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MADRAS RECORD OFFICE.

Government of Madras.

Public Works DEPARTMENT.

G.O. No. 2 12	Press / Mis.
Dated 4 1	18 [illegible].

Not to be folded or roughly handled

PS

PUBLIC WORKS DEPARTMENT.

Public.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

Read the following letter from Lieutenant-Colonel J. OUCHTERLONY, R. E., Deputy Chief Engineer, Southern Circle, to Colonel W. I. BIRDWOOD, R. E., Secretary to Government, Public Works Department, dated Yerkad, Salem, 10th September 1862, No. 64 :—

SIR,

1. Government in their Order No. 1,498, dated 27th June 1862, were pleased to express their readiness to "accord sanction to a definite plan and estimate for giving effect to" the proposal submitted in my letters Nos. 31 and 47 on the subject of the employment of Horizontal Wind Mills in this country.

1 Plan.

No. 31, dated 9th June 1862.
No. 47, dated 13th June 1862.

2. Press of current duty has hitherto prevented me from preparing a drawing of the engine in question fit to lay before Government, but I have at length been enabled to do so ; and I have now the honor to submit a plan for their consideration, and to recommend that sanction be accorded for the expenditure of Rupees 360, out of the Reserve Fund to allow of a fair trial being given to the machine.

3. It is of course difficult to estimate correctly for such a work ; and it will be so until an experimental mill has been constructed.

As however jungle-wood, bamboos and mats may be efficiently employed for this latter purpose, and as the pumps to be worked by the bell-crank can be borrowed from the Department Public Works Stores, I think the sum I have specified will be found sufficient to cover all expenses connected with the experiment ; while, should it prove a failure, the various materials employed will be worth fully $\frac{3}{4}$ of their cost.

4. I would beg leave to suggest that the mill be put together in the Department Public Works Stores under the supervision of Mr. Curley, who thoroughly understands carpentry and joinery ; and that it be fixed over one of the wells in the Chepauk compound, as it can there be worked, and its effect carefully watched, by the Government Lascars without extra cost.

5. To calculate the duty which such a (comparatively) rude machine as is proposed would perform, is not easy : and experiment can alone satisfactorily determine it. I may state however that the mill represented on the accompanying plan working 2 pumps and 4 inches diameter with a 2 feet stroke, under the very low wind pressure of 2 lbs. per square foot of sail surface, and consequently making, after full deduction for friction and counteraction, 15 revolutions of the crank shaft per minute, should raise from a well not exceeding 15 to 18 feet deep below the clack valve, about 320 cubic feet, or 2,000 gallons of water per hour.

6. The machine would of course be more efficient if a fly wheel were appended : but it is not indispensable.

7. I have proposed to employ moveable screens made of bamboos and mats in the experiment in preference to hanging the sails on pivots or hinges to open and close with the wind, because I think the former method will be found the most effectual for lessening the counteracting effect on the lee sail.

There is so little variation in the wind during the prevalence of the two great monsoons that I expect it will rarely be necessary to shift more than the two extreme widths of the screens after they are once adjusted.

8. Should these wind engines ever come into extensive use, I am confident sets of pumps adapted to agricultural and household purposes, and calculated to last, without needing any repair whatever except to the valves, for 30 or 40 years, could be supplied from England at a cost sufficiently moderate to bring the apparatus within the reach of most of the well to do Native cultivators.

ORDER THEREON, 26th September 1862, No. 2,318.

1. The Government sanction a sum of Rupees 360 from the Reserve Fund for the construction of a Horizontal Wind Engine to work a pair of pumps in the Chepauk compound.

2. Lieutenant-Colonel Ouchterlony is requested to superintend personally the construction of the experimental engine, and the Chief Engineer is directed to place the Superintendent of Stores under Lieutenant-Colonel Ouchterlony's orders for the purpose of carrying out his views in the execution of the work.

(True Extract.)

Colonel, R. E.,

Secretary to Government.

To the Chief Engineer.

" Deputy Chief Engineer, Southern Circle.

" Accountant General.

Exd: S. T. Augustin.

Public

Rc 64

Southern Circle Office
on Circuit,
Yercaud, 10th Sept
Salem, 1862

From Lt Colonel Hauchteloney R.E.
Dep. Chief Engineer
Southern Circle

To Colonel AW Birdwood. R.E.
Secretary to Government
D.P.W

Sir,

Govt in their order Rc 1498 dd 27th June 1862 were pleased to express their readiness to "accord sanction to a definite plan & estimate for giving effect to the proposal submitted in my Rc 31 dd 9th June & letters Rcs 31 & 47 on the subject of the employ- 47. 13 — " — ment of Horizontal Windmills in this country.

2. Press of cement duty has hitherto prevented me from preparing a drawing of the Engine in question fit to lay before Govt, but I have at length been enabled to do so; & I have now the honor to submit a Plan for their consideration ~~& favt~~, & to recommend that sanction be accorded for the expenditure of Rs. 360. out of the Reserve Fund to allow of a fair trial being given to the Machine.

3. It is of course difficult to estimate correctly for such a work; it will be so until an

experimental Mill has been constructed.

As however jungle wood, Bamboos & mats may be efficiently employed for this latter purpose, as the Pumps to be worked by the bell-crank can be borrowed from the D.P.W. Stores, I think the sum I have specified will be found sufficient to cover all expences connected with the experiment; while, should it prove a failure, the various materials employed will be worth fully 3/4 of their cost.

4. I would beg leave to suggest that the Mill be put together in the D.P.W. Stores under the supervision of Mr. Curley, who thoroughly understands carpentry & joinery; that it be fixed over one of the wells in the Chepauk compound, as it can there be worked, its effect carefully watched, by the Govt. Coolies without extra cost.

5. To calculate the duty which such a (comparatively) rude machine as is proposed would perform, is not easy: & experiment can alone satisfactorily determine it. I may state however that the Mill represented on the accompanying Plan working 2 Pumps of 4 inches diameter with a 2 feet stroke, under the very low wind pressure of 2 lbs per square foot of Sail surface, & consequently making, after full deduction for friction & counteraction, 15 revolutions of the Crank Shaft per minute, should raise from a well not exceeding 15 to 18 feet deep, below the clack valve, about 320 cubic feet, or 2000 gallons of water per hour.

6. The machine would of course be more efficient if a fly wheel were appended: but it is not indispensible.

7. I have proposed to employ moveable screens made of bamboos & mats in the experiment in preference to hanging the sails on pivots or hinges to open & close with the wind, because I think the former method will be the most effectual for lessening the counteracting effect on the lee sail.

There is a little variation in the wind during the prevalence of the two great monsoons that I expect it will rarely be necessary to shift more than the two extreme widths of the screens after they are once adjusted.

8. Should these Wind Engines, ever come into extensive use, I am confident sets of Pumps adapted to agricultural & household purposes, & calculated to last, without needing any repair whatever except to the valves, for 30 or 40 years, could be supplied from England at a cost sufficiently moderate to bring the apparatus within the reach of most of the well to do native cultivators.

I have the honor &c.

Alex Anderson Lt. Col. R.E.
Dep. Chief Engr. S. Circle.

Yercaud,
Salem, 10th Sept. 62.

1st June 1862 No. 222-223
27th " " " 596-597

No. 488. 489.

C 23d Sep. 1862 4th

P.W. 1862 Department
Public Works
C.E. 64

From 3 No. 2502

The Deputy Chief Engineer
Southern Circle

&c &c

The Secretary to Govt
P.W.D.

Dated Ootacamund 3d September 1862
Read 17th "

No. 318-26 September

Submit a drawing & particulars of a Horizontal Wind mill, & recommend sanction for the expenditure of ——— C. 360.
for constructing an experimental Engine to work a pair of Pumps in a well in the Chepauk Compound.

Withdrawn Order

No. 2218.

The Government sanction a sum of — Rs. 360 from the Reserve fund for the construction of a Horizontal Wind Engine to work a pair of Pumps in the Chepauk Compound.

Lieut. Col. Ouchterlony is requested to superintend personally the construction of the experimental Engine and the Chief Engineer is directed to place the Superintendent of Stores under Lt. Col. Ouchterlony's orders for the purpose of carrying out his views in the execution of the work.

W.M.

Chepauk —
26th Septr 1862

Copies
to the Chief Engineer Disp. 29
" Do. Sn Circle
" Accountant General.

No. 87