

1953.

Kenya.

No. 3297

SUBJECT

C0533/439

Sisal Machinery

(B. D. T. Scheme.)

Previous

18016/32.

Subsequent

23092/34 (Sisal Industry)

Mr. Freeston,

Herewith a copy of a letter which I have received this morning from Mr. Mangnall, the Engineer who is in charge of the new machinery trials which are being made in Kenya. The report which he now sends was promised to me some time ago, but as he explains there have been certain discussions with the Patent Office and certain modifications to the original machinery have been required. Mr. Mangnall is leaving again for Kenya on September 12th, and hopes that with the modifications which are to be made in the original design that it will be possible to put this new sisal machine on a commercial basis. I think it would be advisable for a copy of this report to be sent by air mail to the Government of Kenya, so that it might be in their hands before Mangnall's arrival. You will note that he has sent copies for this purpose.

J. A. Shindala

2.9.33.

*By Air Mail
6/9/33*

2 To Kenya 6/3 (11/10/33) 6 SEP 1933



Handwritten signature and initials in a circle



Mr. Freeston,

Herewith a copy of a letter which I have received this morning from Mr. Mangnall, the Engineer who is in charge of the new machinery trials which are being made in Kenya. The report which he now sends was promised to me some time ago, but as he explains there have been certain discussions with the Patent Office, and certain modifications to the original machinery have been required. Mr. Mangnall is leaving again for Kenya on September 12th, and hopes that with the modifications which are to be made in the original design that it will be possible to put this new sisal machine on a commercial basis. I think it would be advisable for a copy of this report to be sent by air mail to the Government of Kenya, so that it might be in their hands before Mangnall's arrival. You will note that he has sent copies for this purpose.

J. A. Shute

29.33

*By Air Mail
6/9/33*

2 To Kenya 673 (w/issnall 51) 6 SEP 1933

CP
[Signature]



Mr. Freeston.

Mr. Seel.

N. Boarder 4/11
N. Stockdale

Mr. Alfred Wigglesworth asked me recently if I would see Mr. G.C. Anderson who has recently started as a Consulting Engineer for Sisal. Mr. Anderson called today and I gathered that he had been manager of one of the Wigglesworth estates in Tanganyika up to Central Railway line, (I did not catch the name of the estate which begins with R, and has an acreage of 3,000 acres under sisal) that he came from East Africa on leave last October and has recently started in London as Consulting Engineer. He said that he proposed to visit East Africa annually to report on sisal estates and to enable them to keep in touch with latest engineering developments on this side. He further said that he would not be attached to the Wigglesworth group, but that he would visit Kenya and Portuguese East Africa as well as Tanganyika.

Mr. Anderson has apparently been concerned with the Corona No. 4 machine manufactured by Krups and has recently developed an automatic drying machine. He said that in his opinion the sisal industry would have to work towards factories which worked automatically from scratching the leaf to the baling of the dried fibre.

The object of Mr. Anderson's visit was, I am sure, to find out what was the position of the new machine evolved by Captain Magnell of the Chester Hydraulic Engineering Company. He asked if any official report on this machine had been issued and I told him that as far as I knew no such report had been issued.

The

277

The last I know of this question was that Captain Magnell was to have left some time in October to carry out a commercial test. Is there any later information?

J. A. Parkdale
3. 1. 34.

No - see 3197/33 Kang - Burnett

Burnett
41

No (TT Dept) has not seen this before. It might interest the Tanganyika Govt. I have a copy of 102 lbs on 3297/33 with an explanation that we have no further news)

Good

4.1 J. A. Parkdale
4.1

Mr. Registrar,

I would suggest that in the first instance we ascertain if Capt. Magnell has returned for Kang - & if so whether he has anything further to report. I submit ^{letter} draft to the Charter by Hydraulic Engineering Co. ~~for exam.~~ If you agree will you kindly despatch.

J. A. Parkdale

4.1/34

31
41

3 To Hydraulic Engineering Co. Ltd. - cons - 10/2/34

N. 17
when
reply to
is received
see this
of
4/1

Capt. Daynard today gave Mr. Strickdale an account of the progress made with his experimental machine at Longport; Mr. Seal & I were present. The machine produces 20% less waste, uses only about 20% of the power, & needs considerably less water than the Robey & Knapp machine.

on for May 1909
for Navy's interest

It was agreed that Capt. D. should send me a second interim Report (following on that enclosed in ①) that we should send a copy to Messrs. Wemyss suggesting that when the three machines now under construction are ready probably about May 1909, that some serious report (from the D. & A. and possibly from a report of the seed planter) on the commercial utility of the machine - for the info of C. D. & Messrs. Wemyss might also be asked to send a copy of their Report sent to T. T. ; Capt. Daynard was anxious that his interim reports shd. not be broadcast to other territories.

W. Speck
11.1.1909

Tell he writes? put by
A. D. Strickdale
11/1

H. Wolfe
4. ~~Admission~~ (s.o) _____ 20 Dec '33
Encls. copy of letter to E.A. T. & I.O. & furnish
his views on the new decorticating machine.

To A.B. Bates (s.o) _____ 12 Jan '34

REMOVED UNDER STATUTE

*See
J.P. Seal
22/1/34*

Registry Note

The statement by the S of S regarding financial
assistance for installation of road machinery is regd.

MS

on 23054/34 Kenya

See Mr. Strickland's remarks annexed.

B.v. in a week if no reply.

Austin
25/2 1934

To Capt. Maughall s.o. 24.2.34

REMOVED UNDER STATUTE

7 Capt Maughall 26 Feb 34

Th. Stockdale

In view of the later developments (on 23092/34 Kenya), we had better send a copy of Mr. Mangrall's ~~letter~~ Report to Gen. Kenya by next week's Air Mail without comment.

Stockdale
28/2

When report is made of it

I have no objection to the action proposed but I still think it is desirable for as long as possible to have an official report on the commercial markets established in Kenya.

Stockdale
7/3

Yes: we certainly should have a report. We should be interested to see whether the full size plant comes up to or even surpasses expectations. It may easily be a really good thing.

Ask for report on the lines of 10 previous minute on No 3

S. P. O. Flood
13. done

JH 10 copies of R Mangrall files. 7 answered. 27 Feb 34
DESTROYED UNDER STATUTE

By air mail
6/3/34 *8* To Kenya, 165 (w/c7) cons 5 MAR 1934

DESTROYED UNDER STATUTE
W

ALL COMMUNICATIONS TO BE ADDRESSED TO THE COMPANY

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CHESTER, 1421.
Private Branch Exchanges

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INDIA OFFICE,
CROWN AGENTS FOR THE COLONIES,
AND FOREIGN GOVERNMENTS.

7
TELEGRAMS:
"HYDRAULIC, CHESTER"

CODES:
B.C. 6th EDITION
GENTLEYS

The Hydraulic Engineering Company Ltd.

LONDON OFFICE:
59, VICTORIA ST. WESTMINSTER, S.W.1.
TELEPHONE: VICTORIA 2880.
TELEGRAMS: HYDROCHEST, SOWEST, LONDON



Chester

26th. February, 1954.



REFERENCES
YOURS
OURS
ARM/

F. A. Stockdale Esq. C.M.G., C.B.E.
Colonial Office,
2, Richmond Terrace,
Whitehall, S.W.1.

Dear Sir,

Sisal Decorticater Experiments at
Longonot Estate, Kenya.

1. The third and final series of experiments were carried out in September, October and November of last year.
2. The first stage was undertaken three years ago and occupied five months of machine construction and experiment in Kenya.
3. The second stage, which was assisted by a grant and loan from the Colonial Development Fund took three months.
4. The third and final stage recently completed occupied 2½ months.
5. These are the times actually at work in Kenya by the writer, and you will see that the figures total 10½ months. Add to this three single journeys by sea and three single journeys by air, the writer's total time away on this work has been one year two months.

copy 2 - Kings (S)

F. A. Stockdale Esq. C.M.G., S.B.E.
Colonial Office,
Whitehall, S.W.1.

6. Further there has been continuous and unremunerative work in our Drawing Office for three years, and a great deal of machinery has been constructed and sent out to Kenya at different times.

7. The present position is given by summing up the third and final stage of the experiments. Following the second stage the necessary new parts for reconstruction of the machine were made at Chester and shipped in July last. The machine was rebuilt and a further set of experiments and adjustments were then undertaken.

8. The result was that the process was perfected and the experimental machine, which had been greatly altered, certain motions removed and others made roughly on the estate to substitute them, was able to produce continuously and to give results which showed the important effect it will have on the cost of production of sisal in the future.

9. One item of reconstruction was a new type of mechanical feed for the leaves. Five mechanisms had previously been made, tried and in turn scrapped in the endeavour to achieve the object. The sixth attempt was successful and gave a perfectly even spacing of leaves as they entered the treatment section of the machine. Its importance is that the power required to drive the machine does not fluctuate. This removes shock and overload and so greatly reduces the cost of maintenance and change of breakdown.

10. Of the treatment section of the process, there is first the mechanism which softens and flattens the leaves to an even thickness, while it breaks up the structure of the leaf so as to require only a gentle operation to remove the pulp in the next treatment. This section works perfectly and takes what is almost a negligible amount of power to drive it. The leaves now pass through a series of drums, one pair treating one end of the leaf and the second pair the other end of the leaf. One drum operating against a breast plate removes the pulp from one surface of the leaf and the following drum removes the pulp

Chester 26th. February 1954

F. A. Stockdale Esq. C.M.G., G.B.E.
Colonial Office,
Whitehall, S.W.1.

from the other surface. On account of the leaves already being prepared for this operation and the fact that each side of the leaf is separately treated by the scutching operations of the drums, only wide settings between the drums and breast plate are required. This wide clearance causes very little resistance and consequently the power required is very low and wear and tear on these parts, normally very great, is almost negligible.

11. By virtue of its experimental construction and the limitation of the improvised mechanized feed, the output of the machine is only about 2 tons of fibre per day, whereas the commercial models based on this experimental machine will give at least 4 tons per day.

12. The horse power required to drive the experimental machine is the low figure of 17. This will be doubled in the commercial model, i.e. 34 H.P. as against anything from 90 to 120 of the old type decorticators. This means a very great saving in cost of engine and engine foundations, in running cost and in maintenance.

13. On carefully taken comparative tests of a given weight of leaves from the same cutting and same truck load, put through the experimental machine and through the machine of the old type, 20% more fibre was obtained from the experimental machine. This test was repeated on many occasions. This figure will even be improved in the commercial machines for a number of reasons.

14. We understand that since the writer left Kenya the Agricultural Chemist took samples from Longonot of finished brushed fibre from both the experimental machine and the old type decorticator, and found that the fibre from the experimental machine contained only a small fraction of deleterious acid content of the fibre from the old type decorticator.

Chester, 26th February 1934

F. A. Stockdale Esq., C.M.G., C.B.E.
Colonial Office,
Whitehall, S.W.1.

15. The conclusions are that the process has proved,
- a. That it will produce a high percentage more fibre from the leaf and reduce waste so as to leave only the very short fibres which are useless to the trade.
 - b. That it requires well under half the power to drive, and that such power can be applied evenly and without shock.
 - c. It will bring down the first cost of a factory and reduce the present heavy maintenance charge to a very low figure.
16. Apart from many other features, it will prevent stoppage for repairs and adjustment and consequent loss of output, but the three items above are sufficient to put the cost of production on an entirely new basis.
17. You no doubt appreciate the difficulties of experimenting in-country on the equator 7,000 miles by sea from the works which manufactures the necessary machines and parts. Overlooking climatic and other conditions, the difficulty of working with only unskilled and native labour, and this often inadequate, has been considerable. Further that development had to be forced and success obtained quickly if to be of use to the colony or ourselves, and at a time when the mounting costs of the work were serious in view of the trade depression at home.
18. The writer will again fly out to East Africa in about two month's time so as to be available to planters on the question of more economical factory layout and the general details concerning the application of the new process.
19. A batch of commercial machines are now in process of manufacture and the first will be completed in about five weeks time.

Yours faithfully,

THE HYDRAULIC ENGINEERING COMPANY LIMITED.

A. R. H. [Signature]
Managing Director.

ALL COMMUNICATIONS TO BE ADDRESSED TO THE COMPANY

TELEPHONE
CHESTER, 1421.
Private Branch Exchange

CONTRACTORS TO
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CODES
A.B.C. SECTION,
BENTLEY'S

The Hydraulic Engineering Company Ltd

LONDON OFFICE:
39, VICTORIA ST., WESTMINSTER, S.W.1.
TELEPHONE: VICTORIA 2820.
TELEGRAMS: HYDROCHEST, BOWEST, LONDON



Chester 26th. February 1934.

REFERENCES

ARM/

F. A. Stockdale Esq. C.M.S., O.B.E.
Colonial Office,
2, Richmond Terrace,
Whitehall, S.W.1.

Dear Sir,

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1. The third and final series of experiments were carried out in September, October and November of last year.
2. The first stage was undertaken three years ago and occupied five months of machine construction and experiment in Kenya.
3. The second stage, which was assisted by a grant and loan from the Colonial Development Fund took three months.
4. The third and final stage recently completed occupied 2 1/2 months.
5. These are the times actually at work in Kenya by the writer, and you will see that the figures total 16 1/2 months. Add to this three single journeys by sea and three single journeys by air, the writer's total time away on this work has been one year two months.

E. A. Stockdale Esq. C.M.G., G.B.E.
Colonial Office,
Whitehall, S.W.1.

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10. Of the treatment section of the process, there is first the mechanism which softens and flattens the leaves to an even thickness, while it breaks up the structure of the leaf so as to require only a gentle operation to remove the pulp in the next treatment. This section works perfectly and takes what is almost a negligible amount of power to drive it. The leaves now pass through a series of drums, one pair treating one end of the leaf and the second pair the other end of the leaf. One drum operating against a breast plate removes the pulp from one surface of the leaf and the following drum removes the pulp

F. A. Steadale Esq. C.M.G., C.B.E.
Colonial Office
Whitehall, S.W.1.

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11. By virtue of its experimental construction and the limitation of the improvised mechanical ~~fact~~, the output of the machine is only about 2 tons of fibre per day, whereas the commercial models based on this experimental machine will give at least 4 tons per day.

12. The horse power required to drive the experimental machine is the low figure of 17. This will be doubled in the commercial model, i.e. 34 H.P. as against anything from 90 to 120 of the old type decorticators. This means a very great saving in outlay on engine and engine foundations, in running cost and in maintenance.

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26th February 1924

F. A. Stoddale Esq. C.M.G., C.B.E.
Colonial Office,
Whitehall, S.W.1.

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- That it will produce a high percentage more fibres from the leaf and reduce waste so as to leave only the very short fibres which are useless to the trade.
 - That it requires well under half the power to drive, and that such power can be applied evenly and without shock.
 - It will bring down the first cost of a factory and remove the present heavy maintenance charge to a very low figure.
16. Apart from many other features, it will prevent stoppage for repairs and adjustment and consequent loss of output, but the three items above are sufficient to put the cost of production on an entirely new basis.
17. We cannot appreciate the difficulties of experimenting in a country on the order of 7,000 miles by sea from the world's main manufacturing centres. The necessary machines and parts, the necessary facilities and other conditions, the difficulty of transport, the cost of material and native labour, and the other impediments are very considerable. Further, any development here must be carried out as quickly as possible in order to be of use to the country or otherwise, and at a time when the economic conditions of the world were serious in view of the trade depression at home.
18. The writer will again fly out to East Africa in about two weeks' time so as to be available to planters on the question of more special factory layout and the general details concerning the application of the new process.
19. A batch of commercial machines are now in process of manufacture and the first will be completed in about five weeks' time.

Yours faithfully,
THE HYDRAULIC ENGINEERING COMPANY LIMITED.

Managing Director.

SISA/9/105
20th December, 1933.

Answer 12/11

F.A. Stockdale, Esq.,
2, Richmond Terrace,
Whitehall,
LONDON. S.W.1.

Dear Mr. Stockdale,

The attached copy of a letter referring to the new sisal decorticating machine explains itself. On the day I saw it, Major Lead, Chairman of the Tanganyika Sisal Growers' Association, was at MacCrae's farm to see it, and we both agreed that in all respects except one, it left nothing to be desired - the exception is the rate of feeding, which is too slow, and makes the daily output too low. MacCrae tells me however, that the output will be doubled with the commercial machine, and this doubling will cause the output of the Robey or Corona decorticators to be exceeded. I am not quite sure, however, whether this will not require the engine horse-power to be increased, though it would still be far below that of the present decorticators.

Yours sincerely,

H. W. G.
AG. DIRECTOR OF AGRICULTURE.

xxx 338

MISA/9/104.
20th December, 1933.

The Commissioner,
East African Trade & Information Office,
Grand Buildings,
Trafalgar Square,
LONDON. W.C.2.

Dear Sir,

With reference to your letter No.9351/33 of the 11th November last, I have to state that the machine which I have inspected is still to be regarded as an experimental machine and so far as can be judged, there is no doubt of the success of the commercial machine; but a definite report cannot be given until the latter is in operation. The manufacturers have received orders for three commercial machines, which it is expected will arrive in Kenya in March or April of next year. Should you desire further information, I suggest you communicate with the Hydraulic Engineering Co. Ltd., of Chester.

Yours faithfully,

AG. DIRECTOR OF AGRICULTURE.

HW/MGH

16
3
2, Richmond Terrace,

Whitehall, S.W.1.

4
4th January, 1934.

Dear Sir,

In September last, Captain A.R. Magnall informed me that he proposed to proceed to Kenya in connection with the new type of machinery which was under trial at Longhorst Estate.

I would be glad if you could inform me whether Captain Magnall has returned from this visit to Kenya and if so whether he can give me any information in regard to the latest results of the trials which have been carried out under his supervision.

Yours faithfully,

(Signed) F. A. STOCKDALE.

The Hydraulic Engineering Company, Limited,

C. O.

3297/33.

17
2

Mr. Freester 1/2/33. *f*

Mr.

Mr.

For Wednesday's Air Mail.

Mr. Parkinson.

6 September, 1933.

Mr. Tomlinson.

Sir C. Bottomley.

Sir J. Shackburgh.

Permt. U.S. of S.

Parly. U.S. of S.

Secretary of State.



With reference to my

DRAFT. DESPATCH.

despatch No. 477 of the 29th of

KENYA.

(No. 29
on 18016/32)

June, 1932, I have the honour to

NO 643

transmit to you, for your

O. A. C.

information, a copy of a report

furnished by the Hydraulic

Engineering Company of Chester

the progress made in connection

with the new machinery for the

decoration of steel which is in

process of manufacture with the aid

of a grant from the Colonial

Development Fund.

2. It is understood that

Captain Mangall proposes to travel

to Kenya by the air mail which

carries

Enclos. to No. 1 on 3297.

FURTHER ACTION.

Copy, with encls., to
Mr. J.B. Williams for
C.D.A.C.

sent 9/19

carries this despatch, and that
he anticipates reaching Longonot

on the evening of September the 12th.

I have, etc.

(Sgd.) P. CUNLIFFE-LISTER

ALL COMMUNICATIONS TO BE ADDRESSED TO THE COMPANY

TELEPHONE
CHESTER, 1421.
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TRADE MARK
HYDRAULIC CHESSEBROUGH
CODES
1888 EDITION
PATENTED

The Hydraulic Engineering Company Ltd



LONDON OFFICE:
39, VICTORIA ST, WESTMINSTER, S.W.1.
TELEPHONE: VICTORIA 2820.
TELEGRAMS: HYDROCHEST, BOWEST, LONDON.



Handwritten: Chester

1st September 1932

Handwritten: Stockdale

Mr. A. Stockdale Esq. C.M.G., C.B.E.
2, Richmond Terrace,
Whitehall, S.W.1.

Dear Mr. Stockdale,

By taking such a long time to send the promised report I am afraid I have confirmed your view that an Engineer never keeps to his stated deliveries.

actually I have delayed the report in order to be able to state the time of the next trials with accuracy, and to be in a position to let you know that the Patent Office have accepted the various claims embodied in this new method of treatment.

I enclose two copies of my official private letter to you and of the report, as you may wish to send one set to the Governor of Kenya.

I leave Croydon on wednesday morning next and will actually be at Langenat on the evening of Sept'r 12th.

I shall be in town for the latter part of Tuesday afternoon the 5th inst. and if there is anything about which you would like to see me, will you please telephone our London Office (Victoria 2820) as early as possible on Tuesday.

Yours sincerely,

Handwritten signature: A. Stockdale

Vertical handwritten note: Open small to keep (2)

19

Chester. 1st. September 1933.

THE HYDRAULIC ENGINEERING COMPANY'S EXPERIMENTS IN
KENYA IN CONNECTION WITH THE DECORTICATION
OF SISAL.

1. A machine complete with all electric motors, switchgear and dynamo to produce the electrical power was shipped from here, erected in Kenya and trials commenced towards the end of last year. The trials terminated in February of this year. Including erection and building the necessary factory shed, the trials occupied approximately three months. The conclusions were as follows:-

The new principle employed for treatment of the leaf, i.e. a light lateral preliminary crush of the leaf to soften the pulp structure and make the leaf an even thickness throughout followed by the operation of scraping first on one side surface of the leaf and then the other by scraping drums, proved to give the following results :-

- (a) A superior quality fibre.
- (b) Waste of only 5% as against anything from 16% to 50% in existing processes.
- (c) Horse power at under 50 as against 75 to 120 of existing installations.
- (d) A reduced total amount of water required for washing the fibre and carrying away the refuse.

2. It was hoped to put the machine into commercial production immediately, but in this we were unsuccessful. In experimenting with the drum surfaces much of the original strength was reduced and new parts became necessary for continuous running. There was also a very restricted entry for the leaves to the tip section. To ease this condition a larger conveyor wheel was required and this in itself necessitated the rebuilding of the tip section.

PRESENT POSITION.

3. The new parts have been made and are now on site at the estate in Kenya. Our representative flies out to Kenya next week and the reassembly of the machine will be commenced. It is anticipated that this will take about a month, after which we hope to be able to demonstrate the process in production.
4. The detail design of the commercial models is already completed so that we shall be in a position to give immediate effect to any orders which may result from the successful termination of the trials. Naturally the new model will be a much simpler machine and more straightforward in every way. It will be equally suitable for driving by electric motor, steam or oil engine. All the elaborate electrical equipment which was necessary on the experimental machine in order to determine accurate horse powers and speeds will be dispensed with in the commercial model.


Managing Director.

2, Richmond Terrace,
Whitehall, S.W.1.

End September, 1935.

Dear Hengall,

Thank you for your letter of September, giving me a short report of the trials which you are making with new steel machinery in Kenya. I have been interested in this report, and hope that the modifications which you are about to undertake will be successful, and that you will be able to place the new process on a commercial basis. I note that you propose to leave this country for Kenya on September 12th, and if you particularly desire to see me on September 5th, I could see you at any time after 4.30 p.m.

I am

Yours sincerely,

(Signature)

R. MARSHALL, ESQ.