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(2) Date of repair _____

(3) Initials of the Referencer _____

MADRAS RECORD OFFICE

Government of Madras

Public Works

DEPARTMENT

G.O. No.	1007-08- <i>Ref</i>	Press	<i>Original</i>
B.P. No.		Mis.	
Dated	18-4-	1874	195

Not to be folded or roughly handled

*Proceedings of the Madras Government, Public Works Department,
18th April 1874.*

No. 201. Read the following letter from Lieutenant-Colonel J. H. M. SHAW-STEWART, R.E., Consulting Engineer for Railways, to Colonel G. W. WALKER, R.E., Secretary to Government, Public Works Department, dated Madras, 26th January 1874, No. 55:—

I HAVE the honour to submit, for the consideration of Government, three letters* which have passed between this office and the Agent of the Great Southern of India Railway with regard to the dimensions to be given to the iron wire fences for the lines now under

construction between Trichinopoly and Tuticorin, and between Madras and Cuddalore.

2. The existing wire fences upon the open line of the Great Southern of India Railway are furnished with four wires, the top wire being at a height of $3\frac{1}{2}$ feet from the ground. The other wires are so placed as to leave intervals of 8, 9, 10, and 12 inches, respectively.

3. The Railway Authorities now propose that the top wire shall be fixed at a height of 3 feet from the ground; that the number of wires shall be reduced to three; and that the intervals between the wires shall be 14, 10, and 12 inches, respectively. Existing fences on the open line to be modified in accordance with this proposal; the wire removed from them being made available for use on the extensions.

4. In the draft rules submitted with my letter, No. 461, dated the 3rd September 1872, it was suggested that no iron fence provided for a railway should consist of less than four wires, and that the height of the upper wire from the ground should not be less than 3 feet. It was intended that this height of 3 feet should be equally divided by the wires, so that no interval should exceed 9 inches.

5. In the Order of Government, dated the 28th March 1873, No. 970, when revising the draft rules in question, it was recommended that the limit of height for the top wire should be $3\frac{1}{2}$ feet instead of 3 feet, but without retrospective effect as regarded fences then existing.

6. I regret that I am unable to support the proposals now brought forward by the authorities of the Great Southern of India Railway. My experience of iron wire fences in this Presidency has satisfied me that 9 inches is the maximum space that ought to be allowed between adjacent wires. On part of the South-West Line of the Madras Railway the fence originally erected was furnished with only three wires, the top wire being 3 feet in height from the ground, and the intervals between the wires being 12 inches. It was, however, found that the country cattle got so easily through this fence that two additional wires were afterwards added, and it now forms an efficient protection against cattle.

7. Mr. Logan alludes to parts of the open line where a serviceable vegetable fence has grown up alongside the wire fencing. This I know to be the case, and from such places the wire fence might safely be removed and made available for use on the extensions. But in other places, where the wire fence forms the only

*Proceedings of the Madras Government, Public Works Department,
18th April 1874.*

efficient protection against cattle, I cannot support any proposal which would make the space between the wires greater than 9 inches.

I request that the views of Government may be communicated as soon as possible.

From W. S. BETTS, Esq., Agent of the Great Southern of India Railway, to Lieutenant-Colonel J. H. M. SHAW-STEWART, R.E., Consulting Engineer for Railways, dated Negapatam, 29th September 1873, No. 5,215.

I SHALL feel obliged by your informing me, with reference to the attached copy of a letter from the Chief Engineer, if Government will sanction the removal of one (the lower) of the wires from the iron fence which has been erected along the line between Negapatam and Erode. I think, with Mr. Logan, that the removal of this wire will not affect the efficiency of the fence so far as the exclusion of large cattle is concerned.

From the Chief Engineer, to the Agent, dated Trichinopoly, 27th September 1873, No. 2,622.

Wire fencing.

AFTER careful consideration of the matter, I have come to the conclusion that we can, with perfect safety, do away with the bottom wire of the fence in use on this railway.

The fence, as you are aware, consists of four wires passing through and supported by our standards fixed in cast-iron bases embedded in the ground. (See accompanying tracing No. —.)

The bottom and top wire are placed 8 inches and 3 feet 3 inches, respectively, above the ground, the intervening height is, beginning from the bottoms, divided into spaces of 9, 10, and 12 inches, respectively.

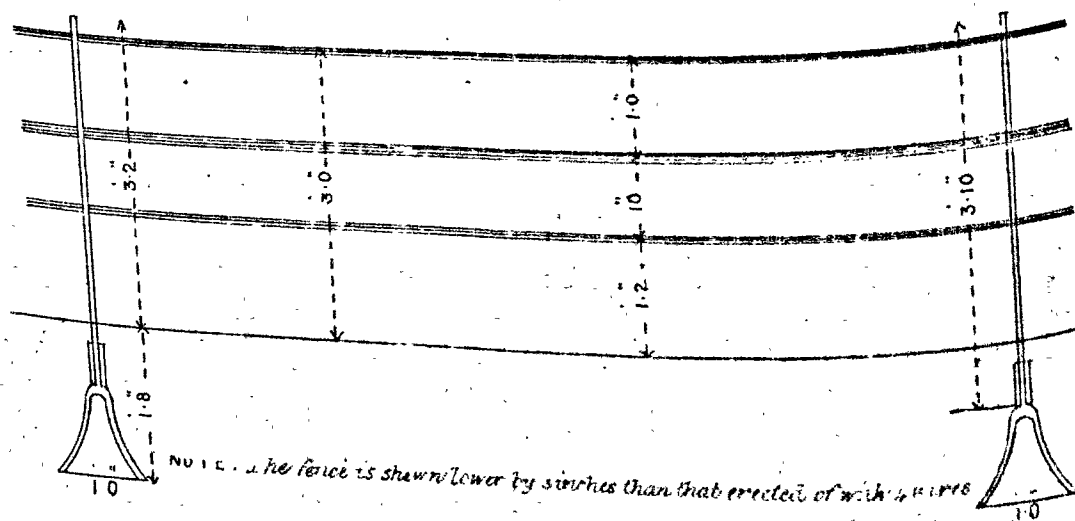
By taking out the bottom wire a space of 17 inches is left through which nothing larger than a sheep or goat can creep. No cows or bullocks could come through that space. With the four wires at present in use sheep and goats easily push through the fence. It appears, therefore, that with the three wires, I propose the large cattle will still be kept out, while we shall not be in any worse position as regards the smaller animals. I would therefore commence that the sanction of Government be asked to taking the bottom wire out of the existing wire fence on the line, and that we be permitted to put a three wire fence where necessary on the southern extension. If this is done a considerable saving to the Capital Account will result, because the bottom wire taken out of the existing fences will go a long way towards fencing the Carnatic Railway, as well as supplying all that is likely to be required on the southern extension of this railway.

The space of 17 inches left by taking out the bottom wire can be reduced to 14 inches by sinking the fence a little, that is, instead of keeping the top wire 3 feet 3 inches high, make it 3 feet, which would, I think, suffice in most cases along our line of country.

I may mention that I am putting up the wire fence on the extension with only the three upper wires, and it looks, in my opinion, perfectly serviceable.

SKETCH.

To show fencing with 4th or lower wire removed.



*Proceedings of the Madras Government, Public Works Department,
18th April 1874.*

From Lieutenant-Colonel J. H. M. SHAW-STEWART, R.E., Consulting Engineer for Railways, to W. S. BETTS, Esq., Agent and Traffic Manager, Great Southern of India Railway, dated Madras, 1st October 1873, No. 423.

IN reply to your letter, dated the 29th ultimo, No. 5,215, I have the honour to inform you that, in addressing the Government of India in March 1873, the Government of Madras expressed their opinion that an iron wire fence, suitable for the exclusion of cattle, ought to consist of not less than four wires, and that the height of the top wire above the ground ought to be not less than 3 feet 6 inches. Mr. Logan's proposal to reduce the number of wires and the height of the fence cannot, therefore, be sanctioned.

2. I may mention that a similar experiment was tried on the Madras Railway, an iron wire fence with three wires being used, the top wire being 3 feet in height from the ground. It was, however, found that the country cattle crept through it so easily that two additional wires were afterwards added.

From W. S. BETTS, Esq., Agent of the Great Southern of India Railway, to Lieutenant-Colonel J. H. M. SHAW-STEWART, R.E., Consulting Engineer for Railways, dated Negapatam, 23rd January 1874, No. 5,355.

THE purport of your letter, No. 423, of the 1st October last, having been communicated to the Chief Engineer, that officer has addressed to me a letter of which the attached is a copy.

2. Mr. Logan is still of opinion that the fourth or lower wire in the iron fence erected alongside the open line can be dispensed with with safety; and, as he wishes an application to be made to Government for a reconsideration of their orders on this subject, I send this letter forward for your disposal.

From the Chief Engineer, to the Agent of the Great Southern of India Railway, dated Trichinopoly, 7th January 1874, No. 58.

YOUR No. 7,491-3,227, of 6th October last.

From further consideration on the subject of wire fencing, and from watching and comparing notes with the experience of others on our own open line, I feel satisfied that the bottom wire, which I proposed (in my No. 2,622 of 27th September last) to take out of the existing fence for use on the extension, does not play any part in the exclusion of cattle from the line. When a cow or ox or other large animal attempts to get through the wire fence, it does so invariably between the top and third wire (counting from and inclusive of the top wire) and generally between the top and second wire as a rule the cattle do not come on to the line through the wire fencing, but through open gates, and it is when frightened by passing trains that they make a dash at and between the wires above referred to. I would ask therefore that Government accord sanction to a trial of the three wires proposed in my letter of September last.

There are a good many miles on the open line where the fourth or bottom wire of the fence runs almost, if not quite, on the level of the ground, and where therefore for years there have been practically only three wires as a protection to the line, and yet I have not heard complaints of its insufficiency to keep out cattle. There are also a good many miles where a serviceable vegetable fence has grown up alongside the wire fencing, and from both these cases we could draw a large supply of wire, obviating to a great extent the necessity for further expenditure on this material.

If further experience should show the necessity for a fourth wire, which I do not think will be the case, it or an earthen bund could easily be added at any time to fill in the space between the third wire and the ground.

ORDER THEREON, 18th April 1874, No. 1,007.

No. 205.

RAILWAY, No. 32.

His Excellency the Governor in Council cannot agree with the Chief Engineer of the Great Southern of

*Proceedings of the Madras Government, Public Works Department,
18th April 1874.*

India Railway that wire fences of the dimensions proposed by him are sufficient for the exclusion of cattle; but as in the Resolution recorded with G. O., No. 2,790, dated 3rd November 1871, the Government of India contemplate the issue of final orders on the question after a consideration of the circumstances of all Guaranteed Railways, the papers will be laid before that Government in continuation of the correspondence ending with letter, No. 2,719, dated 7th November 1873. Having in view, however, the comparative inefficiency of the best wire fences, His Excellency the Governor in Council would suggest, for the consideration of the Government of India, whether the Cow-catcher of America might not be advantageously adopted. Its use is believed to be attended with great success in that country.

(True Extract.)

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

No. 206.

(DOCKET No. 1,008, dated 18th April 1874.)
Copy of the above forwarded to the Government of India.

(True Extract.)

Great Southern of India Railway.

*Letter from the Chief Engineer to the Agent
dated Trichinopoly 27th September 1873 No. 2622.*

Wire fencing

After careful consideration of the Matter I have come to the conclusion that we can with perfect safety do away with the bottom wire of the fence in use on this Railway.

The fence as you are aware consists of four wires passing through and supported by iron standards fixed in cast iron bases imbedded in the ground. (See accompanying tracing p. 1)

The bottom and top wire are placed 8 inches and 3 feet 3 inches respectively above the ground; the intervening height is, beginning from the bottom, divided into spaces of 9, 10 and 12 inches respectively. By taking out the bottom wire a space of 17 inches is left through which nothing larger than a sheep or goat can creep. No cows or bullocks could come through that space. With the four wires as present in use sheep and goats easily push through the fence. It appears therefore that with the 3 wires, I propose the large cattle will still be kept out while we shall not be in any way poorer as regards the smaller animals. I would therefore recommend that the sanction of Government be asked to taking the bottom wire out of the existing wire fence on the line and that we be permitted to put a three wire fence when necessary on the Southern Extension. If this is done a considerable saving to the Capital Account, will result because the bottom wire taken out of the existing fences will go a long way towards fencing the Barua Railway as well as supplying all that is likely to be required on the Southern extension of this Railway.

The space of 17 inches left by taking out the bottom wire can be reduced.

Reduced to 14 Inches by sinking the fence a little, that is
instead of keeping the top wire 3 feet 3 inches high make it 3 ft
which would I think suffice in most cases a long our line of
Country.

I may mention that I am putting up the wire fence
on the Extension with only the 3 upper wires and it looks in my
opinion perfectly serviceable.

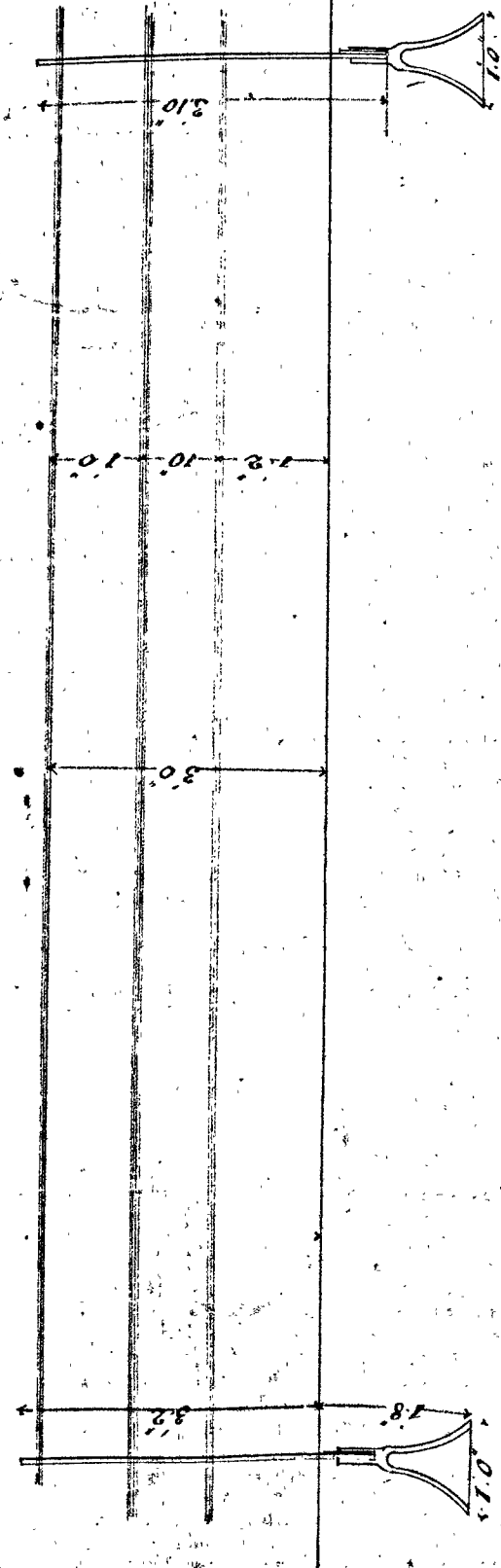
Yours truly,

Wm Callaghan
Chief Clerk

Sketch

to show-fencing/with 2 to 4 lower were removed

Note. The fence is shown lower by 3 inches than that erected of with 2 wires



[Handwritten signature]

27.9.73

No. 5215

GREAT SOUTHERN OF INDIA RAILWAY.

AGENT'S OFFICE,

NEGAPATAM, 29th September 1883

From

THE AGENT,

Great Southern of India Railway,

To

The Consulting Engineer
for Railways
Madras

SIR,

I shall feel obliged by your informing me, with reference to the attached copy of a letter from the Chief Engineer, if Government will sanction the removal of one (the lower) of the wires from the iron fence which has been erected along the line between Negapatam and Erode. I think, with Mr. Logan, that the removal of this wire will not affect the efficiency of the fence so far as the exclusion of large cattle is concerned.

I have the honor to be
Sir

Your most obedient servant
William B. B. B.
Agent

0.17.529/74
29.9.83
29.9.83
29.9.83

Railway Dept Cons. Engrs. Office

To ~~Mr. H. 23~~

The Agent & Traffic Manager
of the P. & O. Railway Co.
Kopartur

Sir,

In reply to your letter
dated the 29th ultimo, N^o 5215,

I have the honour to inform
you that, in addressing the Govern-
ment of India in March 1873,

the Government of Madras expressed
their opinion that an iron wire
fence, suitable for the exclusion

of cattle, ought to consist of not
less than four wires, and that

the height of the top wire above
the ground ought to be not less

than 3 feet 6 inches. Mr. Logan
proposed to reduce the number of

wires

Chicago
The Agent
M. & O. R.
The Consulting Engr
for Railway
dated 29th ultimo, 1873
P. H.
Transacting copy
to the Agent & Traffic Manager
Regarding wire fence.

wires and the height of the fence can
not therefore be sanctioned.

2. I may mention that a
similar experiment was tried on the
Madras Railway; an iron-wire fence
with three wires being used, the
top wire being 3 feet in height from
the ground. It was, however, found
that the country cattle crept through
it so easily that two additional
wires were afterwards added.

I have &c
(Signed) J. H. St. John Stewart Esq. R.C.
Cons. Eng. for Railway
(True Copy)

Mountbatten
R. Coll R.C.
Cons. Eng. for Railway

S.M. 529174
104. 27.10.1874
2. 18.11.1874.

From
THE AGENT,
Great Southern of India Railway,
To
The Consulting Engineer
for Railways
Madras

SIR,
The purport of your letter No 423. of the
1st October last, having been communicated to the
Chief Engineer, that officer has addressed to me a
letter of which the attached is a copy.

Mr Logan is still of opinion that the
fourth or lower wire in the iron fence erected
alongside the open line can be dispensed with,
with safety, and as he makes an application to
be made to Government for a reconsideration of
their orders on this subject, I send this letter
forward for your disposal.

I have the honor to be
Sir,

Your most obedt servant

William Pitt
Agent

Railway Department.

CONSULTING ENGINEER'S OFFICE.

No. 55

From

LIEUT.-COLONEL J. H. M. SHAW-STEWART, R.E.,
Consulting Engineer for Railways,

To

COLONEL G. W. WALKER, R.E.

Secretary to Government,

Public Works Department,

Port Saint George.

I have the honour to submit for the consideration of Government, three letters which have passed between this office and the Agent of the Great Southern of India Railway with regard to the dimensions to be given to the iron wire fences for the lines now under construction between Trichinopoly and Luchuan, and between

From Agent No 5215—29 September 1873
Do do No 423—October 1873
From do No 5355—23 January 1874

From

The Agents

W. S. R.

The Consulting

for Railways

Recd 263 January

W. S. R.

Respecting wire fences along the line

8752979

23. 7. 1874
In P. H. 1874.

between Madras and Cuddalore.

2. The existing wire fences upon the open line of the Great Southern of India Railway are furnished with four wires, the top wire being at a height of $3\frac{1}{4}$ feet from the ground. The other wires are so placed as to leave intervals of 8, 9, 10, and 12 inches, respectively.

3. The Railway Authorities now propose that the top wire shall be fixed at a height of 3 feet from the ground; that the number of wires shall be reduced to three; and that the intervals between the wires shall be 4, 10,

and

and 12 inches respectively. Existing fences on the open line to be modified in accordance with this proposal; the wire removed from them being made available for use on the extensions to be made under the draft rules submitted with my letter No. 464, dated the 3rd September 1872; it was suggested that no fence provided for a railway should consist of less than four wires, and that the height of the upper wire from the ground should not be less than 3 feet. It was intended that this height of 3 feet should be equally divided by the wires, so that no interval

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Jud. Sept.
19 Sept. 1872
No 1246.

interval should exceed 9 inches.
 In the Order of
 Government dated the 28 March
 1873, No 970, whereby revising the
 draft rules in question, it was
 recommended, that the limit of a
 height for the top wire should be
 3 1/2 feet, instead of 3 feet, but with-
 out retrospective effect as regarded
 fences then existing on grounds of
 6. It is to be regretted that I am
 unable to support the proposals now
 brought forward by the Authorities
 of the Great Southern of India
 Railway. My experience of wire

top of
 top of
 top of
 top of

wire fences in this Presidency has
 satisfied me that 9 inches is the
 maximum space that ought to be
 allowed between adjacent wires.
 On part of the South Coast line
 of the Madras Railway the fences
 originally erected were furnished
 with only three wires & the top wire
 being 3 feet in height from the
 ground, and the intervals between
 the wires being 9 inches. It has
 however been found that the cattle
 get so easily through these
 fences that two additional wires
 were afterwards added, and it now
 forms an efficient protection against
 cattle.

Resoluted

cattle, and in some
places in which Mr. Logan alluded to
parts of the open line where a
serviceable vegetable fence has grown
up, alongside the wire fencing, and
this it is proposed to be the case, and
from such places the wire fence
might safely be removed, and be
made available for use on the
extensions and in other places,
where the wire fence forms the
only efficient protection against
cattle. He cannot support any
proposal which would increase
the space between the wires
greater than 9 inches.

I

I request that the views of
Government may be communicated
as soon as possible.

I have the honour to be
Sir

Your most obedient servant.

Wm. Stewart Esq. M.P. &c.

Nadras
26 January
1874
Ind. Secy.

Comm. Engineer for Railways

Received
26 Jan 74
Ind. Secy.

Letter from the Chief Engineer to the Agent Great Southern
of India Railway dated Trichinopoly 7 January 1874, No. 58.

14

Your No. ⁷⁴⁹¹/₃₂₂₇ of 6 October last.

From further consideration on the subject of
wire fencing and from watching and comparing notes
with the experience of others on our own open line, I feel
satisfied that the bottom wire, which I proposed (in my
No. 2622 of 27th Sept. last) to take out of the existing fence, for
use on the extension, does not play any part in the ex-
clusion of cattle from the line. When a cow or ox or
other large animal, attempts to get through the wire
fence, it does so invariably between the top & third
wire (counting from & inclusive of the top wire and
generally between the top & second wire as a rule
the cattle do not come on to the line through the wire
fencing, but through open gates & it is when frightened
by passing trains that they make a dash at between
the wires above referred to. I would ask therefore
that Government accord sanction to a trial of the three
wires proposed in my letter of September last.

There are a good many miles on the open line
where the fourth or bottom wire of the fence runs -
almost if not quite on the level of the ground and
where therefore for years there have been practically only
3 wires as a protection to the line, yet I have not
heard complaints of its insufficiency to keep out
cattle. There are also a good many miles where a
serviceable vegetable fence has grown up alongside the
wire fencing, and from both these cases we could
draw a large supply of wire, obviating to a great
extent the necessity for further expenditure on this
material.

If further experience should show the necessity
for a fourth wire, which I do not think will be the

to which it will be referred
to the consideration of your letter
of 6 October last

to the consideration of your letter
of 6 October last

to the consideration of your letter
of 6 October last

to the consideration of your letter
of 6 October last

to the consideration of your letter
of 6 October last

to the consideration of your letter
of 6 October last

Dated 26th January 1874
Recd. 28th January 1874

Enc. 5. No. 55

J. G. M. 1007 & 1008. 18-11-74

The Secretary to Government,
P. W. Department,
Fort Saint George.

To
From
The Consulting Engineer
for Railways,
1874
No. 529

RAILWAY DEPARTMENT.
P. M. 1874
No. 529

the case, it or an earthen band, could easily be added, at any time to fill in the space between the third wire and the ground.

Spaw Copy.
Wm. Chapman
Chief Clerk.

From the Chief Engineer
for Railways

Could we not have
regular cow fences
fitted to our engines
and bells kept going
in towns as in
America? as he might
be a queer chap
if he can catch
J. of

1007

P. W. D.

Proceedings of the Madras Government,

Under date the

187

Read the following:—

Here enter No 55 of 26 Jan'y
1/81

The Excellency the
Governor in Council can-
not agree with the Chief
Engineer of the Great
Southern of India Rail-
way that wire fences
of the dimensions proposed
by him are sufficient
for the exclusion of
Cattle, but as in the

Resolution recorded with
G. O. No 2790 dated 3rd Novr
1871, the Government of
India contemplate the
issue of final orders on
the question after a
consideration of the cir-
cumstances of all guar-
anteed Railways, the
papers will be laid before
that Government in con-
tinuation of the corres-
pondence ending with
letter No 2717 dated 7th
November 1873.

HE No of

Copy of the above
forwarded to the Government
of

Having in view however
the comparative inefficiency
of the best wire fences this
Excellency the Governor in
Council would suggest for the
consideration of the Govern-
ment of India whether the
Low Batchelor of America might
not be advantageously adopted.
It is believed to be attended with
great success in that Country.

To
The Comd Engineer
Railways
19/3
1. Copies despatched 29/4/74.
2. Copies despatched to Govt.
29/4/74.

16
of India. Lyman

50

P

S. J. Jones

Certs.

Hon. W. R. R. R.
 Hon. J. B. Smith
 H. C. Me. G. W.
 H. E. Me. C. in C.

17

Addition to

of the
 in the

17

204-206.

I admit that
 such wire fences
 poor protection to
 to and indeed a
 fencing is liable
 to breach by.

I would have
 recommended the
 Cow-funder and
 Engine-Shell or
 America as the
 only sure safe
 It is most eff.
 and compared
 the enormous cost
 fencing in this
 unexpensive

W. B. 572

T-5

obt. of 1874 Madras.

PUBLIC WORKS.

Cause Ingr. J. R. P.
Secy. W. P. of India

Dated

Recd.

Encl.

G. O., 18 April 1874, No.

1007
1008

Nos. 26-205-206.

Forwarding copy
of proceedings passed
letter from the Comr.
Ry. submitting co
with regard to the
to be given to the
fences for the line
under construction
G. S. of India Ry.

Railway Fencing

Passing orders on a
letter from the Comr.
Railways submitting
correspondence on the
subject of the dimensions
to be given to the wire
fences for the line
under construction
G. S. of India Ry.