May 9, 1939. S. F. JACKES 2,157,337

APPARATUS FOR ASSEMBLING STOVEPIPES

Filed Jan. 21, 1938

FIG. 1.

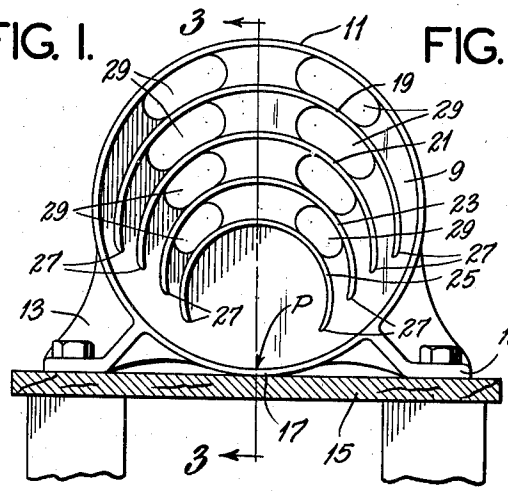


FIG. 2.

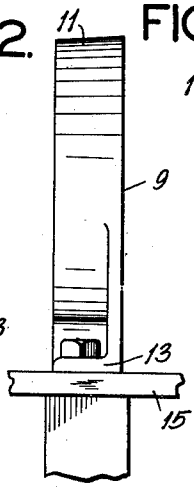


FIG. 3.

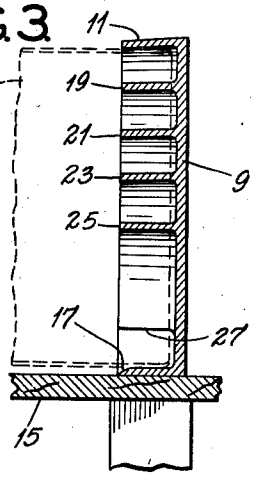


FIG. 4.

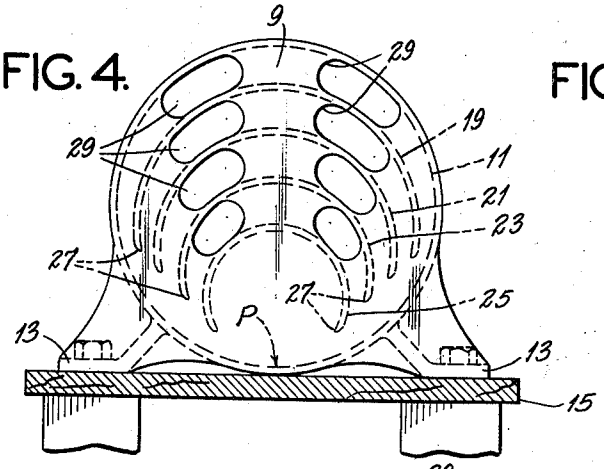


FIG. 5.

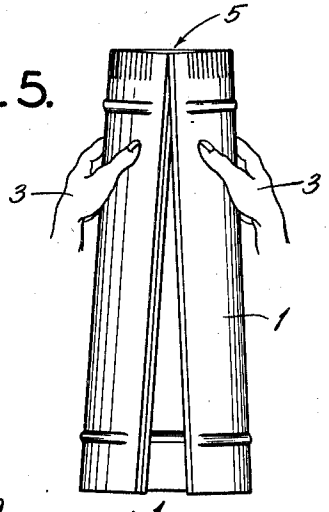


FIG. 6.

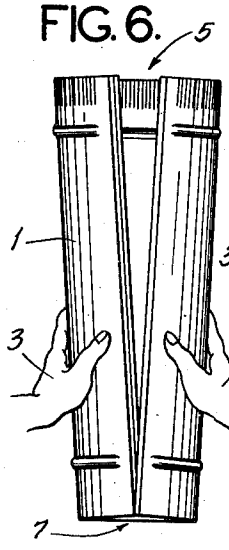
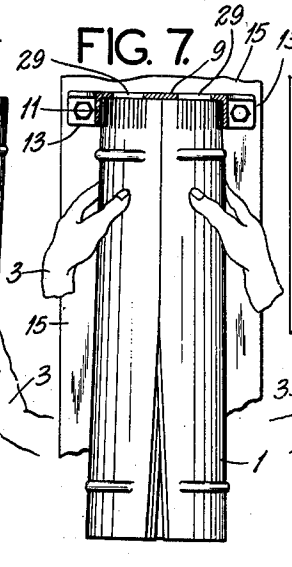


FIG. 7.



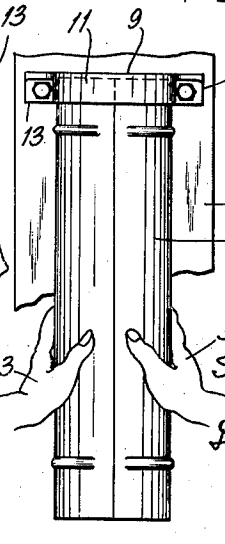


FIG. 8.

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APPARATUS FOR ASSEMBLING STOVEPIPES

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Application January 21, 1938, Serial No. 186,105

6 Claims. (Cl. 153—32)

This invention relates to an apparatus or article, and to a method for assembling into pipe sections sheet metal sections having open seams.

Among the several objects of the invention may be noted the provision of means for quickly and positively forming sheet metal pipe sections, primarily stovepipe sections, from sheets which are shipped with open seams; the provision of an article which will perform the desired results without any moving parts; and the provision of apparatus of the class described which is simple in form and operation. Other objects will be in part obvious and in part pointed out hereinafter.

The invention accordingly comprises the elements and combinations of elements, features of construction, and arrangements of parts which will be exemplified in the structures hereinafter described, and the scope of the application of which will be indicated in the following claims.

In the accompanying drawing, in which is illustrated one of various possible embodiments of the invention,

Fig. 1 is a front elevation of the apparatus;

Fig. 2 is a side elevation;

Fig. 3 is a vertical section taken on line 3—3 of Fig. 1;

Fig. 4 is a rear elevation;

Fig. 5 is a plan view showing how a pipe assembly is ordinarily started;

Fig. 6 is a view similar to Fig. 5 but showing how completion of assembly sometimes fails;

Fig. 7 is a view similar to Fig. 5 showing how assembly of pipe is started by the article and method herein described; and,

Fig. 8 is a view similar to Fig. 7, but showing a succeeding step.

Similar reference characters indicate corresponding parts throughout the several views of the drawing.

Sheet metal pipe sections, particularly stovepipe sections, are ordinarily made with seams which may be manually closed in the field by effecting a manual interlock at one end of adjacent parts of the seam, and continuing the interlocking effect along the seam. The reason for providing such seams is so that the pipe sections may be shipped with open seams. Hence a number of sections may be nested one within another for shipment. A dealer receives these open sections and as the pipe sections are sold interlocks the seams to form finished pipe sections for customers.

A disadvantage of the above procedure is illustrated in Figs. 5 and 6 herein. In Fig. 5 there is shown at numeral 1 a pipe section which is open and is being closed at one end by the operator's two hands 3. As interlocking occurs at the region 5, the operator advances the interlock by passing his hands down as shown in Fig. 6. The intention is that the region 5 remains interlocked so that the final interlocking at 7 will result in a finished and closed pipe. However, as shown in Fig. 6, particularly if the interlocking joint is made for easy assembly, there is a springing apart again at the region 5. This is due to inadvertent, excess pressure which the hand 3 exerted at the opposite end of the pipe in forcing together the parts at region 7.

Heretofore, it has been possible to close the seam by skillful manipulation, but carelessness on the part of the operator has resulted in repeated re-opening of the pipe during assembly.

The apparatus or article herein disclosed comprises a disc-like wall 9 having an outer, circular rim 11. Feet 13 are provided for holding the device down to a work-bench or the like 15. The feet 13 are arranged to bring the lower portion 17 of the rim 11 about tangent to the surface of the bench 15. The purpose of this is to permit any size of pipe to slip up onto the bottom of the rim 11.

On the inside face of the disc-like wall 9 are arranged eccentric, crescent-shaped, or arcuate supports 19, 21, 23 and 25. None of these supports, which are each in the form of an upstanding wall, is concentric with the rim 11 or with another support. The center of each support is determined so that the circular form of its wall, if completed, would approximate tangency at the lower portion 17 of the rim 11.

However, none of the circular forms of said supports 19, 21, 23 or 25 is completed. On the other hand, each is cut off at points 27, before tangency is reached.

The diameters of the walls 19, 21, 23 and 25 are respectively such as to snugly receive pipe sections of different diameters which have been closed at one end, as indicated in Fig. 7, and in each case to allow the bottom tangent line of the stove pipe to lie approximately along the upper surface of the bench 15. Considering the relative flexibility of the sheet metal of which the pipe is made, this permits a snug holding at the end of the pipe, and a resting of the same upon the bench during closing manipulations. This is true, regardless of what size pipe is used, within the limits of the capabilities of the apparatus.

The present apparatus is designed for example so that support 25 takes a three inch pipe; support 23 takes a four inch pipe; support 21 takes

a five inch pipe; support 19 takes a six inch pipe, and the supporting rim 11 taken a seven inch pipe. These figures are not given by way of limitation, but by way of example; and they are subject to variations.

The disc-like back 9 is provided with lightening openings 29. The operation of the device is as follows, referring to Figs. 3, 5, 7 and 8:

The pipe is grasped as shown in Fig. 5, and the adjacent portions of the seam at one end are snapped into cooperation. The pipe is then inserted into the article, as indicated in solid lines in Fig. 7 and approximately by dotted lines in Fig. 3. The size of pipe illustrated is such as to become frictionally engaged by the rim 11 at the pipe end when closed. At this time, if desired, the pipe may be permitted to rest upon the bench 15 while it is within the confines of the rim 11. Then as the hands 3 are advanced from their position shown in Fig. 7 to their position shown in Fig. 8, the seam may be interlocked throughout its length, without danger that the portion which has already been interlocked will spring open. After the seam has been locked throughout its length, the pipe may be withdrawn and delivered for use.

It will be understood that once a seam has been locked throughout its length, the danger that it will spring apart such as shown in Fig. 6 is practically eliminated. The reason for this is that in Fig. 6, it is the local pressure at the lower end of the pipe that puts it into a condition in the upper end that springs apart.

If other smaller sizes of pipe are to be closed, these are merely pushed into the apparatus in a position with their bottoms substantially tangent to the bench, and they will automatically take up their proper positions within the properly dimensioned supporting sleeves or collars 19, 21, 23 or 25. The cooperation is automatic, because of the tangent relationship of the imaginary continuations of these sleeves with respect to the tangent portion 17 of the sleeve 11.

From the above, it will be seen that the continuations of all of the inside circles for the rim 11, and crescents 19, 21, 23 and 25 are tangent at the point P in Fig. 1. Thus the eccentricities of the arcuate supports 19, 21, 23 and 25 are such as to ensure that at least one element of every pipe closed, regardless of size, lies along the line assumed by at least one element in another pipe size. The line of coincidence is substantially at the lowest tangential portion 17 of the outer rim 11. In this connection it will be understood that mechanical equivalents of the rim 11 and crescent shaped portions may be provided by rows of pins or tongues or the like.

In view of the above, it will be seen that the several objects of the invention are achieved and other advantageous results attained.

As many changes could be made in carrying out the above constructions without departing from the scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

I claim:

1. An article of manufacture comprising a member shaped to receive substantially circularly formed pipe ends to prevent physical expansions thereof, the shape of the article comprising an outer substantially circular holding portion, and a plurality of inner substantially circular holding portions for smaller pipes, the inner holding portions being eccentric with respect to the outer holding portion and with respect to one another, whereby all pipe accommodated is adapted to lie tangent to the bottom of the outer circular holding portion.

2. An article of manufacture comprising a member having a plurality of holding portions for a plurality of ends of pipes of various diameters to prevent expansion of the latter, each of said plurality of holding portions being adapted to hold all pipes with portions thereof arranged substantially tangent.

3. An article of manufacture comprising a member having a plurality of holding portions for a plurality of ends of pipes of various diameters to prevent expansion of the latter, each of said plurality of holding portions being adapted to hold all pipes with their bottoms substantially tangent to the surface upon which the article rests.

4. An article of manufacture comprising an outer circular rim adapted to snugly receive the substantially circular end of a large size of pipe, inner arcuate portions located within said rim, said arcuate portions being adapted to receive respectively substantially circular pipe ends therein and various sizes, and said arcuate portions being eccentric to said rim and to one another to a degree adapted to place a pipe element of each pipe accommodated at substantially the same region.

5. An article of manufacture comprising a member having a plurality of crescent-shaped holding means for a plurality of substantially circular pipe ends, each holding portion being adapted to hold its size of pipe so that all pipe sizes accommodated have regions lying at a common region, and a circular rim enclosing the crescent shapes and being tangent at said region.

6. An article of manufacture comprising a wall, an outer circular rim adapted to snugly receive the substantially circular end of a large size of pipe, inner arcuate portions located within said rim, said arcuate portions being adapted to receive respectively substantially circular pipe ends therein of various sizes, and said arcuate portions being eccentric to said rim and to one another to a degree adapted to place a pipe element of each pipe accommodated at substantially the same region.

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