

MADRAS RECORD OFFICE.

Government of Madras.

Revenue DEPARTMENT.

G.O. No.	268-69	Press ~~MIS~~
	3-5	
Dated	1-2	18 66.

Not to be folded or roughly handle

9. Emery Saw Gin No. 1001, thirteen Saws of Dharwar Factory pattern.

Month and date.	Name of Gin and Maker.	Number of Trial.	Description of Cotton and quantity of Kuppas.	Diameter of Driving Wheel.	Number of men driving.	Time.	Width of Hopper box or receptacle for Kuppas.	Remarks.
1865. May 5th.	Emery Saw Gin (Iron) No. 1,001 of 13 Saws. Messrs. Burgess and Key of London, makers.	1	3 lbs.	Ft. In. 4 2	4	M. S. 1 35	Ft. In. 0 9½	Does its work well and quickly; works smoothly; leaves the seed very clean.
„ 23rd.	Ditto ditto ...	2	14 lbs.	4 2	4	6 15	0 9½	Fairly hard work; seed well cleaned.
„ „	Ditto ditto ...	3	14 lbs.	4 2	4	6 35	0 9½	Ditto.
„ „	Ditto ditto ...	4	14 lbs.	4 11	4	6 30	0 9½	Ditto.
„ 24th.	Ditto ditto ...	5	14 lbs.	4 11	4	5 25	0 9½	Working easy; seed well cleaned. N. B.—Waste from the Gin 10 oz. of cleaned cotton to 100 lbs. of Kuppas.

10. Platt Brothers and Co.'s Churka.

Month and date.	Name of Gin and Maker.	Number of Trial.	Description of Cotton and quantity of Kuppas.	Diameter of Driving Wheel.	Number of men driving.	Time.	Width of Hopper box or receptacle for Kuppas.	Remarks.
1865. May 5th.	Platt Brothers & Co. of Oldham's Churka.	1	2 lbs.	Ft. In. 4 2	2	M. S. 3 35	Ft. In. 0 7	Worked very well and smoothly; cleans cotton exceedingly well; leaves the seed very clean.
June 2nd.	Patent 1862 (with leather apron). This is the machine brought by Dr. Forbes from Guzerat. Messrs. Platt Brothers & Co. of Oldham.	2	7 lbs.	4 11	3	21 30	0 7	Works well; no vibration; its fault appears to be that it has not fast enough power, i. e., the present appliances do not give the machine a sufficient number of revolutions; cleans seed very well.
June 3rd.	Platt Brothers & Co. of Oldham's Churka.	3	7 lbs.	4 11	3	25 0	0 7	Works well; no vibration; an exceedingly damp day is much against the machine; cleans seed very well. It appears to me that this machine should have steam to give it greater speed, or a driving wheel of very large circumference for manual labor; it turns off cotton more like the Native Foot Roller than any machine yet tried.

11. Wanklyn's Patent fluted Iron Roller.

Month and date	Name of Gin and Maker.	Number of trial.	Description of cotton and quantity of Kuppas.	Diameter of Driving Wheels.	Number of men driving.	Time.	Width of Hopper box or receptacle for Kuppas.	Remarks.
1865. June 6...	Wanklyn's Patent fluted Iron Roller. (No record of the maker's name in the Dharwar Factory.)	1	7 lbs. of Dharwar Native Cotton.	Ft. In. 4 11	4	M. S. 20 10	Ft. In. 2 0	Works badly; cleans cotton very slowly; vibration is very great, so much so that the machine in constant work would not last a month; the fluted Roller has almost worn smooth in turning off only about 20 lbs. of clean cotton; seed very badly cleaned; the machine breaks up many seeds into dust, which dust gets into, and of course dirties, the cotton wool. I have only made one trial by watch, as this one is more than sufficient to make it at once apparent that the machine (in the present state) could not possibly be brought into general use.

12. In the following Table are given the mean results of the trials showing the time occupied, driving power used, &c., in cleaning *one pound* of Dharwar indigenous cotton. I have placed the machines in numerical order to simplify reference in the concluding summary of remarks.

13. Mean results of above trials shewing time occupied, &c., in cleaning *one pound* of Dharwar indigenous cotton (Kuppas).

No.	Name of Gin and Maker.	Mean of diameter of Driving Wheel.	Mean number of men driving.	Mean of time.	Width of Hopper box or receptacle for Kuppas.	Summary of Remarks.
		Ft. In.		M. S.	Ft. In.	
1	Albion Saw Gin, 26 Saws.	4 11	4 $\frac{1}{4}$	0 49	1 2 $\frac{1}{2}$	The machine works heavily; would require two sets of men for the driving wheel to work from day to day, 6 men in each set, not including feeder; the seed is very clean, and with refitting the great vibration of the gin might be lessened.
2	Eagle American Saw Gin, 18 Saws.	4 6 $\frac{1}{2}$	4 $\frac{1}{4}$	0 27 $\frac{1}{5}$	1 1 $\frac{1}{2}$	The machine does its work very fast, but badly, and, like the above, is very hard work for the men. The seed is far from thoroughly cleaned, much fibre remains sticking to from a want of sufficient draft; much cleaned cotton falls away below the machine so much as to cause a serious objection to the gin, the waste from this cause being not less than four lbs. of cleaned cotton to over 100 lbs. of Kuppas or seed cotton.
3	Emery Saw Gin (Iron) No. 1,001 of 13 saws. Makers Messrs. Burgess and Key, London.	4 5 $\frac{3}{4}$	4	0 26 $\frac{4}{5}$	0 9 $\frac{1}{2}$	Does its work well and quickly; works smoothly, and leaves the seed very clean. It is a pity this machine is too elaborate for Native use.

Name of Gin and Maker.	Mean of diameter of Driving Wheel.	Mean number of men driving.	Mean of time.	Width of Hopper box or receptacle for Kuppas.	Summary of Remarks.
	Ft. In.		M. S.	Ft. In.	
Platt's Patent Churka, 1862. Maker Messrs. Platt Brothers & Co. of Oldham. (This is the machine fitted with a leather apron that you brought down from Goozerat.)	4 8	2 $\frac{3}{4}$	3 7 $\frac{1}{2}$	0 7	Works easily, smoothly and well, though slowly; leaves the seed very clean in this respect; is more like the Native Foot Roller than any machine yet tried; wants either steam or a driving wheel of much greater circumference than any we have at hand to give at sufficient speed.
Wanklyn's Patent fluted Iron Roller (one trial). Maker's name not known.	4 11	4	2 52 $\frac{1}{2}$	2 0	Works badly and slowly; not at all adapted (in its present state) for use amongst Indian Ryots; turns out very dirty, dusty cotton.

14. The next Table merely refers to the three Saw-Gins that have been tried, and gives the turns per day of twelve hours per Saw, which may be found useful in comparing the capabilities of the machines.

15. Out-turn per Saw in a day of twelve hours.

No.	Names of Gins.	Number of Saws.	Quantity of Kuppas each Saw cleans in a day of twelve hours.	Remarks.
			lbs. oz.	
1	Albion Saw-Gin ...	26	3 6 $\frac{5}{8}$	The calculations are not brought to fractions, as that is considered unnecessary.
2	Eagle American Gin...	18	9 0	
3	Emery Saw-Gin ...	13	12 0	

16. It is right to name here that No. 3, the Emery Saw Gin, is fitted with saws of the Dharwar Factory pattern, and this machine with these saws makes an out-turn very much in excess of any other.

17. The chief requirements in machinery for cleaning cotton for use amongst the Natives of India appear to me to be, first, the machine should not destroy the fibre; second, it should not dirty the seed; third, non-liability to get or to be put out of order; fourth, simplicity of construction so as to be easy of repair with the comparatively rude means at disposal in the Indian Mofussil; and fifth, cheapness.

18. Regarding the latter requisite, it seems a pity we have not been supplied with the prices of these several machines. I will now conclude with short remarks on each.

19. No. 1, *Albion Saw Gin*.—The condition of the fibre of the cotton cleaned by this machine will, I conclude, be judged in England, but only an extraordinarily good report on the cotton (which I do not expect) would justify Government in helping the introduction of the Gin; it works far too

heavily, and there is nothing whatever about it that is the slightest improvement on gins now in use; it works fully doubly as heavily as Factory Gins, and the out-turn is very much less.

20. No. 2, *Eagle American Saw Gin*—This machine is much faster in its work than the Albion Gin, i. e., its out-turn is much greater, but it does not clean seed at all well, and the driving is very hard work; it is too, the most wasteful machine I have yet seen, the loss is fully 16 per cent. of clean cotton; this is a ruinously high average. It is only a slender reason to that named above regarding the Albion Gin that would justify Government in making further experiments with this machine.

21. No. 3, *Emery Saw Gin*—Economy of space is a great recommendation in its favor; no lint room is required; the gin can be worked anywhere—in the cotton field itself, if the owner chooses. This where building material of all kinds is so expensive as it is in India is no mean consideration; as will be seen above the out-turn of this machine is greater than any other. It is also much easier driven than gins No. 1 and 2; its great drawback is its construction, it would not remain in order a month if trusted in the hands of Ryots. I consider that it is highly probable that if the principle of the machine can be introduced in a simpler fashion, and into a machine the construction of which is more adapted to the rough and ignorant handling of Natives, and the number of saws increased to twenty, that (supposing it is cheap and not too heavy as this one is) an excellent machine* for cleaning Dharwar New Orleans Cotton will be the result, and one most worthy of further consideration. Whether Saw Gins will clean indigenous cotton or not is yet an undecided question; no Saw Machine has yet done it without destroying the fibre.

22. No. 4, *Platt's Churka*—This of all the machines yet tried appears to me to clean indigenous cotton the best; the seed from it is very similar to that left by the common Native Roller. It is though unfortunately too delicate and finished a machine to be trusted with Natives, and for manual labour a driving wheel of very great circumference would be required; these machines should only be worked by steam machinery where an Engineer is always in attendance, who would understand and take care of their delicate construction; it also wants steam to give it sufficient velocity. Under such circumstances it appears well worthy the attention of proprietors of large Cotton-cleaning Establishments.

23. No. 5, *Wanklyn's Patent fluted Iron Roller*.—I have but few remarks to add to those above on this machine. I would merely mention that with the very little work it has done the fluted roller of the one in the factory is nearly worn smooth, and the machine vibrates in such an excessive manner that a week or two's work would shake it to pieces. I expect too that it will be found that the action of the knives with each other and the fluted roller has done considerable harm to the fibre of the cotton.

24. In conclusion, I would add that, owing to the lateness of the season, the weather was damp when these experiments were made, but as all the machines fared alike this does not affect ascertained results in comparing the different gins. My reference to the Dharwar Factory Gins is also made with a due allowance for damp weather. I worked Factory Gins at the same time as these experiments were in progress.

From the Acting Superintendent Cotton Gin Factory and in charge Office of Cotton Commissioner, Dharwar, to the Under Secretary Her Majesty's Government of Bombay, dated Dharwar 26th December 1865, No. 619.

1. I have the honor to acknowledge the receipt of the papers covered by your endorsement No. 5,072, dated 20th instant.

Vide paragraph 2 of Order No. 2,930, dated 28th November 1865.

2. From the documents in question I learn that the Madras Government "desire that a further and more complete trial be made of the Saw Gins."

*The principle and the machine belong to the patent.

3. It would appear that the Madras Government and the Officers who have been engaged in these experiments are ignorant of the fact that the Dharwar Saw Gin is only constructed for acclimatized New Orleans Cotton. The teeth of the saws are made of a peculiar shape to suit the fibre of this staple; every difference in the fibre of the various cottons requires a commensurate difference in the shape of the teeth of the Saws of the Gin used to clean it. Indian (indigenous) cotton generally is of so short and brittle a fibre that the saw ruins it, and probably in the experiments recorded, some kinds of cotton have been put through the Dharwar Gin for which the machine is not intended.

4. Again, from the Superintendent of the Madras Central Museum's letter of the 27th of May last, No. 106, (paragraphs 9 and 10) I conclude that the Dharwar Gin at the time of trial could not have been in proper working order.

5. Dharwar Saw Gins (or in fact Saw Gins of all descriptions) should never be worked but by people conversant with their construction, and if the Madras Government intends to distribute these machines some mechanics should be sent for training in this Factory; a general recommendation of this nature I had the honor of submitting in my Memorandum (on the Factory) of the 9th instant.

6. When four Gins were sent to Madras for experiment a Factory workman should have gone with them to work them at their trials, this has been done with Saw Gins I have sent to the Nagpore Exhibition, and from this office records I find that when the Punjab Government ordered Saw Gins from Dharwar they sent three men to be instructed in their manufacture and working. Machines of so peculiar a construction cannot be fairly tried, but by people thoroughly conversant with their nature.

7. The only Saw Gins enumerated in this correspondence that appear to me worthy of further trial are the Emery and Dharwar Gins.

8. If the Madras Government considers the matter of sufficient importance to justify the expense, I will send a Dharwar Factory Saw Gin in charge of one of my workmen, who will put it up and be present at the experiment, this would decide for the kind of cotton that the Saw Gin is made for. For other descriptions I could at the same time send a Forbes's Treadle Churka which, considering only one man is required to work it, gives a large and satisfactory out-turn. The machine is a mechanical adaptation of the native foot roller.

9. I would respectfully recommend that a copy of this letter should be sent to the Madras Government, together with a copy of the communication noted in the margin, a copy of which latter was submitted to Government with my

Letter No. 184 from Assistant in charge of Dharwar Factory to Dr. Forbes, dated 19th June 1865.

letter to the Chief Secretary No. 324, dated 27th September last.

10. The letter marginally referred to in the foregoing paragraph is a Report on a series of experiments I tried at this Factory which, besides including my conclusions upon the Wanklyn and Platt's Churka Machines, records the satisfactory trial of the Emery Gin as well as the drawbacks the latter machine at present undoubtedly has for general introduction into this country.

11. For easy reference I return your Memorandum under reply with its accompaniments.

(True Copy.)

(Signed) H. E. JACOMB,
Under Secretary to Government.

No. 4.

ORDER THEREON, 1st February 1866, No. 268.

Miscellaneous.

1. Ordered that the foregoing papers be communicated to the Board of Revenue, and Chamber of Commerce.

8 *Proceedings of the Madras Government, Revenue Department,*
1st February 1866.

2. The Government resolve to request the Government of Bombay to send a competent person to Madras with one of the Dharwar Saw and Treadle Gins, as proposed in paragraph 8 of Mr. Walton's letter.

(True Extract.)

(Signed) J. D. SIM,
Secretary to Government.

To the Board of Revenue.
the Chairman of the Chamber of Commerce.

Exd. S. T. Augustin.

Proceedings of the Madras Government, Revenue Department,
1st February 1866.

No. 3. Read the following letter from the Under Secretary to the Government of Bombay, Revenue Department, to the Secretary to the Government of Madras, dated Bombay Castle, 9th January 1866, No. 97:—

1. I am directed to acknowledge the receipt of your letter No. 2,988, dated 8th ultimo, with accompaniments relative to the trials made in the Madras Presidency of certain Cotton Gins.

(Printed) letter from Mr. Walton, Acting Superintendent Cotton Gin Factory, Dharwar No. 324, dated 27th September 1865, with accompaniment No. 184.
Letter from do. No. 619, dated 26th December 1865.

2. In reply, I am desired to forward a copy of the papers noted in the margin, and to request the attention of the Madras Government to the proposal made by Mr. Walton in paragraph 8 of his communication of the 26th ultimo, No. 619.

From the Acting Superintendent Cotton Gin Factory, to the Chief Secretary Her Majesty's Government, Bombay, dated Dharwar Factory, 27th September 1865, No. 324.

1. I have the honor to submit the enclosed report on experiments carried out in this Factory in obedience to the orders of Government Resolution No. 178, dated 13th January last.

2. The remaining part of the orders to which Resolution No. 178 refers, Dr. Forbes carried out in person.

3. The report was submitted to Dr. Forbes just before he started for Europe, but as I have failed to find any record of his having submitted it to Government, I conclude that want of time has prevented him.

From the Acting Superintendent Cotton Gin Factory, to the Cotton Commissioner, and Superintendent Cotton Gin Factory, No. 184.

1. I have the honor to submit the following report on experiments ordered by Government Resolution, Revenue Department, No. 718, dated 13th January 1865.

2. This report is merely on the practical working of the different machines. As regards the staple of the cotton ginned, I am not competent to record an opinion, and therefore do not attempt it. That can be judged in England. All the cotton cleaned by the machine, with samples of seed from each, accompanies you to Europe.

3. It should be borne in mind that all the ginning experiments are with Dharwar indigenous cotton.

4. The gins tried are of three classes—Saw-gins, a Platt's Churka, and a Roller-gin. Some of them are fitted with handles on the machine itself, but in these experiments all have been driven like, viz, with the Factory driving wheels and straps.

5. I will now proceed to give the results of the experiments in detail.

6. Column No. 6, "number of men driving," does not include the feeder.

7. Trial of Cotton Gins in the Dharwar Cotton Gin Factory.

Albion Saw Gin.

Month and Date.	Name of Gin and Maker.	Number of Trial.	Description of Cotton and quantity of Kuppas.	Diameter of driving Wheel.	Number of men driving.	Time.	Width of Hopper box or receptacle for Kuppas.	Remarks.
1865. May 5th.	Albion Saw Gin, 26 Saws. (No record of the maker's name).	1	3 lbs.	Ft. In. 4 11	4	M. S. 2 10	Ft. In. 1 2½	Heavy work for four men at driving wheel; when working steadily 100 lbs. seed cotton or 10 kuppas per minute; seed very much separated; the seed well, seed left bare and clean.
„ 19th.	Ditto ditto ..	2	14 lbs.	4 11	5	12 40	1 2½	Men quite exhausted; would require eight men to keep the work going; seed fairly cleaned.
„ 22nd.	Ditto ditto ..	3	14 lbs.	4 11	4	11 0	1 2½	Very hard work; men much exhausted; could not remain at work; vibration very much; seed fairly cleaned.
„ 22nd.	Ditto ditto ..	4	14 lbs.	4 11	4	11 5	1 2½	Very hard work; men quite exhausted; could not work more; vibration very great; seed fairly cleaned.

8. Eagle American Saw Gin.

Month and Date.	Name of Gin and Maker.	Number of Trial.	Description of Cotton and quantity of Kuppas.	Diameter of Driving Wheel.	Number of men driving.	Time.	Width of Hopper box or receptacle for Kuppas.	Remarks.
1865. May 5th.	Eagle American Saw Gin, 18 Saws. (No record of the maker's name.)	1	3 lbs.	Ft. In. 4 2	4	M. S. 1 8	Ft. In. 1 2½	Does its work very quickly, but cleans badly; scarcely any seed comes away clean, fibres sticking to all more or less; very little or no vibration.
„ 18th.	Ditto ditto ...	2	14 lbs.	4 2	5	6 10	1 1½	Ditto hard work; men exhausted.
„ 19th.	Ditto ditto ...	3	14 lbs.	4 11	4	6 15	1 1½	Ditto; men much exhausted; cleans seed badly, and a considerable quantity of cleaned cotton falls away below the machine; this latter is owing to a want of draft caused by the construction of the brush, drum, and chamber.
„ 20th.	Ditto ditto ...	4	14 lbs.	4 11	4	6 45	1 1½	Men exhausted; cleans seed badly; much waste cotton falls away underneath the gin. N.B.—The waste from this gin is 4 lbs. of cleaned cotton to every 100 lbs. of Kuppas, an exceedingly high and wasteful average.

REVENUE DEPARTMENT,
FORT SAINT GEORGE,
1st February 1866.

No. 269.

No. 5.
To

THE SECRETARY TO THE GOVERNMENT OF BOMBAY,

SIR,

Miscellaneous.

1. In acknowledging the receipt of Mr. Under Secretary Jacomb's letter of 9th instant, No. 97, I am directed to request that orders may be issued by your Government for sending a competent person to Madras with one of the Dharwar Saw and Forbes's Treadle Gins, as proposed in paragraph 8 of Mr. Walton's letter of 26th ultimo, No. 619.

2. The person sent should be directed to report himself, on arrival, at this Office.

I have the honor to be,

Sir,

Your most obedient servant,

(Signed) J. D. SIM,

Secretary to Government.

Exd. S. T. Augustin.

referred to in the foregoing paragraph
is a Report on a series of experiments
I tried at this Factory, which, besides
including my conclusions upon
the Wanklyn and Platts' Charkha
Machines, records the satisfactory
trial of the Emerg Gin as well as
the drawbacks the latter machine
at present undoubtedly has for
general introduction into this country.

11. For easy reference I return
your memorandum under reply
with its accompaniments.

I have the honor to be,
(Sd) W. Walton
Actg. Supt. Cotton Gin
Factory and in Charge Office
of Cotton Commissioner.

(True Copy)

Yr. servant
Major Secretary to Govt.

22

W 269.

To
The Secretary to the Govt of Bombay
Sir,

In acknowledging the receipt of the Hon. Secy. J. Sambhaji Rao's letter of 11th inst. No. 99, I am directed to request that order may be issued by your Govt for sending a competent person to Madras with one of the Dhanwar, Law and Forbes's Reading, as proposed in para 8 of Mr. Mutton's letter of 26 ult. No. 100.

The man should be directed to report himself, on arrival, at this office.

J. J.

1st July / 66.

No 28, 1866 / 65 No 229-1
8 Dec 1866 - 20

Rev. 1866. 1866
22nd of 1866 / 1866

From Under Secy
to the Govt of Bombay

1866 / 1866
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It is on duty of the papers relative to the trials of Cotton Seed, and the other attention of this Govt to the trial of the same in para 8 of the same of the 26th ult. No. 197.

No 234.

20th July 1866

1866 / 1866

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No 208

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Revenue 1868 20/10/77
of Govt for 1868

No 269.

To The Secretary to the
Govt of Bombay
21st February 1868.

From Mr. J. P. D. D. D. D.
Secretary of the Board of Revenue

Regarding Government
of Bombay to send a
Comptrol. Board in
charge of the Revenue
and the Board of

No 51

2