C. M. ABBOTT.

METHOD OF TREATING BUNDLES OF SHINGLES.

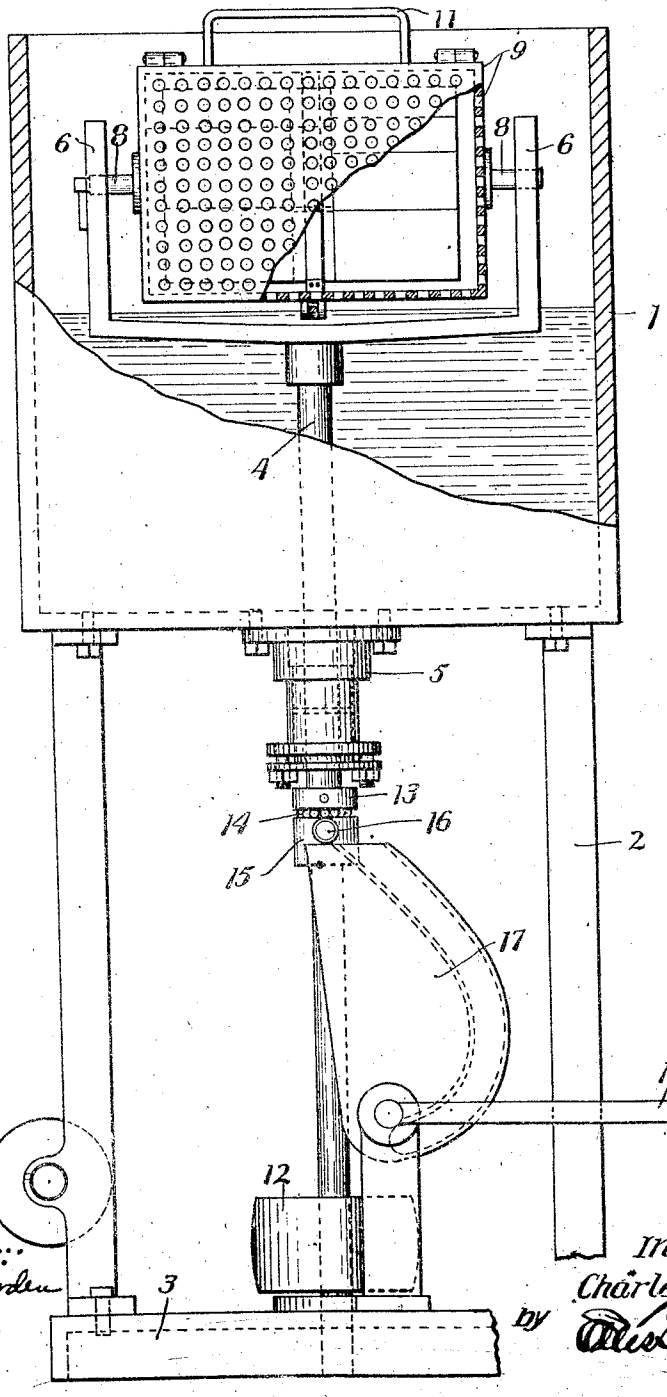
APPLICATION FILED AUG. 5, 1911.

1,105,055.

Patented July 28, 1914.

2 SHEETS—SHEET 1.

Fig. 1



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2 SHEETS—SHEET 2.

Fig. 2

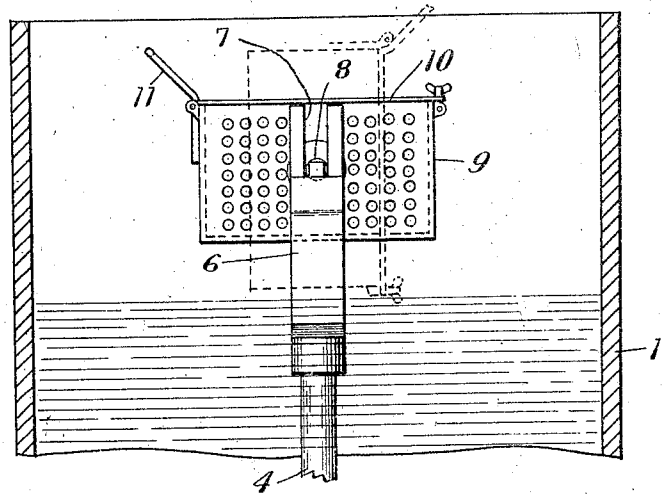
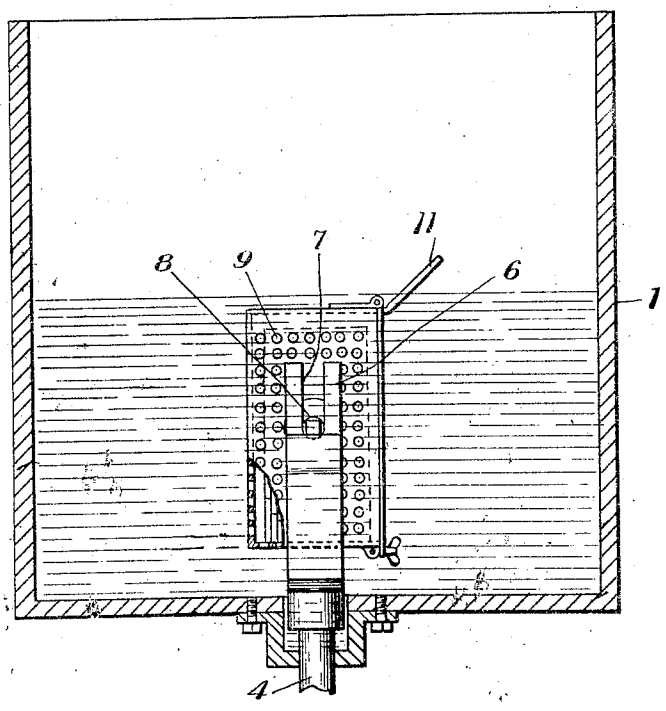


Fig. 3



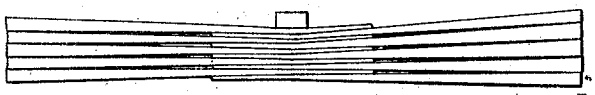


Fig. 4

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UNITED STATES PATENT OFFICE.

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METHOD OF TREATING BUNDLES OF SHINGLES.

1,105,055. Specification of Letters Patent. Patented July 28, 1914.

Application filed August 5, 1911. Serial No. 642,545.

To all whom it may concern:

Be it known that I, CHARLES M. ABBOTT, a citizen of the United States, residing at Watertown, county of Middlesex, Commonwealth of Massachusetts, have invented certain new and useful Improvements in Methods of Treating Bundles of Shingles, of which the following is a specification.

This invention relates to the coating or impregnating of shingles, or like articles, in the bundle.

The application of creosote, or any similar preservative, paint or stain, to shingles has been usually accomplished by dipping or brushing individual shingles in order to give to them a uniformity of treatment. This, of course, has resulted in considerable expense on account of the time and labor necessary for handling, and also in a considerable waste of material due to the detailed application of it to the many parts.

It is the object of my present invention to provide for the treatment of such articles in the bunch.

In order to make my invention clearly understood I will discuss it in the terms of shingle treatment.

My invention consists briefly, in the method of dipping shingles in such a way that the stain will gain ready access to certain parts thereof, and in then distributing the material over all surfaces of the individual shingles of the bundle by the simple manipulation of the bundle itself.

The method which I have found well adapted to practical use will be more fully described in the specification which follows, the same being offered as an illustrative example of a practical employment of my method.

My invention may be practised with the aid of various mechanical devices of more or less complexity.

For the purpose of further describing the successful practise of my method I have shown in the accompanying drawings a simple device which I have found in the further stages of my invention to be of high practical efficiency. It will be understood that the device shown in these drawings and hereinafter described is used merely as an illustrative showing of the steps of the method.

Throughout specification and drawings like reference numerals are employed to indicate corresponding parts and in these drawings:—

Figure 1 is a side view of the illustrative machine with the tank partly broken away to expose the interior, Fig. 2 is a sectional view of a tank showing the cage elevated in horizontal or operative position and also indicated in dotted lines in vertical or dipping position, Fig. 3 shows the cage submerged, and Fig. 4 is a mere illustration of a sectional bunch of shingles illustrating the shingle layers.

A bunch of shingles, as is well known, is laid up in a pair of piles disposed with their weather ends outward and the thin tapered tips inward, and alternately interposed. The bundles are bound, usually in the center, by some convenient clamping means, as by a pair of splints corded at their ends. The center of a bunch of shingles is, therefore, laminated. When observed edgewise it will be seen that, due to the alternation of the tips, transverse spaces are left extending crosswise of the bunch. These spaces grow less and less toward the ends of the bunch where the thicker portions of the shingles are pressed together.

I have found that by dipping the bunch laterally into a tank of creosote, or other treating liquid, that the liquid will penetrate the central portion of the bunch, permitting the bubbles of air to rise vertically across the areas or spaces near the center of the bunch. When dipped in this way the penetration of the liquid is very rapid and very even and the bunch takes up a considerable quantity of the liquid which, for the moment, is held under its own tension within these lateral spaces. If now the bunch be quickly elevated from its first position, in which the spaces are vertical, to a position in which the spaces are horizontal, the liquid will now find itself on surfaces which are substantially level. These surfaces have, however, a slight incline outwardly and, at the same time, the superimposed shingles whose surfaces inclose the space come together closer and closer toward the end of the bunch. If now the bunch be rapidly rotated the liquid will be driven outwardly with increasing force as it approaches the ends of the shingles. The distribution of the liquid will, therefore, be substantially uniform and with

a substantial tendency toward a delivery of the greater part of it lengthwise of the shingle and out through the closely laid butts at the ends of the bunch.

The rotation of the bunch is continued just long enough to secure a complete distribution of the liquid and an elimination of any excess material from the bunch. The centrifugal force acquired by the liquid overcomes the capillary attraction of the surface of the shingles, thus causing a uniform distribution of the liquid. The rapidity with which the bundles may be dipped and rapidity of the rotation to which they are subjected depends somewhat on the nature of the liquid, and also upon the kind of shingles. The centrifugal action of the liquid within the bunch, however, is so complete and uniform that the elimination of excess liquid is positively assured.

Referring to the accompanying drawing, which shows a simple form of the device which I have found satisfactory in the practical use of my invention, I have provided a tank 1 supported on a suitable apparatus 2 set on a base 3. The shaft 4 passes vertically through the bottom of the tank, leakage being prevented by a stuffing box 5. On the upper end of the shaft 4 is a fork 6 suitably notched, as at 7, and in the notch 7 rests the squared ends of journals 8 which are attached to a cage 9 having a suitable top 10. The cage is also provided with a handle 11 for the convenience of the operative in turning the cage within the fork. The lower part of the shaft 4 has a pulley 12 on which a shaft is splined for vertical reciprocation. This pulley furnishes a rotative tendency for the shaft 4. Midway of the shaft is a sleeve 13 supported through an intermediate ball race 14 on a collar 15. The collar 15 has a roller stud 16 adapted to work in the cam 17 controlled by the hand lever 18.

In operating this device, in accordance with my method, the power may be applied to the pulley 12 to rotate the shaft 4 so that the bunch of shingles placed within the cage 9 will be rotatably revolved in a horizontal position. In this position, as hereinbefore explained, any staining or filling liquid which may be presented between the layers of shingles will be forced outward toward the butt of the shingles, evenly distributing the same and throwing off any excess which may have been acquired. The dipping of the shingle bunch is preferably accomplished by tipping the cage from a horizontal to a vertical position, as shown by dotted lines in Fig. 2. The cage is then submerged by throwing the lever 18 from the position shown in Fig. 1 to the left, thus lowering the shaft 4 until the cage is submerged below the liquid tank 1. In approaching this position, the liquid rising edgewise through the shingle bunch will drive out the air and evenly distribute itself in the central part of the bunch. For this reason as soon as the bunch has been completely submerged it may be raised to the position shown in dotted lines in Fig. 2. after which the cage may be lifted up and turned into the horizontal position. The pulley 12 may then be started and the bunch rotated spreading the stainer or filler evenly through the bunch, as described.

Various devices may obviously be employed to practise my invention and the method may be practised with somewhat varied modifications in the manipulation and in the conditions, without departing from the spirit of my invention if within the limits of the appended claims.

What I therefore claim and desire to secure by Letters Patent is:

1. The method of treating shingles in the original compact bundles comprising the introduction of the treating liquid within the transverse crevices formed by the laminations and subsequently rotating the bundle on an axis at right angles to the greater length of the shingles to uniformly distribute the liquid along the surfaces of the shingles in contact in the bundle and to expel the excess liquid therefrom.

2. The method of treating shingles in the original compact bundle comprising the dipping of the bundle in the plane of the shingle layers in a suitable treating liquid to permit said liquid to enter the crevices formed by the transverse laminations and draining the excess liquid from the bundle and subsequently rotating said bundle with the shingle layers in a plane at right angles to the greater length of the bundle to uniformly distribute the liquid along the surface of the shingles in contact in the bundles and to expel the said liquid therefrom.

3. The method of treating shingles in the original compact bundle consisting in applying to the bundle a suitable coating and in causing said coating to penetrate in the interstices between the transverse laminations of the bundle and in subsequently rotating said bundle in the plane of the shingle layers to uniformly distribute the liquid along the surfaces of the shingles in contact in the bundle and to expel the excess liquid therefrom.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES M. ABBOTT.

Witnesses:

L. D. GOODWIN,

R. B. ELLINS.