

(1) Number of pages _____

(2) Date of repair _____

(3) Initials of the Referencer _____

MADRAS RECORD OFFICE

Government of Madras

Public Works

DEPARTMENT

G.O. No.	1626-27(W)	Press
-B.P. No.-		-Mis.-
Dated	27-6-	18.76

Not to be folded or roughly handled

*Proceedings of the Madras Government, Public Works Department,
27th June 1876. No. 1,626*

No 573. Read the following letter from Major P. MONTGOMERIE, R E, Officiating District Engineer, Presidency, to Major-General G. W. WALKER, R E, Secretary to Government, Public Works Department, dated Fort St George, 24th May 1876, No 936.—

In submitting to Government the accompanying statement prepared by Mr Grainger (with his letter) on the comparative expense of working Mr. Orr's

- 1 Letter, No 111, dated 10th April 1876
1 Statement
16 Original Enclosures (returned)
1 Detailed Account

punkah-pulling machine with that of the ordinary mode of punkah-pulling called

for in G O, No 2,287, dated 9th August 1875, I have the honor to inform you that I delayed forwarding this report in the hope of procuring some further information regarding the expenses incurred on hand-pulling during previous years in the General Hospital, Madras, but I regret to state that neither the Indian Medical nor the British Medical Departments are able to supply any further information, "as previous to 1871 the punkahs were pulled under regimental arrangements."

2. The monthly cost of working Mr. Orr's apparatus during the punkah season of the past year has been Rupees 522,*
*The detailed account for the whole year is enclosed this shows some improvement over the cost during the previous year of 1874-75, which was Rupees 636 per mensem.

3 Although this charge of Rupees 522 per mensem does not appear to compare favorably with the actual expenditure incurred on manual labor during the years 1871-72 and 1873-74 (the only years for which data can be procured), and which was Rupees 311 per month in the former and Rupees 380 per month in the latter year, still the amount and description of work performed are very much in favor of the machine. Under the present arrangement all the punkahs in each ward are pulled, whether all the beds are occupied or not, so that the whole of each ward is thoroughly ventilated, but under the manual labor system only such punkahs as were absolutely necessary for keeping the patients cool were worked, and all the rest remained idle.

4 The punkahs which are now worked uniformly and constantly by Mr. Orr's apparatus in the General Hospital are as follow:—

In Civil portion of Hospital, 44 punkahs, each $17\frac{1}{2}$ feet $\times$ 1 $\frac{1}{2}$ feet

In Military do. 98 do. do. 5 „ $\times$ 2 „

To move these by manual labor in the ordinary manner during fifteen hours of the twenty-four would require three relays of twenty-two men for the Civil portion and three relays of sixteen men for the Military portion. And the cost of this at 3 $\frac{1}{2}$ Rupees per man per month would be Rupees 399 per mensem, or about 20 per cent. less than Mr Orr's present apparatus.

5 The direct and simple arrangements for pulling the punkahs and the long and regular swing and secured by Mr Orr's invention (even in such an extensive building as the General Hospital) are allowed to be nearly perfect; but the engine by which the work is done appears any thing but economical; a compound engine with all the best mechanical improvements would probably reduce the working expenses almost in par with the cost of the cheap manual labor of Madras; and I am of opinion that an adaptation of Mr. Orr's arrangements for each of block of

*Proceedings of the Madras Government, Public Works Department,
27th June 1876. No. 1,626*

building with Colonel Creagh Osborne's proposed method of transmitting the motive power from one engine-house would doubtless be the best and most economical system when several buildings have to be cooled and ventilated.

6 The sixteen enclosures which accompanied the Government order under reference are herewith returned.

Statement showing the Expenditure incurred in pulling Punkahs at the General Hospital by Steam during the year 1875-76

Particulars	FOR ONE SEASON FROM 1ST APRIL TO 30TH SEPTEMBER 1875.						Amount expended in preparing the Machinery for the visit of H R H the Prince of Wales	Total Expenditure during 1875-76
	April 1875	May 1875	June 1875	July 1875	August 1875	September 1875		
<i>Labor</i>								
Eng. Drivers	60 0 0	62 0 0	60 0 0	62 0 0	62 0 0	61 0 0	42 0 0	412 0 0
Stokers	29 8 0	31 0 0	30 0 0	31 0 0	31 0 0	33 0 0	11 3 6	195 11 6
Watermen	42 8 0	21 1 6	21 1 6	21 12 9	21 12 9	23 8 0		150 7 6
Superintendent's allowance and carriage hire			35 10 0		100 0 0	20 0 0		155 10 0
Sundry labor	26 7 6	11 9 0	5 5 0	4 13 0	4 12 0	18 13 0	30 11 0	99 5 6
Total, Labor	158 2 6	125 10 6	140 0 6	119 9 9	219 8 9	137 4 0	63 14 6	1,013 2 6
<i>Materials</i>								
Firewood	337 6 9	818 8 0	304 0 0	291 8 0	332 8 0	280 12 0	88 0 0	1,900 10 9
Sundry articles	103 8 9	20 15 6	20 6 0	20 4 0	27 8 1	140 3 4	55 9 10	368 2 6
Total, Materials	440 10 6	838 7 6	324 6 0	311 13 0	360 0 1	420 15 4	93 9 10	2,268 13 3
Grand Total	598 13 0	460 2 0	464 6 6	431 5 9	579 8 10	557 3 4	177 8 4	3,310 15 9
Deduct amount expended on account of H R H the Prince of Wales ..								177 8 4
Net Rupees ..								3,133 7 5

26th May 1876
(Signed) P MONTGOMERIE, Major, R E,
Offg District Engineer, Presidency

From J N GRAINGER, Esq, General Superintendent, Public Works Workshops and Stores,
to Major P MONTGOMERIE, R E, Officiating District Engineer, Presidency, dated
Chepauk, 10th April 1876, No 111

With reference to your endorsement, No 3,059, of 13th October 1875, on G O, 9th August 1875, No 2,287, I have the honor to enclose a statement showing the expense incurred in pulling punkahs at the General Hospital by hand and Mr Orr's engine during the several months of the years from 1870-71 to 1875-76

2 Previous to the erection of Mr Orr's engines the expenses incurred in the Civil and Military parts of the General Hospital were kept distinct

3 The Pay Examiner, Fort St George, informs me that "The expense for 1870-71 cannot be ascertained, having been defrayed by regimental arrangements out of a monthly allowance" During 1871-72 the expenses incurred in both departments amounts to Rupees 1,866

*Proceedings of the Madras Government, Public Works Department,
27th June 1876. No 1,626.*

4 The punkahs were first worked by Mr Orr's machinery in 1872, and then only on the Civil side of the Hospital the expense from 1st April to 31st July of that year was Rupees 1,709-2-0, and total for the year amounted to Rupees 2,998-6-2

5 Government purchased the engine from Mr Orr for Rupees 3,000 during this year, and, as new boilers had then to be laid down and other alterations made during 1873-74, the punkahs were worked by manual labor at a total cost of Rupees 2,281, being Rupees 415 more than the expense in 1871-72

6 The punkahs were worked in both departments by Mr Orr's engine for seven months in the years during 1874-75 and 1875-76, the cost being shown in the columns opposite those years

7 Of these two, the expenses for 1875-76 are the most reliable, and should be the one taken for comparison with the expenses incurred during the years 1871-72 and 1873-74
The whole of the enclosures are herewith returned

Statement of Expenditure in pulling Punkahs at the General Hospital, Madras

Years	Civil Department	Military Department	Total	Orr's Engine	Remarks.
1870-71	RS 672	RS Not given	RS 672	RS ..	
1871-72	538	1,328	1,866	..	
1872-73	821	1,328	2,281	1,709	Punkahs in Civil Department were worked by Orr's engine in 1872-73
1873-74		1,460		3,821	
1874-75	..	..	..	3,133	
1875-76	..	..	..	..	

CHEPAUK,
10th April 1876
(Signed) J N GRAINGER,
Genl. Supt, P W Workshops, &c

No 574. ORDER THEREON, 27th June 1876, No. 1,626.
ORDERED to be forwarded to the Government of India.
(Here enter No 1,627, dated 27th June 1876)
(True Extract)

Colonel,
Offg Under Secy. to Govt, P W.D

To the District Engineer, Presidency

Exd A Grubert
bpare Copies

PUBLIC WORKS DEPARTMENT,
FORT ST. GEORGE, 27th June 1876.

No. 575

No. 1,627.

FROM

MAJOR-GENERAL G. W. WALKER, R E,
*Secretary to the Government of Madras,
Public Works Department,*

TO

THE SECRETARY TO THE GOVERNMENT OF INDIA,
Public Works Department.

ACCOUNT, No 39.

SIR,—I am directed to acknowledge the receipt of your letter, No. 1,177 M. W., dated 17th July 1875, forwarding copy of a despatch from the Secretary of State, with enclosures, on the subject of punkah-pulling machines invented by Colonel Creagh Osborne and Mr. Peter Orr, and calling for information as to the comparative expense of working Mr. Orr's machine with that of the ordinary method of punkah-pulling. In reply, I am to forward, for the information of the Government of India, the accompanying reports by the General Superintendent of Public Works Stores and District Engineer, Presidency, to which are appended statements showing, so far as materials are available, the cost of working punkahs at the General Hospital, Madras, by the ordinary method from the year 1870-71 to 1873-74. The cost of working Mr. Peter Orr's machine for the years 1872-73, 1874-75, and 1875-76 is also given for the last-mentioned year in detail. It is calculated that the cost of the same amount of work as is done by Mr. Orr's machine is 20 per cent less when performed by ordinary manual labor at Madras. But, on the other hand, the work is far more efficiently done by Mr. Orr's apparatus, which has given perfect satisfaction at the General Hospital. All the improvement possible seems to be in the direction of more economical driving power.

2. I am to return all the enclosures received with your letter under reply.

I have the honor to be,

Sir,

Your most obedient servant,

Colonel,

*Offg. Under Secy. to Govt, P.W.D.,
for Secretary to Government.*

Exd. A. Grubert
Spare Copies

Statement showing the expenditure incurred for fueling/ purchased at the General Hospital by steam during the year 1875/76

Particulars		Statement from 1 st April to 30 Sept 1875		Statement from 1 st April to 30 Sept 1875		Total expenditure	
		April 75	May 75	June 75	July 75	Sept 75	1875/76
Labor							
Engine Driver		60	62	60	62	64	412
Blacksmith		29 8	31	30	31	32	195 11 6
Waterman		42 3	21 1 6	21 1 6	21 12 9	22 8	160 4 6
Superintendent of Allowances & Remuneration				35 10		20	155 10
Ordinary Labor		26 7 6	11 9	2 5	4 13	14 12	99 5 6
Total Labor		158 2 6	125 10 6	149 0 6	119 9 9	219 8 9	83-14-6 1013 2 6
Materials							
Firewood		337 6 9	313 8	304 4	214 8 1	332 8 1	28 199 10 9
Sundry Articles		103 3 9	20 15 6	20 5	20 4	27 8 1	65 7 10 388 2 6
Total Materials		440 10 6	334 7 6	324 5	214 12	360 0 1	73 7 10 229 13 3
Grand Total		598 13	460 23	473 6 6	434 5 9	579 8 10	177 8 4 3310 15 9
				Debit amount expended on 1 st April 1876		177 8 4	
				The Balance of 1875		3133 7 5	

26 May 1876.

Edward G. Hare
M.D. District Surgeon

5. 11 7
PRESIDENCY WORKSHOPS, D. P. W.,
Chepauk, Madras, 10th April 1876.

No 111

12-4-76

From

THE GENERAL SUPERINTENDENT,
PUBLIC WORKS WORKSHOPS AND STORES,

To

THE District Engineer.

Statement of expenditure on pulling punkahs at
the General Hospital Madras

Year	Civil Dept. Rupees	Military Dept. Rupees	Total	By Engine	Remarks
1870/71	672	not given	672	.	
1871/72	538	1328	1866	.	
1872/73	.	1328	1328	2998	Punkahs in Civil Department were worked by M.E. Engine in 1872/73
1873/74	821	1460	2281	.	
1874/75	.	.	.	3221	
1875/76	.	.	.	3133	

Presidency Workshops & Stores
Chepauk
10th April 1876
Montgomery
S. Crainier
Genl Superd. P. W. Workshops & Stores

be ascertained, having been defrayed by Regiments
at arrangements out of a monthly allowance.
During 1871-72 the expenses incurred in both
Departments amounts to Rupees 1866.
The Punkahs were first worked by
Mr Orr's machinery in 1872 and then, only on
the

5. 11 4
PRESIDENCY WORKSHOPS, D. P. W.,
Chepauk, Madras, 10 April 1876.

No 111

17.4.76

From

THE GENERAL SUPERINTENDENT,
PUBLIC WORKS WORKSHOPS AND STORES,

To

THE District Engineer
Presidency
Fort Saint George

SIR,

Enclosures 7

With reference to your endorsement
No 3059 of 13th October 1875 on G. O. 9th August 1875.
No 2287 I have the honor to enclose a statement
showing the expense incurred in pulling Punks
at the General Hospital by hand and Mr. Orr's
Engine during the several months of the years
from 1870-71 to 1875-76.

2 Previous to the erection of Mr. Orr's Engine
the expenses incurred in the civil and military
parts of the General Hospital were kept distinct.
3 The Pay Examiner Fort Saint George
informs me that "The expense for 1870-71 cannot
be ascertained, having been defrayed by Regimental
arrangements out of a monthly allowance".
During 1871-72 the expenses incurred in both
Departments amounts to Rupees 1866-.

4 The Punks were first worked by
Mr. Orr's Machinery in 1872 and then, only on
the

8. 7. 3253

the level side of the Hospital. the expense from 1st April to 31st July of that year was Rs. 1709-2-8 & total for the year amounted to Rs. 2998-6-2.

5. Government Purchased the Engine from Mr. Orr for Rs. 3000/- during this year and as new Boilers had them to be laid down & alterations made during 1873-74 the Pankahs were worked by manual labor at a total cost of Rs. 2281/- being Rs. 415/- more than the expense in 1871-72.

6. The Pankahs were worked in both Departments by Mr. Orr's Engine for eleven months in the years during 1874-75 & 1875-76 the cost being shown in the columns of private those years.

The Pankahs are pulled during the months only.
E.H.

7. Of these two the expenses for 1875-76 are the most reliable & should be the one taken for comparison with the expenses incurred during the years 1871-72 and 1873/74.

The whole of the enclosures are herewith returned

I have the honor to be,

Sir,

Your most Obedt. servant

J. J. [Signature]

Genl. Dupont, P. O. [Address]

PRESIDENCY DISTRICT ENGINEER'S OFFICE,
Fort Saint George,

Fort Saint George,

24th May 1876.

No 936.

From

THE DISTRICT ENGINEER,

PRESIDENCY,

To

THE Chief Engineer, and
Secretary to Government per

In submitting to Government the accompanying Statement prepared by Mr. G. S. G. (with his letter) on the comparative expense of work-
ing Mr. Orr's Punkah pulling Machine with that
of the ordinary mode of punkah pulling, called
for in G. O. No 2287 dated 9th August 1875, I
have the honor to inform you that I delayed
forwarding this Report in the hope of procuring
some further information regarding the expenses
incurred on hand-pulling during previous
years in the General Hospital Madras; but
I regret to state that neither the Indian
Medical nor the British Medical Departments
are able to supply any ^{further} information; as pre-
vious to 1871 the punkahs were pulled under
Regimental arrangements.

2 The monthly cost of working Mr. Pitt's apparatus during the purnkah season of the past year has been Rs 522*, this shows some improvement

Encls
Letter No 111
of 10th Feb; 6
1 Statement
16 Criminal
Inclosures
(returned)
1 Details of
Account

x the detailed
Account x for
the whole Year
is enclosed

P. 7 3852 / 76

From

The General Superintendent,

E. W. Workshops,

To

The Artist's Progress

12/10/1919

Stacy A. Dickson

Dated

1874.

Received

No. 111

ENCLOSURES //

Wiederholungsfragen

11. The

studied in England

Remedial Services

for his father's hand &

Mr. Davis

Mr. J. H. Morgan

improvement over the cost during the previous year of 1874-75 which was Rs 636 per mensem.

3. Although this charge of Rs 522 per mensem does not appear to compare favorably with the actual expenditure incurred on manual labor during the years 1871-72 and 1873-74 (the only years for which data can be procured) and which was Rs 311 per month in the former and Rs 380 per month in the latter year, still the amount and description of work performed is very much in favor of the machine. Under the present arrangements all the punkahs in each ward are pulled whether all the beds are occupied or not, so that the whole of each ward is thoroughly ventilated, but under the manual labor system only such punkahs as were absolutely necessary for keeping the patients cool were worked, and all the rest remained idle.

4. The punkahs which are now worked uniformly and constantly by Mr Orr's apparatus in the General Hospital are

as follows -

In Civil portion of Hospital 41 punkahs ea $17\frac{3}{4}' \times 1\frac{5}{8}'$

In Military — do — 90 — do — $5' \times 2'$

To man these by manual labor in the ordinary manner during 15 hours of the twenty four would require

3 Relays of 22 men for the Civil portion and

3 Relays of 16 men for the Military portion

And the cost of this at $3\frac{1}{2}$ Rupees per man per month would be Rs 399 per mensem or ~~about~~ 20 per cent less than Mr Orr's present apparatus.

5. The direct and simple arrangements for pulling the punkahs and the long and regular sowing & secured by Mr Orr's invention (even in such an extensive building as the General Hospital) are allowed to be nearly perfect; but the Engine by which the work is done appears anything but economical, a compound Engine with all the latest mechanical improvements would probably reduce the working expenses almost to a par with the cost of the cheap manual labor of the dras; and I am of opinion that an adaptation of Mr Orr's arrangements for each of block of building with Colonel Levegh Osborne's proposed method

method of transmitting the motive power from one Engine house would doubtless be the best and most economical system when several buildings have to be cooled and ventilated.

6. The sixteen enclosures which accompanied the Govt Order under reference are herewith returned.

I have the honor to be,
Sir,
your most obedient servant

R Montgomerie Major R.E.

Offy District Engineer
Presidency.

Recd.
26

FORMER CASES

Current No. of 187
 " " " " " "

P. H. 1876 Department
 M WORKS FORM No 3

Current No 3853.

From

The District Eng^r Presidency

No 936
 Dated 24th May 1876
 Recd. 29th May

Subject:—

Punjab Pulling at
 General Hospital - Submission of
 report on the comparative expenses
 of working - by Mr. Chris Punjab
 Pulling Machinery & Manual Labor

ENCLOSURES 19-7-11

LATER CASES

Current No of 187
 " " " " " "

From to
 " " " " " "

Orders and Proceedings in file

Depart- ment	No	Date	ENDORSEMENTS		
			Depart- ment	No	Dated
Mr	1988	21/8/72			
	1989	1/11/72			
	2287	9/8/75			
	150	11-4-76 orig			

12573

Desp to Secy 1-6-76
 Cui-207676 Mue 24-6/76
 L.H. Shet. 2 June

N^o 1626 Public Works Department

PROCEEDINGS of the MADRAS GOVERNMENT.

UNDER date the 27th June 1876
 READ the following —

From

The Dist Eng^r Presidency (H.C. N^o 936 of 24th May 1876)

Ordered to be for-
 warded to the Government
 of India.

(H.C. N^o 1627 of 27th June 1876)

The Secy. to the Gov^t of India

Sir,
 I am directed to ac-
 knowledge the receipt
 of your letter N^o 1177/MW
 dated 17th July 1875 for-
 warding copy of a despatch

Encl^{as} 16-

Dist. Eng^r Presidency
 Desp 17/7/76 Mue 17
 1908/10/11/7

from

from the Secretary of
State with inclosures on
the subject of punnah
pulling machines invented
by Colonel Brough Osborne
and Mr. Peter Orr, and
calling for information
as to the comparative expense
of working Mr. Orr's Machine
with that of the ordinary
method of punnah pulling.

In reply I am to forward
for the information of the
Govt. of India the accompany-
ing reports by the General
Supt. of Public Works Stores
and District Engineer in
Presidency, to which are
appended Statements
showing, so far as materials
are available, the cost
of working punnahs at
the General Hospital

Madras

23

Madras by the ordinary
method from the year
1870-71 to 1873-74 - The
cost of working Mr. Peter
Orr's Machine for the
years 1872-73, 1874-75
and 1875-76 is also given,
for the last mentioned
year in detail - It is
calculated that the
cost of the same amount
of work as is done by
Mr. Orr's Machine is
20 per cent. less when
performed by ordinary
manual labor at Madras.
But on the other hand
the work is far more
efficiently done by Mr.
Orr's apparatus, which
has given perfect satis-
faction at the General
Hospital. All the
improvement

improvement possible seems
to lie in the direction of
more economical drawing
power.

I am to return all
the enclosures received with
your letter under reply.

Gmn

W
N

Not 16 C.S.
Despatch 17/7/75

N^o 573/75

to be sent

improvement possible seems
to lie in the direction of
more economical drawing
power.

I am to return all
the enclosures received with
your letter under no. 4.

Grove

24

N^o 573/75

3855 1A

[illegible]

177.7 2054.0

The N. G. Prov^t

27 June 1964

no 5726 175

15

inked-

Water from the 12th St
residence furnishing
information as to the
educative influence of
and Mrs. Mrs. Mrs.
the school of the nation
and the 3 per cent. family
the 1st. 1st. 1st. 1st.
the 1st. 1st. 1st. 1st.