

No. 743,898.

PATENTED NOV. 10, 1903.

J. H. LUBBERS.
BAIT FOR DRAWING GLASS.

APPLICATION FILED MAR. 25, 1903.

NO MODEL.

2 SHEETS—SHEET 2.

Fig. 4.

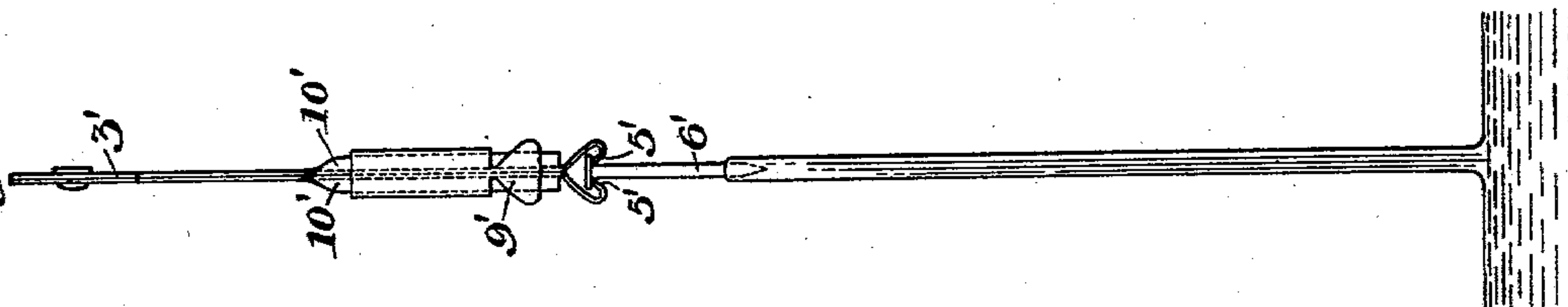
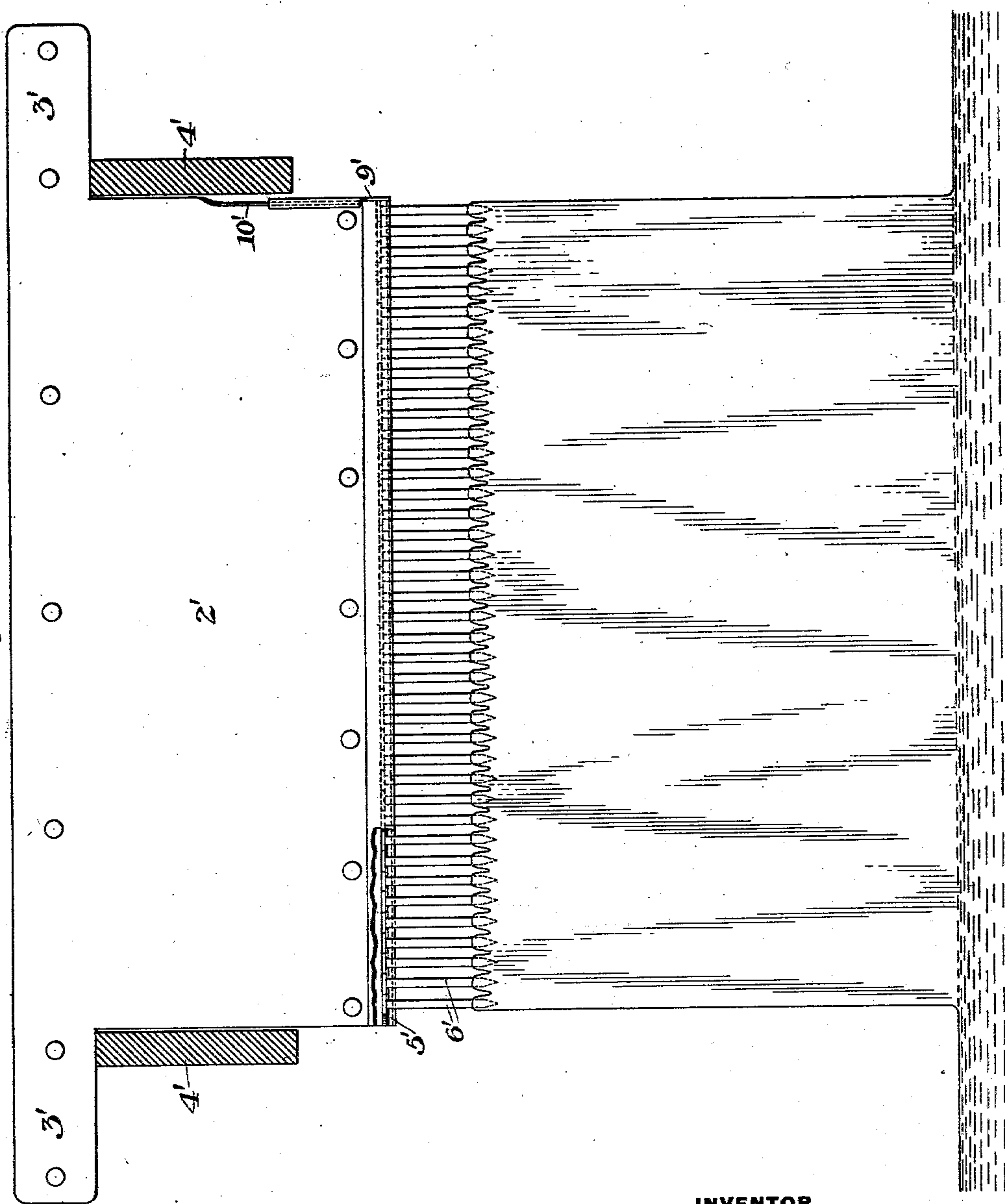


Fig. 3.



WITNESSES

Warren W. Swartz
J. H. Lubbers

INVENTOR

J. H. Lubbers
by J. H. Lubbers
his atty.

UNITED STATES PATENT OFFICE.

JOHN H. LUBBERS, OF ALLEGHENY, PENNSYLVANIA, ASSIGNOR TO JAMES A. CHAMBERS, TRUSTEE, OF PITTSBURG, PENNSYLVANIA.

BAIT FOR DRAWING GLASS.

SPECIFICATION forming part of Letters Patent No. 743,898, dated November 10, 1903.

Application filed March 25, 1903. Serial No. 149,533. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. LUBBERS, of Allegheny, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Bait for Drawing Glass, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a front elevation, partly broken away, showing one form of my improved bait. Fig. 2 is an end elevation of the same, and Figs. 3 and 4 are views similar to Figs. 1 and 2, respectively, showing another form of the bait.

My invention relates to the forming of glass sheets, cylinders, or other articles by drawing them upwardly from a bath of molten glass and is designed to afford a simple, cheap, and long-lived bait, which will not be liable to crack or break the article being drawn.

To that end it consists in a bait having a series of depending pins or rods arranged to enter the bath, these pins being loosely mounted, so that they will adjust themselves independently of each other.

It also consists in a bait having a series of removable pins with flattened heads, the pins being loosely held by the heads within the bait-body, and, further, in the construction and arrangements of the parts, as hereinafter more fully described and claimed.

In the drawings, referring to the form of Figs. 1 and 2, 2 represents the body of the bait, which preferably consists of two sheets of metal riveted together and having end arms 3 3, which rest upon carrying-bars 4, supported by the vertically-movable frame of the drawing apparatus. The lower portions of the two sheets are bent or curved outwardly in opposite directions, as shown at 11, and their edge portions are bent inwardly and upwardly to form inner ledges 5. The pins or rods 6 preferably consist of wire nails, which are dropped through holes in a strip of metal 7, which is preferably pressed into channel form. This nail-carrier is arranged to slide within the lower recess of the bait-body, the flanges 8 of the nail-carrier resting within the coped or ledge portions in the re-

cess. The nail-carrier may then be held in place by a slide 9, which is guided on flattened end portions 10 of the sheets.

In using the device the bait is lowered until the nails enter the molten bath, and the bait is then raised in the usual manner to draw a sheet upwardly from the bath. The nails being loosely mounted are free to accommodate themselves both in entering the bath and during expansion or contraction of the glass during cooling, annealing, &c.

In Figs. 3 and 4 I show another form of the bait, wherein the nail-holder is done away with. In this form the lower portions of the sheets 2' are bent outwardly, as before, and thence bent inwardly and nearly horizontally, leaving a space between their edges of a width as large as the diameter of the nail-body, but narrower than the width of the nail-head. The broad-headed wire nails 6' are then slipped in from the end, their heads holding them apart, so as to space them. They may be held in place by one or two end slides 9', arranged as in the first form.

The advantages of my invention result from the use of the loosely-mounted pins or rods, which have sufficient freedom of movement to allow them to accommodate themselves to the glass. When one sheet has been drawn and removed from the pins, the remaining web of glass will hold them in position. The pins or nails may be easily replaced, and the construction is simple and cheap.

Many variations may be made in the form and arrangement of the bait, the pins, and the manner of loosely supporting them without departing from my invention.

I claim—

1. A bait for drawing glass having a series of depending loosely-mounted pins; substantially as described.

2. A bait for drawing glass having a series of separated depending pins with enlarged heads loosely supported in the bait; substantially as described.

3. A bait having a lower longitudinal groove with ledges, and a series of depending pins loosely supported on said ledges; substantially as described.

4. A bait for drawing glass having a lon-

itudinal lower recess with an open slot and side ledges, and a series of pins extending downwardly through the slots and loosely supported on the ledge portions, said pins having
5 enlarged heads; substantially as described.

5. A bait for drawing glass having a lower longitudinal recess with an open end, and a narrow slot opening into its lower portion, and pins having enlarged heads within the

slot, said bait having a closure for the end of 10 the recess; substantially as described.

In testimony whereof I have hereunto set my hand.

JOHN H. LUBBERS.

Witnesses:

GEO. B. BLEMING,

C. P. BYRNES.