March 29, 1949. T. L. BONKOWSKI ET AL 2,465,423

SECTIONALIZED METAL STRUCTURE

Filed Sept. 16, 1946

Fig. 1

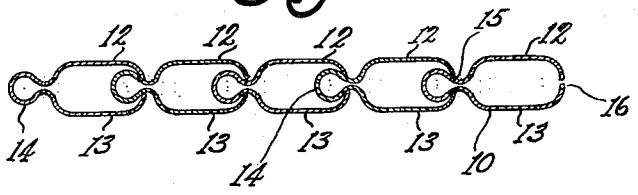


Fig. 2

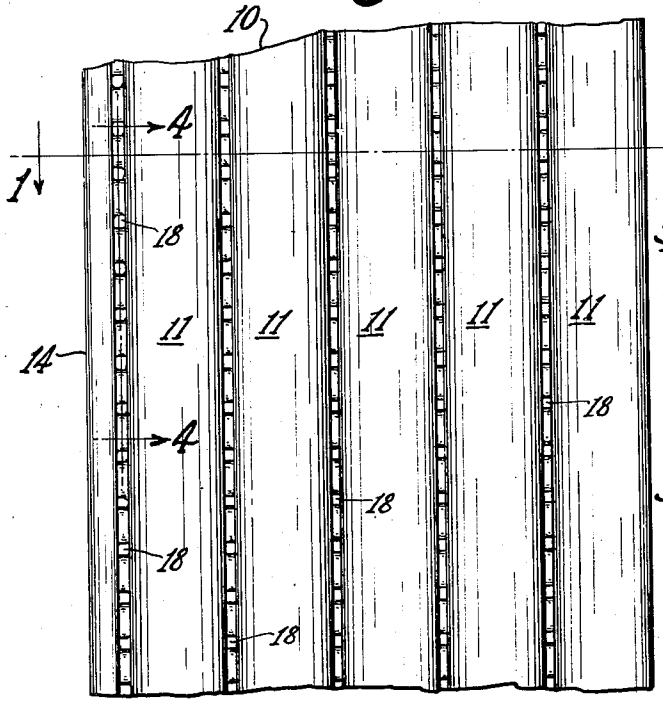


Fig. 3

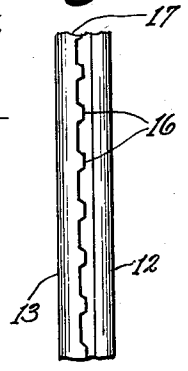


Fig. 4



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Patented Mar. 29, 1949 2,465,423

UNITED STATES PATENT OFFICE

2,465,423

SECTIONALIZED METAL STRUCTURE

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Application September 16, 1946, Serial No. 697,246

3 Claims. (Cl. 160—232)

1

The present invention relates to a sectionalized metal structure.

There are many uses for a flexible metal wall structure such as, for example, "roll top" closure members where articulated motion of sections of a composite wall structure is desired. In such instances the metal structure is sectionalized in such a manner that a composite flexible wall results. It is desirable that the number of kinds of different parts making up the wall structure be no greater than one in number and that such parts cooperate positively thereby to produce an interlocked structure wherein there is only one degree of freedom of one part with respect to another but wherein the parts may be releasably attached and detached from one another to facilitate assembling, cleaning, painting, etc., operations.

It is therefore an object of the present invention to provide an improved flexible metal structure achieving the mentioned desideratum.

A specific object of the present invention is to provide an improved flexible metal structure of parts which cooperate to assure but one degree of freedom of movement of one of the parts with respect to another in normal use of the structure.

Another specific object of the present invention is to provide an improved flexible sectionalized metal structure wherein the sectionalized parts are maintained interlocked positively but are yet separable to allow releasable attachment and detachment of individual sectionalized parts.

Yet another specific object of the present invention is to provide an improved flexible sectionalized metal structure having identical sections which are formed inexpensively from a single sheet of metal.

Still another specific object of the present invention is to provide an improved flexible sectionalized metal structure having identical sections which are interlocked in a new and improved manner, the interlocked structure providing enhanced flexibility in the desired one degree of movement.

The features of the present invention which ar believed to be novel are set forth with particularity in the appended claims. This invention itself, both as to its organization and manner of operation, together with further objects and advantages thereof, may be best understood by reference to the following description taken in connection with the accompanying drawings in which:

Figure 1 is a sectional view taken substantially on line 1—1 of Figure 2.

2

Figure 2 is a view in plan elevation of five identical parts interlocked to form a sectionalized flexible metal wall structure in accordance with the present invention.

Figure 3 is a view in end elevation of one of the parts taken in the direction 3—3 in Figure 2, and

Figure 4 is a sectional view taken substantially on line 4—4 of Figure 2.

The flexible sectionalized wall structure 10, a portion of which is shown in Figure 2, is made up of a plurality of identical interchangeable parts 11.

Each part 11 is formed from a split flattened tubular member to provide a pair of resilient fingers 12, 13 on one side thereof and on the other side thereof a bulbous swivel member 14, the fingers 12, 13 being spaced from the swivel member 14 by a reentrant portion 15 within which the fingers 12, 13 of the adjacent part 11 extend to thereby resiliently clamp one part 11 to the adjacent part 11.

An important feature of the present invention is the manner in which adjacent parts are interlocked. The nature of the interlocking connection is such that in normal operation but one degree of freedom is permitted and enhanced flexibility in the composite wall structure results.

To achieve these desirable features, in accordance with the present invention, the resilient finger 12 has serrations or bifurcations 16 on its edge 17 spaced to enter into and cooperate with equally spaced indentations 18 at the reentrant portion 15 in the adjacent part 15 to thereby correctly space and resiliently lock adjacent parts against relative movement in their longitudinal directions.

Inasmuch as the bifurcations 16 contact the indentations 18 on an area less than is otherwise the case when the bifurcations 16 and indentations 18 are not present, there is less frictional resistance to movement of adjacent parts in the desired direction of articulated motion. Thus, by providing the cooperating serrations or bifurcations 16 and indentations 18 better articulated motion between adjacent parts 11 result and more important the adjacent parts are prevented positively from moving relative to one another in their longitudinal directions in normal use.

However, the fingers 12, 13 are sufficiently resilient to allow withdrawal or insertion of the bifurcations 16 from and into the indentations 18 upon the exertion of relatively large forces between adjacent parts 11 thereby to allow adjacent

parts to be interlocked in a releasably attachable and detachable manner.

While the particular embodiments of the present invention have been shown and described, it will be obvious to those skilled in the art that changes and modifications may be made without departing from this invention in its broader aspects and, therefore, the aim in the appended claims is to cover all such changes and modifications as fall within the true spirit and scope of this invention.

We claim:

1. A flexible metal wall structure comprising a pair of identical parts, each part having a pair of resilient flanges at one side thereof and a bead member at the other side, the resilient flanges and the bead member being separated by a depressed portion, one of said flanges having serrations on the free edge thereof, and said depressed portion having indentations therein receiving said serrations.

2. A flexible metal wall structure comprising a pair of identical parts, each part having a pair

of resilient flanges and a bead member, the resilient flanges and the bead member being separated by a depressed portion, and cooperating locking means between the flanges of one part and the depressed portion of the other part.

3. As an article of manufacture, a wall member having a pair of opposing resilient flanges, one of said flanges having serrations on the edge thereof, a bead member, a depressed portion joining said flanges and said bead, and said depressed portion having indentations therein.

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