

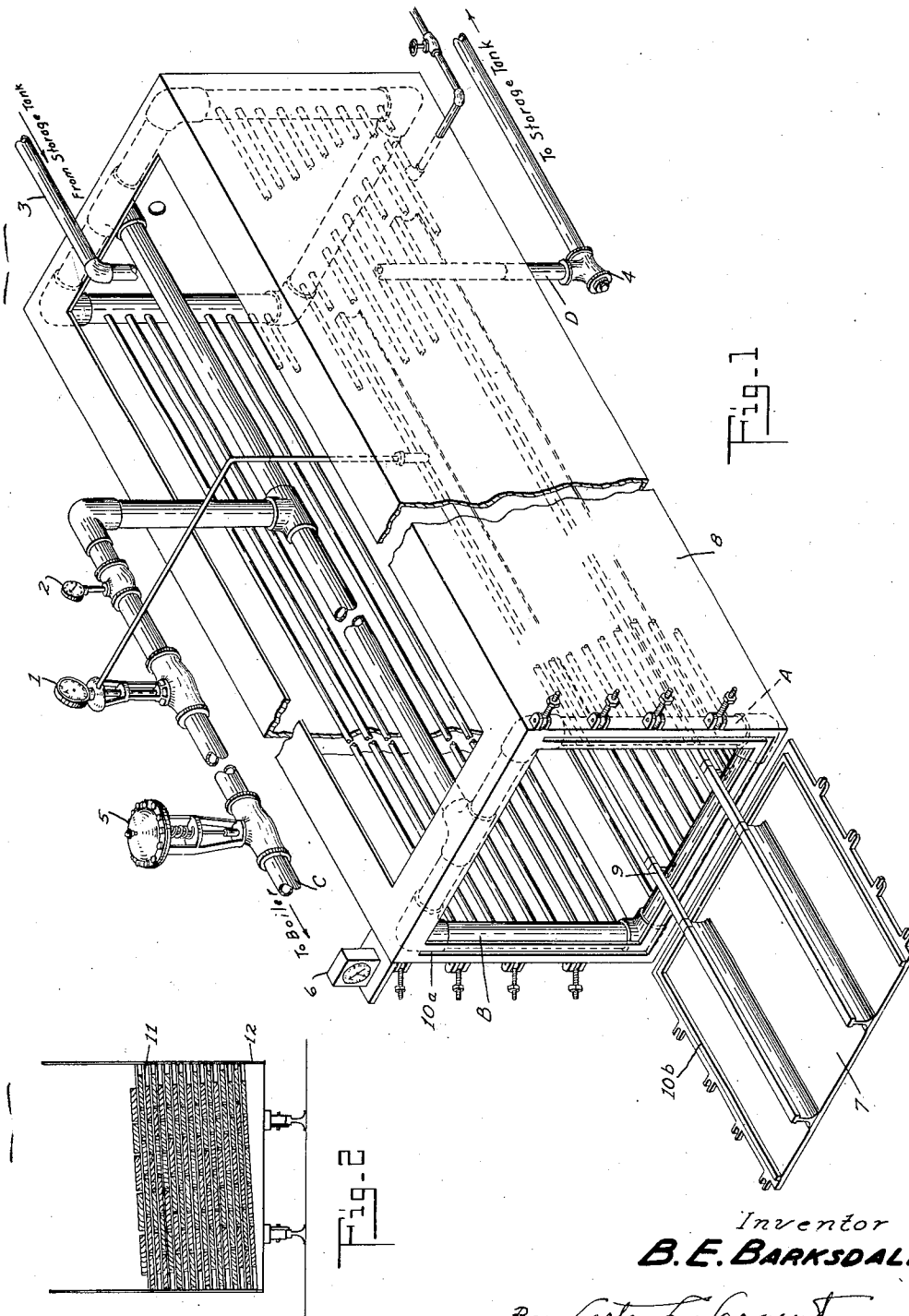
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B. E. BARKSDALE, SR

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APPARATUS FOR DRYING LUMBER

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Inventor
B. E. BARKSDALE

By *Foster Sargent*
Attorney

UNITED STATES PATENT OFFICE

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APPARATUS FOR DRYING LUMBER

Beverly E. Barksdale, Sr., Charlotte, N. C.

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1 Claim. (Cl. 34-48)

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The object of my invention is to provide a novel apparatus for drying green lumber more quickly than has been possible with prior apparatus or processes. It is also an object of my invention for attaining this result which will not cause fires. I attain the objects of my invention by the apparatus illustrated in the accompanying drawings in which Fig. 1 is a perspective view of my invention, a portion being broken away to save space; and

Fig. 2 is a section through the truck on which the lumber is arranged for placing in the apparatus shown in Fig. 1.

Referring to the accompanying drawings, I provide a steel tank A which is equipped with heating coils B that will produce sufficient radiation of heat at given temperatures and pressures. A pipe C leads from the boiler to the heating coil B. Mounted on the pipe C is a temperature control instrument 1 which is so regulated that a definite control of temperature over a period of time necessary to dry the wood to a given or stated or required moisture content is obtained by setting or regulating this instrument at certain definite temperatures. A gage 2 is provided which indicates the steam pressure in the heating coils. A pipe line 3 is provided through which the drying fluid is pumped into the tank A. An outlet pipe D opens out from the bottom of the tank and has a strainer 4 where fluid is drained from the tank after drying time and is for the purpose of trapping those objects which are foreign to the fluid, as for example, sawdust, shavings, chips, etc.

Also mounted in the intake steam pipe C is a pressure steam-controlled valve 5 which can be regulated so as to control the pressure on the steam coils B and prevent rupture or bursting of same due to excess pressure. The timing apparatus 6 is provided to govern the time of operation involved and is equipped with an element which indicates when the termination of the required drying period has been reached.

The tank has a hinged end door 7 equipped with stay-bolts 7a that allow the door to be lowered or opened so that trucks may pass in or out of the tank. Doors 7 may be provided on either end of the tank or on both ends to permit a continuous operation in supplying and removing lumber. Rails 9 are provided on the door and on the body of the tank to permit passage of trucks from the rails on the door to the corresponding rails within the tank. The door 7 is equipped with a steel tongue 10 which seats in a corresponding groove 10a in the end of the tank

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containing a gasket to prevent the leaking of fluid from the tank.

The bottom of the truck or other suitable means such as the bottom of the tank, on which the green lumber is placed is provided with sloping cross-members 12, so that the lumber being dried may be placed in a sloping position which allows the fluid to rapidly drain from the upper surface of the material being dried. The material is also spaced, as at 11, from the edge of the truck to allow a complete circulation of the drying fluid around the girth of each individual piece of material being dried.

The green lumber to be dried is placed on trucks or other suitable means in the manner shown in Fig. 2 and the lumber is then rolled or suitably conveyed into the tank, either by hand or mechanically. The material is then anchored in the tank in such a manner as to prevent floating.

The tank is then filled with a mineral fluid, preferably of a high paraffin content. At the time of introduction of the drying fluid and the wood or other material to be dried, the temperature of the drying fluid and the material to be dried must not vary more than 20 degrees Fahrenheit. This prevents the drying fluid from entering or penetrating the material to be dried. After introduction of drying fluid into the tank, the material to be dried is to be covered completely, the same being submerged in the drying fluid. Then steam control valve 5 is opened to permit the flow of steam not in excess of 60 pounds pressure which flows through thermostatic control valve No. 1 into the steam coils until the temperature of the fluid has reached 250 degrees Fahrenheit. Control valve #1 maintains the correct temperature. This is necessary to prevent the checking, warping or twisting of the material being dried. At the time the drying solution reaches the required temperature, timing apparatus No. 6 is set for a period of time to be determined by the size and nature of the product being dried. Pressure on the coils is constantly checked by gauge No. 2.

The required time for proper processing having elapsed, drying fluid is rapidly drained from the tank, the heat being maintained on the steam coils to prevent any change in temperature of the fluid or wood so that fluid will not enter or penetrate the material being dried. This maintaining of a uniformity of temperature is important to the proper drying of the wood.

Material is then ready for removal and manufacturing.

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The drying liquid can be used again and again, as it is not absorbed by the wood, provided my process is followed. In case it is desired to use the drying liquid again shortly after it is removed from the drying tank, then it is run through a cooling tower, which can be attached to said tank.

What I claim is:

An apparatus for drying lumber comprising a tank having an open end and of a size to accommodate a truck carrying the lumber to be dried, rails disposed on the bottom of said tank for engaging and supporting the wheels of said truck, a closure for said open end hinged to said tank at the bottom thereof, rails on the inner surface of said closure adapted to form continuations of the rails in said chamber when said closure is in open position, a bead on the inner surface of said closure, a recess in the open end wall of said tank, a gasket in said recess whereby upon closing of said closure a fluidtight seal will be provided, means for forcibly locking said closure in closed position, heating coils disposed along the bottom and two vertical sides of said tank, means for supplying a heating fluid to said coils, a pressure control means in said supply means, temperature control means in said supply means re-

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sponsive to the temperature within said tank for maintaining a relatively constant temperature therein, a source of drying liquid, means for supplying said liquid to said tank, means for withdrawing the drying liquid from said tank upon completion of the drying operation whereby a truck load of lumber to be dried may be disposed in said tank and said lumber immersed in a drying liquid maintained at a predetermined temperature for a predetermined period of time, thus drying said lumber and preventing penetration of said lumber by said drying liquid.

BEVERLY E. BARKSDALE, SR.

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