

P. B. PALMER.
MACHINE TO MANUFACTURE SODA AND SULFITE WOOD PULP.
APPLICATION FILED MAY 20, 1909.

956,728.

Patented May 3, 1910.

2 SHEETS—SHEET 1.

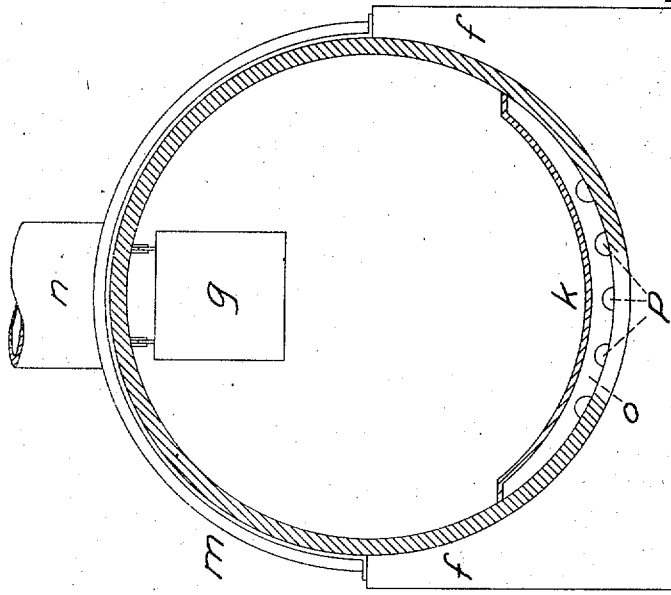


Fig. 2

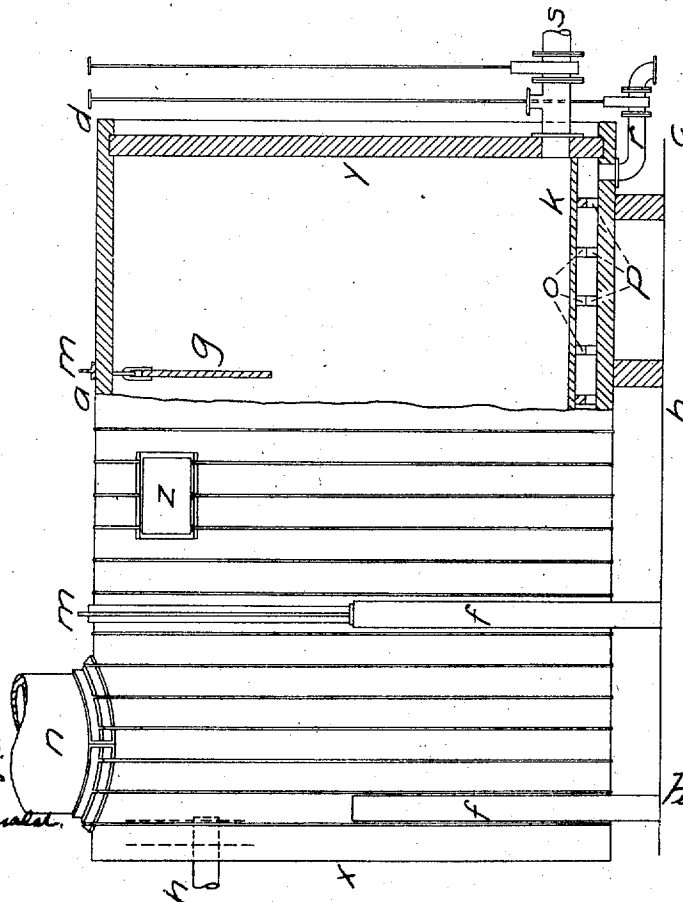


Fig. 1

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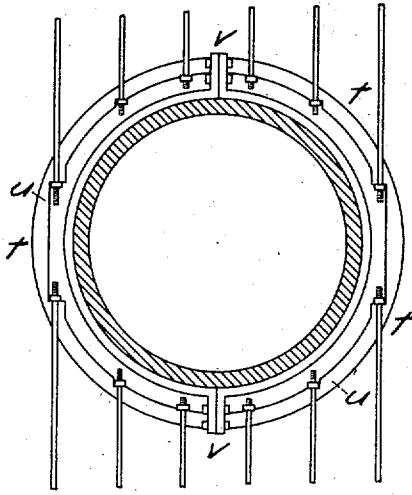


FIG. 4

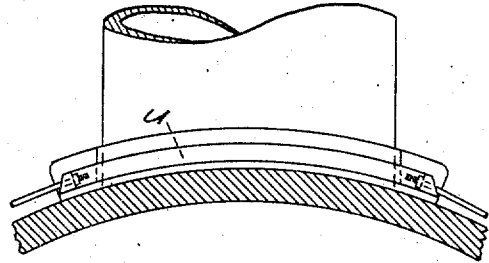


FIG. 3

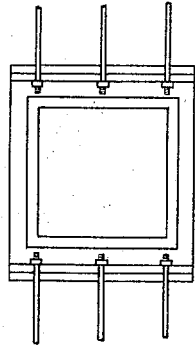


FIG. 6

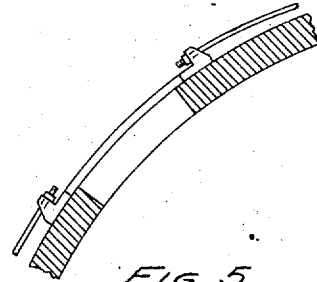


FIG. 5

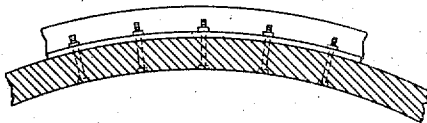


FIG. 8

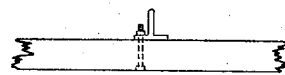


FIG. 7

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UNITED STATES PATENT OFFICE.

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MACHINE TO MANUFACTURE SODA AND SULFITE WOOD-PULP.

956,728.

Specification of Letters Patent.

Patented May 3, 1910.

Application filed May 20, 1909. Serial No. 497,368.

To all whom it may concern:

Be it known that I, PERLEY B. PALMER, a citizen of the United States, residing at Orono, in the county of Penobscot and State of Maine, have invented a new and useful Machine to be Used in the Manufacture of Soda and Sulfite Wood-Pulp, of which the following is a specification.

My invention relates to improvements in blow-pits used in the manufacture of soda and sulfite wood-pulp, to be used in conjunction with the other parts of the machinery in common use in the manufacture of soda and sulfite wood-pulp; and the objects are,—first, to secure greater economy of space than can be secured by cylindrical blow-pits of a corresponding height, now in use; second, to secure a relatively larger filtering and drainage area than is the case with blow-pits now in use, and a more rapid escape of the waste liquid than is the case with the blow-pits now in use, hence an economy of time and increase in efficiency in the process of washing the pulp-stock over that of the blow-pits in common use, and, third, a more rapid, easy, and complete sluicing of the pulp stock to the pump than is the case with the blow-pits now in use. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 represents the longitudinal elevation and a partial longitudinal vertical section of the blow-pit; Fig. 2 a vertical cross section of the blow-pit; Figs. 3 and 4, the split metallic ring around the base of the vent-pipe and the attachments of the metallic hoops of the blow-pit thereto; Figs. 5 and 6, the metallic frame about the man-hole and the attachments of the hoops of the blow-pit thereto; Figs. 7 and 8, the reinforced bands of metals supported by the cradle of the blow-pit and the method of fastening the staves of the blow-pit to them.

Fig. 1 represents the longitudinal elevation and a partial section, *a b c d*, of the machine (blow-pit) which is cylindrical, of a convenient height and of a length depending on the size of the digesters connected with it. Because of its horizontal position, this blow-pit has two or three times the capacity of the common vertical cylindrical blow-pit unless the digesters connected with the latter are placed at an elevation which would ordinarily be inconvenient.

The filter, *k k*, in Figs. 1 and 2, made of

planks pierced with small holes or cocoa matting or other suitable material and extending the length of the blow-pit, is in its cross section the arc of a circle, thus securing a relatively greater filtering area than that of the blow-pits now in use. This filter is kept in place by the supports, *o o*, as shown in Figs. 1 and 2, these supports being pierced with holes, *p p*, Figs. 1 and 2, to allow the escape of the waste liquid to the waste-pipe, *r*. This flow of the waste liquid to the waste-pipe and of the washed pulp to the pump-pipe, *s*, is greatly facilitated by the circular shape of the bottom of the blow-pit and of the filter, this advantage being also increased by the elevation of the end, *x*, of the blow-pit four or five inches higher than the end *y*.

If the blow-pit is made of wood, it rests on cradles of concrete or of other suitable material, the tops of which rise to half the height of the blow-pit, *f f* in Figs. 1 and 2. These cradles also support heavy reinforced bands of metal, *m m*, to which the plank staves of the blow-pit are firmly fastened by bronze bolts, as shown in Figs. 7 and 8; these serve to keep the plank staves from bending or sagging. From one of these reinforced bands a heavy metallic plate, *g g* in Figs. 1 and 2, is suspended so as to swing freely in the longitudinal direction of the blow-pit. This plate is a target or butt, about four feet square and two inches thick against which the pulp is thrown when blown into the blow-pit through the digester pipe, *h*, and serves to comminute any of the chips whose form has not been destroyed by "cooking" in the digester, and to distribute the pulp evenly in the blow-pit. Owing to the distance of this target from the vent-pipe, *n n* in Figs. 1 and 2, much less pulp is carried up through the vent-pipe into the vomit-tube than is the case with the cylindrical blow-pits now in use.

In Figs. 3 and 4 is shown a device for firmly fastening the vent-pipe to the blow-pit and for avoiding the weakness to the latter that would ordinarily exist as a consequence of the opening. This device is a heavy metallic ring, *t t*, with a collar, *u u*. This ring is made up of two equal parts drawn together by screw-bolts at *v v*, so that the strain of the hoops will not come on the junction of the two halves of the ring. The iron hoops of the blow-pit are extended

as rods with screws through slots in the collar of the ring, Fig. 3, and the hoops are drawn tight by the means of nuts. A similar device is adopted for fastening the hoops to the frame of the manhole, *z* in Fig. 1, and is shown in Figs. 5 and 6.

I am aware that there have been in use for more than two years prior to my invention cylindrical blow-pits, placed upright, however, used in the manufacture of soda and sulfite wood-pulp, also filters made of plank pierced with small holes, of cocoa matting and of other suitable material, but not of the shape or location as the one above described, also cradles of concrete and of other suitable material similar to those above described and serving a similar purpose.

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

1. The combination in a blow-pit used in the manufacture of soda and sulfite wood-pulp of a cylindrical receptacle or pit placed horizontally, as above described, with a filter as above described.

2. The combination in a blow-pit used in the manufacture of soda or sulfite wood-pulp, of a cylindrical pit placed horizontally, as above described, and a hanging target or butt, as above described and set forth.

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Witnesses:

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