

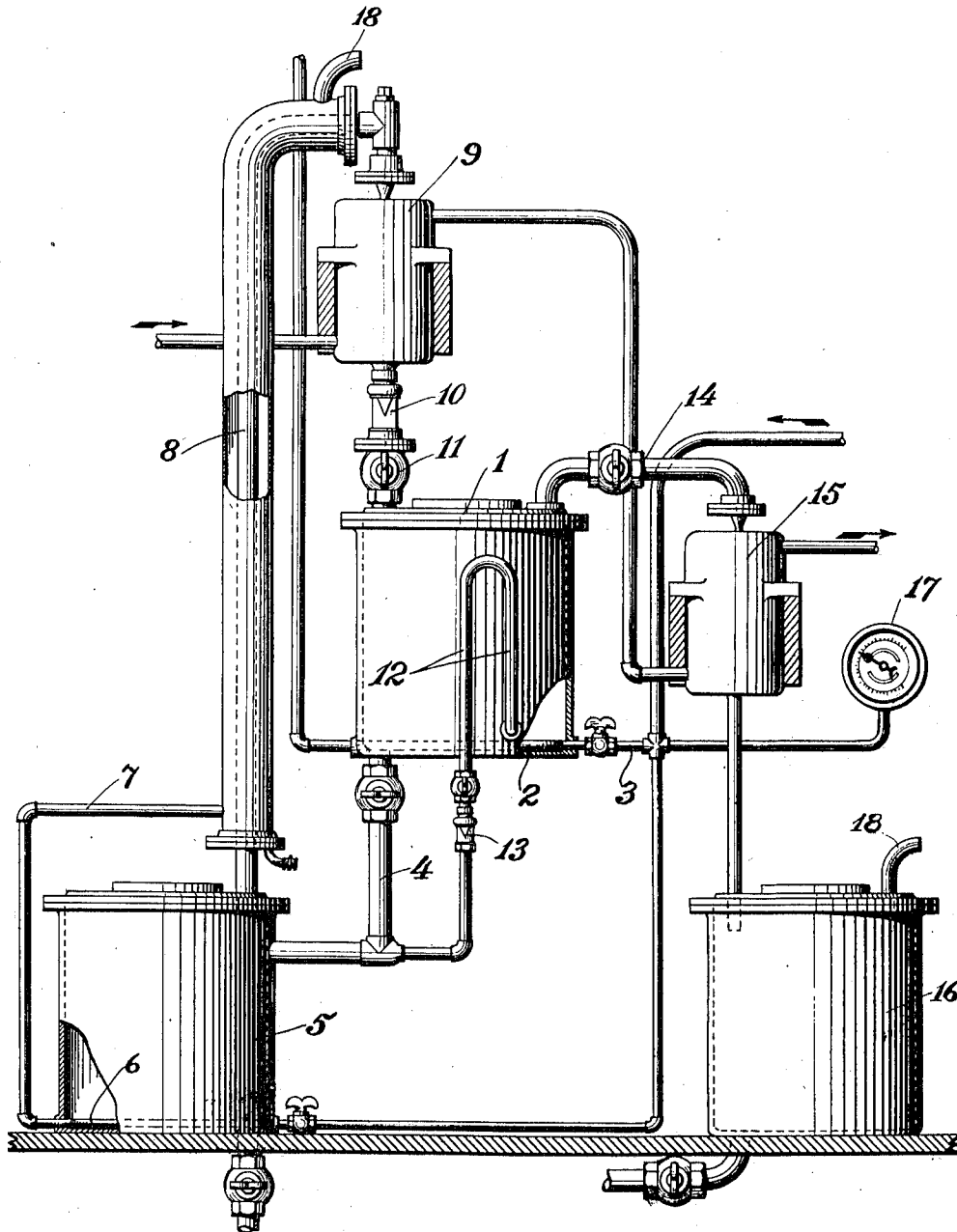
B. HEAP.

PROCESS OF TREATING WOOD FOR USE IN ELECTRIC STORAGE BATTERIES.

APPLICATION FILED OCT. 27, 1908. RENEWED JUNE 27, 1912.

1,051,580.

Patented Jan. 28, 1913.



WITNESSES:

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UNITED STATES PATENT OFFICE.

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TO THE ELECTRIC STORAGE BATTERY COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF NEW JERSEY.

PROCESS OF TREATING WOOD FOR USE IN ELECTRIC STORAGE BATTERIES.

1,051,580.

Specification of Letters Patent.

Patented Jan. 28, 1913.

Application filed October 27, 1908, Serial No. 459,687. Renewed June 27, 1912. Serial No. 706,289.

To all whom it may concern:

Be it known that I, BENJAMIN HEAP, a subject of the King of Great Britain, and residing at Clifton Junction, near Manchester, England, have invented a new and useful Process of Treating Wood for Use in Electric Storage Batteries, of which the following is a specification.

Wooden separators are an example of the use of wood in electric storage batteries. Provided that wood has been deprived of certain of its constituents, its presence in a storage battery is desirable, since it has the effect of increasing the capacity of the negative pole plates, especially if they are somewhat worn out, without deleteriously affecting the positive pole plates, and furthermore it is excellent material from which to make separators. Treatments to which wood was heretofore subjected to fit it for use in storage batteries left the wood in such condition that it had to be kept wet in order to prevent it from warping, shrinking, cracking, and the like, and to keep the wood wet was objectionable and made it awkward to store, ship and handle the wooden separators.

The object of the present invention is to provide a process by which wood, for example, wood separators intended for use in electric storage batteries, can be properly treated so as to deprive it of its deleterious constituents and thereafter be dried without danger of undue warping, shrinking, cracking, splitting, or the like.

The invention stated in general terms comprises the employment of alcohol or alcohol and water, instead of water in the treatment of the wood or wooden separators, and it further comprises the process to be presently described and finally claimed.

In the accompanying drawings there is illustrated in elevation, with parts broken away, one, but not the only type of apparatus that may be used in the practice of the invention.

In describing the process reference will be made to the accompanying drawings and to the treatment of wooden separators but without limiting the process thereto.

In the chamber 1 provided with means as a steam coil 2, supplied by a valved steam pipe 3, is placed along with the wood separators, alcohol containing a proper reagent,

of which caustic potash is an example, whereupon the chamber is closed and heated for a period of, for example four hours at a temperature of 140° centigrade and at a pressure of one hundred pounds to the square inch. The effect of this treatment is to extract from the wood certain substances and to leave in the wood other substances; those which are left in the wood are advantageous and those which are taken out are deleterious, when the separators are used in a storage battery. At the completion of this treatment the liquid contents of the chamber 1 is conveyed as by a valved pipe 4 into the chamber 5 which is similar to the chamber 1 and may be heated by a steam coil 6 supplied by a steam pipe 7. From this chamber 5, alcohol is by heat evaporated and the evaporated alcohol passes through a steam jacketed or otherwise steam heated pipe 8 to a water cooled or other condenser 9, from which it passes through a sight gage 10, past a valve 11, back to the chamber 1. In this operation the alcohol is deprived of the re-agent, caustic soda or whatever it was, and the matter extracted from the wood, and the re-agent and extracted matter are retained in the chamber 5. The condensed alcohol accumulates in the chamber 1, immersing the separators and washing them until finally it passes by way of the valved siphon 12 and the sight gage 13, back to the chamber 5, from which it is again evaporated in the manner already described. This is continued until the separators have been sufficiently washed with alcohol. The sight gage 13 affords means for inspecting the alcohol as it leaves the chamber 1, in order to ascertain whether or not its condition indicates that the separators have been sufficiently washed. When the separators have been sufficiently washed the chamber 1 is caused to communicate by way of the valved pipe 14 and water cooled or other condenser 15, with the chamber 16. Heat applied to the separators, for example, by the coil 2, evaporates from them alcohol, which in passing through the condenser 15, is condensed and recovered for future use in the chamber 16.

17, is a steam gage and 18, are vents which may be provided.

What I claim is,

1. The process of treating wood to fit it

for use in connection with storage battery plates, which consists in digesting or soaking it in an alcoholic solution of a suitable extractive re-agent, washing the wood so
5 treated in alcohol, and drying the washed wood.

2. The process of treating wood to fit it for use in connection with storage battery plates, which consists in digesting or soaking
10 it in an alcoholic solution of a suitable extractive reagent, and drying the wood so treated.

3. The process of treating wood to fit it

for use in connection with storage battery plates, which consists in dissolving out dele- 15
terious substances and drying the wood, and maintaining the wood throughout the process substantially free from contact with water.

In testimony whereof I have hereunto 20
signed my name.

BENJAMIN HEAP.

Witnesses:

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