

No. 686,817.

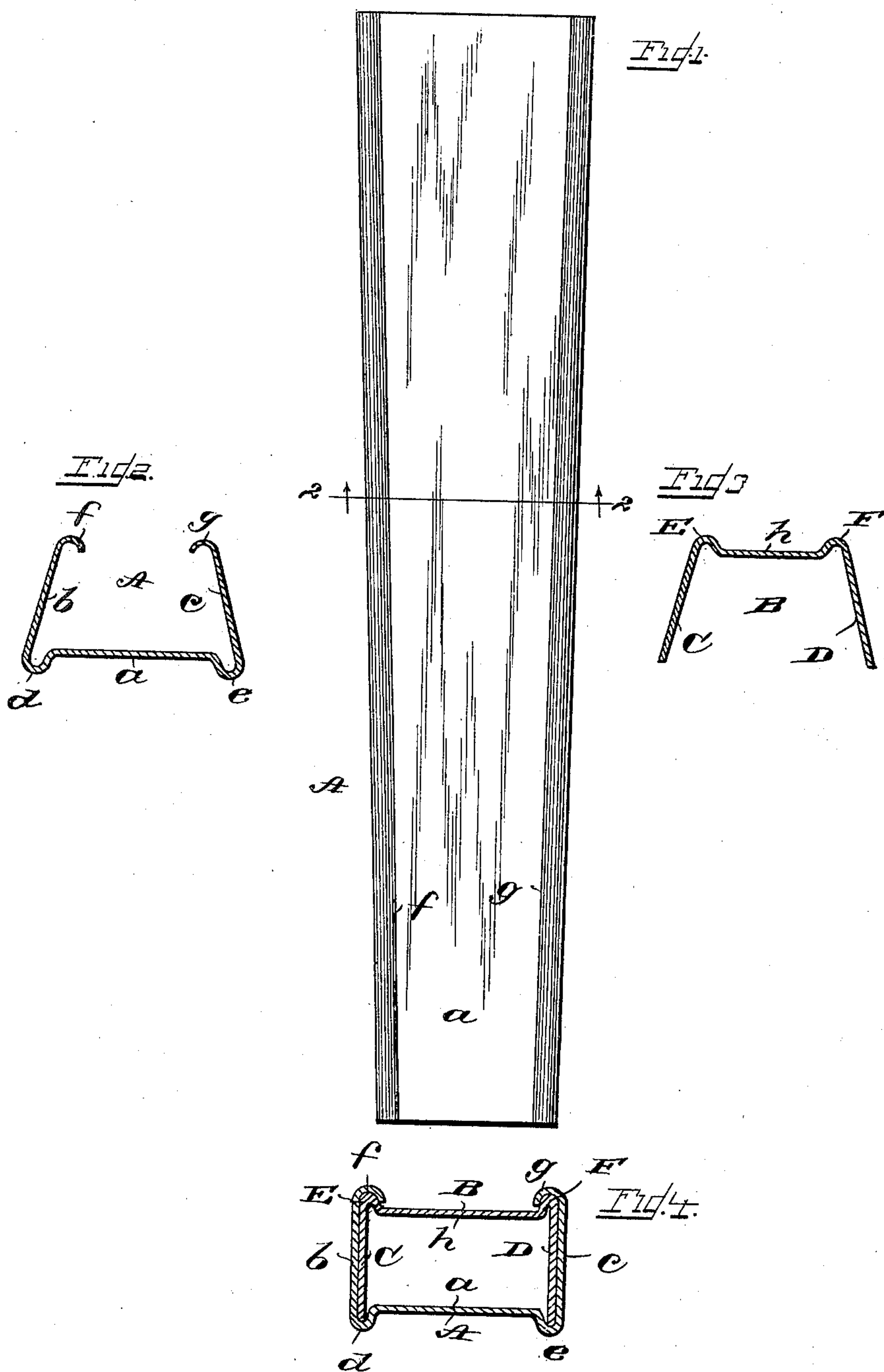
Patented Nov. 19, 1901.

J. MACPHAIL.

BEADED CONSTRUCTION OF TUBES, BEAMS, PIPES, &c.

(Application filed Feb. 17, 1900.)

(No Model.)



WITNESSES

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UNITED STATES PATENT OFFICE.

JAMES MACPHAIL, OF BLUE ISLAND, ILLINOIS.

BEADED CONSTRUCTION OF TUBES, BEAMS, PIPES, &c.

SPECIFICATION forming part of Letters Patent No. 686,817, dated November 19, 1901.

Application filed February 17, 1900. Serial No. 5,661. (No model.)

To all whom it may concern:

Be it known that I, JAMES MACPHAIL, a citizen of the United States, residing at Blue Island, in the county of Cook and State of Illinois, have invented a new and useful Beaded Construction of Tubes, Beams, Pipes, or the Like, of which the following is a specification.

This invention relates to beaded construction of tubes, beams, pipes, or the like.

The object of the invention is to provide a tube, beam, pipe, or the like of simple construction which is economical in manufacture and strong and durable in use.

The invention consists, substantially, in the construction, combination, location, and relative arrangement, all as will be more fully hereinafter set forth, as shown in the accompanying drawings, and finally pointed out in the appended claims.

Referring to the accompanying drawings and to the various views and reference-signs appearing thereon, Figure 1 is a view in plan of one portion or section employed in the construction of a tube, beam, pipe, or the like in accordance with my invention. Fig. 2 is a transverse section of the same on the line 2 2, Fig. 1, looking in the direction of the arrow. Fig. 3 is a similar view of the cooperating section or portion of the tube. Fig. 4 is a transverse section of the tube, beam, pipe, or the like complete, the portions or sections being shown in assembled relation.

The same part is designated by the same reference-sign wherever it occurs.

In carrying out my invention I employ two sections or portions, designated on the drawings, respectively, by reference-signs A and B. These sections or portions may be of any suitable material, but preferably of sheet metal. The section or portion A comprises a web or base *a* and the sides *b c*. A longitudinal bead (indicated at *d e*) is formed at the point where the sides *b c*, respectively, join the base or web *a*. Each of the sides *b c* terminates in a bead *f g*, and in the normal or detached position of section A the sides *b c* thereof are inclined or bent toward each other, as clearly shown in Fig. 2. The section or portion B comprises the web or base portion *h* and the sides C D, a longitudinal bead E F being formed at the point of junc-

ture of sides C D with web or base portion *h*. In the detached position of section B the sides C D are flared outwardly or away from each other, as clearly shown in Fig. 3, so that the transverse area of section B detached is greater than the transverse area of section A detached.

With the sections A B constructed and formed as above described the tube, beam, pipe, or the like is completed by telescoping the section B, of larger transverse area, into the section A, which is of smaller transverse area, the beads *f g* at the extremities of the side portions *b c* of section A fitting over and embracing the beads E F of section B and the free edges of sides C D of section B entering the beads *d e* of section A, as clearly shown in Fig. 4. By reason of section B being of larger transverse area than section A when said sections are assembled by telescoping section B into section A, of smaller transverse area, the sides C D of said section B are bent or forced toward each other and the sides or sections *b c* of section A are forced apart, thus imposing a reactionary pressure upon each section, which causes said sections to firmly hug each other and to be held in joined relation. It will be observed that the sections A B are assembled in inverted relation.

If desired, the sections A B may be longitudinally tapered, as shown in Fig. 1. It will be observed that the shape of the resulting construction differs from the shape of each of the original sections.

A tube, beam, pipe, or the like constructed in accordance with the principles above set forth is exceedingly simple, easily and economically manufactured, is strong and durable, and is adapted for use generally in framing, framework, or as a beam, pipe, column, pole, sleeper, sill, or for any other purpose to which it is adapted.

The sections A B may be constructed of any suitable or desirable length to form a complete article. If desired, however, additional length may be secured by joining endwise tubes, beams, pipes, or the like constructed as above described by telescoping the end of the one into the proximate end of the next adjacent one.

It will be observed that the beads serve to

strengthen the construction, at the same time affording additional means of maintaining the union of the sections.

Having now set forth the object and nature of my invention, what I claim as new and useful and of my own invention, and desire to secure by Letters Patent of the United States, is—

1. As a new article of manufacture, a tube, beam, pipe or the like, comprising telescopically-assembled channels, each channel being longitudinally beaded, as and for the purpose set forth.

2. As a new article of manufacture, a tube, beam, pipe or the like, comprising telescopically-assembled channels, each channel being longitudinally beaded, the beads of one channel fitting into the beads of the other channel when assembled, as and for the purpose set forth.

3. The combination with a channel having flaring sides, and a connecting-web, and longitudinal beads at the juncture of the sides and webs, of a similarly-beaded channel having the sides thereof inclined toward each other, the section of flaring sides adapted to be telescopically received within the channel having inclined sides, to form a tube, beam, pipe or the like, whereby through the resilient action exerted by said channels upon each other when assembled said channels are efficiently held and maintained in assembled relation, as and for the purpose set forth.

In witness whereof I have hereunto set my hand, this 10th day of February, 1900, in the presence of the subscribing witnesses.

JAMES MACPHAIL.

Witnesses:

E. C. SEMPLE,
S. E. DARBY.