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R.H.

Date

25th November 1925.

For Circulation:—

Mr. [illegible]

Mr.

Mr.

Asst. U. S. of S.

Perm. U. S. of S.

Parly. U. S. of S.

Secretary of State.

CARBON FUEL FROM WASTE VEGETABLE MATTER.

Fwds letter setting forth the result of Mrs A.M.Hart's researches, requests interview.

Previous Papers

[illegible]

MINUTES

Please see minutes of June last on 9421/25

[illegible] further letter. The letter has been ack d.

? Copy all to the Fuel Research Board ref. 9421/25 & ask for their views.

[illegible]
25/1/26

[illegible]

[illegible]

-2 DEC 1925

-19 JAN 1926

Subsequent Papers

[illegible] 56069

C.O. 53119

34249/25

18, Hilltop Road, West Hampstead. 26 NOV 25

25th. November, 1925. 700

Hon. W. Ormsby Gore, Esq., M.P.,
Colonial Office,
Downing Street, S.W.1

re Mrs. Hall Fraser

Dear Sir

Referring to your letter of August 11th., last, and your previous letters on the subject and the correspondence relating thereto I am writing to you at the request of Mrs. A. Hall Fraser after getting from the results of her recent visit to Canada in connection with the petition for the removal of Wasteful Use of Waste Vacant Matter of the Alive Living.

I should feel obliged if you would arrange an interview so that I may personally deliver the petition and explain more fully the object of the petition.

Yours faithfully

R. N. Hughes

Manager

Reference No. 34249/25.

18 Hilltop Road,
West Hampstead.

Nov 25th. 1925.

[illegible] the
Under Secretary of State
Colonial Office
Downing Street S.W.

[illegible]ar Sir

Re Carbon [illegible] Waste [illegible] Matter

Refe[illegible] [illegible] recently
[illegible]ceived [illegible] of your instructions [illegible] specimens [illegible] Native
[illegible] forwarded by the Acting Governor [illegible] They
[illegible] the following and which the Governor stated were
[illegible] valueless

[illegible]
[illegible] Fragrans
Elephant Grass
[illegible] Sugar Refuse

[illegible] their receipt [illegible] subjected same [illegible] Patented
[illegible] forwarded [illegible] Carbon powder to
[illegible] analysis

[illegible] of their
[illegible] consider highly satisfactory. You will
[illegible] of the Grasses and Refuse [illegible] for tests
[illegible] percentage of [illegible]
[illegible] to point [illegible]
[illegible] solidified and [illegible] throw
[illegible] colloidal
[illegible]
[illegible] white [illegible]
[illegible] solidified
[illegible] anywhere
[illegible]
[illegible] as it throws off [illegible]
[illegible]
[illegible] it may prove very valuable when used for [illegible]
[illegible] and it is proved that it gives a [illegible] flame when used
[illegible] These highly desirable attributes
[illegible] the result of the following

[illegible] have [illegible] after many years of [illegible] study [illegible]
[illegible] powder [illegible] pressure into
[illegible] blocks of any size [illegible] shape [illegible] powder is [illegible]
[illegible] which does not
[illegible] lignite coal [illegible]
[illegible] and B.A. [illegible] satisfactory results [illegible]
[illegible] ready for your inspection. The two former give about
[illegible] when mixed with other waste
[illegible]etable matter [illegible] I have now filed my Patent
[illegible] this new method [illegible] of pro[illegible]
[illegible]and [illegible] waste
[illegible] and vegetable areas [illegible] should [illegible]
[illegible]ploited [illegible] commercial success [illegible] to the
[illegible]pire.

[illegible] of the [illegible] prior
[illegible] carbonisation if required at [illegible] and samples are being
[illegible]livered to you. Coal Refuse can also be solidified and burnt
[illegible]ilarly to a solid block of coal. The chemicals I use for

binding purposes have an astonishing effect in keeping the particles from becoming disintegrated; thus giving a sustained or retentive heat for an abnormal period. The bye-products of Coal-dust or dumps should prove very valuable, these being obtained from the Volatiles during carbonisation.

Expensive and complicated machinery with high technical skill is quite unnecessary for the production of the Carbon and the period of effecting carbonisation is very short.

I should greatly appreciate your giving instructions whereby a small simple Government laboratory may be temporarily placed at my disposal, thus enabling me to give a demonstration of my process before any Government Experts you care to appoint. A large sized Gas Stove with Gas Rings on the top with a ventilating chimney, plus a small hand press for the solidification process, is all that I require for a small demonstration. At the present moment my experiments are being conducted under extremely disadvantageous circumstances in my own house and many important data cannot be obtained. You will observe that the Carbon of Cocoa-nut Shells give the high percentage of 12,400 B.T.Us.

It will be interesting for you to also note that the loss by grinding prior to the carbonisation of your various samples only amounted to about 1.4% and I presume, they were merely sun-dried. I am submitting samples of the various grasses - ground, and both before and after solidification.

This grinding or pulverisation is done by a machine which has been found by me in every way satisfactory, and the No. 1. Standard Mill will grind these materials at about the rate of 4 to 6 cwt. per hour. They could be installed in units or, no doubt, large machines could be made.

I have not attempted to work out the estimates of cost as I am unaware of the cost of native labour per ton for gathering the grasses, but I think it may be safely assumed that the total cost of production will not exceed one third of the present price of Coal in Central Africa and many other of our Dependencies, and in a great many countries the Carbon blocks can be made where Coal is almost unobtainable, unless at a prohibitive price for ordinary Commercial use. Various samples of Coal Dust, Lignite, Peat, Sudd, etc., which have been solidified into small blocks by my process are available for your inspection.

I have samples of Carbon Powder produced from the actual Vegetable and Refuse Matter received by me from Uganda under your instructions, and also a sample of Nile Sudd ground into powder and then solidified by my process. The power to resist the action of water after consolidation has not yet been determined, but there appears no doubt whatever that they can be manufactured practically waterproof

The enclosed Analytical Report Sheet will further enable you to form some definite opinion upon the enormous potential value of the Empire's resources now lying wholly undeveloped, but which you, personally, have evidently not overlooked

I am,

Yours faithfully,

J. Mc Nair

TESTS of CARBONISING

Mineral and Vegetable Matter & Refuse

under the "Hart Process" (Patent)

The following analyses have been made by Sir Alfred Herbert's firm, Messrs. Marconi Limited, and at the Home Laboratory.

Description of sample	Laboratory Report.	Remarks	B.T.U.'s per lb dry.
Lignite (Coal) Carbon			11,140
Peat (Carbon)		(de-hydrated by machinery)	11,050
Straw	"		10,240
Paddy Husks	"		6,650
Papyrus or Sudd	"		6,650
Malayan Bamboo	"		8,130
Sudd Carbon	"		8,500
" "	"		8,650
" "	"		8,370
" "	"		7,850
Coal Dust	"		10,900
Cocoa-nut Shell	"		12,400
Mixed Sudd & Vegetable Refuse	"		10,250
Peat (Somerset)	"	10,900 Calories 5040	10,500
" "	"	washed & dried 5090	9,180
" "	"	wet 4900	8,820
" (Donegal)	"	5330	9,660

Note: The ash residue of the above 4 Peats were only 4.88, 3.5, 10.4, and 7.34 per cent respectively It was actually done in the open air (Marconi Report)

Coal Dust	Time	Carbon produced
Weight of Coal		
900 grammes	90 minutes	600 grammes
900 "	60 "	750 "
900 "	30 "	810 "
400 "	20 "	430 "
500 "		850 "
1000 "		720 "
800 "	40 "	

Coal Dust (cont.) Time. 704 Carbon produced

ight of Coal		Carbon produced
800 grammes	25 minutes	640 grammes
800 "	30 "	655 "
800 "	30 "	615 "
800 "	30 "	660 "
900 "	30 "	760 "
900 "	30 "	685 "
500 "	25 "	420 "
800 "	30 "	640 "
900 "	30 "	800 "
900 "	30 "	660 "

Gas consumed:- 4 Therms

The following are the Samples of the Native Grasses and Refuse sent for Carbonisation by the Acting Governor of Uganda (Central Africa) at the request of H.M. Government (Colonial Off

Costos Afer
Dracaena Fragrans
Elephant Grass
Cane Sugar (Refuse)

They were carbonised by the "Hart Process", and Sir Alfred Herbert's Laboratory Report is as follows:-

Calorific Value of Material Dried at 100°-c

Costos Acer	8330 B.T.U. per lb
Dracaena Fragrans	10400
Elephant Grass	10200
Cane Sugar (Refuse)	10440

W. M. Hart

Hughes, L.H. 53469/25

E. Africa

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[illegible]

DRAFT.

2. December 1925

Sir,

Scientific & Industrial Research

Research Branch

With reference to the letter from this department of the 17th of June regarding Mr A.M. Hart's claim to have invented a process for the production of carbon fuel from vegetable waste, I am to convey for your information copies of further correspondence on this subject [illegible]

[illegible] 25.xi.25

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~~...peal you ... / ...y observations you may / ... to make on this / ...etter~~

2 Mr Amery would be glad to have ~~any~~ the observns of the Dept of Scientific & Industrial Research on the enclosed papers.

(Signed) W. C. BOTTOMLEY