

## **Specification of Richard Goodwin : prepared fuel.**

### **Contributors**

Goodwin, Richard B., 1934-

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Wellcome Collection  
183 Euston Road  
London NW1 2BE UK  
T +44 (0)20 7611 8722  
E [library@wellcomecollection.org](mailto:library@wellcomecollection.org)  
<https://wellcomecollection.org>



37  
A.D. 1838 . . . . . N<sup>c</sup> 7627.

S P E C I F I C A T I O N

OF

RICHARD GOODWIN.

PREPARED FUEL.

L O N D O N :

PRINTED BY GEORGE E. EYRE AND WILLIAM SPOTTISWOODE,

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1857.









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A.D. 1838 . . . . . N° 7627.

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**Prepared Fuel.**

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**GOODWIN'S SPECIFICATION.**

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, RICHARD GOODWIN, of Saint Paul's Terrace, Camden Town, in the County of Middlesex, Coal Merchant, send greeting.

WHEREAS Her present most Excellent Majesty Queen Victoria, by Her  
5 Royal Letters Patent under the Great Seal of Great Britain, bearing date at Westminster, the Twenty-sixth day of April, in the first year of Her reign, and in the year of our Lord One thousand eight hundred and thirty-eight, did, for Herself, Her heirs and successors, give and grant unto me, the said Richard Goodwin, Her especial license, full power, sole privilege and  
10 authority, that I, the said Richard Goodwin, my executors, administrators, and assigns, and such others as I, the said Richard Goodwin, my executors, admors, or assigns, should at any time agree with, and no others, from time to time and at all times during the term of years therein mentioned, should and lawfully might make, use, exercise, and vend, within England, Wales, and  
15 the Town of Berwick-upon-Tweed, my Invention of "**AN IMPROVED PREPARED FUEL**;" in which said Letters Patent is contained a proviso, obliging me, the said Richard Goodwin, by an instrument in writing under my hand and seal, particularly to describe and ascertain the nature of my said Invention, and in what manner the same is to be performed, and to cause the same to be  
20 inrolled in Her Majesty's High Court of Chancery within six calendar months next and immediately after the date of the said in part recited Letters Patent, as in and by the same, reference being thereunto had, will more fully and at large appear.

NOW KNOW YE, that in compliance with the said proviso, I, the said  
25 Richard Goodwin, do hereby declare that the nature of my said Invention,



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*Goodwin's Improved Prepared Fuel.*

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and the manner in which the same is to be performed, are particularly described and ascertained in and by the following description thereof (that is to say):—

My Invention of an improved prepared fuel consists in mixing or combining certain materials (which in themselves are nearly useless) in various proportions, so as to produce when combined a cheap and good fuel. 5

The composition consists of the under-mentioned articles, and is combined in the following proportions:—Seven parts of fullers' earth or strong blue clay or loam, such as is or may be found in abundance in the neighbourhood of London, or the sediment mud or loamy earth from the banks or bottoms of rivers, canals, moats, or ponds; two parts of coal tar or pitch, or Stockholm 10 tar; eight parts of small bituminous coal, such as will pass through a quarter-inch sieve (and which of itself is comparatively of no use for domestic purposes); three parts of mire, mud, or scrapings from the public highway roads, whether macadamized or paved, as in London.

In combining these ingredients I use the following method:—First, I 15 make a layer of fullers' earth, blue clay, or loam, or the sediment mud or loamy earth from the banks or bottom of a river, canal, moat, or pond; I then take one of the two parts of coal tar, pitch, or Stockholm tar, and make a layer of it by pouring it on the before-named seven parts of fullers' earth or clay; after which I take the eight parts of small coal with which I make a 20 layer upon the former; I then make another layer, consisting of the mud, mire, or scrapings of the public highway roads, and add, lastly, the remaining one part of coal tar, pitch, or Stockholm tar. If the mud, mire, or scrapings be in a fluid state, it will most probably contain sufficient water for the perfect mixing of the whole; but if nearly dry, a sufficient quantity of water must be applied 25 to cause the whole of the materials to amalgamate; I then have the whole turned over with a shovel or other suitable instrument and thus mixed, and afterwards, for the more perfect incorporation of each component part with the other, I grind the whole in a mill actuated by horse, steam, or other power, the mill being constructed on a similar principle to those used for grinding or 30 mixing brick earth or mortar. The whole being thus thoroughly compounded and reduced to about the consistency of clay prepared for tile making, it may be formed or made into any convenient shape by the hand or in a mould, and afterwards dried in the same manner as bricks, and when hard the fuel will be fit for use. I would here notice, that when the fuel is about half dry it is 35 susceptible of compression, and may be reduced from the original size full one-sixth or more, still retaining its full strength as a fuel, which I believe to be equal to that of Merthyr coal, and spreading in its flame to that of Hartley Main, and consequently it presents to the steam navigator most incalculable



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*Goodwin's Improved Prepared Fuel.*

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advantages in the saving of stowage to the extent of at least one-third. I use the fullers' earth, blue clay, or other such earthy materials as before named for binding or holding the other matters together.

I most distinctly claim the use of road mud, mire, or scrapings of the  
5 highway roads or streets, as applied to the manufacture of fuel, as my Invention or discovery, and consider the use of the same as a component of fuel as an invaluable discovery, inasmuch as the said mire or mud is in itself inflammable and combustible, as it contains iron and steel in very small and innumerable particles, which is perpetually being chafed from the shoes and  
10 shoe nails of horses, and from the tires of carriages of every description; this brought into collision with flint stone (with which also this mud or mire abounds) of themselves produce fire. And the mineral and vegetable parts and qualities of this part of my improved fuel I consider to be in their very finest state of applicability for burning purposes, not having been washed of  
15 their native strength in the common sewers, nor finally deposited in the river, where it becomes mud necessarily exhausted of its greatest strength and finest qualities by the flowing and ebbing tides, and constantly in an almost state of inundation, which is well known to be ruinous to the very best and strongest coal produced in the kingdom. The coal I use being all small, is  
20 with a view to its entire incorporation with the other materials, and to bring it into the most important use in giving or imparting to the fullers' earth, clay, or loam a mouldering tendency, reducing it to ashes. The unctious qualities of tar or pitch are so great that in being well mixed with fullers' earth, clay, or loam, it becomes, when lighted, a kind of cemented body of fire, and in like  
25 manner also diffuses its bituminous power into the mire or mud. The qualities of the road or highway mud or mire are peculiar and most important:—First, it gives to the fullers' earth, clay, or loam an additional readiness for crumbling into ashes when submitted to the action of fire, instead of its forming a hard substance or kind of stone or brick in the fire; the grit of  
30 stone and sand in the mud or mire occasions this in a great degree, loosening or separating the glutinous or binding qualities of the fullers' earth, clay, or loam; also the pulverized iron and steel it contains gives to this fuel an intensity of heat which I believe is not found in any coal. The vegetable matter this mud or mire also contains, such as corn, clover, hay, and straw,  
35 after the partial decomposition it undergoes before it forms a part with the other numerous ingredients, vegetable and mineral (found in road mud or mire), added to the well-known bituminous properties of tar, pitch, and coal, produce a superior and economical fuel for all domestic purposes, and in a furnace is quite equal in extent of spreading flame to Hartley Main coal.



*Goodwin's Improved Prepared Fuel.*

In conclusion, I wish it to be understood that I do not claim the exclusive right to use any of the above-named materials (except the road mud or mire) separately, nor do I confine myself to the precise proportions of each or either article herein mentioned, as they may be, under circumstances, varied; but that which I claim as my Invention is,—

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First, the applying of road mud or mire for the manufacture of an improved fuel.

Secondly, the combining of the above-mentioned materials therewith, they, (viz<sup>t</sup>) strong blue clay, &c., coal tar and small coal, being the refuse of their respective kinds, in the above-mentioned proportions or nearly so, whereby the same may be applied to important uses as a substitute for ordinary fuel, both for domestic purposes and the more important use of generating steam in steam boilers, for the furtherance of steam navigation, in both which uses I effect a saving of at least one-third in the room required for stowage and also in the expence of ordinary fuel.

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In witness whereof, I, the said Richard Goodwin, have hereunto set my hand and seal, this Twenty-sixth day of October, in the year of our Lord One thousand eight hundred and thirty-eight.

RICHARD (L.S.) GOODWIN.

AND BE IT REMEMBERED, that on the Twenty-sixth day of October, in the second year of the reign of Her Majesty Queen Victoria, the said Richard Goodwin came before our said Lady the Queen in Her Chancery, and acknowledged the instrument aforesaid, and all and every thing therein contained and specified, in form above written. And also the instrument aforesaid was stamped according to the tenor of the Statute made in the fifty-fifth year of the reign of His late Majesty King George the Third.

LYNCH.

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Inrolled the Twenty-sixth day of October, One thousand eight hundred and thirty-eight.

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