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H. H. BRYAN

METHOD OF MAKING SHEET METAL SLEEVES

Filed April 17, 1923

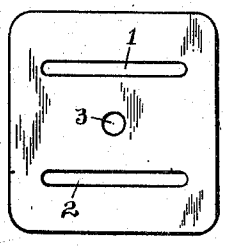


Fig. 1.

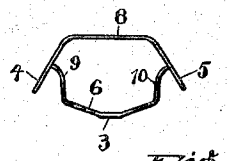


Fig. 2.

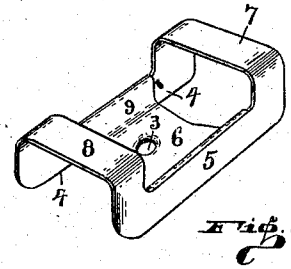


Fig. 3.

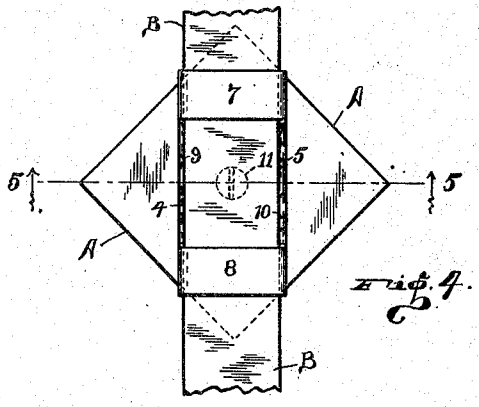


Fig. 4.

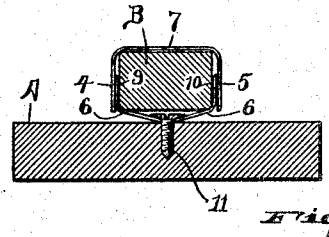


Fig. 5.

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UNITED STATES PATENT OFFICE.

HAMILTON H. BRYAN, OF CAMBRIDGE CITY, INDIANA, ASSIGNOR TO THE STANDARD MANUFACTURING COMPANY, OF CAMBRIDGE CITY, INDIANA, A CORPORATION OF INDIANA.

METHOD OF MAKING SHEET-METAL SLEEVES.

Application filed April 17, 1923. Serial No. 632,791.

To all whom it may concern:

Be it known that I, HAMILTON H. BRYAN, a citizen of the United States, residing in Cambridge City, in the county of Wayne, State of Indiana, have invented new and useful Improvements in Methods of Making Sheet-Metal Sleeves, of which the following is a full, clear, and comprehensive specification and exposition, the same being such as will enable others to make and apply the same with exactitude.

The object of my present invention, broadly speaking, is to provide a sleeve to be carried pivotedly, or rotatably, by a non-rotatable or relative stationary element, and at the same time forming a guideway for a second element to slide unobstructedly therethrough, said sleeve being simple in character, strong and durable in its construction, easily applied in operative position, and which can be manufactured and sold at a comparatively low price.

More specifically stated, my object is to provide a sleeve formed from a single blank of sheet metal, being so arranged that it may be formed with a minimum of operations applied thereto, and providing means whereby a slidable element may reciprocate therethrough, and at the same time allowing said reciprocating element to have swinging or oscillating movements simultaneously with its reciprocations.

And, finally, my object is to provide an economical method of making sheet metal sleeves, substantially as herein described, whereby the sleeves may be produced at a minimum cost, and at the same time having a maximum of efficiency in practice.

Other minor objects and particular advantages of the invention will suggest themselves in the course of the following description, and that which is new and novel will be correlated in the appended claims.

The preferred manner of carrying out the principles of my invention in a practical way is shown in the accompanying drawings, in which—Fig. 1 is a plan of a flat blank cut to the desired dimensions to form one of my sleeves; Fig. 2 is an end elevation showing the same after it has been given the first bending operation; Fig. 3 is a perspective view of the same after it has been given its final bending operation, and showing the complete sleeve alone; Fig. 4 is a front elevation showing the sleeve in actual operative position in connection with a relative fixed element and a slidable element; and Fig. 5 is a cross-section, as taken on the line 5—5 of Fig. 4.

Similar indices denote like parts throughout the several views.

In order that the construction, the operation and the advantages of the invention may be more fully understood and appreciated, I will now take up a detailed description thereof, in which I will set forth the same as comprehensively as I may.

As shown in Fig. 1 the sheet metal blank is first formed substantially square, except that it has rounded corners.

The second operation is cutting the two slots, 1 and 2, through the blanks, said slots being parallel with each other and they are spaced apart, and at the same time a round aperture 3 is formed through the center of the blank.

The blanks, with said slots and the aperture formed therein, are next placed in a machine, such as a bulldozer, by which the material is brought to substantially the form shown in Fig. 2, this being accomplished by pressing the central portion, that is between the slots, in one direction while the parts at the ends outward from said slots and parallel therewith, are being bent in the opposite direction, and at the same time the sides at right angles to said slots are bent to extend downward and outward, thereby bringing the parts to the positions shown in Fig. 2. In this operation the central portion concentric with the aperture 3 is formed dish-shaped as indicated.

In the second operation just described the various parts begin to assume somewhat their final shape, as for instance: The sides 4 and 5; the base portion 6; the straps 7 and 8; and the end portions 9 and 10 of the base 6.

In the next bending operation the sides 4 and 5 are bent inward until they are at right-angles to the central portions of the straps 7 and 8, and at the same time the ends 9 and 10 are pressed flat against the inner faces of the respective sides 4 and 5, whereby they are also at right-angles to said straps, and if it were not for the dishing of the base 6 they would also be at right angles thereto.

We now have the sleeve formed substantially as shown in Fig. 3.

Letter A denotes a relatively stationary element, as for instance a block or a bar, or the like.

A bolt, or a screw 11, may now be inserted through the aperture 3 and then run into the element A, by which the sleeve is revolvably mounted to the element A, as shown in Fig. 5.

Letter B denotes the slidable or reciprocating element, the same being in the nature of a bar, which is of such size in cross section that it will fit loosely in the sleeve, that is to say, it is contactable with the ends 9 and 10, the straps 7 and 8, and the outer portions of the base 6.

The purpose of dishing the base 6 is twofold: (*a*) It removes the head of the screw 11 from possible engagement with the element B, and (*b*) it prevents the base 6 from contacting with the element A, except immediately adjacent of the screw 11, whereby the friction will be practically nil.

It is now most clearly manifest that the element B is free to reciprocate in the sleeve, at the same time the element B may have an oscillating movement, or even a planetary movement if desired, thereby accomplishing the desideratum of this invention in a practical manner.

I desire that it be understood that various changes may be made in the several details herein set forth without departing from the spirit of the invention and without sacrificing any of the advantages thereof which are new and useful.

Having now fully shown and described my invention, what I claim and desire to secure by Letters Patent of the United States, is—

1. The method of making a pivotal sliding mounting sleeve, which consists in providing a sheet blank with a pair of transverse slots, bending the entire side margins of the portions of said blanks beyond the slots and on longitudinal lines that intersect the slots, at substantially right angles to the body of the blank to form sides and upstanding slide-keepers, bending the portion between the slots and substantially to the ends of said slots inwardly to form a pivot mounting, and forming a pivot-receiving opening in said intermediate inset portion.

2. The method of making a pivotal sliding mounting sleeve, which consists in providing a sheet blank with a pair of transverse slots, bending the entire side margins of the portions of said blanks beyond the slots and on longitudinal lines that intersect the slots, at substantially right angles to the body of the blank to form sides and upstanding slide-keepers, bending the portion between the slots and substantially to the ends of said slots inwardly and dishing said inset portion, and forming a pivot-receiving opening in said intermediate inset portion.

3. The method of making a sleeve, which consists in providing a substantially square blank of sheet metal with a central aperture and with two slots parallel to each other and located at equal distances from the aperture, bending the said blanks on two lines transversely of said slots into channel form, forming a bottom and sides of a channel, depressing the central portion of the bottom of the channel, and leaving the end portions of the bottom of said channel in the original plane, whereby the upper halves of the sides of said central portion are folded downwardly and upon the inside of the lower halves of said sides, and simultaneously depressing that central portion of the bottom downwardly into dish form.

HAMILTON H. BRYAN.