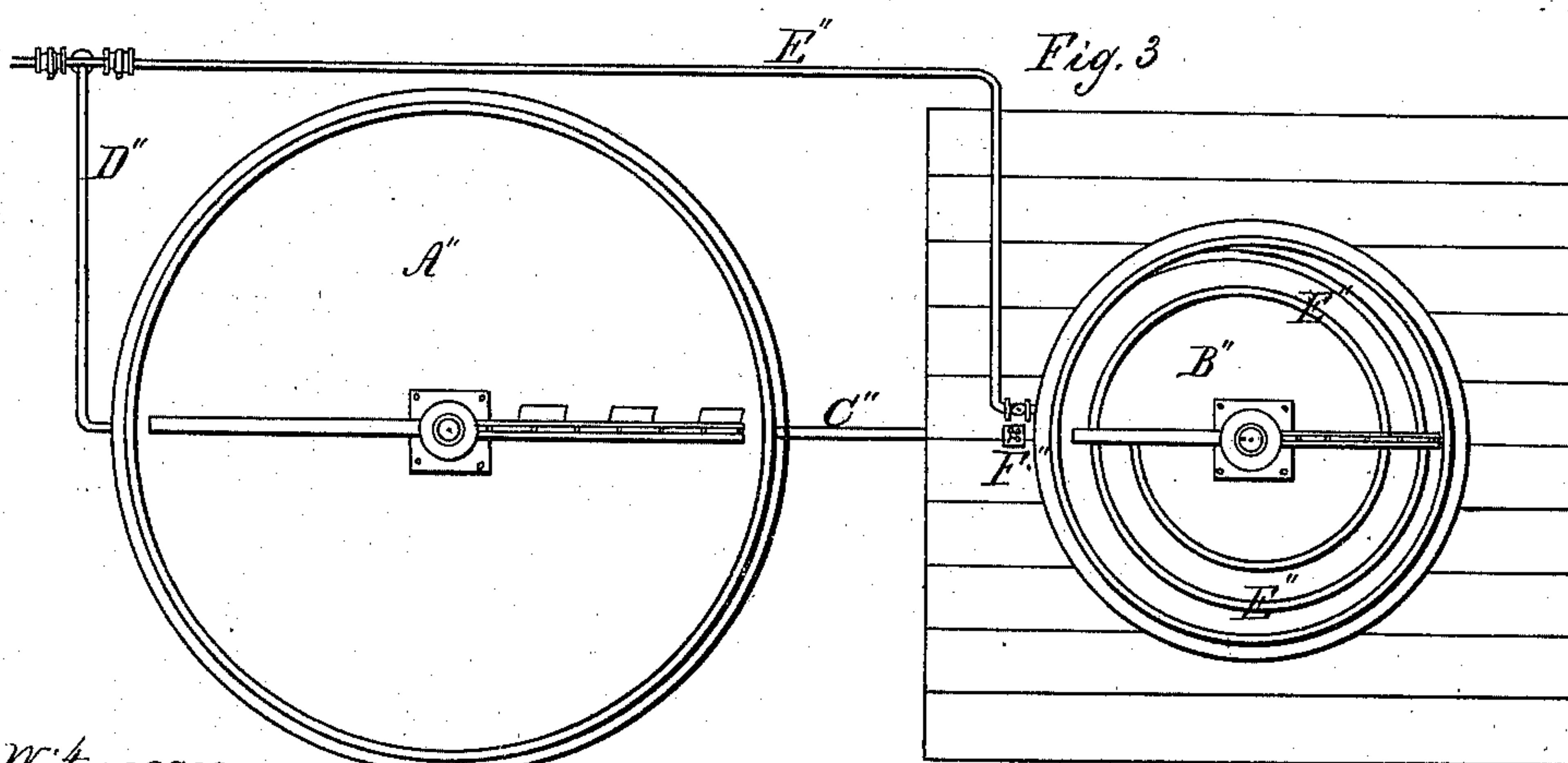
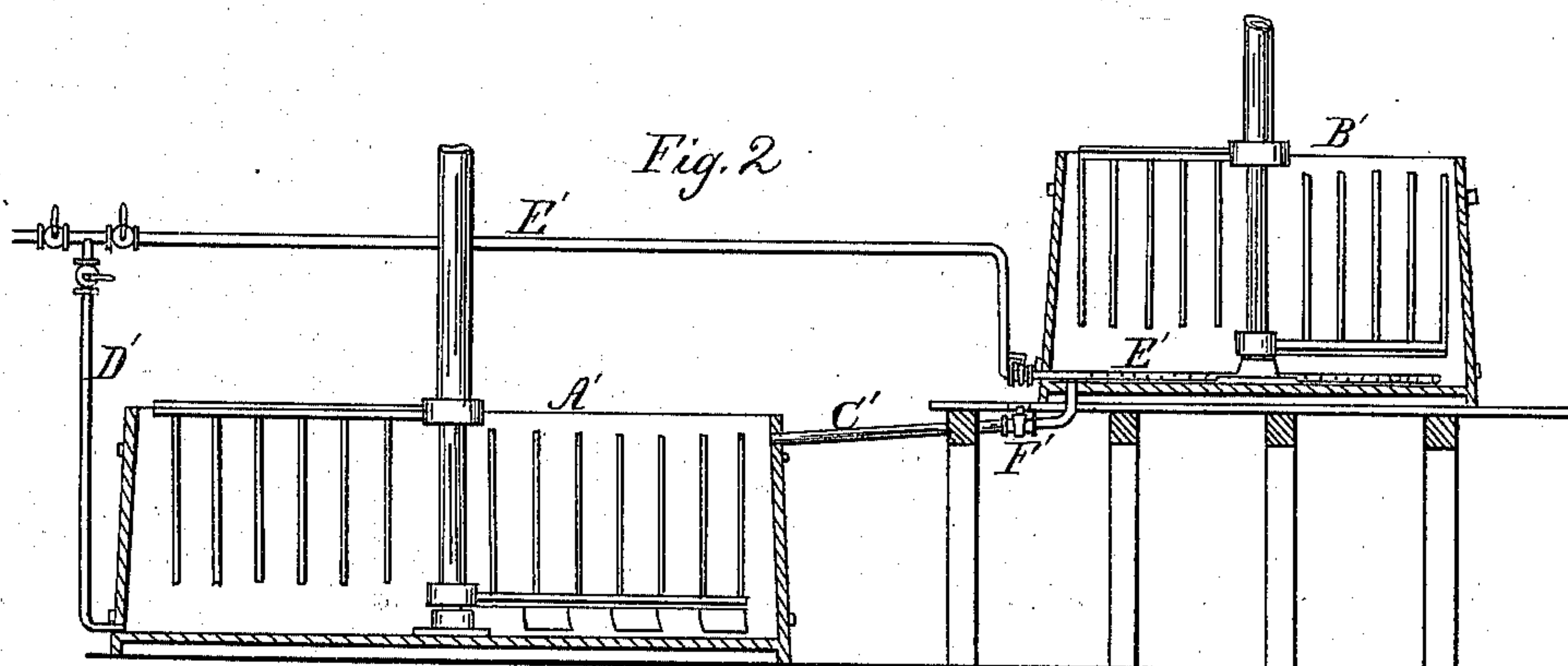
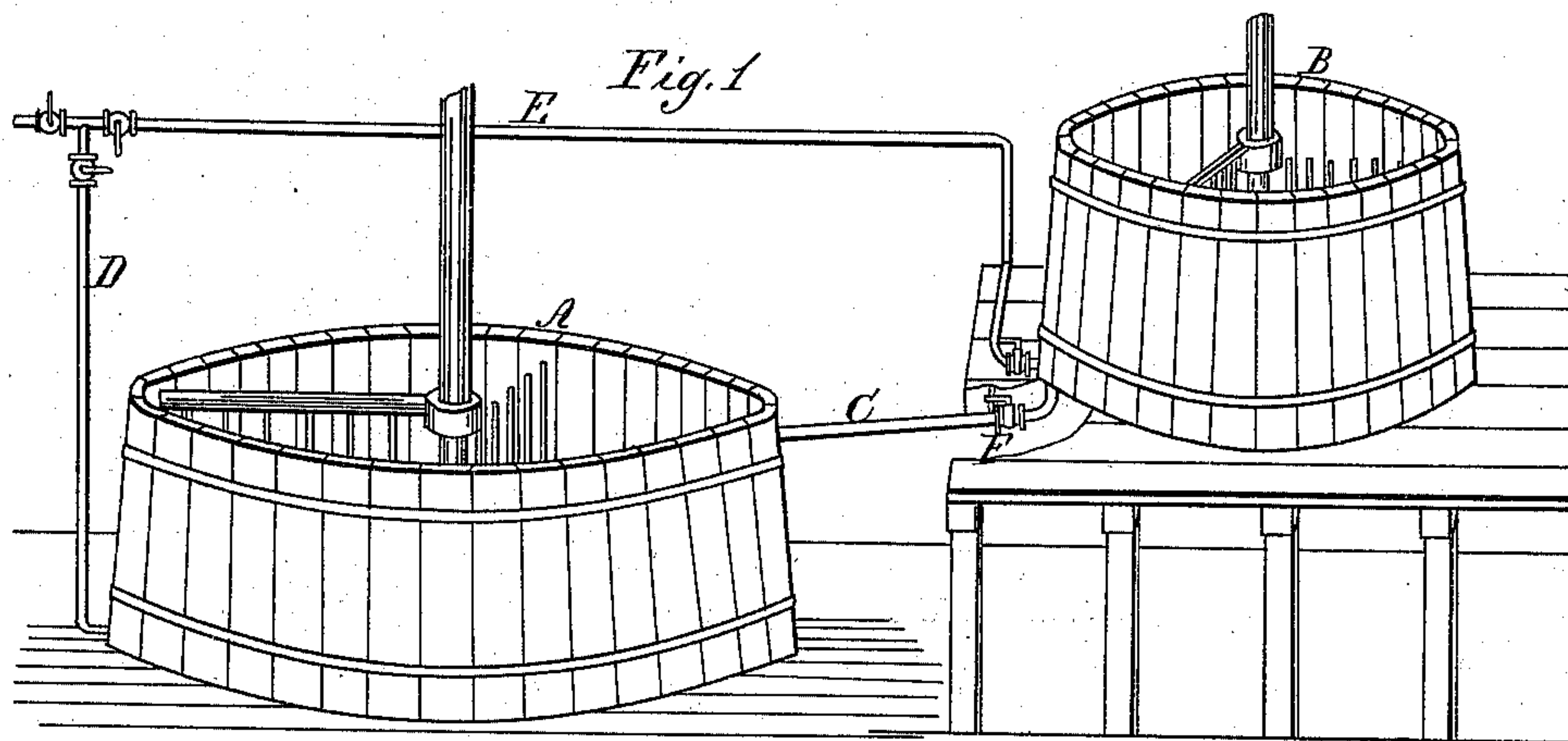


N. Baumann.

Process of Using Unmashed Corn for Beer.

N^o 90,066.

Patented May 18, 1869.



Witnesses
J. H. Green
R. F. Johnson

Inventor
Nicholas Baumann

United States Patent Office.

NICHOLAS BAUMANN, OF KALAMAZOO, MICHIGAN, ASSIGNOR TO HIMSELF AND W. B. CLARK, OF SAME PLACE.

Letters Patent No. 90,066, dated May 18, 1869.

IMPROVED PROCESS OF USING UNMASHED INDIAN CORN IN BREWING BEER, &c.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, NICHOLAS BAUMANN, of Kalamazoo, in the county of Kalamazoo, State of Michigan, have invented a new and improved Mode of Applying Unmashed Indian Corn in the Manufacture of Beer; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in providing two mash-tubs A and B, Figure I representing a perspective view, A B, Figure II, representing a transverse section, and A B, Figure III, representing a plan.

The tub B, Fig. I, may be constructed smaller in size than the tub A, and is placed so that its bottom is about four inches higher than the top of the larger one.

Each tub has its own mash-machine, and the contents of the smaller one, B, may be let off through the pipe C, Fig. I, into the lower one, A.

Steam may be conveyed through the pipes D and E, Fig. I, D and E, Fig. II, D and E, Fig. III, into both tubs, stop-cocks being provided, so as to permit each tub to be supplied with steam independently of the other.

The pipe D, Fig. I, ends where it enters the lower part of the tub A, and has but a single opening.

The pipe E, leading steam to the smaller tub B, is continued into the inside of the same, in the form of a spiral or circular pipe, perforated on the inner sides with a large number of small holes, through which the steam is driven into the contents of the tub.

To enable others skilled in the art to use my invention, I will proceed to describe the process.

While common barley-mash is being made in the large tub, A, Fig. I, the smaller tub, B, is filled to half its height with water, and steam is then introduced through the pipe E E E, Fig. III, until the water reaches a temperature of 160° to 165°; then Indian-corn meal is put into the water, (in quantity equal to that of malt used in the larger tub A,) and the mash-machines are put in motion.

The stop-cocks for the admission of steam being open, the steam is continually driven from the inside spiral pipe E E, Fig. III, toward the centre of the tub, causing a bubbling of the mixture, especially in the centre of the same. After a time, the bubbling will become stronger near the inner sides of the tub. The corn meal is now entirely dissolved, the liquid clear like a dissolution of sugar. It is now the proper moment to mix the contents of this tub B with the equal quantity of malt, prepared, in the mean time, in the larger tub A.

The stop-cock F, Fig. I, is now opened, and the tub B is emptied through the pipe C into the larger tub A, under a continual movement of the mash-machines in each tub. Both fluids being thus completely mixed, produce an excellent beer.

It is known that malt is able to transform a larger quantity of starch into sugar than that which is contained in the barley itself, and it is not a new thing to apply unmashed Indian corn in the manufacture of beer; but difficulties have arisen everywhere in endeavoring thoroughly to mix the unmashed corn with the mash, and thus to utilize the whole transforming-power of the malt.

The object of the above-described process is to overcome these difficulties.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination of the separate mash-tub B, Fig. I, enclosing the spiral steam-pipe E E, Fig. III, perforated with small holes on the inside; the larger mash-tub A, Fig. I; the pipe C, provided with stop-cock F, connecting the tubs, for the purpose of discharging the contents of the tub B into the tub A, with the steam-pipes E and D, provided with stop-cocks for letting steam into or shutting it off from the tubs A and B, for the purposes set forth and described.

NICHOLAS BAUMANN.

Witnesses:

J. W. BREESE,
R. F. JUDSON.