

No. 845,470.

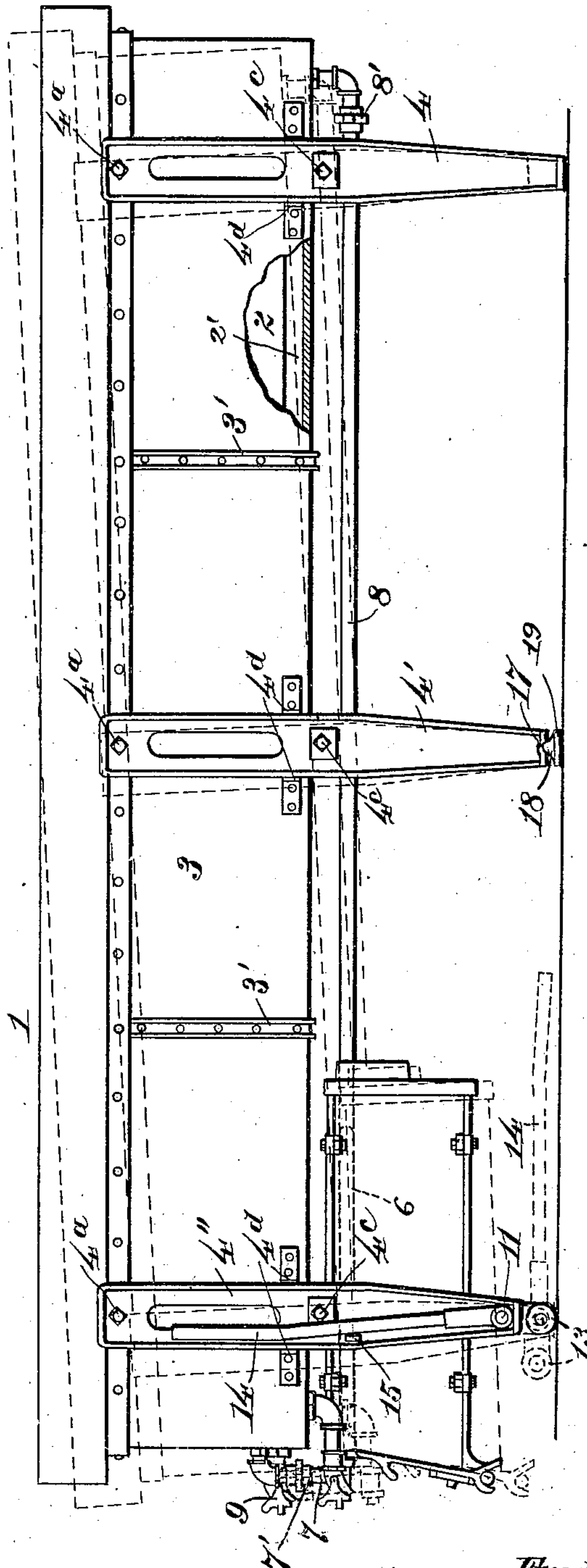
PATENTED FEB. 26, 1907.

F. J. MACNISH.
CHEESE VAT.

APPLICATION FILED JULY 28, 1906.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses:

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Inventor

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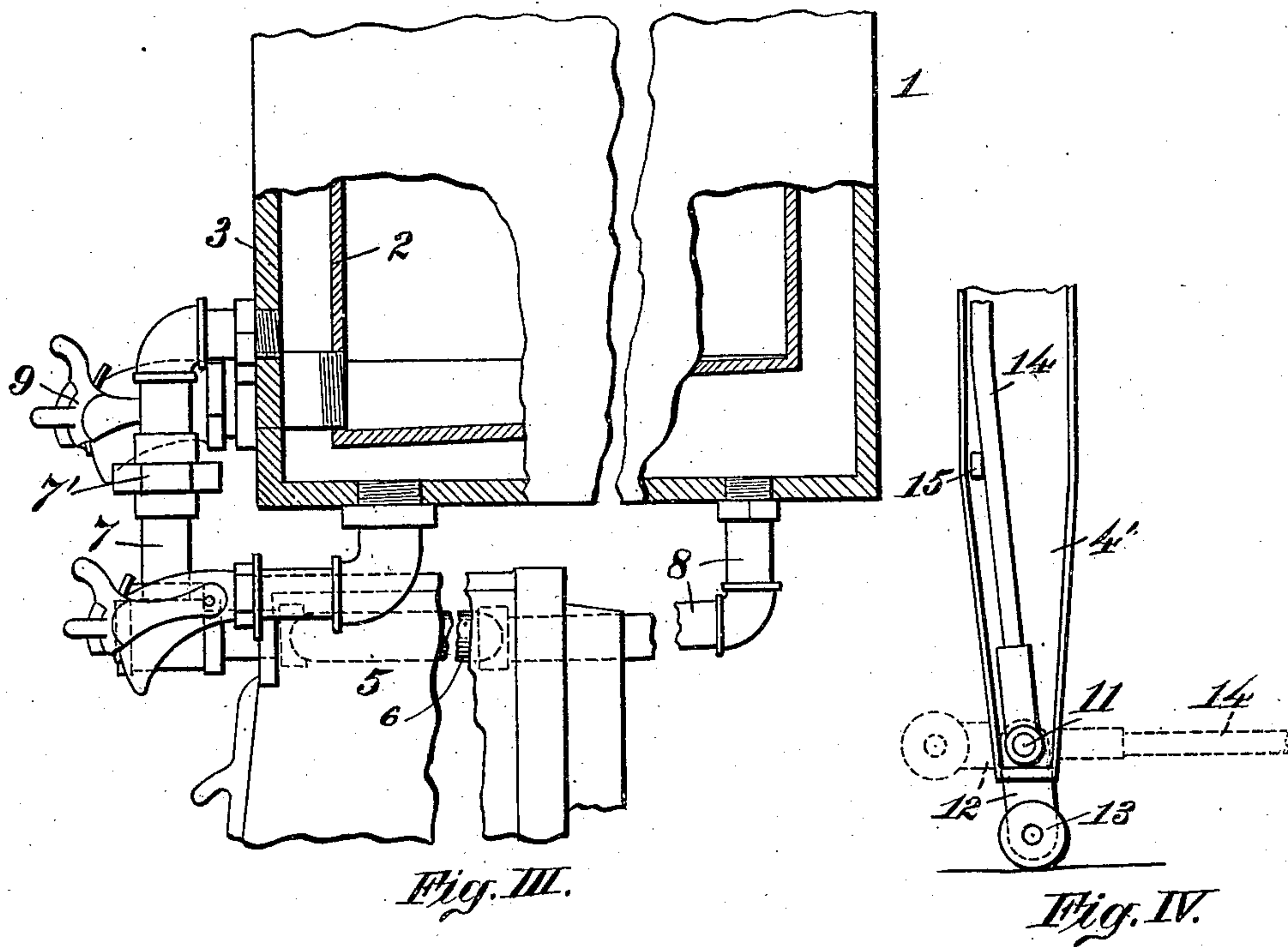
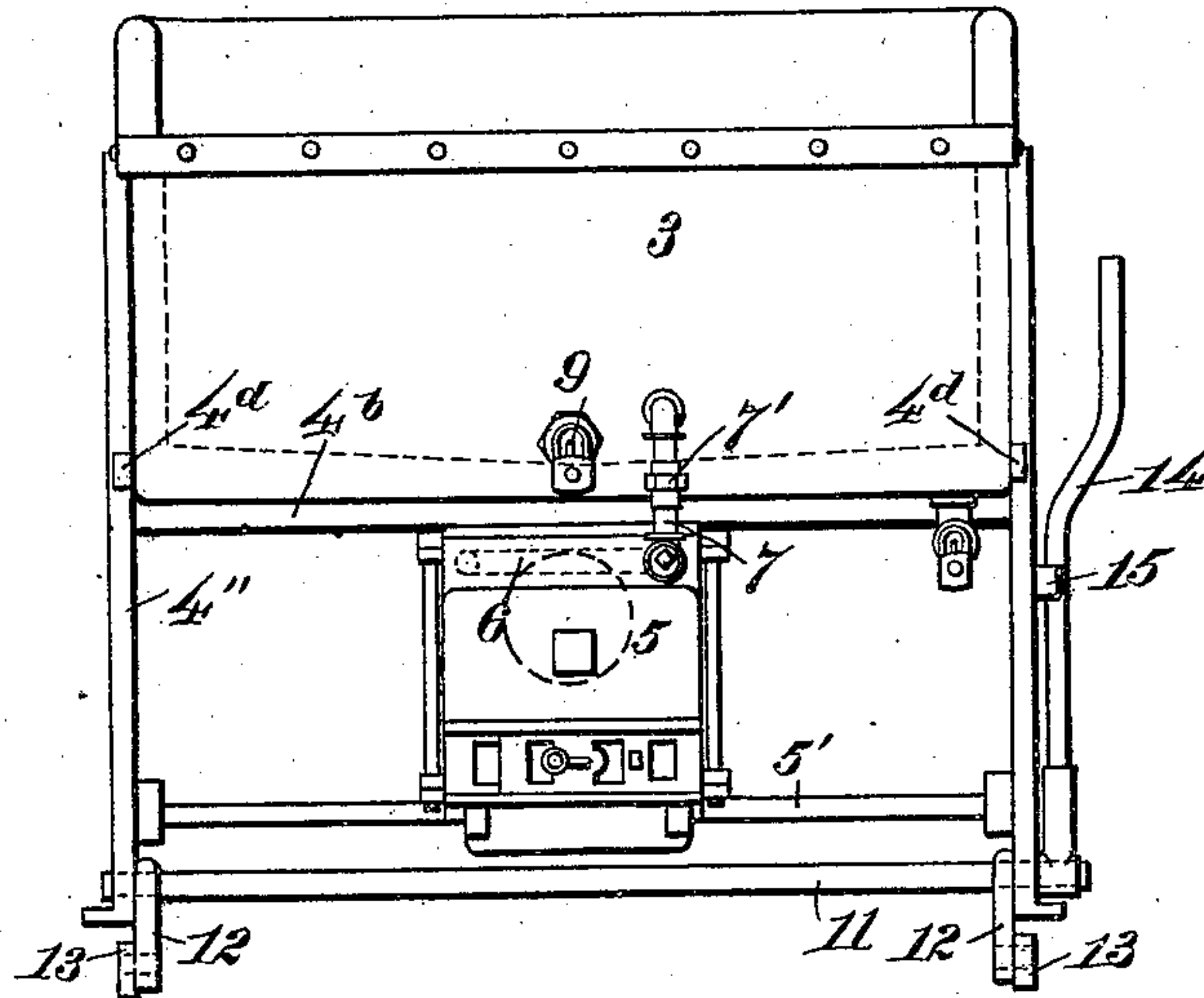
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2 SHEETS—SHEET 2.

Fig. II.



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UNITED STATES PATENT OFFICE.

FREDERICK J. MACNISH, OF OAK PARK, ILLINOIS, ASSIGNOR TO THE
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CHEESE-VAT.

No. 845,470.

Specification of Letters Patent.

Patented Feb. 26, 1907.

Application filed July 28, 1906. Serial No. 328,263.

To all whom it may concern:

Be it known that I, FREDERICK J. MACNISH, a citizen of the United States, and a resident of Oak Park, county of Cook and State of Illinois, have invented a certain new, useful, and Improved Cheese-Vat, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in the vats which are used in making cheese. As is well known, it is necessary to temper the contents of a cheese-vat, various changes of temperature being required during the process, and it has been the practice to provide cheese-vats with water-jackets and with heaters or stoves for varying and maintaining the desired temperatures.

My invention relates particularly to improvements in cheese-vats in this class; and the object of my invention is to provide a cheese-vat of the self-heating type which shall be more efficient than the vats that are now in use.

Another object of my invention is to provide a cheese-vat of simple and economical construction and which may be dismembered or "knocked down" and shipped in more compact form than has been the case hitherto.

Other objects of my invention will appear hereinafter.

My invention consists generally in a cheese-vat having a water-jacket, in combination with a stove arranged beneath the vat, a water heater or coil in said stove, and circulating-pipes connected with opposite ends of the water-jacket, whereby vigorous circulation of the contents of the jacket is insured and uniform temperature secured throughout the vat.

My invention also consists in various novel constructions and in combinations of parts, all as hereinafter described, and particularly pointed out in the claims.

My invention will be more readily understood by reference to the accompanying drawings, which form a part of this specification, and in which—

Figure I is a side elevation of a cheese-vat embodying my invention, a portion of the

outer shell being broken away to illustrate the water-jacket. Fig. II is an end elevation of the vat. Fig. III is a detail illustrating the manner of connecting the water-jacket to the heater and also showing the drain gate or valve of the cheese-tank. Fig. IV is a detail of one of the legs at the forward end of the vat, illustrating the operation of the extension device.

Referring to the drawings, 1 indicates a vat comprising an inner tank 2 and outer tank 3. Both are preferably made of sheet metal, although the outer one may be made of wood. In either case the vat is suitably strengthened by ribs, as shown at 3'. The inner tank 2 is the receptacle for the milk, while the outer tank 3 forms a water-jacket 2' about the sides, ends, and bottom of the former. The vat thus formed is supported by three pairs of legs 4 4' 4''. The legs are of light though strong construction and extend nearly to the top of the vat. At their upper ends they are attached to the vat by bolts 4^a. Cross members 4^b extend from leg to leg of each pair and serve to support the weight of the vat. These cross members are attached to the legs by bolts 4^c. To obviate any tendency of the legs to turn on the bolts 4^a, and thus render the vat unsteady, I provide bosses or stops 4^d on each side of each leg and at points near the bottom of the vat. These may be formed on the vat or may be separate pieces fastened thereto, as shown in the drawings.

To heat the water in the water-jacket 2', I employ a hot-water heater 5 beneath the vat and connect the water-jacket by suitable pipes to the hot-water coil 6 in said heater. Short and long pipes 7 and 8 connect the coil 6 with the water-jacket, forming a complete system of circulation. The water is heated in the coil 6 and passes through the pipe 7 to the water-jacket of the vat. As it circulates through the jacket it cools somewhat and returns through the pipe 8 to the coil, where it is reheated. This device gives a vigorous circulation to the hot water, which keeps the vat at substantially the same temperature throughout. The heater 5 is located beneath the forward end of the vat and may be supported upon the device in any suitable manner. I have illus-

trated it as resting upon a transverse member 5'. It will be seen that the heater may be readily removed from the vat by simply disconnecting the pipes 7 and 8 at the union-joints 7' and 8' and lifting it from the cross-rods. It will be noted that by merely resting the heater upon the cross member and securing it to the vat only by the pipe connections it is free to move sufficiently to take up all expansion and contraction of the pipes without putting any strain upon any portion of the device.

The bottom of the inner tank 2 is channeled, as illustrated by dotted lines in Fig. II of the drawings, to facilitate drawing off the whey through a gate 9. In order that the whey may be drawn off more quickly, I construct the legs of the vat in such a manner as to permit the vat to be readily tilted. To this end the forward pair of legs 4'' are made somewhat shorter than the others; and I provide them with extension members, which may be turned back when it is desired to tilt the vat. 11 indicates a shaft or rod extending from one leg 4'' to the other. On the rod 11 and adjacent to each leg is an extension member 12, provided on the lower ends with rollers 13. Secured to one end of the rod 11 is a lever 14. When it is desired to tilt the vat, the lever 14 is turned down, as shown in the dotted lines of Figs. I and IV. This raises the extension members and shortens the legs 4''. The vat may then be readily tilted, as shown by dotted lines in Fig. I, utilizing the intermediate pair of legs 4' as fulcrums. No force is required to depress the end of the vat, for the reason that the weight of the stove, which is at this end of the vat, is sufficient for this purpose. To right the vat after the whey is withdrawn, the lever 14 is raised, swinging the extension members 12, so as to lengthen the legs 4''. This is more readily accomplished by reason of the friction-reducing rollers 13, which I provide on the ends of the extension members 12.

15 indicates a stop-lug located on one of the legs and in the path of the lever 14. This lug is so positioned on the leg that when the lever is thrown back against it the rollers have passed beyond the line of centers and is therefore not easily displaced accidentally. The center pair of legs 4' are also made somewhat shorter than the pair 4, though not shortened to the extent of the forward pair. They are provided on the bottom with notches 17, which are engaged by fulcrum-lugs 18, formed upon floor-blocks 19. These form a fulcrum upon which the vat is tilted.

The vat shown and described herein is light, strong, and durable and is easily knocked down for packing and shipment

By disconnecting the pipes at the unions 7' 8' the heater is easily removed and the legs are detached by unfastening the bolts 4^a and 4^c. The legs, heater, and heater-pipes may then be packed inside the vat proper, after which the whole is crated for shipment. Owing to the extreme simplicity of construction, any cheese-maker may set up or assemble the vat without the aid of a skilled mechanic.

It is obvious that numerous changes and modifications of my device may be made without departing from the spirit of my invention.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A cheese-vat, provided with a water-jacket, in combination with a stove arranged beneath the vat, a water heater or coil in said stove and long and short circulating-pipes connecting said coil with opposite ends of said water-jacket, substantially as described.

2. A cheese-vat, provided with a water-jacket, in combination with a stove arranged beneath the vat and detachably secured thereto, a heater-coil in said stove, and long and short circulating-pipes connecting said coil with opposite ends of said water-jacket, substantially as described.

3. The combination of a cheese-vat comprising a water-jacket, supported upon a plurality of detachable legs, with a hot-water heater arranged beneath said vat and detachably secured thereto, and circulating-pipes connecting said hot-water heater with said jacket, substantially as described.

4. In a cheese-vat, the combination of a tank provided with a water-jacket; with a plurality of legs detachably secured thereto, cross members connecting said legs in pairs and a heater detachably secured to said vat, and resting upon one of said cross members, substantially as described.

5. In a cheese-vat, the combination of a tank provided with a water-jacket; with a plurality of detachable legs secured thereto, cross members connecting said legs in pairs, a hot-water heater arranged beneath said tank and resting upon one of said cross members, and circulating-pipes connecting said heater with said water-jacket, substantially as described.

6. In a self-heating cheese-vat carrying a stove at one end, a plurality of detachable legs secured thereto in pairs, and means for shortening the pair of legs adjacent to said stove to tilt said vat, substantially as and for the purpose specified.

7. A cheese-vat comprising a tank provided with a water-jacket and having a suitable heater secured thereto; in combination with a plurality of legs detachably secured to said vat and arranged in pairs, one of said

pairs being shorter than the others, extension members on said short pair of legs and means for operating said extension members to tilt or right the vat, substantially as described.

5 8. A self-heating cheese-vat provided with a plurality of detachable legs arranged in pairs, fulcrum devices arranged upon one pair of said legs, and means for shortening

another said pair of legs to tilt the vat, substantially as described.

In testimony whereof I have hereunto set my hand, this 23d day of July, 1906, in the presence of two subscribing witnesses.

FREDERICK J. MACNISH.

Witnesses:

A. McComb,

E. F. WELLINGHOFF.