

Specification and disclaimer of William Buckwell : compressing fuel and other materials.

Contributors

Buckwell, William.

Publication/Creation

London : Great Seal Patent Office, 1857 (London : George E. Eyre and William Spottiswoode)

Persistent URL

<https://wellcomecollection.org/works/mwfk3vb3>

License and attribution

This work has been identified as being free of known restrictions under copyright law, including all related and neighbouring rights and is being made available under the Creative Commons, Public Domain Mark.

You can copy, modify, distribute and perform the work, even for commercial purposes, without asking permission.



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



A.D. 1849 N° 12,544.

SPECIFICATION AND DISCLAIMER

OF

WILLIAM BUCKWELL.

COMPRESSING FUEL AND OTHER MATERIALS.

LONDON:

PRINTED BY GEORGE E. EYRE AND WILLIAM SPOTTISWOODE,
PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY :

PUBLISHED AT THE GREAT SEAL PATENT OFFICE,
25, SOUTHAMPTON BUILDINGS, HOLBORN.

Price 4d.

1857.

THE HISTORY OF THE

REIGN OF

CHARLES THE FIRST

BY

JOHN BURNET

OF THE UNIVERSITY OF OXFORD

IN TWO VOLUMES.

LONDON,

Printed by J. St. John, at the Angel in St. Dunstons Church-yard, 1724.

THE SECOND EDITION, CORRECTED.

1733.



A.D. 1849 N° 12,544.

Compressing Fuel and other Materials.

BUCKWELL'S SPECIFICATION AND DISCLAIMER.

SPECIFICATION.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, WILLIAM BUCKWELL, of the Artificial Granite Works, Battersea, in the County of Surrey, C. E., send greeting.

WHEREAS Her present most Excellent Majesty Queen Victoria, by Her
5 Royal Letters Patent under the Great Seal of the United Kingdom of Great Britain and Ireland, bearing date at Westminster, the Twenty-eighth day of March, (one thousand eight hundred and forty-nine) in the twelfth year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the said William Buckwell, my exors, admors, and assigns, Her especial
10 licence, full power, sole privilege and authority, that I, the said William Buckwell, my exors, admors, and assigns, or such others as I, the said William Buckwell, my exors, 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 expressed, should and lawfully might make, use, exercise,
15 and vend, within England, Wales, and the Town of Berwick-upon-Tweed, my Invention of "IMPROVEMENTS IN COMPRESSING OR SOLIDIFYING FUEL AND OTHER MATERIALS;" in which said Letters Patent is contained a proviso that I, the said William Buckwell, shall cause a particular description of the nature of my said Invention, and in what manner the same is to be performed, by an
20 instrument in writing under my hand and seal, to be 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

Buckwell's Improvements in Compressing Fuel and other Materials.

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 William Buckwell, do hereby declare that the nature of my said Invention, and the manner in which the same is to be performed, are fully described 5 and ascertained in and by the following statement thereof, that is to say:—

My Invention consists of a new method of condensing, solidifying, and compressing coke, coal, or other material ordinarily used as or applicable for fuel, by subjecting it to percussion in moulds, and so converting it into dense or solid blocks easily portable, and admitting of convenient stowage. And the 10 mode or process which I have adopted for producing this effect is the following:—Taking, for example, as the fuel to be compressed or solidified, coke in a crushed, granular, or fractured state, and mixed with a small quantity of liquid, I cause it be fed or fall in this state into a massive cast-iron mould lined with wrought iron casehardened, firmly fixed and well supported, the 15 inner surface of the mould being of the form and dimensions of the intended blocks. In this mould a ram works. I use and prefer for this purpose a steam hammer, but other means of obtaining the requisite percussion may be used. In making hexagonal blocks (which is the shape I prefer) of about fifty square inches transverse section, I have used such a hammer of about three 20 tons weight, capable of acting through a space of four feet, and working at the rate of about fifty blows per minute. As the mould is fed with the fuel the ram or hammer strikes and beats it in the mould, and thus compresses or solidifies it; and the best effect I find to be produced by feeding in small quantities at a time between successive blows of the ram. The block so 25 formed is then to be removed from the mould; but as in practice I have found it expedient not to do this immediately, but to suffer the block to rest for a short time in the mould, I have for this purpose adopted the following method, which I prefer and recommend as advantageous:—I make the mould of double the depth required for the formation of a block, supposing one block to have 30 been formed, the next blow, as herein-after explained, will carry it forward into the lower part of the mould, a plate of iron fitting the mould being introduced so as to separate this block from the next, which will now be made in the upper part of the mould, as before described. The block at the lower part of the mould is then to be driven out, and the upper block to take its place, 35 which is effected thus:—The plate under the lower of the two blocks in the mould is supported by a prop inserted into a cylinder filled with steam, the prop moving in the cylinder as a piston. This prop, whilst a block is being formed, remains bolted or fixed, but when a block has been formed the prop is

Buckwell's Improvements in Compressing Fuel and other Materials.

to be unfixed, and it will descend into the cylinder by the succeeding blow of the hammer, so as to release the lower block of fuel from the mould, which is then to be removed, the upper block taking its place. The steam in the cylinder will then bring the prop back into its place under a plate in the
5 mould, where it is again to be bolted or fixed, and the process repeated. In the first instance, and before any block of fuel has been formed in the mould it will of course be necessary to place in the lower part of the mould under the plate of iron before mentioned for separating the successive blocks of fuel, a block of wood, or other material capable of bearing the blows, which, being
10 driven out after the first block of fuel has been formed, may then be laid aside, but it is desirable to use it when finishing work, so as to leave such block in the mould in preference to a block of fuel. I subject the blocks, when formed to the action of a dry atmosphere in a room or chamber, at a temperature somewhat higher than the outer air. But this is not essential, the action
15 of the outer atmosphere in fine weather being sufficient to produce the same effect, though in a longer time, varying, of course, according to the condition of the atmosphere. As respects the quantity of liquid to be applied to coke or other fuel before subjecting it to the blows of a ram or hammer, when in a mould, I would state that it is impossible to specify any exact proportion,
20 because coke or other fuel itself varies as to its state of dryness according to circumstances, and particularly according to the condition of the atmosphere. It may be, and sometimes is found to be, sufficiently damp by exposure to and absorption from the atmosphere, without the addition of any liquid, but in ordinary cases it will be necessary to mix with it a small quantity of water or
25 matter in a fluid state. If the coke or other fuel, when subjected to the ram, be not sufficiently damp, a dust will arise, and the solidification will not be complete ; if, on the other hand, it be too much loaded with liquid, the excess will shew itself on the surface of the block, and in this case again the effect of the impact will be less perfect. A workman will very soon be able to judge with
30 sufficient accuracy of the proper condition from the mere feel of the materials. If bituminous matter, such as tar or other matter, in a liquid state be used in combination with the fuel to be compressed, the water will be omitted or proportionately diminished.

Having thus stated the manner in which the operation may be effected,
35 as applied to coke, I would remark, that I have merely selected coke as the material by way of example, and because I think the Invention may be very usefully applied in practice to coke alone. But the same process may be applied to mixtures of coke and coal, also to coal, and to mixtures of different sorts of coal, and to other materials which may be used as fuel.

Buckwell's Improvements in Compressing Fuel and other Materials.

Having thus described the nature of my Invention, and the manner of performing the same, I would have it understood that what I claim is the compressing or solidifying fuel in moulds by percussion.

In witness whereof, I, the said William Buckwell, have hereunto set my hand and seal, this Twenty-eighth day of September, in the year of our Lord One thousand eight hundred and forty-nine.

W^M BUCKWELL. (L.S.)

Buckwell's Improvements in Compressing Fuel and other Materials.

DISCLAIMER.

In the Matter of a Patent granted to WILLIAM BUCKWELL, of the Artificial Granite Works, Battersea, in the County of Surrey, Civil Engineer, for his Invention of "IMPROVEMENTS IN COMPRESSING OR SOLIDIFYING FUEL AND OTHER MATERIALS," bearing date at Westminster, the Twenty-eighth day of March, One thousand eight hundred and forty-nine.

DISCLAIMER proposed to be entered by the said William Buckwell with the Clerk of the Patents of England, pursuant to an Act passed in the fifth and sixth years of the reign of His late Majesty King William the Fourth, intituled "An Act to amend the Law touching Letters Patent for Inventions."

I, the said William Buckwell, do declare that since I obtained the said Letters Patent I have discovered that that part of the Invention which was intended to have been described under that part of the title which is contained in the following words, "and other materials," is not of such practical utility as would make it desirable to retain it; for which reason I am desirous to and do hereby disclaim all that part of the title which is contained in the following words, "and other materials," so that the title of the Invention may remain thus: "Improvements in Compressing or Solidifying Fuel."

In witness whereof, I, the said William Buckwell, have hereunto set my hand and seal, this Twenty-eighth day of September, in the year of Our Lord One thousand eight hundred and forty-nine.

To the Clerk of the Patents of England.

This is to certify that the above-named William Buckwell, of the Artificial Granite Works, Battersea, in the County of Surrey, Civil Engineer, has applied to me for leave to enter with you the above-written Disclaimer of part of the title of a certain Invention for which Letters Patent were granted to him, under the Great Seal of Great Britain, dated at Westminster, the 28th day of March, 1849. And having considered of the said application, and no objection having been made to the same, I hereby grant leave to the said William Buckwell to file his said Disclaimer pursuant to the Statute

Buckwell's Improvements in Compressing Fuel and other Materials.

passed in the fifth and sixth years of the reign of His late Majesty King William the Fourth, intituled "An Act to amend the Law touching Letters Patent for Invention.

JOHN JERVIS,

Temple, September 28th, 1849.

W^M (L.S.) BUCKWELL.

5



Entered with and filed by the Clerk
of the Patents of England, this
28th day of September, 1849.

JEFFERSON.

AND BE IT REMEMBERED, that on the Twenty-eighth day of September, 10
in the year of our Lord 1849, the aforesaid William Buckwell came before
our said Lady the Queen in Her Chancery, and acknowledged the Specifica-
tion aforesaid, and all and every thing therein contained and specified, in form
above written. And also the Specification aforesaid was stamped according
to the tenor of the Statute made for that purpose. 15

Enrolled the Twenty-eighth day of September, in the year of our Lord
One thousand eight hundred and forty-nine.

LONDON :

Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty. 1857.