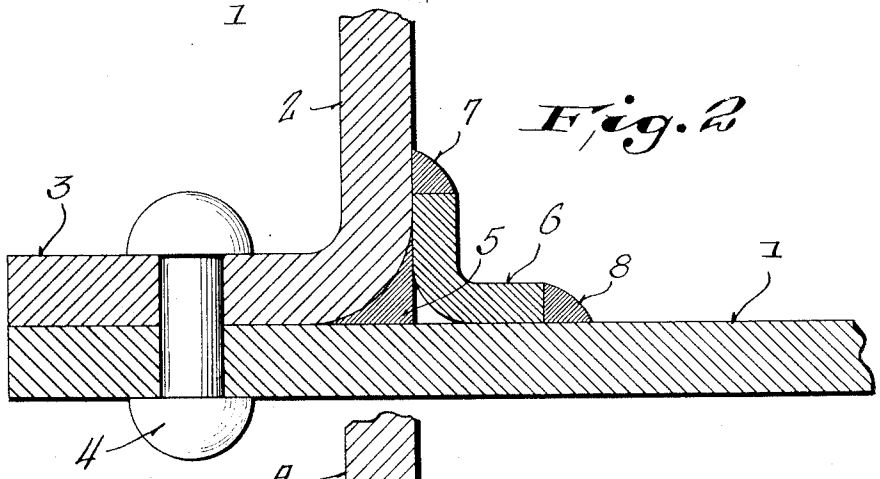
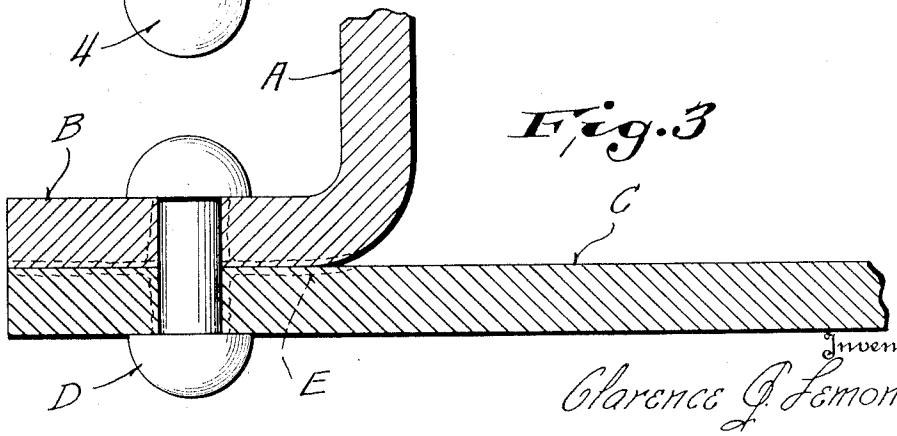


Fig. 3



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GALVANIZING KETTLE

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4 Claims. (Cl. 220—67)

This invention relates to galvanizing kettles.

In galvanizing kettles, as heretofore constructed, it has been the usual practice to join the several parts by means of rivets. For instance, galvanizing kettles frequently have the ends joined to the sides or body portion by means of rivets. It was found that the molten metal or dross would eat through the rivets and along the surface of the metal adjacent the rivets, thereby causing the rivets to loosen, and in some instances completely eating through the rivets. The metal would then escape and the kettle would be useless.

While the exact cause of this action may not be fully understood, it is believed that capillary action aids in drawing the molten material between the adjacent surfaces so that the rivets are reached and are attacked as well as the surface. At all events, loosening up of the joints is the result with consequent leaking and loss of the metal.

This invention is designed to overcome the defects noted above, and objects of the invention are to provide a galvanizing kettle which has a long life, and which is provided with means to protect the joints and prevent the molten material from entering between adjacent or contacting portions of the kettle and attacking the contacting surfaces or the rivets which may be used for holding the parts together.

Further objects are to provide a galvanizing kettle which is of simple construction, which is not expensive, and which is easy to make.

An embodiment of the invention is shown in the accompanying drawing, in which:—

Figure 1 is a side elevation partly broken away showing a galvanizing kettle.

Figure 2 is an enlarged sectional view at the joint of the kettle.

Figure 3 is a view corresponding to Figure 2 showing the old form of kettle and showing the manner in which surfaces are eaten away.

Referring to the drawing, particularly Figures 1 and 2, it will be seen that the kettle chosen for illustration comprises a body portion 1 and end portions 2. Preferably these end portions are provided with outwardly turned flanges 3, which may be secured to the body portion by means of rivets 4.

After the end portions 2 are secured in place by means of the rivets 4, a welded seam 5 is formed between the end portions 2 and the body portion 1, as shown most clearly in Figure 2. Thereafter an angle insert 6 is positioned as shown in Figure 2, and welded seams 7 and 8 are formed at the ends of this angle insert and thus join the angle insert to the body portion and to the end portions.

This construction can be very readily produced and requires scarcely any more material than the usual form of kettle.

In the old form of kettle, as shown in Figure 3, the end portions A had their flanges B joined to the body portion C solely by the rivets D. It was found, from actual experience with these kettles, that the molten material, such as the metal and the dross, found their way between the flanges B and the body portion C and attacked the rivets D. The rivets were soon eaten away sufficiently to allow loosening of the parts. In addition to this, loosening of the parts occurred due to the fact that the contacting or adjacent surfaces were also reduced or partly eaten away, as shown in dotted lines and indicated by the reference character E in Figure 3. Thus loosening of the end portions very quickly resulted and the metal leaked through and was lost.

The exact phenomena may not be wholly understood, but it is believed that capillary action plays an important part in this process and draws the molten material in between the flanges B and the body portion C no matter how tightly the rivets are drawn up.

These results were obtained from actual use of the old style of galvanizing kettle, as indicated in Figure 3, and the results were found to be uniformly as stated immediately above.

By means of this invention the life of the kettle is greatly prolonged, as there is a protection furnished for these joined sections. For instance, as shown in Figure 2, the welded seams 7 and 8 prevent entrance of the molten material even between the angle insert 6 and the adjacent portions. However, even when the parts wear down sufficiently to permit metal to pass back of the angle insert 6, nevertheless the welded seam 5 prevents the passage of the metal into the joint between the end portions and the body portions, and thus an additional or double protection is afforded.

It has been found, from actual experience, that the life of a kettle constructed in accordance with this invention is many times that of the old style galvanizing kettle.

While the materials of which the apparatus is composed may be varied, it has been found satisfactory to form the body portion 1 and the end portions 2 of boiler plate steel and to use mild steel or welding iron in forming the welded seams.

The rivets may be ordinary mild steel or iron rivets, as desired.

It will be seen that the construction is such that the mechanical strength may be furnished by the rivets, if desired, and the actual physical protection against attack from the molten material may be furnished by another form of joint, such as the welded seams described above. These welded seams thus protect the mechanical joint and greatly lengthen the life of the kettle.

It is, of course, within the province of this invention to depend wholly upon the welded seams both for strength and for protection against attack from the molten material, as discussed above.

It will be seen that a very easily constructed galvanizing kettle has been provided by this invention which is inexpensive to produce and which has a very long, effective life.

Although this invention has been described in considerable detail, it is to be understood that such description is intended as illustrative rather than limiting, as the invention may be variously embodied and is to be interpreted as claimed.

I claim:

1. A galvanizing kettle comprising a hollow vessel adapted to contain molten material and comprising a plurality of mechanically joined sections, inserts covering the joints between successive sections, and welded metal seams joining said inserts and said body portion and protecting the joints between said sections from the action of said molten material.

2. A galvanizing kettle comprising a body portion, end portions, angle inserts covering the joints between said end portions and said body portions, and welded metal seams between the edges of said inserts and the body portion and end portions.

3. A galvanizing kettle comprising a body portion, end portions, angle inserts covering the joints between said end portions and said body portions, welded metal seams joining said body portion and end portions, and welded metal seams between the edges of said inserts and the body portion and end portions.

4. A galvanizing kettle comprising a body portion, end portions, rivets joining said body portion and end portions, welded metal seams between said body portion and end portions, angle inserts covering said welded metal seams, and welded metal seams joining said angle inserts and said body portion and end portions.

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