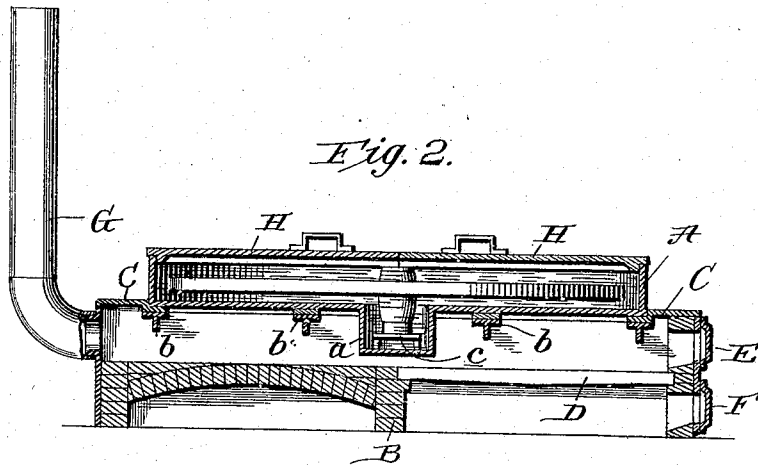
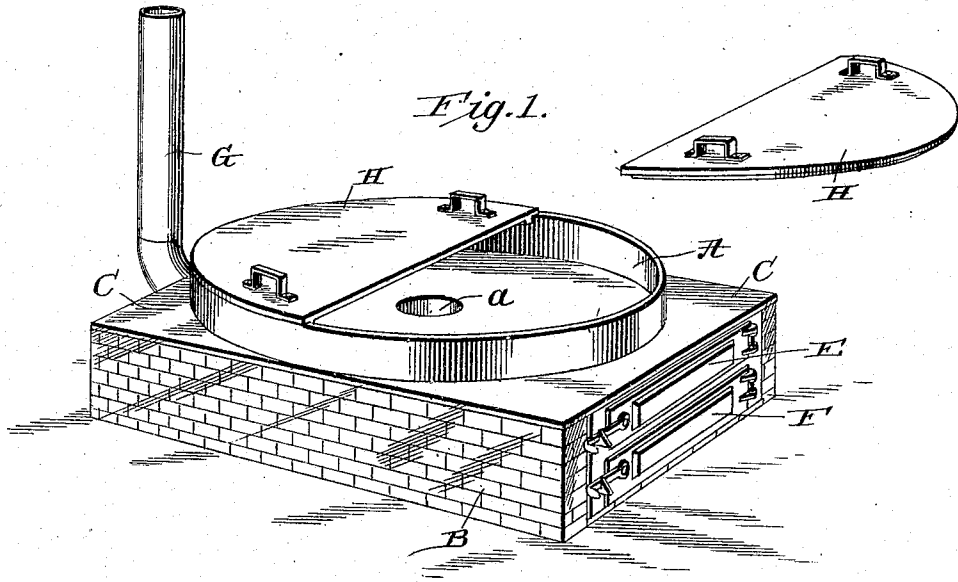


J. J. LIPE.
 APPARATUS FOR TREATING WOODEN WHEELS.
 APPLICATION FILED APR. 22, 1909.

941,683.

Patented Nov. 30, 1909.



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JOHN JACOB LIPE, OF WITT, ILLINOIS.

APPARATUS FOR TREATING WOODEN WHEELS.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN JACOB LIPE, a citizen of the United States, residing at Witt, in the county of Montgomery and State of Illinois, have invented certain new and useful Improvements in Apparatus for Treating Wooden Wheels, of which the following is a specification.

My invention pertains to apparatus for treating wooden wheels, to prevent, or to overcome the effect of, shrinkage, without the necessity of cutting and shortening the tires, wedging the spokes, or resorting to any of the analogous modes of treatment which have heretofore been adopted, at least in some cases.

In the accompanying drawings illustrating my invention: Figure 1 is a perspective view of the structure or apparatus; and Fig. 2, a longitudinal vertical section through the same.

Briefly stated, the treatment consists in immersing the wheel bodily in oil, in a tank or vessel of suitable form and dimensions, the oil being heated to a proper temperature, and the wheel being allowed to remain therein until the pores and interstices of the wood are charged therewith. The wheel may be preliminarily immersed in water, and retained therein for a longer or shorter time, if desired, or the wheel in its dry state may be directly placed in the oil in the first instance. Experience, however, has demonstrated that there is advantage in the preliminary treatment with water.

As is well known, wooden wheels, particularly in dry climates, or in seasons of prolonged periods of dry weather, shrink so that the spokes become loose in the hubs and in the fellies, and the fellies draw away from the tires. If this condition be permitted to obtain for any considerable time, the spokes and their sockets in the hubs and fellies wear away, so that it is impossible thereafter to make the wheel as firm and rigid as when originally made. Temporary tightening may be effected by wetting the wheels, and causing the wood to swell, but this is a makeshift at best, and after being repeated a few times loses in great measure its efficacy. A more effective plan is to cut and shorten the tires, but this treatment is objectionable not only because of the cost and the time involved, but, more especially, because upon the subsequent swelling of the wheels in damp weather, or through passage

of the wheels through water, the spokes are liable to spring out of shape, and the wheel to be made untrue. If, on the other hand, the wheel be caused to swell to its normal proportions, and to fill the tire as when originally made, and if the filling material be of such character as will remain permanently in the pores of the wood and unaffected by weather conditions, the life of the wheel may be greatly prolonged, and the wheel maintained in perfect condition at very slight expense.

To facilitate such treatment of the wheels, I construct my apparatus as shown in the drawings, in which A indicates a shallow tank or vessel, which may conveniently be made either of cast or of sheet metal, and which is formed with a central pocket or well *a*, the main tank or vessel being of a diameter somewhat more than sufficient to receive the largest wheel likely to require treatment, and the well or pocket being of a depth and diameter to receive the hub of the wheel and leave an annular space about it. This vessel may be supported in any convenient manner, either on permanently attached legs or temporary supports, but is preferably placed upon a structure B of brick or masonry, having a top plate C to cover such portions of the structure B as are not covered by the bottom of tank or vessel A. The plate C and the bottom of the tank or vessel A may be supported by cross bars *b*, if deemed expedient, and in order that the end of the hub may not be subjected to undue heat, a plate *c* is advisably raised slightly above the bottom of the well or pocket *a*, as shown in Fig. 2.

Structure B is provided with a fire space, which will be varied in construction according to the nature of the fuel to be used. For purposes of illustration only, I have represented the structure B as provided with a series of grate bars D, having a fire-door E above the grate bars, and an ash-door F below the same, though, of course, a liquid or vapor fuel burner, gas burner, or in fact any common form of heater may be used if desired. A smoke pipe G is provided to carry off the smoke and products of combustion. The plate *c*, or if this be not used the bottom of the well or pocket *a*, is in such relation to the bottom of tank A that a wheel placed within the tank, and having its hub introduced into the well or pocket *a*, will have the end of its hub supported by the plate *c*

or the bottom of well or pocket *a*, as the case may be, while the felly and tire will be held somewhat above the bottom of tank A, as indicated in Fig. 2. Cover plates H, H, 5 may be provided, if deemed desirable, with a view to holding within the tank A the heat imparted to the oil, or other charging mixture with which the said tank is to be supplied in practice. Obviously the form 10 and dimensions of the structure may vary widely, as also the materials of which it is constructed. The material requirements are that there shall be a tank or vessel into which the wheel may be bodily introduced, 15 and in which it may be completely immersed in oil or other filling agent, but held out of contact with the tank or vessel and that means be provided whereby the oil in said tank may be heated.

20 The apparatus being constructed as above set forth, the vessel A is filled to a suitable level with any appropriate charging agent or mixture, linseed oil being, in my judgment, the most satisfactory. The oil or 25 other filling agent is then heated to a suitable temperature, and the wheel to be treated is immersed bodily therein, and is subjected to the action of the heated oil for a period varying usually from fifteen to twenty minutes, according to the condition of the wheel, 30 the temperature of the oil, or the character of the filling agent, if other than oil be used. As before stated, it is found advantageous first to subject the wheel to the action of 35 water, and this may be done by placing it in any convenient tank or receptacle, or subjecting it to a stream of water from a hose, or in like manner. The treatment may also be adopted for new wheels either before or 40 after placing the tires thereon, but its special purpose is for the restoration of wheels which, having been for a time in use, have become loose through shrinkage.

45 With an apparatus such as here described, a large number of wheels may be treated in an ordinary working day, and the apparatus may, from its nature, be placed out of doors, or in spaces unavailable for other use, or in other words, without occupying floor space 50 in a shop which is too valuable to justify such use.

The well or pocket *a*, though desirable, is not essential, but the quantity of oil necessary for the immersion of a wheel is materially lessened by such provision, and the 55 body of the wheel is brought nearer to the bottom of the tank, and consequently to the heat of the fire.

Where, as in the present construction, a

well or depression is formed for the hub of 60 the wheel, such depressed portion is subjected to a more intense heat than the main bottom of the tank or receptacle, since not only its bottom but its sides are exposed to the flames, and the quantity of oil or filler 65 contained in such depression is relatively small. It is therefore important that the end of the hub be held up out of contact with the bottom of such well or depression, and hence the raised plate *c* is of impor- 70 tance. By providing cover plates the heat is better retained or confined within the tank, and the requisite temperature and proper treatment of the wheel are more promptly and certainly accomplished. Loss of filler 75 through evaporation is likewise lessened.

While as above pointed out, the form of heater may vary, it is nevertheless important that some permanent heating apparatus constitute a part of the structure, and that 80 through suitable draft and check doors or dampers, or like means of control, provision be made for nicely regulating and maintaining the temperature of the oil or filler. The structure is here illustrated and de- 85 scribed as self-contained and complete, and is not dependent on any external boiler or heating apparatus, as would be the case were a steam or water jacketed tank or vessel employed. 90

Having thus described my invention, what I claim is:

1. In an apparatus for treating wheels, a tank or vessel having a well or pocket *a* in the central portion of its bottom, said well 95 being provided with a raised support *c* at such elevation as shall cause the felly and spokes of the wheel to be raised somewhat above the bottom of the tank, and the end of the hub to be held away from the bottom 100 of the well or pocket; and a base or support for said tank, containing a fire chamber and grate.

2. The herein described apparatus for treating wheels, comprising tank or vessel A 105 provided with well or pocket *a* and with raised plate *c* in said well; base B provided with a fire chamber, a grate D, and doors E and F above and below the grate; a stack or chimney G; and cover plates H for the tank 110 or vessel.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN JACOB LIPE.

Witnesses:

GEO. R. COOPER,
IONE GANNOW.