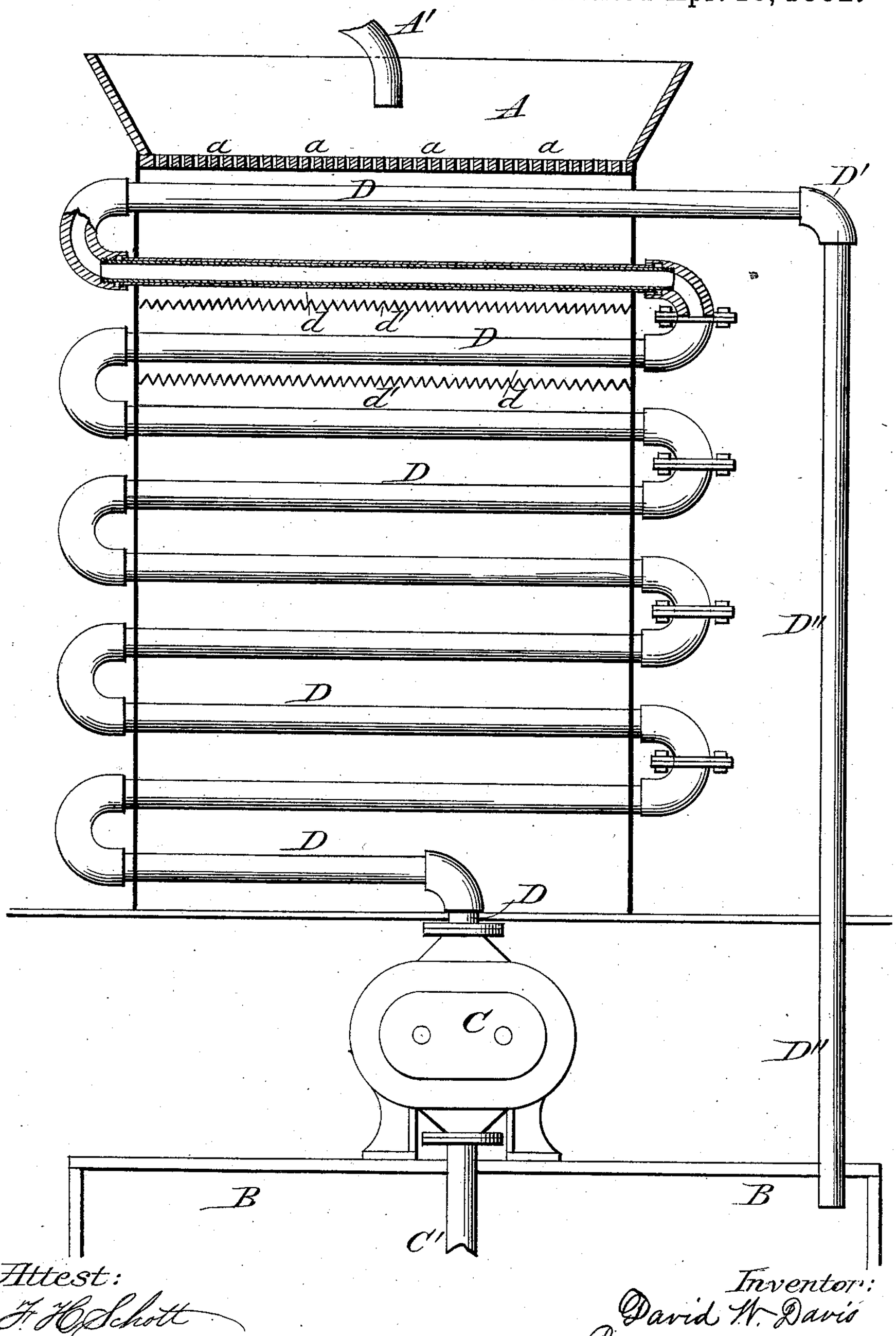
(No Model.)

D. W. DAVIS.

COOLING BEER.

No. 256,550. Patented Apr. 18, 1882.



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DAVID W. DAVIS, OF DETROIT, MICHIGAN.

COOLING BEER.

SPECIFICATION forming part of Letters Patent No. 256,550, dated April 18, 1882.

Application filed February 28, 1882. (No model.)

To all whom it may concern:

Be it known that I, DAVID W. DAVIS, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in the Process of Cooling Beer; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawing, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention consists in a new process of cooling beer, which process can be applied to most of the devices in use for that purpose, and especially to that class of coolers known as the "Baudelot Cooler;" and the process is produced by the device that will be fully hereinafter described.

The drawing shows the side elevation of my device, in which—

A represents the ordinary hot-beer-receiving tray from the delivery-pipe A′, and has the angular bottom pierced with a series of holes, *a*.

B represents a broken side view of a tank or reservoir filled with salted ice-water.

Upon the top of the tank B is a common force-pump, C, having a suction-pipe, C′, extending down into the salted ice-water in the tank B.

D D represent the usual coil of cooling-pipes, attached to the force-pump C.

D′ is an elbow at the outer end of the upper coil of pipe D, to which is secured a perpendicular drain-pipe, D″, the lower end of which drain-pipe extends into the tank B.

The hot beer is delivered into the drip-tray A from the boilers through the pipe A′, and is generally about the temperature of 190° Fahrenheit, when it drips through the perforations *a* upon the upper coil D, thence upon plate *d*, to be formed into drops from the serrated points *d′*, to fall upon the next pipe below, and so on to the lowest pipe of the coil, when it is brought to the proper degree of cold to be drained into casks to be stored or for further treatment.

The process used in my invention will require less length of cooling-pipes to accomplish the same degree of temperature in the beer, as it is a well-understood fact that salted ice-water is many degrees colder than simple ice-water. Hence if salted ice-water is used as a cooling agent it will, when applied by the same means, produce the same result in a much less time. The tank B, being filled with water containing ice and saturated with salt, the force-pump C is put into operation, which forces the salted ice-water upward through all the horizontal coils of pipes D to the upper one, thence the partially-warmed salted ice-water is returned through the downward drain-pipe D″ into the tank B, to be again mingled with the colder contents of the tank, which may be kept in agitation by any well-known means so as to prevent congelation and to keep the entire contents at about the same temperature. At the same time the beer, hot at first, is trickling from the receiving-tray upon the cool pipes, thence onto the next lower pipe that is cooler than the upper one, and so on until the lower pipe is reached, in which the coldest salted ice-water is, when the beer is cool enough to store away. Common ice-water is in temperature above 32° Fahrenheit, while salted ice-water is just above zero, or near to that temperature. Hence, as a cooling agent the difference between it and simple ice-water is about 32°, which applied in and through the pipes upon which hot and warm beer is dripping, it is apparent that the beer is cooled in a less time or by a shorter device through which the cooling agent is forced.

I am aware that ice-water has been passed through pipes to cool the beer from the boilers. I am also aware that the devices used in making ice artificially are used in cooling beer, neither of which do I claim. Nor do I claim the construction seen in Patent No. 230,694, or the construction in any other patent; but

What I do claim is—

The process of cooling beer by forcing salted ice-water into and through a coil of cooling-pipes upon which the hot beer drips, and then returning the salted ice-water back into the tank from which it was taken, substantially as described.

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

DAVID W. DAVIS.

Witnesses:

W. B. ALLPORT,

MENNO ZIMMERMANN.