E. J. NORRIS.
Fire-Kindlers.

No. 209,069. Patented Oct. 15, 1878.

Fig. 1.

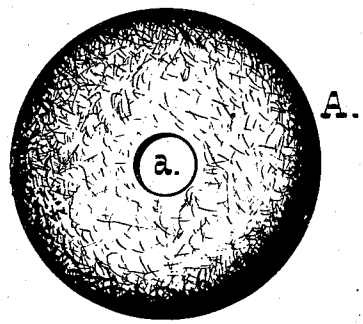
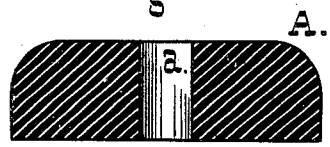


Fig. 2.



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UNITED STATES PATENT OFFICE.

EDGAR J. NORRIS, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN FIRE-KINDLERS.

Specification forming part of Letters Patent No. **209,069**, dated October 15, 1878; application filed October 5, 1878.

To all whom it may concern:

Be it known that I, EDGAR J. NORRIS, of Baltimore city, State of Maryland, have invented certain new and useful Improvements in Fire-Lighters; and I hereby declare the same to be fully, clearly, and exactly described as follows, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of the device, and Fig. 2 a vertical sectional view of the same.

My invention relates to that class of devices in use for setting up combustion in stoves and grates; and it consists in a kindler having the form shown in the accompanying drawings, and also in the composition of matter of which it consists.

The materials used in the manufacture of my kindler, are two—to wit, the residue from the distillation of coal-oil, and a peculiar variety of resinous wood.

In the eastern part of the State of North Carolina, notably in Martin county, a phenomenal behavior is noticed on the part of the pine trees. Upon reaching a certain size the trees die and their trunks and branches assume a bleached appearance, the wood undergoing at the same time a change which may be described as, physically, a semi-petrifaction, and, chemically, an incipient conversion into a material resembling lignite, highly impregnated with resin. The wood is no longer capable of being split or cut into chips, but crumbles under the pressure of a cutting implement in a manner suggestive of the behavior of chalk under the same circumstances. This physical characteristic admits of a ready comminution of the wood, while the enormous amount of resin it contains renders it an excellent material for the purpose to which I devote it.

In manufacturing the kindler I grind or otherwise comminute this wood to about the size of fine sawdust or coarse gunpowder, and mingle it, at a temperature of about 212° Fahrenheit, with the residuum from the distillation of coal-oil, the materials being used in about the proportion of eight of wood to one of residuum. The mass, which at this temperature has a pasty consistency is then pressed into molds, previously dusted with fine cedar sawdust, and allowed to cool and harden.

The molds are of a form to give to the kindlers the shape shown in the accompanying drawings—namely, that of a disk, A, having a central aperture, *a*, and a rounded edge. The diameter of the central aperture, the thickness of the disk, and its diameter are to each other about as one to two to six.

In using the device it is laid upon the grate-bars so that the passage of air through the central aperature is practically unobstructed, and two or three pieces of kindling-wood are placed thereupon. Coal is then supplied, and, the kindler being ignited, the fire is started.

The heat of the burning wood—*i. e.*, the resinous pine of the kindler—volatilizes the coal-oil residuum, causing the evolution of a highly carbonaceous gas, which is at the same time ignited.

The peculiar form of the kindler produces zones of unignited, of partially ignited, and of fully ignited, gas, exactly after the manner of an Argand burner, oxygen being supplied both from within and without, the curved edges of the disk affording a draft directly into the flame and depressing the line of complete ignition. The heat is intense, and a speedy and complete ignition of the wood and coal results.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A fire-kindler having the form of a disk with a central aperture and rounded edge, substantially as described.

2. A fire-kindler consisting of a resino-carbonaceous base and a hydrocarbon, volatile at the temperature of ignition of the former, the said kindler having the form of a disk with a central aperture, as set forth.

3. A fire-kindler consisting of the comminuted pine described and the residuum of the distillation of coal-oil, substantially as set forth.

4. The fire-kindler herein described, consisting of comminuted pine wood, as set forth, and the residuum of the distillation of coal-oil, the said kindler having the form of a disk with a central aperture and rounded edge, substantially as and for the purpose described.

Witness my hand this 4th day of October, 1878.

EDGAR J. NORRIS.

Witnesses:
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NELSON N. HOLLAND.