

UNITED STATES PATENT OFFICE.

WILLIAM B. TUCKER, OF BALTIMORE, MARYLAND, ASSIGNOR TO JOHN G. McCULLOUGH, OF SAME PLACE.

IMPROVEMENT IN FIRE-KINDLINGS.

Specification forming part of Letters Patent No. 135,607, dated February 4, 1873.

To all whom it may concern:

Be it known that I, WILLIAM B. TUCKER, of the city of Baltimore and State of Maryland, have invented certain new and useful Improvements in Fire-Kindlings; and do hereby declare that the following is a full, clear, and exact description thereof, that will enable others skilled in the art to which it appertains to make and use the same.

The object of my invention is to furnish a cheap and convenient article of fire-kindlings that shall be cheap, simple, safe, and cleanly. Heretofore there have been numerous attempts to supply the public with such an article, but with little success. The article offered generally proved objectionable in point of economy, cleanliness, or convenience, so as to cause the public to discard its use after a trial.

My invention consists in treating fire-wood of any kind, but more particularly such as is commonly known as split and bundle wood, with the oil of resin, in order to make it easily and readily inflammable, so that a very small piece, even a mere splint, will, when ignited by the use of the common match, burn with tenacity for a sufficient length of time to light any ordinary fire, while at the same time the wood so treated is not affected by exposure to moisture.

My method for treating wood for fire-kindlings is as follows: I take a quantity of the oil of resin and heat it in a suitable vessel to a boiling-heat, or near that point. This may be done by any of the usual modes of heating, but I prefer to heat it by the employment of a steam-coil placed within the body of the oil. After the oil has attained the desired heat, I immerse ordinary split wood, of desirable size, in it, where it remains for about half an hour, more or less, according to the size of the wood; but half an hour is found to be sufficient time with the ordinary split bundled wood to expel the aqueous matter and air, and to thoroughly saturate the wood with this highly carbonaceous oil. The wood is then lifted from the oil and allowed to drain, when all excess of oil upon its outer surface disappears by absorption into the body of the wood, or runs off into the boiler. The wood is then removed, and is immediately ready for use.

So completely does the excess of oil (owing to the peculiar nature of this oil) disengage itself from the surface of the wood, when it is left to drain a few moments, that no surface oil can be seen upon it either to cause the pieces of wood to adhere to each other, or to soil the hands, or prevent handling for the purpose of putting it up in packages or otherwise making use of it. The wood, after being saturated by the said carbonaceous matter, as described, may be left exposed to moisture without affecting its combustible qualities.

After the wood has been prepared by my process, I not only put it up in bundles after the manner of ordinary bundle-wood, but I also propose to reduce it to small splints, and put these into small or convenient paper or other packages, so that they may be as readily handled as are packages of ordinary matches.

I also treat match-splints with resin-oil in the same manner as the fire-kindlings, and when they are made into matches they not only ignite and burn with greater tenacity than the ordinary wood match in common use, but continue to burn as great a length of time as the wax or parlor match, and are far less expensive.

By this method of saturating match-splints, or wood to be made into match-splints, with heated resin-oil, I am enabled to use a more economical quality of wood than would be otherwise required; hence it adds little or no additional cost to the production of wood matches of a superior quality.

I also propose saturating sawdust or spent tan-bark with resin-oil in the same manner as the fire-wood or match-splints, and then, by forming them, by pressure or otherwise, into balls or cakes, put them up for use as fire-kindlings.

I am well aware that the use of heated resin has been frequently attempted in treating wood for kindlings, but it has been found in many respects impracticable and objectionable.

The advantages in the use of oil of resin over that of resin are many and important, a few of which are that, unlike resin, it is freed from naphtha, and therefore emits no offensive smell when the kindlings prepared with

it are ignited. A still more important fact in its use is that, unlike resin, it is perfectly absorbed in the body of the wood, and leaves no excess upon its surface to drip and soil or injure any thing with which it may come in contact either before or after the kindlings are ignited; nor do the materials treated with it adhere together from the effects of heat when being prepared, or after being packed or bundled for use, as in the use of resin; besides its use in the preparation of kindlings is far less troublesome and expensive than that of resin.

I do not confine myself to the use of resin-oil, but propose to use heated paraffine-oil in the same manner as the resin-oil when it can be had at a less cost than resin-oil, since it is

almost or quite as efficient as the resin-oil for treating kindlings and match wood or splints.

I prefer, when using paraffine-oil, that which is distilled and unpressed, and from petroleum, since it contains more wax than that which has been pressed, and gives a better result.

Having thus described my invention, what I claim is—

Treating wood, spent tan-bark, or sawdust with heated resin-oil or heated paraffine-oil, substantially as described, for making fire-kindlings.

WILLIAM B. TUCKER.

Witnesses:

C. H. SLICER,

WM. H. BAYZAND.