

Aug. 23, 1932.

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1,872,789

METHOD OF MAKING METAL BARS AND FENCE POSTS

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Fig. 1.

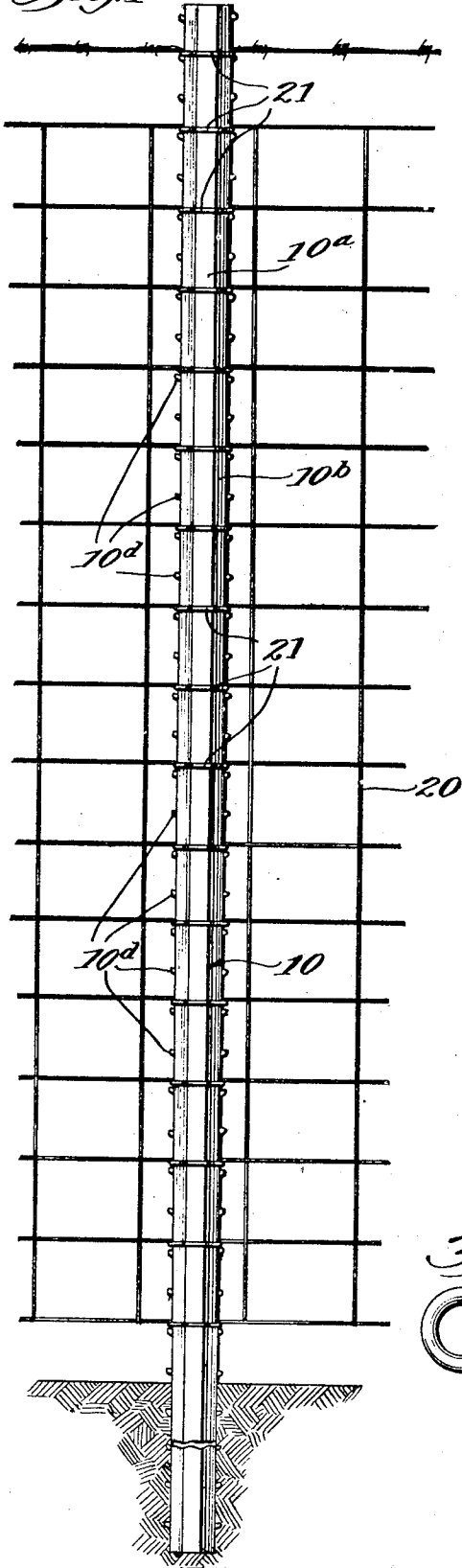


Fig. 2.

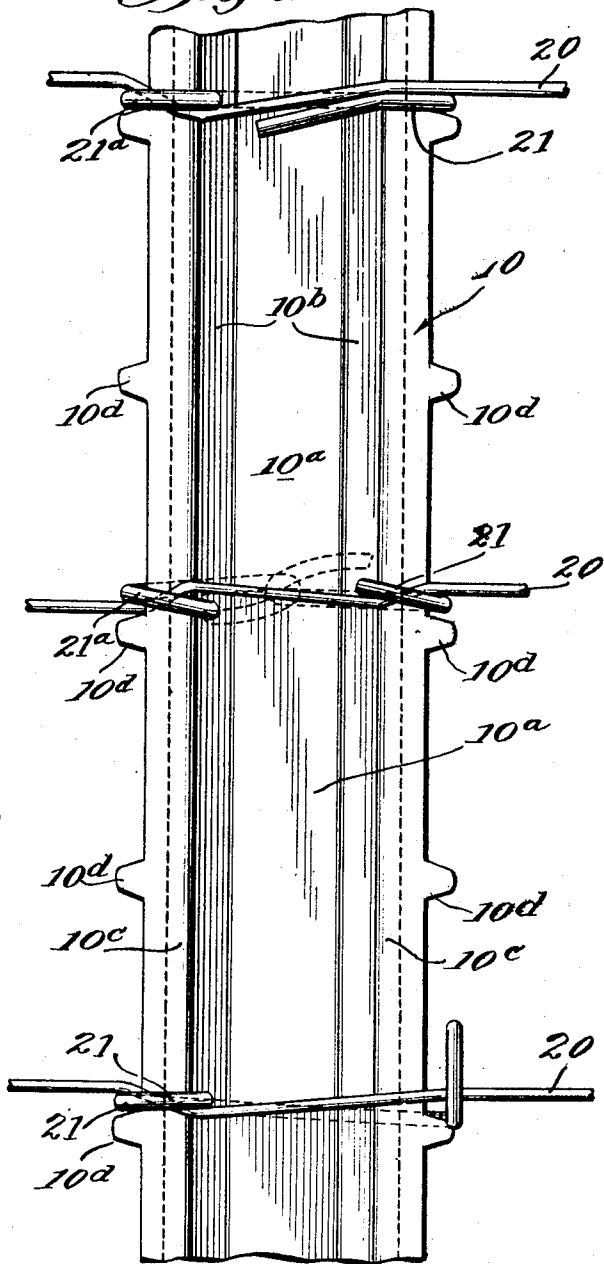
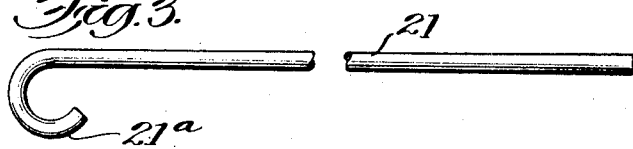


Fig. 3.



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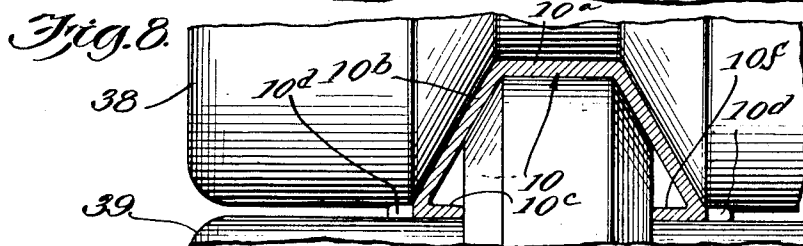
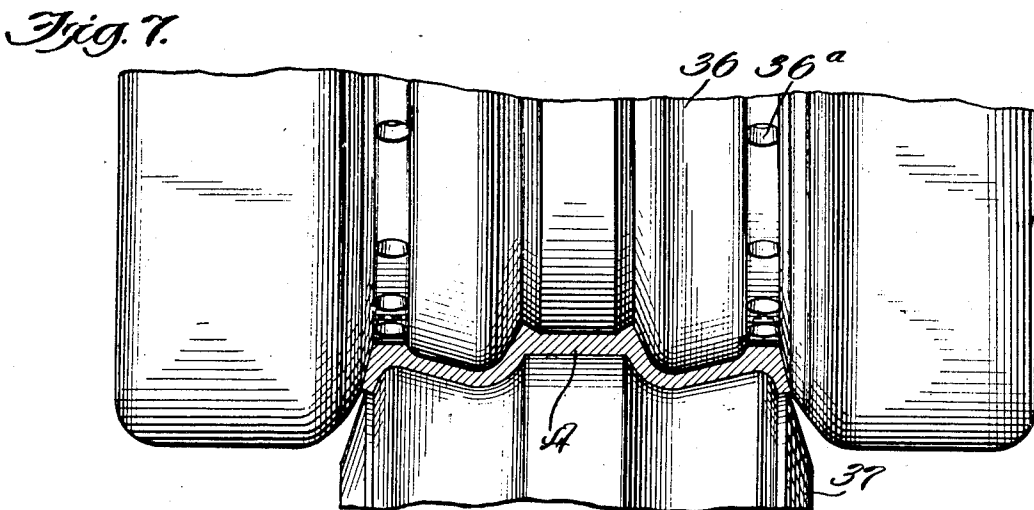
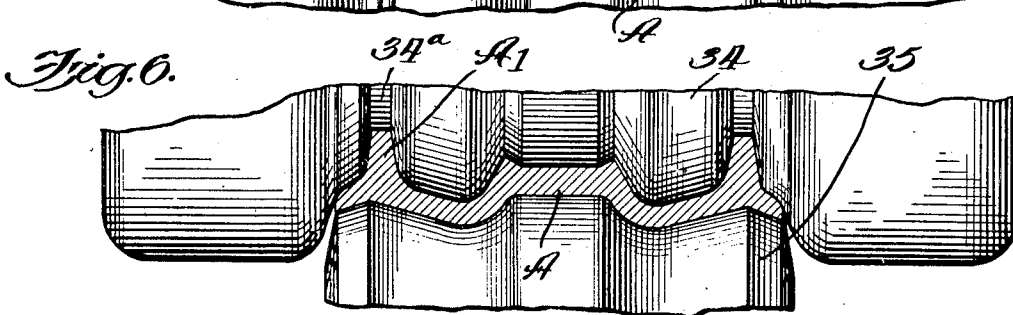
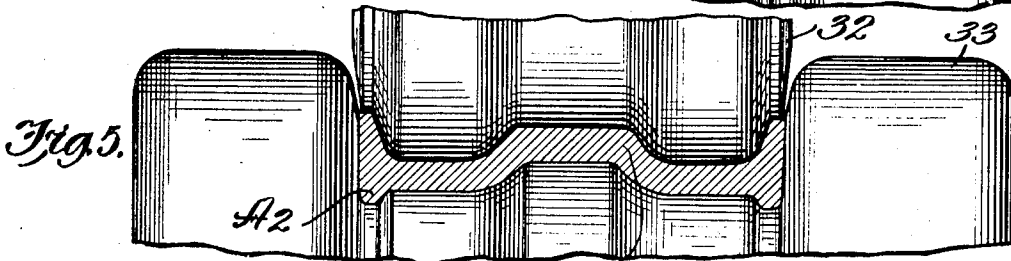
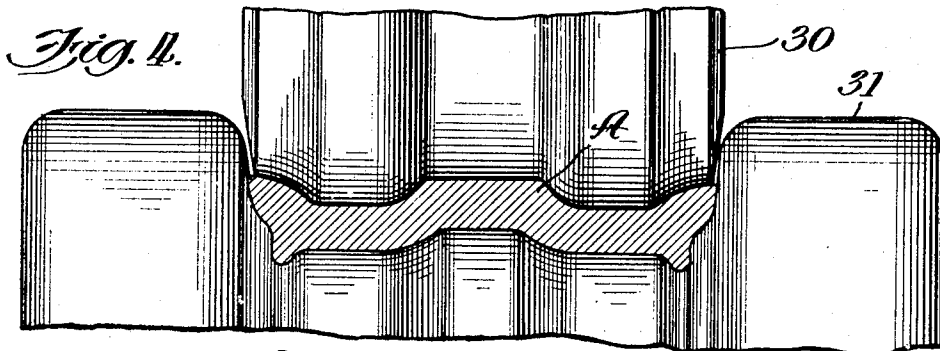
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METHOD OF MAKING METAL BARS AND FENCE POSTS

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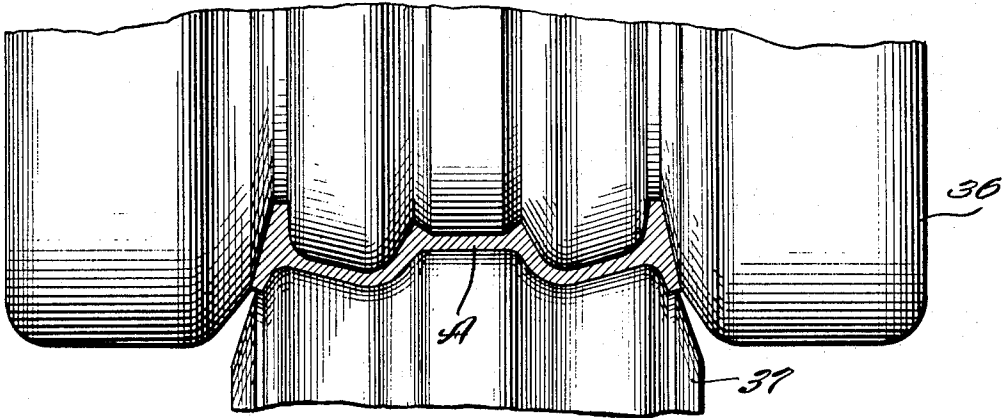
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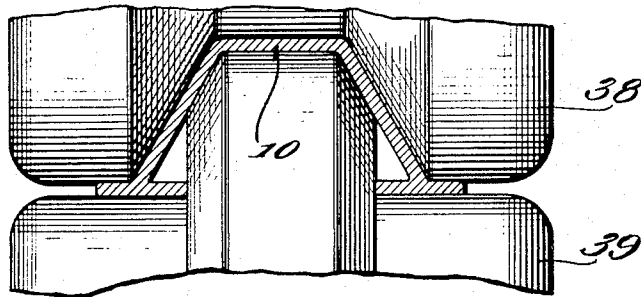
Filed March 2, 1931

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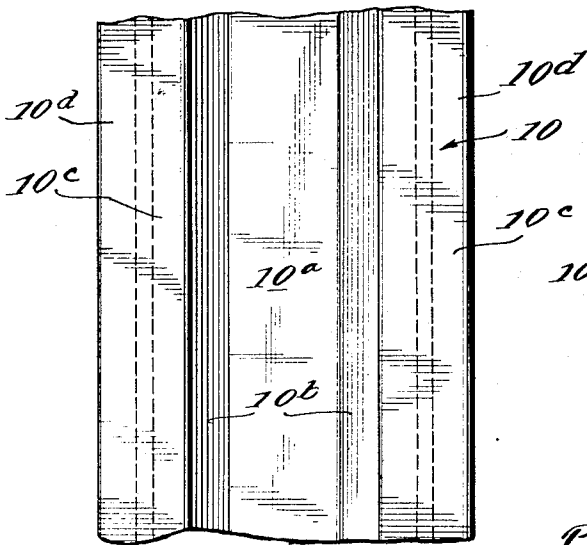
*Fig. 9.*



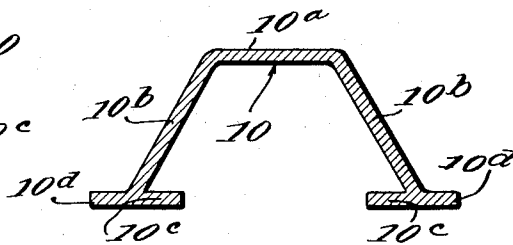
*Fig. 10.*



*Fig. 11.*



*Fig. 12.*



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# UNITED STATES PATENT OFFICE

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## METHOD OF MAKING METAL BARS AND FENCE POSTS

Application filed March 2, 1931. Serial No. 519,369.

This invention relates to methods of making metal bars and fence posts constructed therefrom.

The object of this invention is to provide a new process of continuously rolled metal bar of polygonal or tubular-like cross section with an open side with flanges projecting partially across said opening. In one form the method contemplates the formation of flanges extending outwardly from said first named flanges substantially coplanar therewith, and another form of my invention contemplates the formation of spaced studs projecting outwardly from said flanges particularly adapted for use in securing a wire fence, or the like, when lengths of these bars are used as fence posts.

Other objects will be more fully set forth in the following specification and illustrated in the accompanying drawings in which

Fig. 1 is a front elevation of a post embodying my invention, a portion of the fence being illustrated as attached thereto.

Fig. 2 is a rear elevation drawn to an enlarged scale of such post showing various means and methods of securing a fence thereto.

Fig. 3 is a plan view of a form of tying or fastening member for attachment of a fence to the post.

Fig. 4 is a side elevation of a pair of opposed rolls illustrating the first pass of a steel blank in the formation of the bar or fence post, the blank being illustrated in section.

Fig. 5 is a similar view of the second pass.

Fig. 6 is a similar view of the third pass.

Fig. 7 is a similar view of the fourth pass.

Fig. 8 is a similar view of the final pass or finishing operation by which the bar is completed.

Fig. 9 is a view similar to Fig. 7 showing a variant step in the process of the rolling to form flanges in lieu of the studs there illustrated.

Fig. 10 is a view similar to Fig. 8 showing the finishing operation of the bar provided with outwardly extending flanges in lieu of the studs.

Fig. 11 is a rear elevation of a portion of the bar formed according to the variant

process partially illustrated in Figs. 9 and 10.

Fig. 12 is a horizontal section of the bar illustrated in Fig. 11.

Like numerals refer to like elements throughout the drawings in which 10 indicates generally a portion of a continuously rolled steel bar illustrated in cross-section in Fig. 8, for example.

In the form illustrated in Figs. 1 to 8, the bar is constructed of polygon-like or tubular-like construction with a front side or face 10-a, side walls or faces 10-b and a rear open side across which partially extend opposed flanges 10-c. Projecting outwardly at the rear edges are the fastening studs 10-d.

In Fig. 1 I have illustrated a drive type fence post formed of such a bar, it being my intent to roll these bars of suitable or desired lengths and thereafter to cut them to proper length for fence posts. The post may be readily driven into the ground in the usual manner by the use of sledges or driving instruments and a woven wire fence, for example, generally indicated by numeral 20, carried across the flat surface at the back, represented by the flanges 10-c, after which tying members 21 are utilized to secure the strands of wire to the rear face of the post in any number of suitable ways, as indicated in Fig. 2, for example, the tying members being preferably provided with engaging looped end 21-a, the other end being bent, after attachment, to engaging position.

The studs 10-d co-act with the tying members 21 to prevent sagging or slipping of the strands of wire of the fence.

The tubular-like or polygonal-like construction, while permitting driving of a post into the ground, encompasses or surrounds a substantial amount of dirt or material and thereby presents a substantial resistance to movement of the post in any lateral direction in contradistinction to present day fence posts. In other words, there is an earth-locking action with the polygonal-like post of what might be termed an enclosed column of earth or ground material, so that there is more area of the post interposing a resistance to lateral movement of the post in proportion

to the weight thereof than in any prior type of construction.

At the same time a relatively high resistance to torsion is presented for the weight of metal utilized. Also a substantial flat surface is presented for contact with the fence, which renders it relatively easy to stretch the fence before fastening thereof to the post, while the fastening studs 10-*d* permit a non-sag attachment.

In Figs. 4 to 8 I have illustrated various steps of one process of manufacturing or continuously rolling the bars from which the fence posts are made.

In Fig. 4 is illustrated the first strand pass where the blank A, which, for example, may be a heated steel rail, is passed between opposed forming rolls 30, 31.

In Fig. 5 opposed rolls 32, 33 effect a second strand pass of blank A, which is shown in section in the entire series of drawings illustrating the forming operation.

In Fig. 6 rolls 34, 35 effect a third strand pass.

In Fig. 7 rolls 36, 37 effect a leader pass or fourth forming operation.

In Fig. 8 rolls 38, 39 effect the finishing operation.

In the first four operations, illustrated in Figs. 4 to 7, for example, the blank is brought partially to completed condition or shape in what I term a developed condition, i. e., in a flattened form, while in the fifth and last operation the sides are not only shaped to the final dimension, but are bent or formed in final or finished relation with the flanges 10-*c* inturned, as illustrated, and the studs 10-*d* are out-turned and finally dimensioned.

In the first operation, illustrated in Fig. 4, the flanges 10-*c* are partially formed and in succeeding operations are brought to or toward final dimension. Similarly, the metal, which is ultimately utilized for the studs 10-*d*, is formed in a flange until the fourth operation, illustrated in Fig. 7, when the studs are formed by recesses 36-*a* in the upper roll 36, the final operation of Fig. 8, embracing the studs to their final form.

The third operation, illustrated in Fig. 6, is unique as being, what is termed in the art, an "overfill" in which the flanges A<sub>1</sub>, from which the studs are later formed, are moved inwardly of their position in the second operation of Fig. 5 and formed in the grooves 34-*a* of the upper roll 34, while metal is extruded outwardly from the partially formed flange A<sub>2</sub> from which flanges 10-*c* are ultimately formed. This "overfill" operation has hitherto been considered either impractical or not feasible in rolling operations of this character, but I have found it desirable in the method described.

In Figs. 11 and 12 I have illustrated a slightly modified form of a continuously rolled bar useful for certain purposes, which

in lieu of the studs 10-*d* are provided outwardly extending flanges 10-*g* shown, in the embodiment illustrated, as substantially coplanar with flanges 10-*c*.

In Figs. 9 and 10 I have illustrated two variant steps of the process illustrated in Figs. 4 to 8 desirable to form the bar of Figs. 11 and 12. In Fig. 9 is illustrated a variant fourth pass of the blank in which upwardly extending flanges at the outer edge are left upon the blank, while in Fig. 10 they are rolled to final shape and dimension in final or finishing operation.

I am aware that variations and changes may be made in the method illustrated and described, and I do not wish to be restricted to the forms illustrated and described, but refer to the appended claims, properly interpreted, as defining my invention.

What I claim is:

1. A process of rolling tubular-like metal bars consisting in rolling the blank partially to completed condition in developed form with angularly disposed opposed flanges at the sides thereof, thereafter forming studs of one of each pair of said flanges, and thereafter passing said blank between rolls constructed to shape the same in tubular-like form with an open side and with the other flanges projecting inwardly partially across the same.

2. A process of rolling polygon-like metal bars consisting in rolling the blank partially to completed condition in developed form with a pair of angularly disposed flanges at each side thereof, forming studs of one of each pair of flanges and passing said blank between rolls constructed to shape the same in polygon-like form with an open side, with the other flanges projecting partially across said side and with said studs projecting outwardly from said bar.

3. A process of rolling polygon-like metal bars consisting in rolling a blank partially to completed condition with flanged portions at the sides thereof, forming studs of a flange at each side thereof and passing said partially completed blank between rolls constructed to shape it in polygon-like form with an open side and inturning other flanges partially across said open side.

4. A process of rolling tubular-like metal bars consisting in rolling a blank partially to completed condition in developed form and angularly disposed flanges above and below said blank at one side thereof, and thereafter passing said blank between rolls constructed to shape the same in tubular-like form with an open side, and with one of said flanges projecting partially thereacross and the other of said flanges projecting outwardly from said bar.

5. A process of rolling tubular-like metal bars consisting in rolling a blank partially to completed condition in developed form

with angularly disposed flanges above and below said blank at each side thereof, and thereafter passing said blank between rolls constructed to shape the same in tubular-like form with an open side with one of the flanges at each side thereof projecting inwardly partially across said opening and the other flanges projecting outwardly from said bar.

6. The process of rolling tubular-like metal bars consisting in rolling a blank to partially completed condition with flanged portions at the sides thereof, thereafter passing said blank between complementary rolls, one concaved and the other convexed, in such wise as to bring said blank to tubular condition with an open side and with said flanges directed inwardly partially across said open side.

7. A process of rolling tubular-like metal bars consisting in rolling a blank to partially completed condition in developed form and forming angularly disposed flanges above and below said blank at the sides thereof, and thereafter passing said blank between complementary rolls, one of which is concaved and the other convexed, to shape said blank in tubular-like form with an open side and with flanges extending partially across said open side and other flanges projecting outwardly from said first named flanges.

8. A process of rolling tubular-like metal bars consisting in rolling the blank partially to completed condition in developed form with enlarged portions at one side thereof, thereafter passing said blank between rolls constructed to shift one of said portions inwardly of said bar, leaving a portion projecting outwardly thereof, subsequently rolling said outwardly projection portion and said shifted portion to form flanges thereof, and finally bending said bar to tubular shape, with one of said flanges projecting outwardly thereof and the other projecting inwardly thereof.

9. A process of rolling tubular metal bars consisting in rolling the blank partially to completed condition in developed form with enlarged portions at each side thereof, subsequently passing said blank between rolls constructed to shift one of said portions at each side of said bar inwardly, leaving outwardly projecting flanges, then rolling said blank to form oppositely directed flanges of said projecting portions and said shifted portions at each side of said blank, and finally bending said blank to completed tubular shape with an open side and with flanges projecting outwardly and the closed flanges projecting inwardly partially across said open side.

In witness whereof, I hereunto subscribe my name this 10th day of February, 1931.

CRAWFORD B. MURTON.