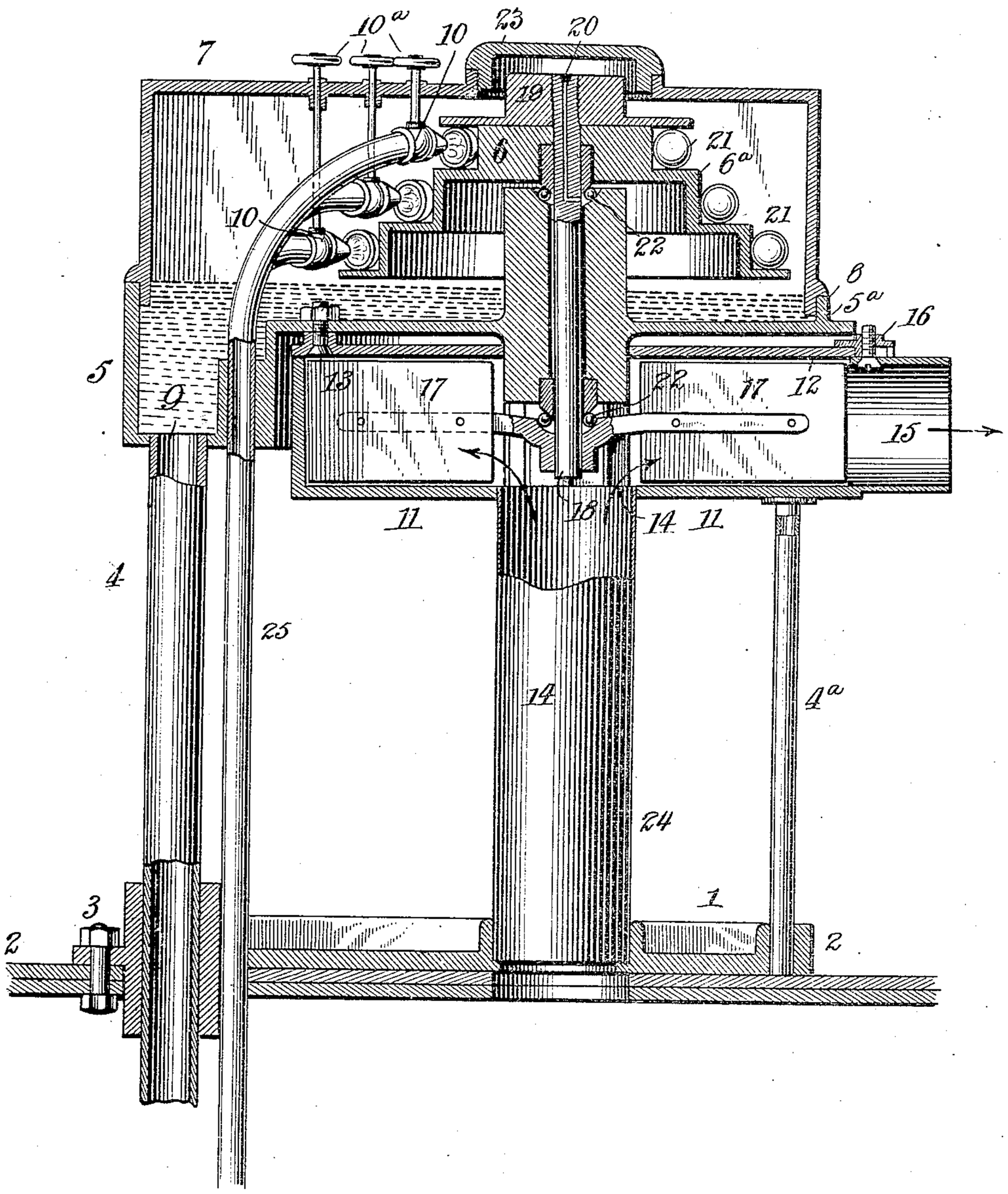
No. 832,100. PATENTED OCT. 2, 1906.

N. TINGLEY.

WATER MOTOR FOR BLOWERS FOR FORGES.

APPLICATION FILED MAY 29, 1905.



WITNESSES:

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WATER-MOTOR FOR BLOWERS FOR FORGES.

No. 832,100. Specification of Letters Patent. Patented Oct. 2, 1906.

Application filed May 29, 1905. Serial No. 262,837.

To all whom it may concern:

Be it known that I, NELSON TINGLEY, a citizen of the United States of America, residing at Scranton, in the county of Lackawanna and State of Pennsylvania, have invented certain new and useful Improvements in Water-Motors for Blowers for Forges, of which the following is a specification.

My invention relates to water-motors for blowers for forges.

The object of the invention is to provide an improved arrangement of water-motor for blowers for producing a blast for blacksmiths' forges.

In addition to the above other objects of the invention relate to certain details of construction and combinations and operations of parts, all of which will more fully hereinafter appear.

What I claim as new will be set forth in the claims at the end of the specification.

I have illustrated my invention in the accompanying drawing, which is a view in sectional elevation.

Numeral 1 is a floor-plate fastened to floor 2 by bolts or screws, as at 3.

4 is a pipe coming up through floor-plate 1, to which it is fastened by set-screw, so as to hold frame 5 (into which it is screwed) at the proper height and serving to carry away the water from wheel 6.

7 is a cover over wheel 6, resting on a raised edge 8. This raised edge 8 forms annular runway for the water from wheel 6. The bottom of this runway has sufficient slope to drain the water into box 9 and from thence into pipe 4.

5 is the main frame and is supported by pipe 4 and pipe or rod 4ª.

The feed-pipe 25 passes up through box 9 to valves and nozzles 10, the valves having stems 10ª, reaching up through cover 7.

The frame 5, reaching across the machine to 5ª, serves as a pan or runway for waste water, a bearing for shaft 18, and to which is fastened the cover 12 of fan-case 11 by bolts, as at 13, leaving an air-space between the water and fan-case to prevent the water being frozen by the cold air in fan-case. To the plate 12 is fastened fan-case 11 by several clamps, as at 16, allowing the tube 15 to be placed in any position. This case receives the air at the center of under side and forces it out at tube 15.

18 is a perpendicular shaft connecting fan 17 with water-wheel 6 and is adjusted by jam-nut 19. 19 has a flange to cover buckets and prevent the waste water from reaching oil-hole 20.

6 is a water-wheel (here placed horizontally) of cone shape with several rows of buckets forming wheels of different diameters and lying in the same plane as each of the nozzles 10. Instead of having the sides of the cone straight I form right angles for each row of buckets to rest in by which the outer angle 6ª prevents the waste water from striking the other buckets and reducing the speed.

The bearings 22 are preferably ball-bearings.

In the top of cover 7 I place a small cover 23 directly over the shaft 18. This cover can be opened in oiling at 20.

24 is a tube to conduct the cold air from under the floor to the fan, so as not to take the warm air from the shop in cold weather.

The object of the cone water-wheel 6 is to provide water-wheels of different diameters in order that different speeds can be obtained without gearing.

In the operation of the blower the water is supposed to come from a source of supply located at such an altitude that it will cause the water to issue from nozzles 10 with considerable force. A jet of water issuing from any one of these nozzles 10 and striking the buckets 21 in succession will cause the cone-wheel 6 to rotate very rapidly, which in turn rotates the shaft 18 and the fan 17. As the fan revolves it draws in air through opening 14 or tube 24 and forces it out at pipe 15 to the fire.

Having thus fully described my invention, what I wish to protect by Letters Patent is—

1. A water-motor composed of a cone-shaped body having several rows of buckets mounted thereon and forming wheels of different diameters, a shaft, and nozzles substantially as described.

2. The combination of a water-motor and blower driven thereby each having a separate casing the casings being arranged with an air-space between to prevent freezing substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

NELSON TINGLEY.

Witnesses:
JACOB BAUMAN,
L. J. WALTER.