

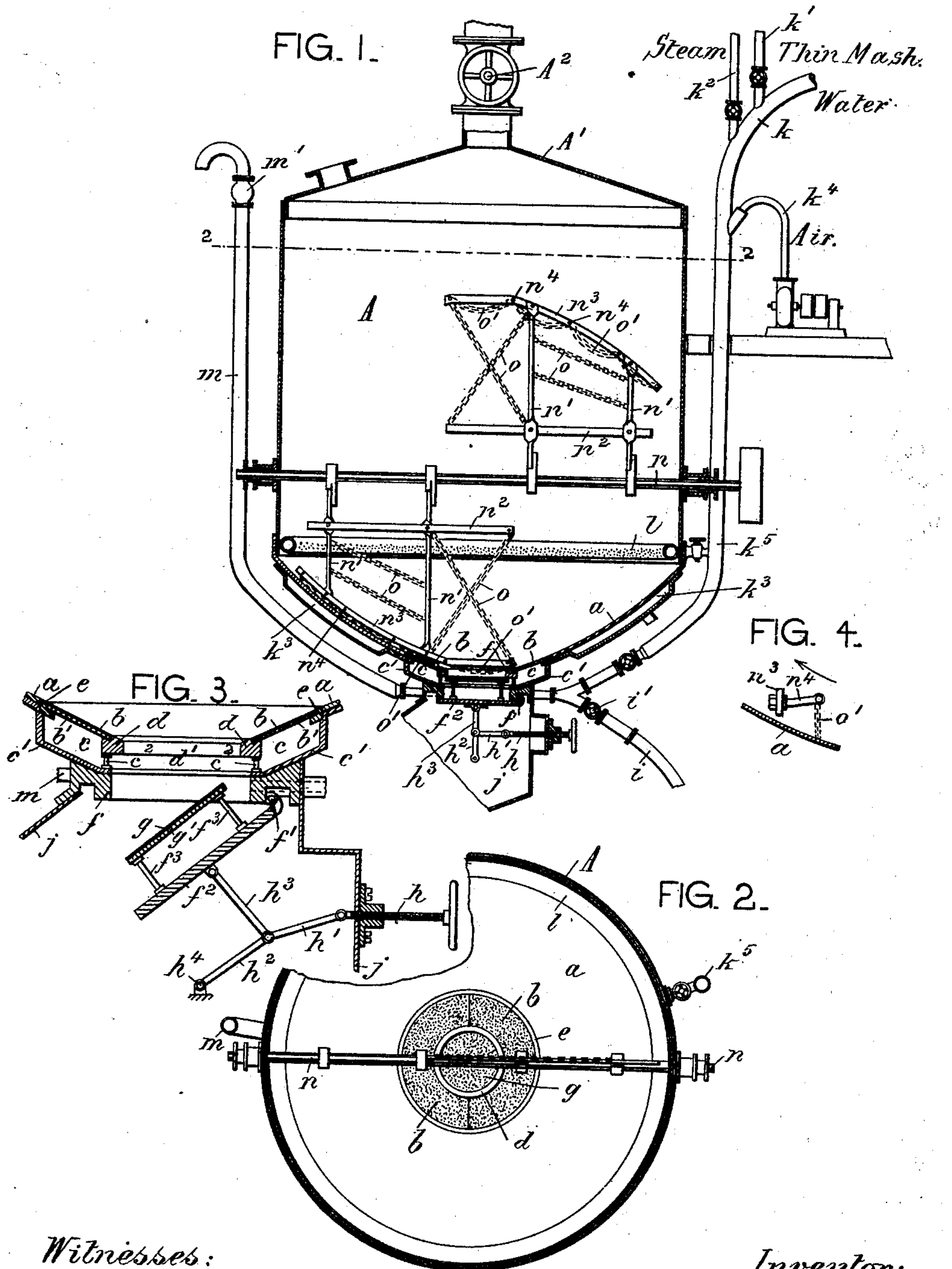
No. 719,052.

PATENTED JAN. 27, 1903.

O. SELG.
MASHING APPARATUS.
APPLICATION FILED SEPT. 18, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:
Arthur Gump.
Edward Ray.

Inventor:
Otto Selg
by his attorneys
Boeder & Briesew

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2 SHEETS—SHEET 2.

FIG. 5.

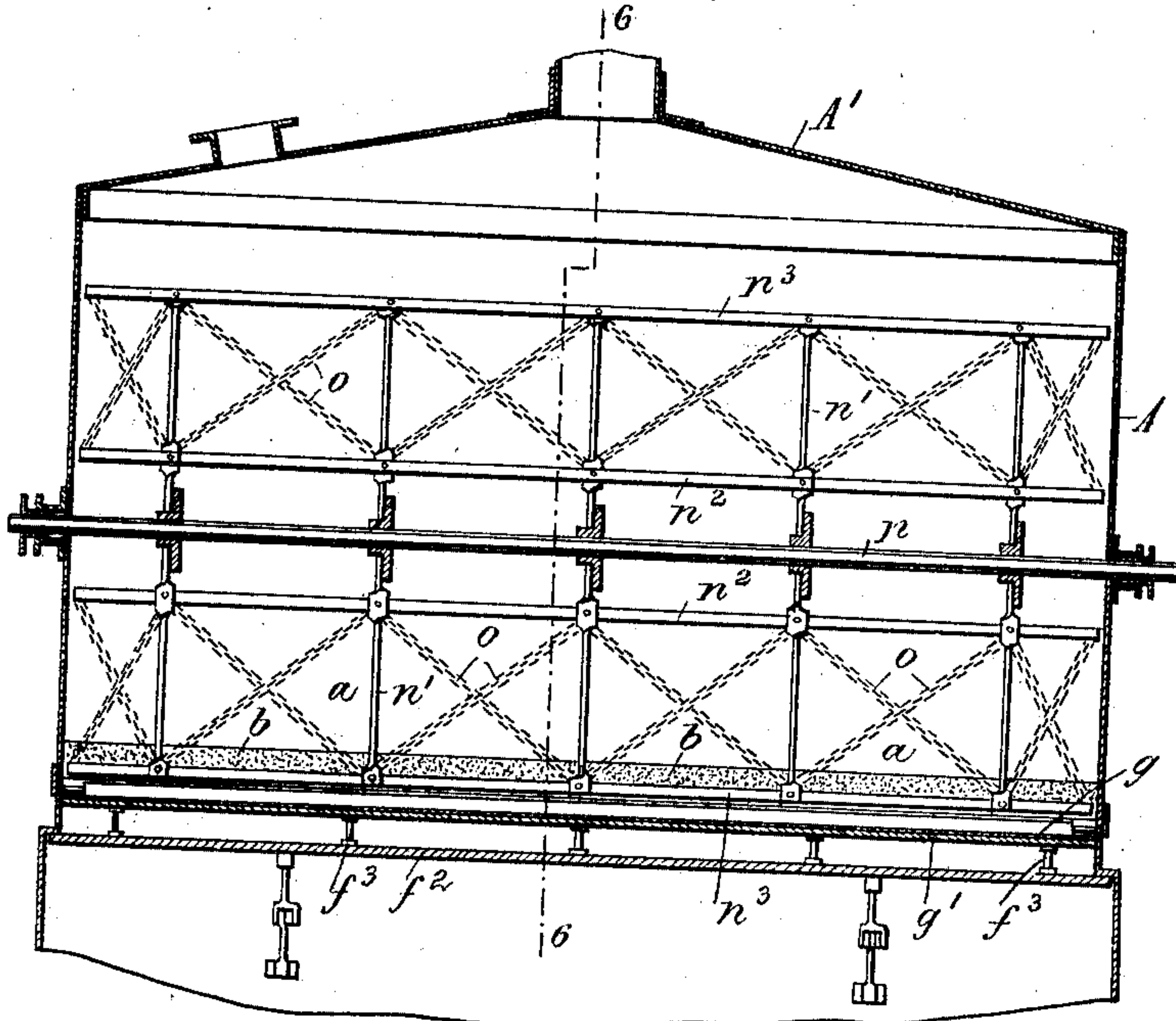
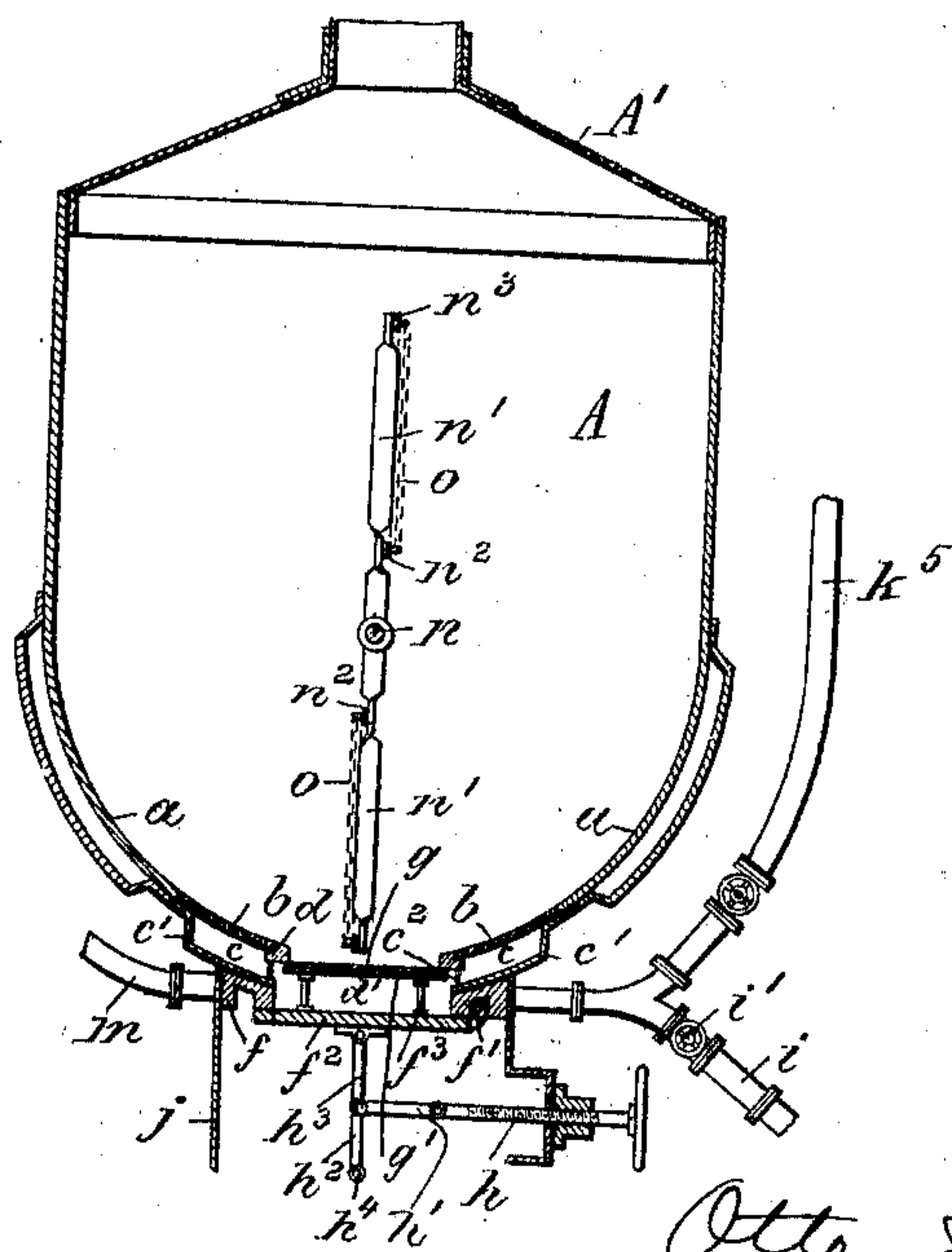


FIG. 6.



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UNITED STATES PATENT OFFICE.

OTTO SELG, OF BROOKLYN, NEW YORK.

MASHING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 719,052, dated January 27, 1903.

Application filed September 18, 1902. Serial No. 123,824. (No model.)

To all whom it may concern:

Be it known that I, OTTO SELG, a citizen of the United States, and a resident of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Mashing Apparatus, of which the following is a specification.

This invention relates to a mashing apparatus of simple construction by means of which a superior extraction of malt and other brewing material is obtained.

In the accompanying drawings, Figure 1 is a vertical section of my improved mashing apparatus; Fig. 2, a cross-section on line 2 2, Fig. 1; Fig. 3, a detail of the lower end of the apparatus, showing the gate-valve open; Fig. 4, a detail of the stirrer - sustaining bolt; Fig. 5, a vertical section of a modification of the apparatus; and Fig. 6, a cross-section on line 6 6, Fig. 5.

The letter A represents the mash-tub, provided with a curved or inclined bottom *a*. This bottom has a central opening within which there is fitted an annular or open strainer or sieve *b*, flush with the inner surface of bottom *a*, Fig. 3. Underneath the sieve *b* there is formed an annular chamber *c* by means of an angle plate or step *c'*, which is connected at its outer end to the inner end of bottom *a*. At its inner end the plate *c'* sustains, by means of posts *c²*, a ring *d*, which forms the inner seat for the sieve *b*. The outer seat for such sieve is formed by a flanged ring *e*, set into the opening of bottom *a*. By means of the posts *c²* communication is established between the annular chamber *c* and a chamber *d'*, formed beneath the opening of ring *d*, so that the wort is free to flow from chamber *c* into chamber *d'*. The sieve *b*, being fine-meshed and weak, is reinforced by an underlying coarse-meshed sieve *b'*.

To the lower side of angle-plate *c'* is attached an annular frame *f*, to which is hinged at *f'* the discharge gate-valve *f²*. This valve supports by posts *f³* a coarse-meshed sieve *g'* below an upper fine-meshed sieve *g*. When the valve *f²* is closed, the sieve *g* folds against the lower side of ring *d*, so that in this way the opening within annular sieve *b* is closed by sieve *g*. The valve may be operated in suitable manner—such, for instance, as a set-screw *h* and links *h'* *h²* *h³*, of which the link

h² is fulcrumed at *h⁴* to a fixed support. When the gate *f²* is closed, the wort percolating through the strainers *g* and *b* accumulates in chamber *d'* and is thence discharged through an outlet-pipe *i*, controlled by valve *i'*. When the gate *f²* is opened, the spent grain is discharged through a hopper *j*.

The apparatus is provided with a water-pipe *k*, a thin mash-pipe *k'*, a steam-pipe *k²*, a steam-jacket *k³* beneath bottom *a*, and an air-pipe *k⁴*, which pipes communicate by pipe *k⁵* with the space above gate *f²*. The pipe *k⁵* also connects with a sprinkler *l*, arranged within tub A, so that the contents of pipe *k⁵* are blown against the malt and bottom from opposite sides.

During the discharge of the wort air is admitted to the bottom of the apparatus by means of a vent-pipe *m*, having vacuum-valve *m'* and entering frame *f*. The air emitted from this pipe against the descending wort will prevent the grain from packing compactly upon the strainer. If desired, the mashing process and the running off of the wort may be carried on under pressure, which may be taken off by a valve *A²* of cover *A'*.

The stirrer-shaft *n* carries a number of radially - arranged arms *n'*, provided with straight inner cross-arms *n²* and curved outer cross-arms *n³*. The stirrers proper are composed of a number of chains *o*, fitted to the arms *n'* *n²* *n³* in suitable manner and traversing the space between the arms, so as to sweep through the interior of the tub. I have found that these chain stirrers, owing to the multiplicity and area of their links, agitate the mass more thoroughly than the ordinary blade or rod stirrers. I prefer to suspend sagging chains *o'* from the curved arms *n³* by obliquely-set bolts *n⁴*, which permit the chains to sweep over the bottom *a* without being caught underneath arms *n³* when the shaft *n* is reversed.

In Figs. 1 and 2 I have shown an apparatus having a circular cross-section, while in Figs. 5 and 6 the apparatus has a rectangular cross-section. This latter modification is designed to be used wherever the head-room is limited.

The advantages of the apparatus are numerous. Its costs of construction are greatly diminished by dispensing with the usual perforated false bottom extending over the entire surface of the tub-bottom. The com-

paratively small filtering-surface is so completely covered by the filtering material that the malt, &c., may be mashed without introducing the hulls. The sparging-water has
 5 no chance to pass through the false bottom without passing through the grain, nor can it pass through any channels in the grain, and therefore all extract is thoroughly washed out and a very clear wort is obtained. The
 10 sediments may be readily removed and the apparatus may be cleaned after every brewing operation without detaching or removing any of its parts.

If desired, my improved mashing apparatus
 15 tus may also be used as a hop-jack.

What I claim is—

1. A mashing apparatus provided with a perforated stepped bottom to form a chamber surrounding the perforation, a sieve above
 20 said chamber flush with the bottom, and a valve having a sieve and a chamber beneath said sieve, substantially as specified.

2. A mashing apparatus provided with a perforated stepped bottom to form a chamber surrounding the perforation, posts on the inner side of the chamber, a ring supported by the posts, a sieve supported by the ring and flush with the bottom, and a valve having a sieve and a chamber beneath said sieve, substantially as specified. 25 30

3. A mashing apparatus provided with a shaft, arms projecting radially therefrom, a cross-arm connecting the ends of the radial arms, inclined bolts projecting from the cross-arm, and sagging chains suspended from the outer ends of the bolts, substantially as specified. 35

Signed by me at New York city, New York, this 17th day of September, 1902.

OTTO SELG.

Witnesses:

WILLIAM SCHULZ,
 F. V. BRIESEN.