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MADRAS RECORD OFFICE.

Government of Madras.

Public works DEPARTMENT.

G.O. No. 713

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50-51

Dated 3 3

1868.

Not to be folded or roughly handled

S.T.

No. 50. Read the following letter from the Sanitary Commissioner, Madras, to the Military Secretary to Government, Fort St. George, dated Madras, 11th February 1868, No. 156:—

1. I have the honor to submit, for the information of Government, a description, with plans and drawings, of a new self-acting earth closet designed by Mr. Gover, of the Military Male Orphan Asylum.

3 Sheets of drawings.
1 Memorandum.

2. The self-acting machines which were introduced in the men's division of the family privies in the Fort, the Government is aware, did not answer the object for which they were designed.

3. Colonel Worster, in his recent report upon the experiment undertaken in the Fort, writes—

“ In the men's division of the family privy twelve machines were furnished for the delivery of the earth, but from faulty construction of the shoots have been and still are perfectly useless.”

4. The Government may consider it desirable to give a trial to Mr. Gover's apparatus, which that gentleman is confident will meet all the requirements of a machine designed for the self-application of dry-earth.

5. I have carefully watched the 'closet' in action, and it certainly appears to work with regularity and efficiency. It is strong, massive, but simple in construction, cheap, and not likely to fall out of order by rough usage.

6. Mr. Gover, it will be observed, contends for a particular construction of privy to which the apparatus is to be applied, but it will not, I conceive, be difficult, and entail but small outlay, to adapt it to any existing latrine.

7. It would be convenient were the apparatus fitted to some privy at Madras, the men's division of the family latrines in the Fort, in which the former apparatus was tried, for instance, so that Mr. Gover could be requested personally to superintend the erection of the 'closets,' and ensure their being made and fixed under conditions that he considers essential to their success.

8. Or as a new privy is about to be built at St. Thomas' Mount, in connection with the Guard-room sanctioned for the Reserve Powder Magazine, a plan of which was yesterday sent for my approval by the Superintending Engineer of the 4th Division, the Government may consider it advisable to construct it entirely upon Mr. Gover's plan, and to apply his self-acting apparatus to it instead of Captain Rogers', for which provision is now made in the plan, and which failed in the family privies in the Fort, as noted in paragraph 2 of this letter.

9. Should Mr. Gover's machine solve the problem which has hitherto baffled our Engineers, considerable saving will be effected in this department of conservancy, as the "constant watchers," as they have been termed, (sweepers on duty in the passages or in the latrines to apply the earth after each use of a privy pan,) will no longer be needed, while that *immediate* application of the earth, which is the essential element of the 'dry-earth system,' will be ensured.

DESCRIPTION OF SELF-ACTING EARTH HOPPER FOR USE IN DRY CON-
SERVANCY LATRINES.

The perspective view given in the large diagram will at once show the general construction of the apparatus. The objects to be gained were chiefly these:—

1. An invariable supply of earth to the latrine vessels as soon as the user rises.
2. An easy withdrawal of the vessel by the Toty when necessary.
3. Such a timing of the fall of the earth as to ensure that those using the latrine shall not be inconvenienced by any dust that may arise.
4. Such a construction of the seat, that the mouth of the bucket shall be so close to the seat that no urine shall escape by the front.
5. Special care to be taken that by no carelessness can any part of the user's person be crushed or caught.
6. Such a construction of the apparatus as to permit the use of unscreened and undried earth.
7. Non-liability to fracture or to be out of order.
8. Easy construction and repair when necessary.
9. A minimum of expense.

Before proceeding to describe the apparatus in detail, I would premise that its full benefit can never be derived unless the wall of the closet itself be erected somewhat after the fashion shown in the perspective drawing. The closets should be in pairs. Between the pairs, the wall should project to allow for the erection of steps, or the placing of a ladder to enable the Toty to fill the receiver.

The essential part of the apparatus is the charger (figure N). When the closet is unoccupied, the charger is in the position shown in figures B. and D.; the former being a birds' eye view of the receiver and charger, and the latter a side view, the dotted lines in which show the condition of the interior of the receiver. The seat, which works on a hinge at the front, is raised about an inch at the back. Immediately one sits upon the seat, his weight depresses it. Figure E. exhibits an under view of the seat, and figure F. a section showing the iron struts by which the seat is connected with the lever shown in figure H. When the seat is depressed it carries down with it one end of this lever. This raises the other end, which is attached by an arm to the base of the charger, which it consequently raises, and throws into the position shown in figures A and C. The charger is now open at top and closed at bottom. Earth from the receiver immediately runs into and fills it. Thus matters remain so long as the seat is occupied.

The charger is made of solid wood, and is therefore heavy. Its weight is greatly increased by the insertion of a mass of iron or lead of about 10 lbs weight, as far from the axis as is consistent with strength. The weight of the sitter keeps the charger up. Immediately he has risen, though not till then, the weight of the charger brings it down, opening the bottom of the charge, and forcing the earth it contains downwards into the spout, which conveys it to the bucket. The time this operation takes is amply sufficient to allow the occupant to be well removed from the seat before the earth falls. The spout, figure O, should be only about

fifteen degrees from the perpendicular, and not less than eighteen inches long, in order that the earth may receive sufficient momentum to enable it to fall well towards the front of the bucket, so that it may always crown the top of the heap that may be formed within the bucket. To secure the same object, the lower portion of the spout is curved outwards, so as to assist in throwing the earth to the proper distance.

The first of the desiderata referred to before is secured, partly by the spout being open, so that it cannot choke, but chiefly by the construction of the receiver and charger, the latter of which is the bottom of the former, and cannot move without bringing the earth with it. The slightest dampness always causes earth to "stick" unless great care be taken.

The difficulty is obviated in this machine in three ways, first, by the movable bottom of the receiver, carrying as it does a diamond shaped protuberance upon its surface; secondly, by the steepness of its sides and front; and, thirdly, by a system of "stops" which strike the receiver every time the seat rises and falls. By these means immunity from sticking is secured even although fresh, damp earth be employed.

The second object is gained since the bucket is within easy reach of the Toty's hand, and is at a convenient elevation.

The third point has been discussed when describing the working of the apparatus.

The fourth thing to be desired is obtained by placing the bucket upon a slope, and fitting it into a groove so arranged that the bucket will not enter at all, unless it be in its right place. The slope is such that the upper part of the front of the vessel touches the under side of the seat, so that no accident can happen, while there is no difficulty in the withdrawal. The same arrangement effects the fifth object.

The sixth is very important. It is certain that no scheme can succeed in the long run which shall always demand such care in the preparation of the earth as nothing but constant attention can ensure.

It will be observed that, in this apparatus, all apertures and passages are large enough to permit the free exit of any lumps as far as an inch in diameter, while the action is powerful enough to crush any ordinary lump that might fix itself at the one point where its stay would interfere with the working of the machine.

The apparatus that has been at work in this Institution has only been supplied with earth just as it has been dug by our lads, who water the ground daily where they are about to dig in order to render their work easier.

It will be observed, with regard to the seventh and eighth points, that the parts are so simple, yet so massive, that both construction and repair are extremely easy. For the very same reason it is almost impossible for the works to get out of order.

With regard to the ninth point, I would observe that the Native blacksmith has offered to make any number of sets of the iron work for Rupees 6 per set complete, while the wood-work will not cost more than 5 Rupees, so that the whole

cost of the apparatus will not be more than Rupees 11. Doubtless the cost would be less if made in the most advantageous manner.

I must not omit to mention that the peculiar shape of the receiver, as shown in figure M, is due to the necessity that exists for avoiding friction. If small particles of sand were allowed to work between the sides of the receiver and charger, they would at once rapidly wear out the machine and enormously increase the difficulty of working. To avoid this, an interval of at least the eighth of an inch should be allowed between the charger and receiver, while strips of soft leather should be fastened to the latter so as to overlap the upper surface of the former by three-quarters of an inch as shown in figures A and B. The leather will prevent all but a very little earth from reaching the edge of the charger, while whatever does arrive at that point immediately falls through without causing friction.

Awaiting your instructions, I will cause the model to remain until a decision has been come to with regard to the future application of the apparatus.

(Signed) CHARLES E. GOVER.

Referred to the Department of Public Works.

FORT ST. GEORGE,
17th February 1868.

(Signed) C. S. ELLIOT, Major,
Officiating Deputy Secretary to Government.

No. 51. ORDER THEREON, 3rd March 1868, No. 713.

MILITARY WORKS, No. 4.

Ordered that copies of these papers be furnished to the Superintending Engineer of the 4th Division, who will place himself in communication with the Sanitary Commissioner and the Principal of the Military Male Orphan Asylum, and, in conjunction with those Officers, arrange for the introduction of Mr. Gover's self-acting earth closet into some of the existing latrines in Fort St. George, reporting the result for the information of Government.

(True Extract.)

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

To the Superintending Engineer, 4th Division, with three Plans.

„ Military Department.
„ Sanitary Commissioner.
„ Controller of Public Works Accounts.

Exd. S. T. Augustin.

3
Description of Self Acting Earth Dopper
for use in Dry Conservancy Latrines.

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The difficulty is obviated in this machine in three ways - first, by the moveable bottom of the Receiver, carrying as it does a diamond shaped protuberance upon its surface; secondly, by the steepness of its sides and front; and thirdly, by a system of "stops" which strike the Receiver every time the seat rises and falls. By these means immunity from sticking is secured even although fresh, damp earth be employed. -

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Signed/Charles E. Gover.

(True copy)

J. Murray

Sanitary Commissioner for Madras.

No. 156.

OFFICE OF SANITARY COMMISSIONER,
MADRAS, 11th February 1868.

From,

The Sanitary Commissioner, Madras,

To,

The Military Secretary to Government
Fort St. George.

SIR,

I have the honor to submit for the information of Government a description, with plans and drawings, of a new self-acting earth closet designed by Mr. Gover of the Military Male Afghan Bazaar.

2. The self-acting machines which were introduced in the Men's Division of the Family privies in the Fort, the Government is aware did not answer the object for which they were designed.

3. Colonel Worster in his recent report upon the experiment undertaken in the Fort writes

"In the Men's division of the Family Privy twelve machines were furnished for the delivery of the earth, but from faulty construction of the shoots have been and still are perfectly useless."

4. The Government may consider it desirable to give a trial to Mr. Gover's apparatus, which

Enclosures Four
3 Sheets of drawings
1 Memorandum.

Enclosure in a letter from the
Sanitary Commissioner has been
sent to the Secretary to Government by
Post on 11th Feb 1868 dated 11th
February 1868.

(Description of self-acting earth
closets for use in the Convent
at Bangalore.)

11th Feb 1868

11th Feb 1868

which that gentleman is confident will meet all the requirements of a machine designed for the self application of dry earth.

5. I have carefully watched the 'closet' in action and it certainly appears to work with regularity and efficiency. It is strong, massive but simple in construction, cheap and not likely to fall out of order by rough usage.

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8. Or as a new privy is about to be built at St. Thomas' Mount in connection with the Guard room sanctioned for the Reserve Powder Magazine, a plan of which was yesterday sent for my approval by the Superintending Engineer of the 4th Division, the Government may consider it advisable

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I have the honor to be,

Sir,

Your most obedient servant

J. A. Murray

Sanitary Commissioner for Madras.

7/13
ср 7/13

Under date the 3rd March 1868

Read the following

From The Sanitary Commissioner
Madras. (Here enter No. 156 dated 11th February 1868)

Ordered that copies of the papers be furnished to the Superintending Engineer of the Lth Dⁿ, who will place himself in communication with the Sanitary Commissioner and the Principal of the Military Male Orphan Asylum and, in conjunction with those Officers, arrange for the introduction of Mr. Govers' self acting earth closet into some of the existing latrines in Fort Saint George, reporting the result for the information

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- - 13 Aug - - 294/95
- - 11 July/65 - - 890/177

The Society Commissioners
all address.
of,
The Secretary to Government
Ministry of Parliament,
St. George

Dated 11th

Dr. 12.00 { January 1868

[illegible]

Ms. A. 9. 2. 156
Inscribed

Submit a description, with
plans and drawings, of a new
self acting cable street cleaning
system. One of the industry
made system may be used.

etc. 713-30 March 1968

William DeChamant

Used to the Department of Public Works.

Vol. First Series
July 26. 1868
To Mr. John H. Smith
of New York City.

New York Aug. 19th

Chas

c. 2425 Friday 1680 27th

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P. W. 1868. Department.

Pro. of Govt. for March

No. 713

PROCEEDINGS OF GOVERNMENT.

of Madras

Dated 3rd March 1868

Instructing the
Supg. Engr. of the 1st Division
to arrange for the introduc-
tion of Mr. Gowers self.
a strong earth closet into
some of the latrines in
Fort St. George and
requesting to report the
result.

Ch. 50-51

C. 2125 Encl. 1/68 A-27th