

April 28, 1931.

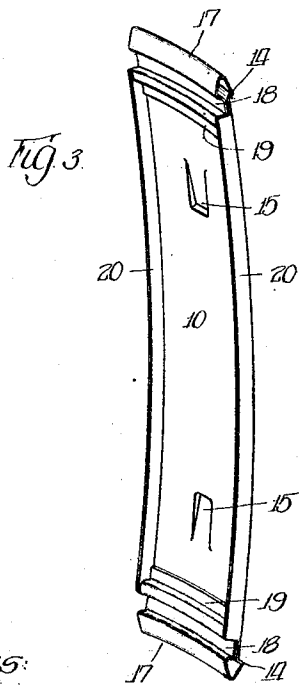
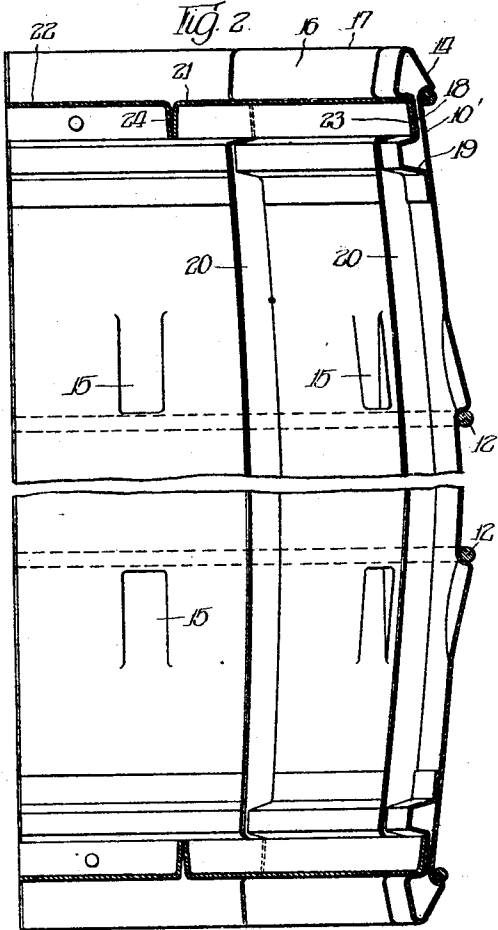
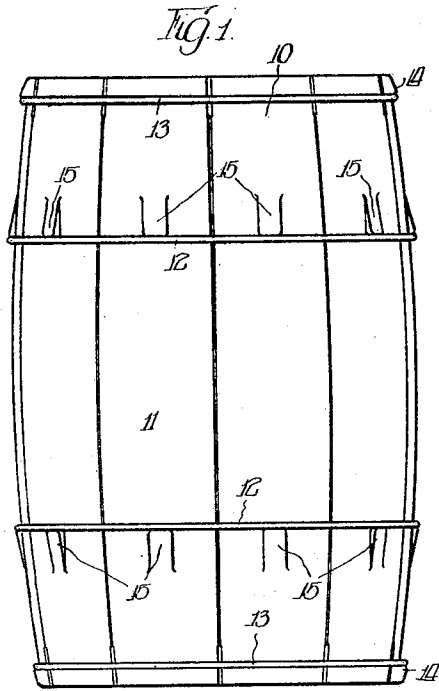
E. J. ERIKSSON

1,802,638

PRESSED METAL KEG

Filed March 5, 1927

2 Sheets-Sheet 1



Witness:
A. Burkhardt.

Inventor:
E. J. Eriksson,
By D. Anthony Wina atty.

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2 Sheets-Sheet 2

Fig. 4

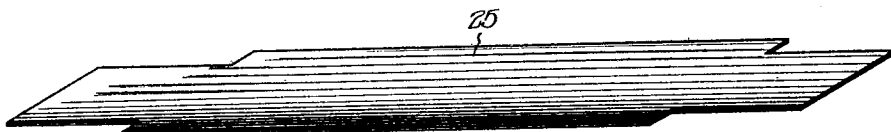


Fig. 5

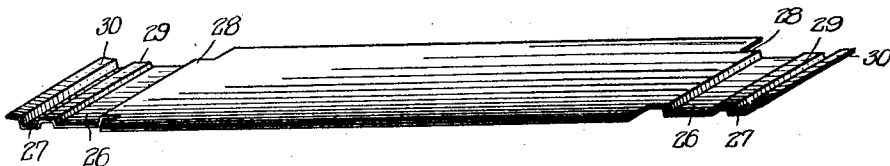


Fig. 6

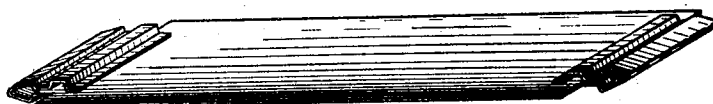
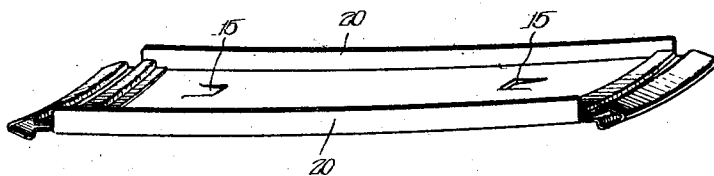


Fig. 7



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UNITED STATES PATENT OFFICE

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PRESSED-METAL KEG

Application filed March 5, 1927. Serial No. 173,121.

My invention relates to pressed metal kegs, and more particularly to the type of keg composed of a plurality of pressed metal staves assembled with metal end pieces and hoops in the manner of the customary wooden keg.

My invention also relates to a process of making the pressed metal staves which constitute a keg of the type contemplated by my invention.

One of the objects of my invention is to provide a pressed metal keg constructed of pressed metal staves and end pieces and held in assembled relation by metal hoops, all of the parts being assembled and constructed in the same general manner as parts of wooden kegs.

Another object of my invention is to provide a keg made of metal staves, each of which has side flanges on adjacent edges in assembled relation so that by contact they exert the necessary expanding force for creating tension on the hoops.

Another object of my invention is to provide a keg made of pressed metal staves, the staves having notched or recessed end pieces which constitute a yielding croze for holding the end pieces.

Another object of my invention is to provide pressed metal staves having bosses symmetrically arranged on their length on the outer surface and at their ends for the purpose of retaining the hoops.

Another object of my invention is to provide a keg made of pressed metal staves, each of which has an arcuate bend or "bilge" both longitudinally and transversely in the form of a customary wooden stave thereby making it possible to use existing well established and smooth operating keg assembling and packing machinery for assembling the keg.

A further object of my invention is to provide a pressed metal stave of the type described in the above stated objects which is provided with a bent over end piece and a "bilge" whereby a stave is provided having a greater degree of strength, insuring the completed keg against wrinkling or telescoping action when under load.

A further object of my invention is to pro-

vide pressed metal staves of the type described in the above stated objects, in which the ends are provided with transverse ridges and recesses to form a croze at each end, and the ends so formed being bent upon themselves but spaced therefrom to form a yielding holding means for the keg ends.

Another object of my invention is to provide a keg of the above described type having ends made of two metallic sections.

A further object of my invention is to provide a process for forming kegs embodying the above enumerated features.

These and other objects are accomplished by means of the arrangement disclosed on the accompanying sheet of drawings, in which—

Figure 1 is a side elevation of a keg constructed in accordance with my invention;

Figure 2 is an enlarged half-portion of the keg, partly in cross section so as to reveal the interior thereof;

Figure 3 is a perspective view of a stave constructed in accordance with this invention; and

Figures 4 to 7 inclusive show the various steps in the process of forming the stave.

The various novel features of the invention will be apparent from the following description and drawings and will be particularly pointed out in the appended claims.

Referring to the drawings, it will be noted that my invention relates to a keg 10 made up of a plurality of staves 11 placed in a general circular relation and held, thus assembled, by suitable hoops 12 and end hoops 13. Hoops 13, it will be noted, are held against displacement by the circumferential flange 14 whereas the hoops 12 abut the surface bosses 15 formed on each stave.

Referring to Figure 2, it will be noted that each stave has an end portion 16 bent back upon itself as at 17 which forms a rounded outer edge for the keg, the end 16 being bent to form a croze 18 and an attaching flange 19 at its end. Attention is called to the fact that the croze 18 is spaced from the main portion 10' of the stave so that the croze will be capable of yielding outwardly by virtue of the inherent resilience of the metal em-

ployed. Each stave is formed with a side flange 20 at each side thereof so that the side flanges of adjacent staves abut each other to form a resilient engagement acting to effect an expansion of the staves in assembled relation; it serves to hold the staves more tightly engaged by the retaining hoops 12 and 13.

The keg is provided with end members which may be a solid disc of sheet material or may be, as shown in the drawing, composed of three pressed metal members 21 and 22, the members 21 being provided with a flange as at 23 and both having flanges as at 24 adapted to abut each other. Both outside members are of identical structure and are therefore both referred to by numeral 21.

Referring now to Figures 4 to 7, it will be noted that the process for making staves according to this invention contemplates the formation of a blank 25 stamped from sheet material by a shearing device, the blank being the correct size and shape to form the completed stave. The blank thus formed is placed in an end forming die wherein it will be formed with recesses 26 and 27 and shoulders 28, 29 and 30 at both ends. The stave is then placed in an end folding device wherein each stave end will be turned through approximately 180°, as shown in Figure 6, thereby placing the keg-end recesses and shoulders in a normal position relative to the completed stave so as to form the croze 18 and the end flange 19 as shown in Figure 2. This operation must be so detailed as to prevent distortion of the shoulders and recesses formed under operation "two" above described. The stave is then placed in a main stave forming die wherein will be produced the double curvature, that is, the longitudinal or "bilge" and the transverse curvatures of the stave; the projections or bosses 15 for retaining the intermediate hoops or bands of the assembled keg; as well as the flanges 20 of the stave. During this operation, it will be necessary to retain the recesses and shoulders for receiving the keg-ends in their true shape and position relative to the completed stave. This may be accomplished by inserting secondary dies of a jointed-finger construction into the recesses 26 and 27. It is intended that such jointed-finger dies will retain the shape and size of the recesses and shoulders during the time interval when the body of the staves is being "bilged" by the action of the main dies.

It is also true that during the last die forming operation, the side flanges 20 are bent up at right angles to the main body of the stave, as shown in Figure 7, and also that the bosses 15 are formed. Attention is called to the fact that the bosses 15 may be formed during operation number "two" at the time the recesses and shoulders are formed in the end portions.

The keg-end pieces will be formed by first

shearing a blank from sheet material, and then by the action of folding dies, the flanges are formed on each of the two shapes.

The sheet metal, from which the staves and the end pieces are to be shaped, is to be of such a gauge and of such a hardness as will best lend itself to forming and assembling, and at the same time attain the strength necessary for the service, for which the keg is intended to be used. It is intended that these requirements are best to be ascertained, from actual trial manufacture of the keg. In any event, it will be necessary to use as light weight of metal as is possible, to minimize the shipping weight; as well as from an economic standpoint, of manufacturing cost. To meet these requirements, it is suggested that 20 gauge sheet iron be used when it is intended that the keg is to be used as a package for 100 pounds of nails.

It is intended that the class of machinery now in vogue for this class of work shall be adopted, in principle, for the manufacture of the keg-ends. As there are two different shapes required for the ends, it will be necessary to provide interchangeable dies for such machinery.

It is intended that the same type of wire hoops or steel bands, or a combination of wire hoops and steel bands, shall be used, as is at present used in assembling wooden stave kegs. However, after the hoops or bands have been pressed in place, back of the "bosses" each may be spot welded at four equally spaced circumferential locations, either to the bosses 15 or to the body of the staves. This will be in lieu of the nailing, required in wooden-stave keg construction.

In placing the heads, after the kegs have been packed, the process will be similar to that in vogue in placing the heads in wooden kegs; except that spot welding may also be substituted here for the nailing operation.

From the above description it will be manifest that a keg embodying the many advantages is provided, among which are the following:

The setting up of the keg will be expedited inasmuch as a definite number of pressed steel staves of uniform size will be used for each and every keg, thereby eliminating the trial fits which are found necessary in placing the final stave in kegs of a wooden construction;

Also, the parts from which a number of kegs will be made up will be uniform in size and weight, thereby tare weighing will be eliminated when shipping in such kegs;

All kegs will have uniformity of strength, size and appearance;

Uneconomic waste will be eliminated since the stampings resulting from the blanks will be returned to the melting furnace as scrap;

The use of multiple part steel keg will permit a possibility of return of the container

from the consumer through the medium of the retailer. In such event, the empty kegs would be "knocked down" and bundled, to eliminate bulkiness in shipping;

5 Kegs made according to my invention also render the manufacturer independent of an uncertain and fast depleting source of raw material required for wooden keg construction, whereas he will be enabled to carry on
10 the manufacture of kegs with certain slight alterations to his present plant;

Lastly, the use of pressed metal parts eliminates the necessity of keeping on hand a highly inflammable stock of wooden staves, there-
15 by reducing the fire risk resulting in reduced insurance rates.

I claim:

1. A metallic barrel stave, having transversely grooved end portions bent upon itself
20 to form crozes for the barrel ends, each end portion being spaced from the main portion of the stave but being attached thereto at their inner ends.

2. A metallic barrel stave, having trans-
25 versely grooved end portions, bent first in one direction to form an external boss, and then upon itself in the opposite direction to form crozes for the barrel ends, each end portion being spaced from the main portion of the
30 stave but being attached thereto at their inner ends.

3. A metallic barrel stave having its ends bent outwardly and then inwardly upon itself to form an enlarged protecting end portion
35 to serve as a part of a barrel base, said enlargement also forming a ridge for engaging a retaining hoop.

4. A metallic barrel stave having integrally formed portions at its ends, said portions
40 being spaced from said stave and having their ends secured to said stave, said portions being shaped to form crozes for the barrel ends, and being slightly yielding at the location of said crozes.

5. A metallic barrel stave having an end
45 bent outwardly, over and then inwardly to form an enlarged end and then continuing substantially parallel to said stave, said parallel portion being shaped to form a croze
50 for the barrel ends and being slightly yielding and finally extending toward said barrel stave and secured thereto.

6. A barrel comprising a plurality of metallic staves, yielding metallic means carried
55 by said staves extending around the inside and at the ends of said barrel, said means being constructed to form a croze at each end of said barrel, said means having their inner ends supported by and secured to the inside
60 surface of said staves.

Signed at Duluth, Minnesota, this 28 day of February, 1927.

ERIK JOS. ERIKSSON.