

# UNITED STATES PATENT OFFICE.

IRA BICKNELL, OF CINCINNATI, OHIO.

## IMPROVED FIRE-KINDLING AND FUEL.

Specification forming part of Letters Patent No. **72,964**, dated January 7, 1868.

*To all whom it may concern:*

Be it known that I, IRA BICKNELL, of the city of Cincinnati, county of Hamilton, and State of Ohio, have invented a new and Improved Combination for Kindling Fires and for Fuel; and I do hereby declare that the following is a full and exact description of the same.

The nature of my invention consists in combining slack or fine coal with sawdust and rosin, or resinous substances, tempered with coal-oil or any burning-fluids, for the purpose of a cheap and reliable compound for kindling fires in grates, stoves, and may be successfully used in raising steam in steam fire-engines. It is easily lighted with a friction-match, is very inflammable, kindles quick, and makes a very hot and durable fire.

To enable others to make and use my invention, I will proceed to describe the component parts and proportions, and manner of manufacturing the same.

First, I use slack or fine coal; second, dry sawdust; third, rosin or pitch, or any resinous substances; and, fourth, coal-oil or any burning-fluids.

Mode of manufacturing: Take slack or fine coal, obtained from the mines or otherwise, and screen it, (a process well known,) to separate the coarse from the fine. Take of the coal thus screened, one-half bushel, and one bushel of sawdust, and mix them well together in a place prepared for the purpose. Take twenty-five pounds of rosin or pitch, and

put into a kettle set for the purpose, of sufficient capacity to hold the quantity required to be made at one time. Add to the rosin or pitch, as the case may be, one gallon of crude coal-oil, (or any burning-fluids may be used.) Melt or dissolve the rosin or pitch over a moderate fire, or by steam. When the rosin or pitch is well dissolved and mixed with the oil, and raised to a boiling heat, then commence stirring in the one and a half bushel of prepared coal and sawdust, as above stated, stirring rapidly; and when the parts are well mixed, and the coal and sawdust well saturated with the melted rosin and oil, it is ready for the molds prepared to receive it.

The above proportions may be varied, but will be found best as above stated. The quantity may be extended or diminished, preserving the relative proportions. The mold may be of any given size for convenience, say about three by six feet surface, and two inches deep, barred and cross-barred, so as to form cakes or bars of any given size.

What I claim as my invention, and desire to secure by Letters Patent, is—

The fuel combination, using for that purpose the aforesaid compound of rosin or pitch, fine coal, sawdust, and coal-oil, or any other substantially the same, and which will produce the same effect.

IRA BICKNELL.

Witnesses:

EDWARD F. CASSEDY,  
BENJAMIN BICKNELL.