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(3) Initials of the Referencer

MADRAS RECORD OFFICE.

Government of Madras.

Public works **DEPARTMENT.**

G.O. No. 251-52 Press Mis.-

484-86

Dated 21 1 1870.

Not to be folded or roughly handled

No. 484. Read the following letter from the Consulting Engineer for Railways, to the Secretary to Government, Public Works Department, dated Madras, 27th December 1869, No. 429 —

WITH my letter, dated the 8th November 1869, No. 365, I forwarded a report from the Locomotive Superintendent of the Great Southern of India Railway upon the spark-catchers which had been used upon that line. In that report Mr Sheward stated that he had information regarding the spark-catchers used on the Madras Railway, "to the effect that they are, although in a measure effective as actual "arresters of sparks, great drawbacks to the engine's steaming, the drivers saying "that they are always 'fighting for steam'"

2. As this statement was opposed to the report* which had been furnished by the Locomotive Superintendent of the Madras Railway, I forwarded a copy to Mr. Elwin, and requested him to favour me with any further remarks which Mr. Collinson might wish to offer on the subject

* *Vide* G O, 5th November 1869, No 3,551

3 Mr. Elwin's reply† I have the honour to enclose. The papers which accompany it show that the statements made by Mr. Sheward are directly opposed to the actual results of the working of the spark-catcher now in use on the Madras Railway, and as those statements may have led the Government of India to form incorrect conclusions as to the advantage of using spark-catchers, I beg to suggest that the enclosed papers be also forwarded to that Government

† No 742, 21st December 1869, with enclosures

From the Agent and Manager of the Madras Railway Company, to the Consulting Engineer for Railways, dated Madras, 21st December 1869, No 742

UPON receipt of your letter of the 10th instant, No 623, giving cover to order of Government, No 3,609, dated the 10th ultimo, I placed myself in communication with the Acting Locomotive Superintendent, and now have the honour to solicit your special attention and, through you, that of the Government to Mr Collinson's reply of this date, No 282, with extracts from the reports of the several Locomotive Foremen

2. As the opinion expressed by Mr Collinson, and the statements of actual results of the working of the spark-catchers now in use on this railway, furnished by the several foremen, are in direct opposition to the remarks made by the Locomotive Superintendent of the Great Southern of India Railway, I am justified in asking you to be good enough to call upon Mr Sheward to substantiate what he has said in his letter of the 1st ultimo, No 451, addressed to the Agent of the Great Southern of India Railway.

From the Acting Locomotive Superintendent, to the Agent and Manager of the Madras Railway Company, dated Perambore Works, 21st December 1869, No 282

REFERRING to the Consulting Engineer's letter to your address, No 623, dated the 10th instant, forwarding copy of an order of Government, Public Works Department, No 3,609, of the 10th ultimo, I beg to enclose, for your information, extracts from the reports of our Foremen on the spark catchers now in use on this line

2 These reports have been sent to me in reply to my Circular, No 41, of the 14th instant, copy of which I also enclose

3 It will be seen that they are unanimously of opinion that there is no difficulty in getting up steam when an engine is first lighted, nor in maintaining it when the engine is hauling a load, with the description of spark-arrester now in use

4 I have frequently travelled on engines burning wood between Jollarpett and Cooppum, where the heaviest gradients on our line exist, and seen the fire-door kept open for a considerable distance, the safety-valves blowing off nearly the whole time

5 The immunity from fire, saving in working, and wear and tear of the engines are, in my opinion, of themselves quite sufficient proof of the value of the spark-arresters now in use

---

CIRCULAR No 41

REFERRING to the subjoined extract of a letter having reference to the spark-catchers now in use on this line, be good enough to inform me if any of the difficulties mentioned have been experienced in your division, more particularly with regard to the tops of the spark-catcher failing to arrest the sparks, the difficulty in getting up steam when first lighting, and the remark of the drivers that they are always "fighting for steam'," and also, whether, in your opinion, a more effective spark-catcher could be introduced for arresting sparks and generating steam —

"Of the crinoline no drawing is needed to explain it Those we had sent out, my prede-
"cessor condemned as being useless from various causes, firstly, the tops were only wired of a
"very coarse mesh, and failed to arrest the sparks at all, and, secondly, the baffle being a fixture
"under the wire-mesh, it was with the greatest difficulty that an engine could be got to make any
"steam when first lighting up in the shed for want of draught These crinolines are also a source
"of constant expense from corrosion of the plates at the bottom where the ashes and priming
"collect They are also cumbersome and ugly *I have information regarding their use on*
"*the Madras Railway (where they are the kind adopted) to the effect that they are,*
"*although in a measure effective as actual arresters of sparks, great drawbacks to the*
"*engines steaming, the drivers saying that they are always fighting for steam* No spark-
"catcher that I have seen or heard of is effective as not being an impediment to the engines'
"steaming-powers"

2. Please let me have your reply as soon as possible, as I wish to embody it in my report

PERAMBORE,
14th December 1869

(Signed) W J COLLINSON,
Acting Locomotive Superintendent

EXTRACTS

From Locomotive Foreman, Madras, No 854, *dated 16th December* 1869.

WITH reference to your Circular, No 41, of the 14th instant, I beg to inform you that, in my opinion, the spark-catchers in use on this line are as perfect as possible in arresting sparks, and that I have never experienced any difficulty in getting up steam when first lighting, also that I never heard the drivers of wood-burning engines complain that they had to fight for steam, on the contrary all our drivers prefer engines burning wood

2 I always thought the crinoline was made with sufficient area to allow for baffle-plate and mesh, and I need not say what the result has been on this point after the number of years' experience we have had in wood-burning As to the expense through corrosion at the bottom of the crinoline, of course, if the ashes and priming are allowed to remain they will destroy the plates, but we find no difficulty on this point, as the ashes are easily taken out at the small doors at the bottom

3 Wood burning is a great saving in fire-bars and bar-frames and smoke-boxes Smoke-box doors, with coal burning, are constantly giving trouble through getting hot and becoming warped—a thing not known with wood-burning, moreover, there is no cleaning the fire with wood-burning I really prefer wood-burning to either coke or coal Our young drivers appear to get on better with wood-burning than with coal or coke; and I am quite sure that coal-burning engines emit more dangerous sparks than a wood-burning engine is able to emit through the mesh of our spark-catchers

From Locomotive Foreman, Arconum, No 1,454, *dated 16th December* 1869

THE statement that drivers are always fighting for steam will not bear any investigation The contrary is the fact from several years' experience, and the drivers have less trouble, and are equal in any emergency to command steam

2 With reference to there being any difficulty in raising steam when first lighted, with baffle and spark-catcher complete, of wood-burning engines, I can only say that, having been now some years with a fluctuating traffic which causes sudden demands for engine-power, I have not any grounds to complain of, and do not consider that when called on for an engine I could get a coal-burner ready at shorter notice

3 The plates wear out where the ashes collect, but not so often as to be of serious consideration, on the contrary, the fire-bars that are saved in wood *v* coke or coal, would pay for this many times over, and does not form an increase in expenditure, because it is saved in smoke-box and doors, coal and coke being very destructive to the latter

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From Locomotive Foreman, Cuddapah, No 491, *dated 16th December* 1869

WITH reference to Circular, No. 41, dated 14th December 1869, I beg to inform you that engines on my division, when burning wood, do not throw out any sparks I have worked them hard up inclines and run them fast on level road, but never, on any occasion, have I seen sparks escape from the chimney.

2 There is not the slightest difficulty in getting up steam, no more than an engine burning coke and coal, and not the least difference in time of lighting an engine, whether burning coke and coal or wood, they both generate steam in the same time I have always found wood-burning engines able to get any amount of steam when working, without one-half the care or attention an engine requires when burning coke or coal, and I may add, all drivers are anxious to burn wood, it being so much easier for them

3 I cannot give the least suggestion for a more effective spark-catcher, as I consider the spark-catcher now in use perfect

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From Locomotive Foreman, Jolarapett, dated 17th December 1869

IF the baffle is not in its proper position over the centre of the chimney, so as to receive the exhaust steam and sparks to spread them equally, the wire-work will not arrest the sparks, let it be ever so fine a mesh, nor will it stand the force of the exhaust-steam, or, in other words, no wire-work will arrest the sparks at the top of the chimney without the baffle

2 I beg to submit that it would be difficult to use it in any other way than as a fixture, as it has to receive the whole force of the exhaust-steam on its under-surface, and spread out the steam and sparks into the outer-casing of the chimney, thus breaking up the large sparks and keeping them in contact for a short time with the steam as it were damping them out

Difficulty in getting up steam when first lighted —I have not experienced any difficulty during the eight years I have been constantly engaged in looking after wood-burning engines, fitted with these bottles, wire-work, etc, and never, during the whole of that time, has an engine been late for its train from this cause There are coal and coke-burning engines running from Jolarapett as well as wood-burners, and these engines are all lighted together, and have steam up together, and I believe if there is any difference, the wood-engines have it in their favour.

Drivers fighting for steam —The fact of the very steep gradients daily passed over on the Bangalore Branch and South-West Line and the number of minutes made up every month with the very few lost, is the best answer to this

3 Without a doubt, if a driver neglect his fire and get his spark-catcher dirty, he will have to fight for steam, exactly the same as if he neglect to oil, something will get hot

4 But when engine is properly adjusted with these baffles, she can be kept at as constant a pressure as with coal without baffles

From Locomotive Foreman, Salem, No 1,495, *dated 17th December* 1869.

I DO not know of any instance since the new baffle-plate was introduced at Perambore, of any driver or engine working on my division experiencing any difficulty in generating steam, either in first lighting up, or in working a train

2 With the new spark-catcher it is almost impossible for sparks to escape The only time I have known a few do so has been where the engine was worked very heavy with a low fire and near its journey's end, and the fire being stirred up with the dirt, the sparks were very small, but were out before they reached the ground

3 I have travelled on all the engines that work between Jolarapett and Coimbatore at different times, and on no occasion have I seen an engine, with the new spark-catcher, find it difficult to make steam

---

From Locomotive Foreman, Coimbatore, No 807, *dated 16th December* 1869

I HAVE never, to my knowledge, heard any complaints from our drivers, at least not with our present chimney

2 My assertion needs no corroboration, as we have had too much proof of their efficiency from practice You are aware we have several times run Express-specials with wood burning engines, fitted with top complete, which, I think, is sufficient proof that the drawback referred to is mere supposition All my engines are fitted with a 4 1/8 inches blast-pipe, and are able to drag their loads with the greatest ease, and as for getting up steam, I only allow two hours with cold water either for large or small chimnies

3 If we are to judge from the wear of our pistons, we have no reason to suppose that our present chimnies are not efficient, if otherwise, we should not be able to keep such good time as we do.

4 Secondly, if there was that obstruction as regards the free passage of the exhaust which is complained of in your Circular, we should very soon find it out, as the present piston-rugs are but very slight, and would soon break if exposed to back pressure.

(True Extracts)

(Signed) W J COLLINSON,
Acting Locomotive Superintendent

No. 485. ORDER THEREON, 21st January 1870, No. 251.

RAILWAY, No 61.

ORDERED that these papers be forwarded to the Government of India

(True Extract)

Colonel, R E,
Secretary to Government.

To the Consulting Engineer for Railways

Exd F. R. Bantleman.

No. 484 Read the following letter from the Consulting Engineer for Railways, to the Secretary to Government, Public Works Department, dated Madras, 27th December 1869, No 429 —

WITH my letter, dated the 8th November 1869, No 365, I forwarded a report from the Locomotive Superintendent of the Great Southern of India Railway upon the spark-catchers which had been used upon that line In that report Mr Sheward stated that he had information regarding the spark-catchers used on the Madras Railway, "to the effect that they are, although in a measure effective as actual "arresters of sparks, great drawbacks to the engine's steaming, the drivers saying "that they are always 'fighting for steam'"

2 As this statement was opposed to the report* which had been furnished by the Locomotive Superintendent of the Madras Railway, I forwarded a copy to Mr. Elwin, and requested him to favour me with any further remarks which Mr Collinson might wish to offer on the subject

* *Vide* G O, 5th November 1869, No 3,551

3 Mr Elwin's reply† I have the honour to enclose. The papers which accompany it show that the statements made by Mr. Sheward are directly opposed to the actual results of the working of the spark-catcher now in use on the Madras Railway, and as those statements may have led the Government of India to form incorrect conclusions as to the advantage of using spark-catchers, I beg to suggest that the enclosed papers be also forwarded to that Government

† No 742, 21st December 1869, with enclosures

From the Agent and Manager of the Madras Railway Company, to the Consulting Engineer for Railways, dated Madras, 21st December 1869, No 742

UPON receipt of your letter of the 10th instant, No 623, giving cover to order of Government, No 3,609, dated the 10th ultimo, I placed myself in communication with the Acting Locomotive Superintendent, and now have the honour to solicit your special attention and, through you, that of the Government to Mr Collinson's reply of this date, No 282, with extracts from the reports of the several Locomotive Foremen

2. As the opinion expressed by Mr Collinson, and the statements of actual results of the working of the spark-catchers now in use on this railway, furnished by the several foremen, are in direct opposition to the remarks made by the Locomotive Superintendent of the Great Southern of India Railway, I am justified in asking you to be good enough to call upon Mr Sheward to substantiate what he has said in his letter of the 1st ultimo, No 451, addressed to the Agent of the Great Southern of India Railway

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From the Acting Locomotive Superintendent, to the Agent and Manager of the Madras Railway Company, dated Perambore Works, 21st December 1869, No 282

REFERRING to the Consulting Engineer's letter to your address, No 623, dated the 10th instant, forwarding copy of an order of Government, Public Works Department, No 3,609, of the 10th ultimo, I beg to enclose, for your information, extracts from the reports of our Foremen on the spark catchers now in use on this line

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4 I have frequently travelled on engines burning wood between Jollarpett and Cooppum, where the heaviest gradients on our line exist, and seen the fire-door kept open for a considerable distance, the safety-valves blowing off nearly the whole time.

5 The immunity from fire, saving in working, and wear and tear of the engines are, in my opinion, of themselves quite sufficient proof of the value of the spark-arresters now in use

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CIRCULAR No 41

REFERRING to the subjoined extract of a letter having reference to the spark-catchers now in use on this line, be good enough to inform me if any of the difficulties mentioned have been experienced in your division, more particularly with regard to the tops of the spark-catcher failing to arrest the sparks, the difficulty in getting up steam when first lighting, and the remark of the drivers that they are always "fighting for steam," and also, whether, in your opinion, a more effective spark-catcher could be introduced for arresting sparks and generating steam —

"Of the crinoline no drawing is needed to explain it Those we had sent out, my predecessor condemned as being useless from various causes, firstly, the tops were only wired of a very coarse mesh, and failed to arrest the sparks at all, and, secondly, the baffle being a fixture under the wire-mesh, it was with the greatest difficulty that an engine could be got to make any steam when first lighting up in the shed for want of draught These crinolines are also a source of constant expense from corrosion of the plates at the bottom where the ashes and priming collect They are also cumbersome and ugly. *I have information regarding their use on the Madras Railway (where they are the kind adopted) to the effect that they are, although in a measure effective as actual arresters of sparks, great drawbacks to the engines steaming, the drivers saying that they are always fighting for steam* No spark-catcher that I have seen or heard of is effective as not being an impediment to the engines' steaming-powers"

2 Please let me have your reply as soon as possible, as I wish to embody it in my report

PERAMBORE,
14*th December* 1869

(Signed) W J COLLINSON,
Acting Locomotive Superintendent.

EXTRACTS

From Locomotive Foreman, Madras, No. 854, *dated* 16*th December* 1869.

WITH reference to your Circular, No 41, of the 14th instant, I beg to inform you that, in my opinion, the spark-catchers in use on this line are as perfect as possible in arresting sparks, and that I have never experienced any difficulty in getting up steam when first lighting, also that I never heard the drivers of wood-burning engines complain that they had to fight for steam, on the contrary all our drivers prefer engines burning wood

2 I always thought the crinoline was made with sufficient area to allow for baffle-plate and mesh, and I need not say what the result has been on this point after the number of years' experience we have had in wood-burning As to the expense through corrosion at the bottom of the crinoline, of course, if the ashes and priming are allowed to remain they will destroy the plates, but we find no difficulty on this point, as the ashes are easily taken out at the small doors at the bottom

3 Wood burning is a great saving in fire-bars and bar-frames and smoke-boxes Smoke-box doors, with coal burning, are constantly giving trouble through getting hot and becoming warped—a thing not known with wood-burning, moreover, there is no cleaning the fire with wood-burning I really prefer wood-burning to either coke or coal Our young drivers appear to get on better with wood-burning than with coal or coke, and I am quite sure that coal-burning engines emit more dangerous sparks than a wood-burning engine is able to emit through the mesh of our spark-catchers.

Proceedings of the Madras Government, Public Works Department,
21st January 1870

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3 The plates wear out where the ashes collect, but not so often as to be of serious consideration, on the contrary, the fire-bars that are saved in wood *v* coke or coal, would pay for this many times over, and does not form an increase in expenditure, because it is saved in smoke-box and doors, coal and coke being very destructive to the latter

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From Locomotive Foreman, Cuddapah, No 491, *dated* 16*th December* 1869

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2 There is not the slightest difficulty in getting up steam, no more than an engine burning coke and coal, and not the least difference in time of lighting an engine, whether burning coke and coal or wood, they both generate steam in the same time I have always found wood-burning engines able to get any amount of steam when working, without one-half the care or attention an engine requires when burning coke or coal, and I may add, all drivers are anxious to burn wood, it being so much easier for them

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From Locomotive Foreman, Jolarapett, dated 17*th December* 1869

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2 I beg to submit that it would be difficult to use it in any other way than as a fixture, as it has to receive the whole force of the exhaust-steam on its under-surface, and spread out the steam and sparks into the outer-casing of the chimney, thus breaking up the large sparks and keeping them in contact for a short time with the steam as it were damping them out

Difficulty in getting up steam when first lighted —I have not experienced any difficulty during the eight years I have been constantly engaged in looking after wood-burning engines, fitted with these bottles, wire-work, etc, and I never, during the whole of that time, has an engine been late for its train from this cause There are coal and coke-burning engines running from Jolarapett as well as wood-burners, and these engines are all lighted together, and have steam up together, and I believe if there is any difference, the wood-engines have it in their favour

Drivers fighting for steam —The fact of the very steep gradients daily passed over on the Bangalore Branch and South-West Line and the number of minutes made up every month with the very few lost, is the best answer to this

3 Without a doubt, if a driver neglect his fire and get his spark-catcher dirty, he will have to fight for steam, exactly the same as if he neglect to oil, something will get hot

4 But when engine is properly adjusted with these baffles, she can be kept at as constant a pressure as with coal without baffles

Proceedings of the Madras Government, Public Works Department, 21st January 1870

From Locomotive Foreman, Salem, No 1,495, *dated 17th December* 1869

I DO not know of any instance since the new baffle-plate was introduced at Perambore, of any driver or engine working on my division experiencing any difficulty in generating steam, either in first lighting up, or in working a train

2 With the new spark-catcher it is almost impossible for sparks to escape The only time I have known a few do so has been where the engine was worked very heavy with a low fire and near its journey's end, and the fire being stirred up with the dirt, the sparks were very small, but were out before they reached the ground

3 I have travelled on all the engines that work between Jolarapett and Coimbatore at different times, and on no occasion have I seen an engine, with the new spark-catcher, find it difficult to make steam.

From Locomotive Foreman, Coimbatore, No 807, *dated 16th December* 1869

I HAVE never, to my knowledge, heard any complaints from our drivers, at least not with our present chimney

2 My assertion needs no corroboration, as we have had too much proof of their efficiency from practice You are aware we have several times run Express-specials with wood burning engines, fitted with top complete, which, I think, is sufficient proof that the drawback referred to is mere supposition All my engines are fitted with a $4\frac{1}{8}$ inches blast-pipe, and are able to drag their loads with the greatest ease, and as for getting up steam, I only allow two hours with cold water either for large or small chimnies

3 If we are to judge from the wear of our pistons, we have no reason to suppose that our present chimnies are not efficient, if otherwise, we should not be able to keep such good time as we do

4 Secondly, if there was that obstruction as regards the free passage of the exhaust which is complained of in your Circular, we should very soon find it out, as the present piston-rugs are but very slight, and would soon break if exposed to back pressure

(True Extracts)

(Signed) W. J COLLINSON,
Acting Locomotive Superintendent

No 485 ORDER THEREON, 21st January 1870, No 251.

RAILWAY, No 61.

ORDERED that these papers be forwarded to the Government of India.

(True Extract)

(Signed) CHARLES A ORR, Colonel, R. E.,
Secretary to Government.

No 486 DOCKET No. 252, dated 21st January 1870.

COPY of the above forwarded to the Government of India, in continuation of Docket, Nos. 3,552 and 3,610, of the 5th and 10th November 1869, respectively.

(True Extract.)

Colonel, R E,
Secretary to Government.

Exd F. R. Bantleman.

No. 742

MADRAS RAILWAY.

AGENT AND MANAGER'S OFFICE

Madras, 21st December 1869.

From

R. S. Elwin Esq
Agent and Manager of the Madras

To

Major F. W. Chas Stewart &c
Consulting Engineer for Railways

SIR,

Upon receipt of your letter of the 10th instant & No 623, giving Copies & Orders of Government, & No 3610 dated the 10th ultimo, I placed myself in Communication with the Acting Locomotive Superintendent, and now have the honor to submit for your special attention and through you that of the Government, to all Calumnies Reply of this date & No 252, with Extracts from the Reports of the several Locomotive Foremen.

2 On the opinions expressed by the Calumnies and the Statements & Medical Reports of the working of the Spark-Catchers now in use on the Railway forwarded by the several Gentlemen, and in direct opposition to the Remarks made by the Locomotive

Superintendent of the Great Southern of India Railway, I am instructed to request you to be good enough to call upon Mr Sherrard to substantiate what he has said in his letter of the 1st ultimo, c/o 1451, addressed to the Agent of the Great Southern of India Railway.

I have the honor to be
Sir
Your most obedient Servant
Agent and Manager

To

The Consulting Engineer
for Railways

From

The Agent and Manager.

MADRAS RAILWAY

Dated 21st December 1869
Read 22nd "

No 1142.

Forwarding Copy of a Letter from the Agent Eastern Bengal Railway Co. forwarding Reports from Guards and Drivers of Trains on the Metre Gauge of the Great Southern of India Railway, on the working of Sparks Arresters used on Engines of that Line.

20788

1178

Madras Railway Company
Coco Superintendent's Office
Perambore Works 21st Decr 1869

No 282

To

The Agent and Manager

Dear Sir,

Referring to the Consulting Engineer's letter to you address c/o No. 623 dated the 10th Instant, forwarding copy of an Order of Government P W D No 3809 of the 10 ultimo, I beg to enclose for your information extracts from the Reports of our Foremen on the Sparks Catchers now in use on this Line.

These Reports have been sent to me in reply to my Circular No. 41 of the 14th Instant, copy of which I also enclose

It will be seen that they are unanimously of opinion that there is no difficulty in getting up steam when an Engine is first lighted, nor, in maintaining it, when the Engine is hauling a load, with the description of Sparks Arrester now in use.

I have frequently travelled on Engines burning wood between Villupuram and Cuddalore - where the heaviest gradients on our Line exist - and seen the fire-door kept open for a considerable distance, the safety valves blowing off nearly the whole time -

The immunity from fire, during working, and wear and tear of Engines are, in my opinion, of themselves quite sufficient

sufficient proof of the value of the Spark Arresters now in use.

Yours faithfully
Sd/ W. Hollwood
Actg. Loco. Supt.

True Copy
Sd/ [illegible]
Asst. Locomotive Engineer

Extracts

From Locomotive Foreman. Madras
No 854. dated 16th December 1869

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I always thought the crinoline was made with sufficient area to allow for baffle plate and mesh, and I need not say what the result has been on this point after the number of years experience we have had in wood burning. As to the expense through Corrosion at the bottom of the crinoline, of Course, if the ashes and burning are allowed to remain, they will destroy the plates, but we find no difficulty on this point, as the ashes are easily taken out at the small doors at the bottom.

Wood burning is a great saving in fire-bars and bar frames and smoke boxes. Smoke box doors with Coal burning are Constantly giving trouble through getting hot and becoming warped, a thing not known with wood burning. Moreover, there is no cleaning the fire with wood burning. I really prefer wood burning to either Coke or Coal. Our young Drivers appear

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No 14574. dated 16. December 1869

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The Plates wear out where the ashes Collect; but not so often as to be of Serious Consideration; on the Contrary, the fine bars that are saved in Wood v Coke or Coal, would last for this many times over, and does not form an increase in expenditure, because it is saved in Smoke box and door. Coal and Coke being very destructive to the latter.

From

From Locomotive Foreman. Goddapah.
No 491 dated 16. December 1869.

With Reference to Circular No 41 dated 11. December 1869, I beg to inform you that Engines on my Division, when burning wood, do not throw out any Sparks. I have worked them hard up inclines and run them fast on level road, but never, on any occasion, have I seen Sparks escape from the Chimney.

There is not the slightest difficulty in getting up Steam no more than an Engine burning Coke and Coal, and not the least difference in time of lighting an Engine, whether burning Coke and Coal or wood - they both generate Steam in the same time. I have always found wood burning Engines able to get any amount of Steam when working, without one half the Care or attention an Engine requires when burning Coke or Coal; and I may add, all Drivers are anxious to burn wood, it being so much Easier for them.

I Cannot give the least Suggestion for a more effective Spark Catcher, as, I Consider the Spark Catcher now in use perfect.

From Locomotive Foreman Jolarapett.
dated 17. December 1869

If the baffle is not in its proper position over the centre of the Chimney so as to receive the exhaust Steam and Sparks to Spread them equally, the wire work will not arrest the Sparks let it be ever so fine a mesh, nor will it Stand the force of the Exhaust

Steam

steam; or, in other words, no wire work will arrest the Sparks at the top of the Chimney without the baffle.

I beg to submit that it would be difficult to use it in any other way than as a fixture, as it has to receive the whole force of the exhaust steam on its under surface and spread out the steam and Sparks into the outer Casing of the Chimney, thus breaking up the large Sparks and keeping them in Contact for a short time with the steam, as it were damping them out.

"Difficulty in getting up steam
"when first lighted."

I have not experienced any difficulty during the Eight years I have been Constantly engaged in looking after wood burning Engines, fitted with these bottles, were work, Dia, and never, during the whole of that time, has an Engine been late for its train from this Cause. There are Coal and Coke burning Engines running from Jolarapett as well as wood burners, and these Engines are all lighted together and have steam up together, and I believe if there is any difference, the wood Engines have it in their favor.

"Drivers fighting for steam."

The fact of the very steep gradients daily leaped over on the Bangalore Branch and South West Line and the number of minutes made up every month with the very few lost, is the best answer to this.

Without a doubt, if a Driver neglect his fire and get his Spark Catcher dirty, he will have to fight for steam, exactly the same as if he neglects to oil, something will get hot.

But when an Engine is properly acquited with these baffles she can be kept at as Constant a pressure as with Coal & & without baffles.

From Locomotive Foreman. Salem
No 1195 dated 17 December 1869

I do not know of any instance since the new baffle plate was introduced at the new baffle plate was introduced at Perambore, of any Driver or Engine working on my Division experiencing any difficulty in generating steam, either in first lighting up or in working a Train.

With the new Spark Catcher it is almost impossible for Sparks to escape. The only time I have known a few do so has been where the Engine was worked very heavy with a low fire and near the journey's end, and the fire being stirred up with the dirt, the Sparks were very small, but were out before they reached the ground.

I have travelled on all the Engines that work between Jolarapett and Coimbatore, at different times, and on no occasion, have I seen an Engine with the new Spark Catcher, found it difficult to make steam.

From Locomotive Foreman Coimbatore
No 807 dated 16 December 1869.

I have never, to my knowledge heard any Complaints from our Drivers, at least not with our present Chimney.

Jry

My assertion needs no Corroboration, as we have had too much proof of their Efficiency from practice. You are aware we have several times run express Specials with wood-burning Engines, fitted with top Complete, which I think, is sufficient proof that the draw back referred to is mere supposition. All my Engines are fitted with a 4"3/16" blast pipe and are able to drag their loads with the greatest ease, and as for getting up Steam, I only allow two hours with Cold water either for large or small Chimnies.

If we are to judge from the wear of our Pistons we have no Reason to suppose that our present Chimnies are not efficient; if, otherwise, we should not be able to keep such good time as we do.

Secondly, if there was that obstruction as regards the free passage of the Exhaust which is Complained of in your Circular we should very soon find it out, as the present Piston rings are but very slight and would soon break if exposed to back pressure.

True Extracts.
(signed) W. J. Collinson
Asst. Loco. Supt.

Madras

Madras Railway
Locomotive Superintendents office
Perambore Works
14th December 1869.

No. 41

Circular.

Referring to the subjoined Extract of a letter having reference to the Spark Catchers now in use on this Line, be good enough to inform me if any of the difficulties mentioned have been experienced on your Division; more particularly with regard to the tops of the Spark Catcher failing to arrest the Sparks, the difficulty in getting up Steam when first lighting, and the remark of the Drivers that they are always "lighting for steam", and also, whether in your opinion a more effective Spark Catcher Could be introduced for arresting Sparks and generating Steam.

"Of the crinoline no drawing is "needed to explain it. Those we had lent "ed to explain it. Those we had lent "out my predecessor Condemned as being "useless from various Causes; firstly, the "tops were only wired of a very Course mesh, "and failed to arrest the Sparks at all; and, "Secondly, the baffle being a fixture under "the wire mesh, it was with the greatest "difficulty that the Engine Could be got to "make any Steam when first lighting up in "the shed for want of draught. These "Crinolines are also a Source of Constant "expense from Corrosion of the plates at the "bottom

"bottom where the ashes and priming collect-
"They are also cumbersome and ugly I have
"information regarding their use on the Madras
"Railway / where they are the kind adopted /
"to the effect that they are, although in a
"measure effective as actual arresters of
"sparks, great drawbacks to the Engines
"steaming- the Drivers saying that they
"are always fighting for steam. No spark
"Catcher that I have seen or heard of is
"effective as not being an impediment to the
"Engines' steaming powers".

Please let me have your reply as soon as possible, as I wish to embody it in my Report.

/Signed/ W. J. Collinson
Asst. Loco. Supt.

/True copy/
/Signed/ W. J. Collinson
Asst. Loco. Supt.
21/12/69.

/True Copies/

Agent & Manager

Consulting Engineer's Office

No 429.

From

Major A. A. M. Stewart R. E.
Consulting Engineer for Railways.

To,

Colonel C. A. Orr R. E.
Secretary to Government
Public Works Dept.

Sir,

With my letter dated the 5th November /69, No. 365, I forwarded a report from the Locomotive Superintendent of the Great Southern of India Railway upon the spark-catchers which had been used upon that line. In that report Mr. Steward stated that he had information regarding the spark-catchers used on the Madras Railway, "to the effect that they are "although in a measure effective as "actual arresters of sparks, great "drawbacks to the engine's steaming—

the

"the drivers saying that they are
"always spitting for steam." "

2. As this statement was opposed to the report[x] which had been furnished by the Locomotive Superintendent of the Madras Railway, I forwarded a copy to Lt[n] Colvin, and requested him to favour me with any further remarks which Lt[n] Collinson might wish to offer on the subject.

3. Lt[n] Colvin's reply[x] I have the honour to enclose. The papers which accompany it show that the statements made by Lt[n] Sheward are directly opposed to the actual results of the working of the spark-catcher now in use on the Madras Railway; and as those statements may have led the Government of India to form incorrect conclusions

as

vide G. R. 5th Jan[y] 1864 No. 3551.

[x] No. 742 - 244 Dec[r] 1863 with enclosures.

as to the advantages of using spark-catchers, I beg to suggest that the enclosed papers be also forwarded to that Government.

I have the honour to be,
Sir,
Your most Obed[t] Humble Servant
[illegible] Major R.E.
Consulting Engineer
for Railways.

Madras
27th December 1863

Public Works Depart.

No 257

Proceedings of the Madras Govt.

Under date the 21st Jan 1870

Read the following:

From: The Consulting Engr. to G. H. E. No 229 of 27th Decr 1869

for Railways

Ordered that these

papers be forwarded to the

Govt of India

To Consulting Engr for Railways

Despr 26/1/70

Rocket No 25-2 of 21st Jan 1870:

Copy of the above for-

warded to the Govt of India

in continuation of Docket

Nos 3552 and 3610 of the 5th

and 10th Nov: 1869 respectively

Despr 26/1/70.

No 484

From: The Consulting Engr. to G. H. E.

To The Secretary to Govt.

Pub: Works Dept.

Fort St. George

Dated 27th December 1869

Sir: I have the honor to request that the accompanying letter from the Superintending Engineer, Madras Railway Co, dated 18th Instant, may be forwarded to the Govt of India for the information of the Secretary of State for India in Council.

I have the honor to be

Sir

Your most obedient servant

Consulting Engr for Railways

Encl 257-N252-21st Jany 1870

Cue 5205

Govt. of Madras.

PUBLIC WORKS.

To

The Consulting Engineer
for Railways

Dated

Rec'd

Ans.

G.O. 21st Jany 70 No 257 & 252

Nos 1811-1852 & 1856

Spark-catchers (Ry) Asking orders on the letter from the Cons Engr submitting notes and remarks & report from the Locomotive Supt of the G.S.I. Ry upon the Spark-catchers which had been used upon that line.

Spark-Catchers (Ry) A Copy of the Proc. regarding the Spark-Catchers in use on the S.I. Ry, forwarded to the Govt of India—