No. 667,263. Patented Feb. 5, 1901.

D. TAYLOR & F. WOODRUFF.

APPARATUS FOR COOLING GLASSWARE.

(Application filed July 15, 1899. Renewed Oct. 31, 1900.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 2.

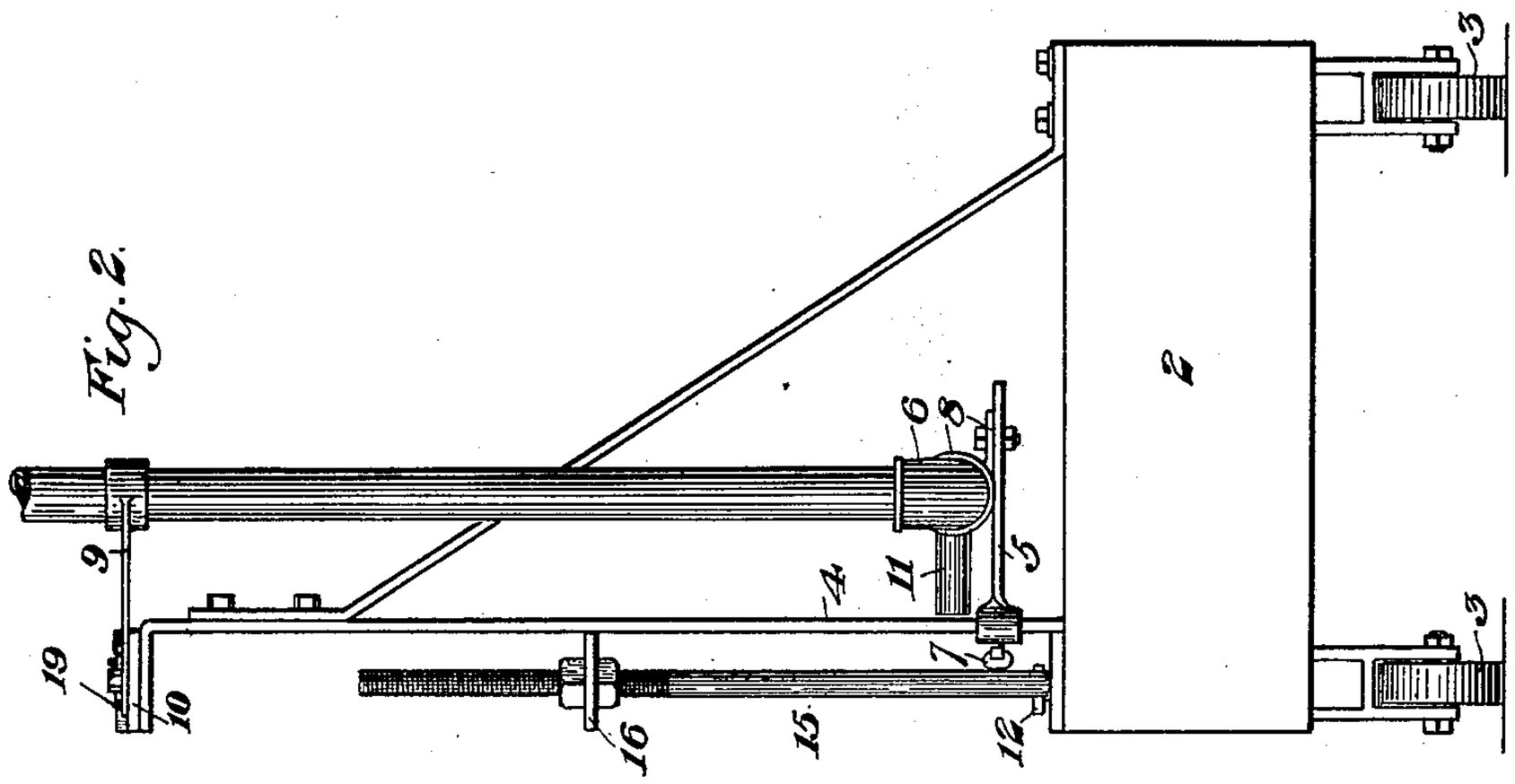
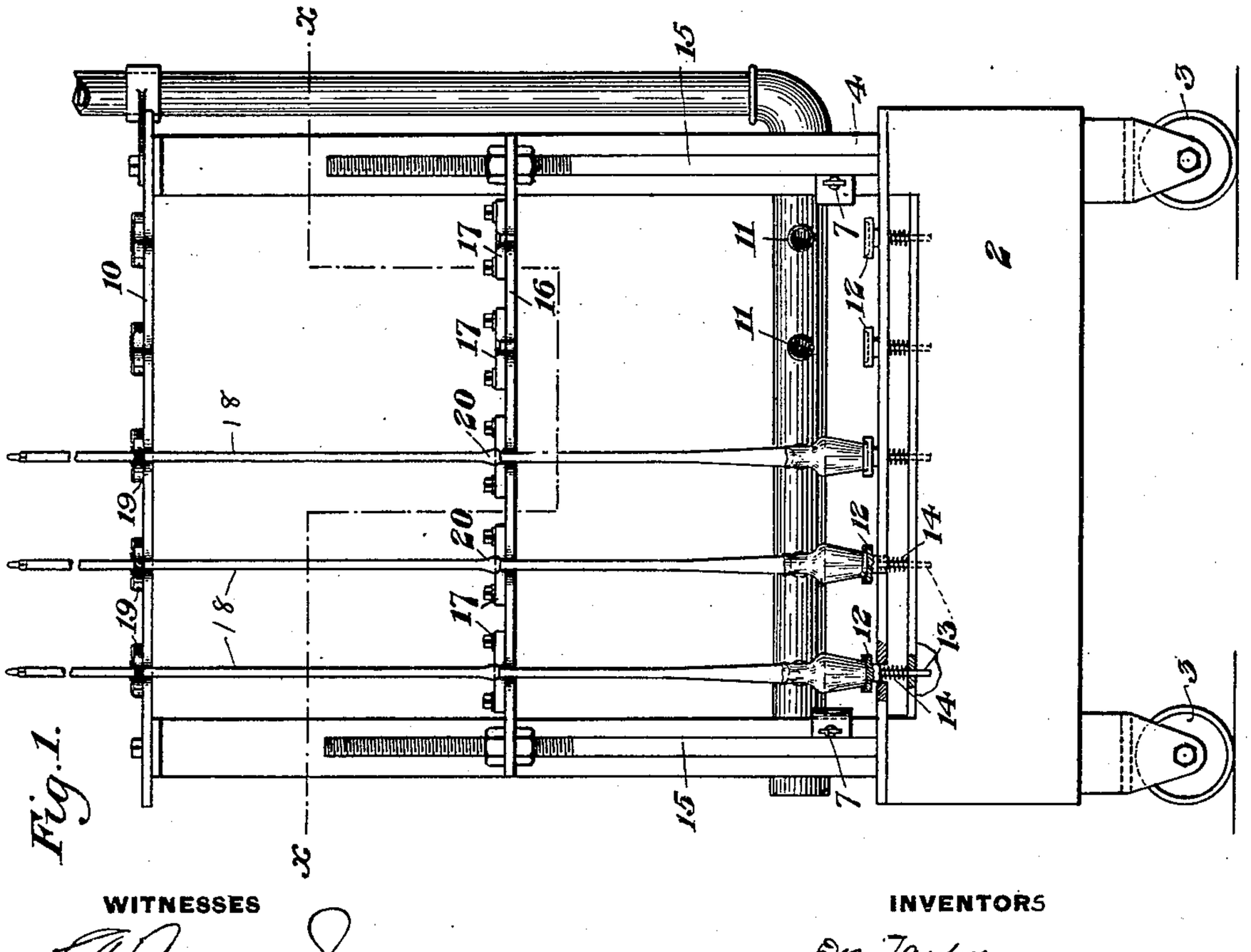


Fig. 1.



WITNESSES

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INVENTORS

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Fig. 4.

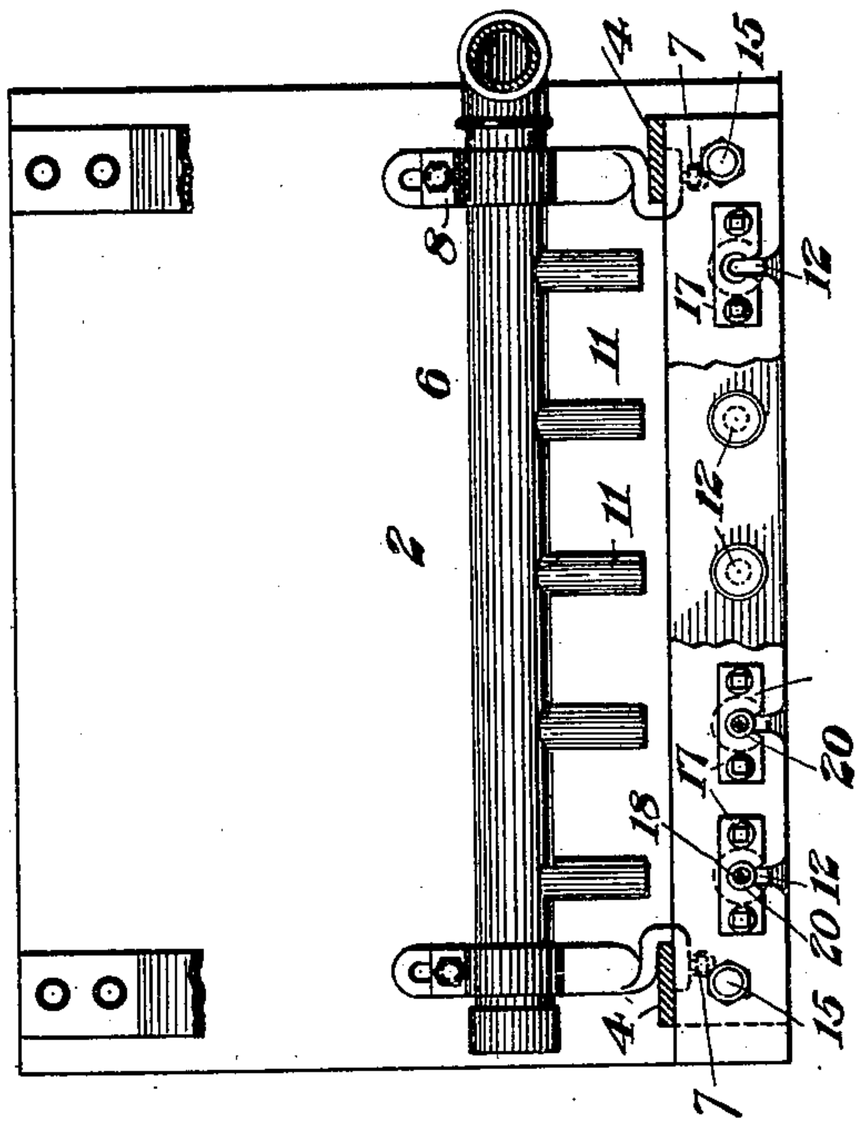

Fig. 3.

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DOS TAYLOR AND FRANK WOODRUFF, OF ROCHESTER, PENNSYLVANIA.

APPARATUS FOR COOLING GLASSWARE.

SPECIFICATION forming part of Letters Patent No. 667,263, dated February 5, 1901.

Application filed July 15, 1899. Renewed October 31, 1900. Serial No. 35,049. (No model.)

To all whom it may concern:

Be it known that we, DOS TAYLOR and FRANK WOODRUFF, of Rochester, in the county of Beaver and State of Pennsylvania, have invented a new and useful Improvement in Apparatus for Cooling Glassware, 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 of our improved glass-cooling apparatus. Fig. 2 is an end elevation of the same. Fig. 3 is a top plan view, and Fig. 4 is a horizontal sectional view on the lines X X of Fig. 1.

Like numerals of reference indicate like parts wherever they occur.

In the use of blowing-machines in the manufacture of tumblers and other articles of blown glassware the glass article or blank on the end of the blowpipe when it leaves the blowing-machine is still in a soft and plastic condition, and the soft glass of the blank becomes more or less out of shape under the power of gravity before it cools and hardens.

The purpose of our invention is to obviate this difficulty and to provide means for cooling and hardening the glass as soon as the blowpipe is taken from the blowing-machine.

It consists in a rack or frame designed to support the blowpipes, cold-air pipes designed to blow cold air on the glass blank, and a yielding support adapted to support the bottom of the blank and prevent the elongation of the plastic blank under the power of gravity.

We will now describe our invention, so that others skilled in the art may manufacture and use the same.

In the drawings, 2 represents the base of the frame, which is mounted on wheels 3. Extending upwardly from the base 2 are the vertical standards 4, adjustably secured to which are the sliding brackets 5, which brackets support the air-pipe 6 in such a manner that it may be raised or lowered and fixed in any desired position by the set-screws 7 to accommodate different-sized articles of glassware. This air-pipe may also be adjusted horizontally by the collars and slides 8 and 9, which are adjustably secured by set-screws to the brackets 5 and to the cross-bar 10, that extends between the standards 4 at the top of the same. Extending horizontally from the air-pipe 6 are the tubes or jets 11. In front of the mouth of the jets 11 and below the same are the disks 12, the upper faces of which disks may conform to the shape of the bottom of the blown articles or blanks. These disks 12 are provided with spindles 13 and springs 14, so arranged as to cause the disks to press upwardly. In rear of the standards 4 are two posts 15, the upper portions of which are screw-threaded and fitted with nuts, which nuts support the cross-bar 16, which is provided with the slotted rests 17 for the reception of the blowpipes 18. Hinged or pivoted to the top bar 10 on vertical lines with the rests 17 are spring-snaps 19, adapted to receive and support the blowpipes. The purpose of the screw-thread on the posts 15 and nuts which fit thereon is to allow of the vertical adjustment of the bar 16 and rests 17, so that the collar 20 of the blowpipe resting on the rests 17 may support the blowpipe in such a position that the spring-disks 12 may press lightly against the base of the glass blank on the end of the blowpipe.

The operation is as follows: When the blowpipe 20 is removed from the blowing-machine with the soft blown article or blank depending therefrom, it is immediately placed in the rack, the pipe being held by the support or rest 17 and snap 19 and the bottom of the blank resting on the surface of the yielding disk 12. In this position the glass blank is directly in front of a jet of cold air from the air-pipe 6, which jet rapidly cools and hardens the blank. When the blank is sufficiently cooled, the blowpipe is taken from the rack, and the blank is removed therefrom in the usual manner.

The advantages of our invention will be apparent to those skilled in the art.

The air pipes or jets may be made adjustable to throw the cooling-current in any desired direction.

By the use of the word "blowpipe" we desire to include any punty, snap, or rod for carrying the blank or other articles of glassware.

What we claim is—

1. In apparatus for cooling blanks or articles of glassware, the combination of a blow-

pipe rack and a yielding support for the base of blank.

2. In apparatus for cooling blanks or articles of glassware, the combination of a blowpipe-rack and a cooling-jet.

3. In apparatus for cooling blanks or articles of glassware, a blowpipe-rack having adjustable rests or supports for supporting the blowpipe in combination with cooling-jets.

4. In apparatus for cooling blanks or articles of glassware, the combination of a blowpipe-rack, yielding supporting-disks, and cooling-jets.

5. In apparatus for cooling blanks or articles of glassware, the combination of a blowpipe-rack, having adjustable rests or supports, and an adjustable conduit for the cooling medium.

In testimony whereof we have hereunto set our hands.

DOS TAYLOR.
FRANK WOODRUFF.

Witnesses:
H. M. CORWIN,
JAMES K. BAKEWELL.