July 16, 1929. C. GOODALL 1,721,297

PROCESS AND MEANS FOR DRYING AND/OR OTHERWISE TREATING TIMBER

Filed June 7, 1928 2 Sheets-Sheet 1

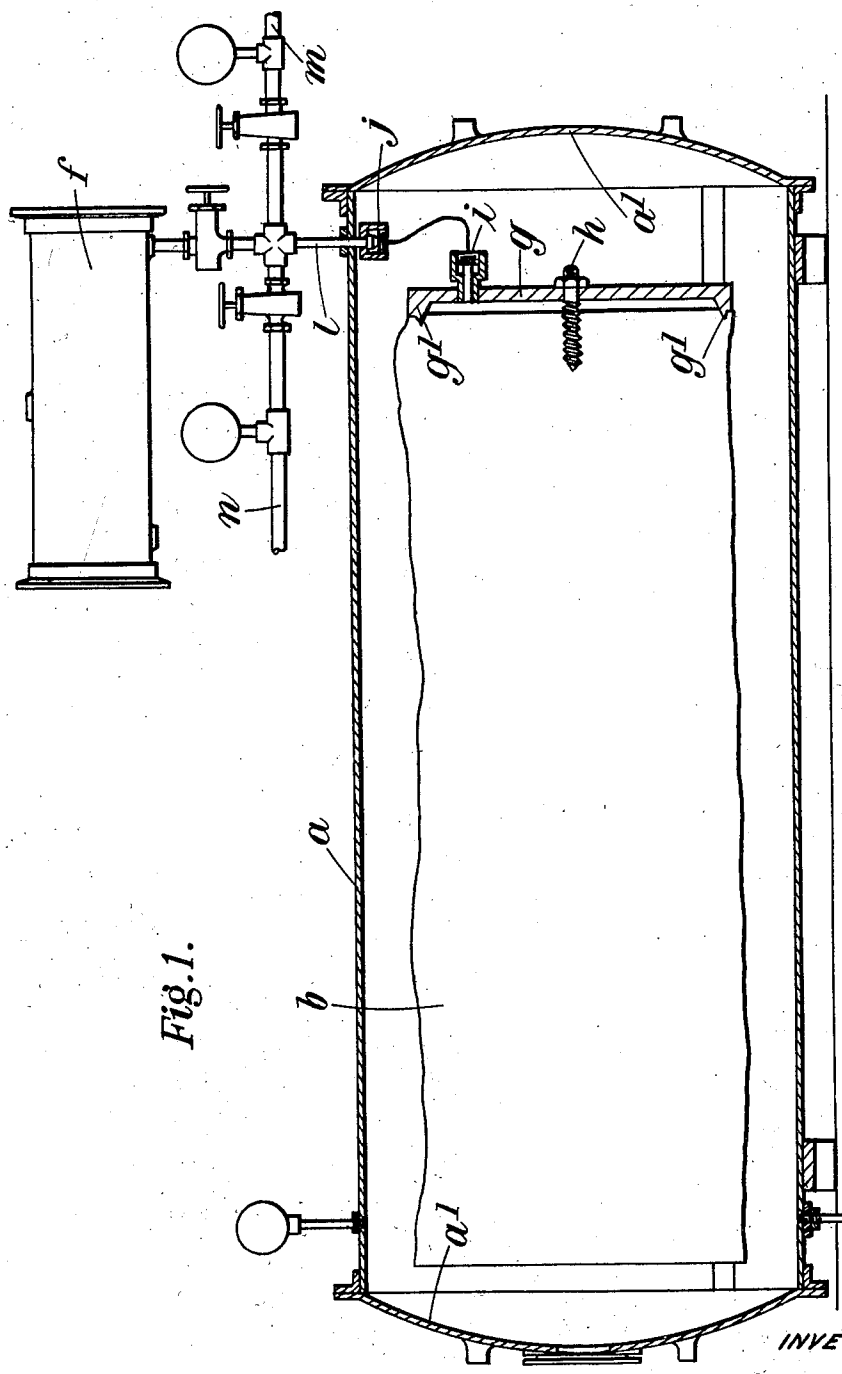


Fig. 1.

INVENTOR
Charles Goodall
BY
Ruggles Boyce & Bakelaar
ATTORNEYS

July 16, 1929. C. GOODALL 1,721,297

PROCESS AND MEANS FOR DRYING AND/OR OTHERWISE TREATING TIMBER

Filed June 7, 1928 2 Sheets-Sheet 2

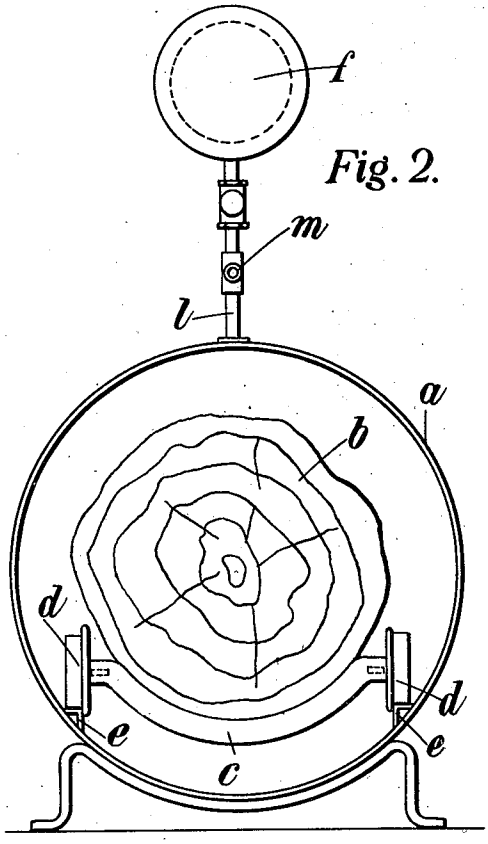


Fig. 2.

INVENTOR
Charles Goodall
BY
Ruggles, Boyer & Bakeless
ATTORNEYS

Patented July 16, 1929. 1,721,297

UNITED STATES PATENT OFFICE.

CHARLES GOODALL, OF TUTBURY, ENGLAND.

PROCESS AND MEANS FOR DRYING AND/OR OTHERWISE TREATING TIMBER.

Application filed June 7, 1928, Serial No. 283,488, and in Great Britain December 28, 1927.

This invention relates to an improved process and means for extracting sap, resins, and other matter from timber, and also for drying, dyeing, fireproofing or otherwise treating the same.

It has formerly been proposed to place a cover over the two sawn ends of a log of timber, and connect one cover to a source of fluid pressure and the other to a suction pump or vacuum. It has also been proposed to enclose a log in a chamber, and to connect one end of the log to a cap or cover which communicates with a suction pump. Neither procedure is satisfactory, for the reason that the resistance to fluid movement along the natural passages of some timbers is great and cannot readily be overcome by moderate fluid pressures.

The present invention comprises a process of subjecting the circumferential or outer surface of the timber as well as one end to a vacuum, fluid pressure being applied to the other end. Fluid (either liquid, gas or vapor) is caused to pass along the timber by the combined action of fluid pressure applied at one end and suction at the other end, and according to my invention, this operation is greatly facilitated by the removal of as much as possible or convenient, of the atmospheric pressure acting on the outer surface of the timber. It will be understood that the effect of the vaccum in which the timber is enclosed is not to promote escape of fluid through the outer surface of the timber but to enable fluid to pass more readily through the natural passages of the timber.

By applying water or the like under pressure to one end of the timber, the sap, resin and other contents may be forced, drawn and washed out. The timber may then be dried by passing any suitable gas, steam or air through it and afterwards treated in a similar manner with any dyeing, fireproofing or other desired solution.

I have obtained good results by applying fluid at a pressure of 40 lbs. per square inch to one end of a log and a vacuum of 27 inches of mercury at the other end, but these figures may be varied considerably to suit different requirements.

In further describing this invention reference will be had to the accompanying drawings which illustrate suitable apparatus for carrying out my improved process, Figure 1 is a longitudinal section and Figure 2 an end elevation with the end plate removed.

The apparatus consists of a vacuum cylinder, tank or drum a of any desired size and shape, communicating through a pipe k with an extracting pump or other means to create the vacuum, to receive the log or length of timber b, suitable cradles or holders c for the the timber being preferably arranged to run on rollers or wheels d and any suitable track or guides e in preferably the lower part of the cylinder a. The ends a^1 of the cylinder are preferably retained in position by the vacuum but may be hinged and clamped or otherwise secured if desired.

The fluid under pressure may be introduced through a pipe l communicating with water, gas or any other supply pipes such as m, n, and with fireproofing or other solution contained in a tank or the like f, the pressure being under control in each case by means of any suitable pumping gear. A pressure plate g of convenient size and shape is attached to the end of the timber b by any suitable means such as a ball jointed screw and lock-nut h, the screw being passed into the end of the log. An internally projecting flange or rim g^1 may be provided on the plate g which cuts into the end of the timber upon the lock-nut h being turned so forming a pressure-tight joint. A union or the like i is formed in said pressure plate connected by any suitable means such as flexible piping not shown upon the drawings to a union j in the cylinder a to which the pipe l is connected, said connection being made easily detachable for convenience in use. The plates g may thus be placed in position on the timber b before it is inserted in the cylinder and rapidly connected up to the source of pressure.

Any suitable number of pressure plates and connections may be used within a cylinder so that a plurality of lengths of timber may be dealt with at one time.

A trap of any suitable type may be pro-

vided in the vacuum pipe *k* from the cylinder *a* to intercept or catch the sap, resin or other by-products.

Having now described my invention what I claim as new and desire to secure by Letters Patent is:—

In the drying or other treatment of timber, subjecting the circumferential or outer surface of the timber as well as one end to a vacuum, and applying fluid pressure to the other end, substantially as described.

In testimony whereof I have signed my name to this specification.

CHARLES GOODALL.