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 WOOD IMPREGNATING PLANTS  
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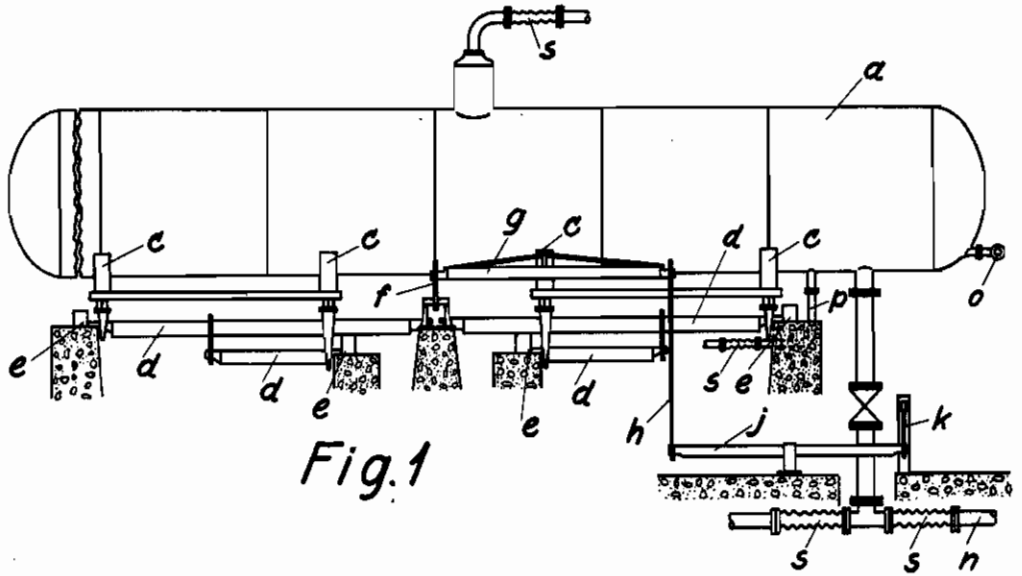


Fig. 1

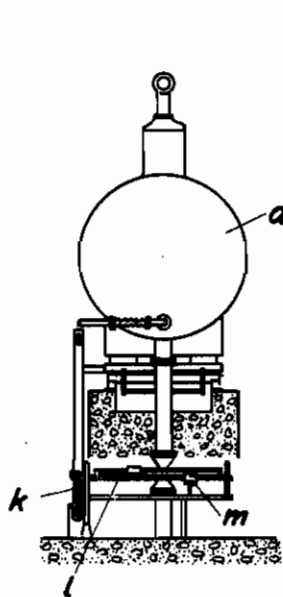


Fig. 2

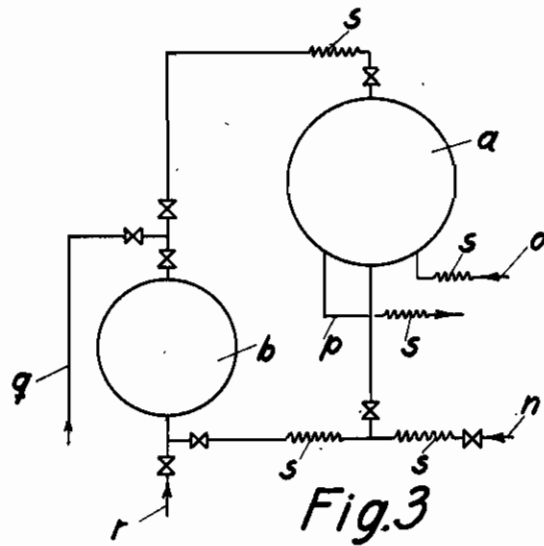


Fig. 3

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# ALIEN PROPERTY CUSTODIAN

## WOOD IMPREGNATING PLANTS

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The present invention relates to a device for weighing the amount of impregnating liquid used for the individual impregnating operations in wood impregnating plants.

The necessary substantiation of how much impregnating liquid (such as creosote) the wood has absorbed hitherto has substantially been performed in either of two different ways. By the eldest method the wood was weighed before and after the impregnation, which work of course took much time as each single impregnating car was weighed per se. As an example can be named that in the case of sleepers 8 or 9 cars are used for each operation, which cars thus must be weighed twice, making 16 or 18 weighing operations per impregnating operation.

Later on as a rule there was resorted to the measuring of the volume of the impregnating liquid used for a complete operation. This measurement in practice has been just as accurate as the weighing, but yet it entails certain sources of error which are difficult to avoid, because the reading off of the level of a container can be interfered with by dirt or the like, and besides you are limited to employ so large containers that a variation of one centimeter level may easily result in an error of 10-20 kilograms; moreover it is necessary to always work with equal temperatures of the impregnating liquid before and after the impregnating operation respectively.

The present invention for the purpose of eliminating the above named drawbacks of the known methods mainly resides therein that a container forming part of the wood impregnating plant and wherein the liquid to be used for the impregnation is found is mounted on a weighing machine, so that the quantity of impregnating liquid retained per operation can be ascertained merely by two weighing operations, viz. one before and one after the impregnation proper. By such weighings the difficulties encountered with in measurements of volume due to differences in temperature are completely avoided, and the weighing itself is effected very quickly so that practically no time is lost in making this operation.

The container to be placed on the weighing machine, preferably a centesimal weighing machine of known type, normally can not be the impregnating cylinder itself as the same is too large, and in such case another suitable, smaller container must be used. In modern wood impregnating plants operating after the Rüping process for instance, the equalizing reservoir (the preheater) mounted at a somewhat higher level

than the impregnating cylinder and connected therewith by pipes, will be well adapted for the purpose in question, as the centesimal weighing machine which shall carry the said reservoir for instance, may be designed for a maximum load of 100 tons and for recording loads from 50 to 100 tons with an error less than 5 kilograms.

The weighing machine in a manner known per se, besides being constructed for direct indication, may be provided with a ticket printing appliance so that the load can always be effectively checked.

Due to the fact that the equalizing reservoir or other container adopted for weighing purposes, which for instance may receive about 60 tons impregnating liquid or more and in filled condition weighs up to 100 tons or more, is connected with other containers by heavy pipe conduits, then although the vertical play of the first named container on the weighing machine is small only, for instance about 15 mm, it will as a rule be preferable to insert movable connections, such as flexible tube pieces, telescopic pipe portions or ball joints into these pipe conduits so that the container can move freely up and down.

On the drawing there is shown an embodiment of the herein contemplated parts of a wood impregnating plant according to the invention.

Figure 1 is an elevation of the preheater or equalizing reservoir of a wood impregnating plant working after the Rüping method, said reservoir being placed on a centesimal weighing machine,

Figure 2 is a right hand end view of the parts shown in Figure 1 and

Figure 3 is a diagram of the equalizing reservoir and the impregnating cylinder with associated pipe conduits.

The equalizing reservoir or preheater *a* is assumed to be placed at a level a couple of meters higher than the impregnating cylinder *b*, Figure 3, and is by means of four saddles *c*, Figure 1, supported on a centesimal weighing machine which may be of any suitable known or standard type and in the example shown comprises a system of one-armed beams *d* swinging on pillow blocks at *e* and transferring the load through strap *f*, two-armed beam *g*, rod *h*, two-armed beam *j* and strap *k* to a steel yard *l*, Figure 2, the sliding weight or poise *m* of which in a manner known per se is formed as or combined with a ticket-printing machine *n*, so that the weight of the equalizing reservoir with contents both can be read off directly and recorded by a weighing machine ticket. The details of this centesimal weighing machine are immaterial since as before

stated the weighing machine may be of any suitable type capable of accurately weighing a long heavy container.

The manner in which the weighing and the impregnating operations are performed may be as follows:

The equalizing reservoir *a* is filled with impregnating liquid through the supply pipe *n*, and the impregnating liquid is heated by steam supplied through steam pipe *o*, *p* being a condensed water drain pipe. Thereupon the equalizing reservoir with contents is weighed. Through pipe *q* compressed air is supplied to the impregnating cylinder *b* containing cars with the wood to be impregnated, and after a suitable time the impregnating liquid is transferred from the equalizing reservoir *a* (also subjected to the compressed air pressure) to the impregnating cylinder *b*. Further liquid pressure is applied to the impregnating cylinder *b* through pipe *r*, and then excess of impregnating liquid is returned to the equalizing reservoir *a*. Vacuum is applied to the impregnating cylinder *b*, and any further excess of impregnating liquid accumulated on the bottom of the impregnating cylinder is also transferred to the equalizing reservoir *a*, whereupon the latter is again weighed. The difference between the two gross weights of the said reservoir indicates the weight of impregnating liquid retained by the wood in the impregnating cylinder. It will be

understood that the steps of the impregnating method have only been explained briefly as they themselves form no part of the present invention.

In the various pipe conduits connecting the equalizing reservoir *a* with the stationary parts of the plant including the impregnating cylinder *b* flexible tube pieces *s* are interposed so that the equalizing reservoir can move freely and be exactly weighed before and after the delivery of the amount of impregnating liquid necessary for one impregnating operation.

While in the above example contemplating a wood impregnating plant working after the Rüping process it has been preferred to mount the preheater or equalizing reservoir on a weighing machine as the impregnating cylinder itself is very long and heavy it will be understood that in other cases it may be feasible or preferable to place the impregnating cylinder or another vessel adapted to receive the liquid to be used for the impregnation on a weighing machine for the purpose specified.

Speaking generally the present invention may be applied not only to wood impregnating plants working after the Rüping process but also to such operating according to the full cell process or in other ways.

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