THE CITY WATERWORKS. To the Editor of The World.

Sin: On the 22nd ult., you published a letter of mine addressed to the chairman of the city waterworks, in which I expressed my opinion of the various plans and other papers relative to increasing the pumping ower, and in doing so I avoided personal ity or making any intemperate remarks for I have no personal interest in the matter

whataver, either directly or indirectly, but merely as a citizen of the city that I have, and also several members of my family, made our home, I feel that I have the right The engines were guaranteed to do a duty of 60 and 55 million foot pounds per 100 lbs of oal and you may deduct 20 per cent from the alleged water supply. The correctness of this the waterworks committee may easily terested in this rambling prosy (fusion I may give my estimate of this irate official. to express myself upon any matter connect-

give my estimate of this irate official. I have been poring over this letter of J. V. & Co.., I say Co. beause John always has help, and in this instance his help has mixed up matters that one cannot take up items seriatim which Mr. McMinn avoided when he rewrote his Cleveland report for him, who, bye the bye he should have let correct the spelling, etc., in his letter to Mr. Ald. Evans.

However to begin, he states that I "attempt to discredit an array of facts in re-ference to the 'Martin geared engine'—that I waste away with easy grace, accomplished results and siste boldly that I object, etc. engine, etc. It is hard to conceive the reading of a professional gentleman to be so succerficial, etc." February 4 he writes me:

Will your kindly go and see my plan will your kindly go and see my place for pumps for these works and let me know what you think of them. I should like to see you on this question because I know you have seen the English geared pumps and know their merits." Rather contradicory, ch ? 1 Now, then, first for this array of facts, I

say they are not facts, but that the entire report is a garbled statement, perhaps done in ignorance, with but a modicum of t:u; a

He states that he saw a pumping angine doing a duty of 90,000,000 toot pounds per 100 h of coal, working with a pressure of 60 h steam cut off at id the stroke, running 55 rewaltions 60 lb steam cut off at id the stroke, running 85 revolutions a minute against a pressure varying from 100 to 185 lbs per inch. Ther nemust also have seen a boiler that Nouth vaporate considerably over 20 lbs of water with 1 lb of coal or it cannot be done, add the best coal yet produced 1 lb will not evaporate more than 11 lb of water, also the card he took is really too good. I object to geared engines for the follow-

card he took is really too good. I object to geared engines for the follow-ing reasons: The altitude we have to pump is 216 feet above zero; 10 feet above zero; to this add one fourth for friction, say in all 280 feet = 140 pounds pres-sure -- diameter of proposed pumps 24 = 471.436 area x 140 x 2=120.802 lbs stream of each pair of pumps on stream of each pair of pumps on the rods, or when both pair are at work 120

practical authority and in their specification is they state that 200 feet is the correct thing, so do E. P. Allis & Co., and at the London, Ont., water works the pump's pist as travel 300 feet a minutes. The engines were built by J. H. Killey & Co. of Hamilton and I am of opinion there is no better authority on this continent on thermodynamics or any who can turn out a more perfect engine. J. V. states that the engines at our water-J. V. states that the engines at our water-works do a duty of 45,000.000 foot pounds per 100 lbs of coal, and the daily consump-

tion is 8,000,000 gallons. He cannot prove it is anything of the kind. These statements are made to cover up an inordinate consumption of coal. It will be remembered that some few years back I gave the formula for accertaining the

do so, publicly. Let them have a pressure guage put on at the end of one of the pumps and see themselves the pressure it is working at, then stop the engine, set the pumps at half stroke, take off the cover and try by the force pump to get up the pressure indicated when at work, they will find they can't, but they may flood the engine house with

From January to December 1832 a vac-cuum is recorded of 27.5 secs., from that we must suppose that it was wet and showery weather the whole year round in

showery weather the whole year round in which case the vaccuum is very good, but with bright, bracing weather with the ba-rometer at \$1 5 secs. it would be very bad The condenser should average an equivalent of 11th pressure of steam in the boiler, is such maintained. I do not reproach J. V. for his ignorance of mechanical science or of thermo-dyna-mics, but when he has another attack of "cacethes scribendi" I would advise him to consult some judicious friend.

Since my last communication my atten-tion was called by a gentleman to a letter on Toronto's progress in the Mail by a Mr. Pemberton of Washington, a friend of J, V., where J. V. comes from, and where he served his apprenticeship, and he wickedly insinuated that as this letter and the Eleveland report seemed mutually inthe gentiles. the Cleveland report seemed mutually in-spired, the writer, like Jules Verne, wrote

leasant to take; sure and effectual in dein an imaginary strain, and was never in Toronto at all. J. V. told me Mr. P. had Toronto at all. J. V. told me Mr. P. had written him a very nice letter, and I there-fore thought the suggestion not at all im-probable, if, I say, if J. V. should get his risky project carried out, and Mr. Pember-ton was to pay Toronto a visit in another decade, the chances are that he would not find either the engine or J. V. The testimonials laid before the water-werks committee by J. V. from Messis. Chisholm & Walker of the Cleveland iron and steel works refer to the pumps only, which maybe very good.

which may be very good. I am indebted to the engineer in chief of

the Philadelphia and Chicago waterworks for a large mass of official information, drawings a large mass of official information, drawings of engines, diagrams, statistics, stc., such might be expected from well conducted es-tablishments, also reports from Milwaukee, London, Ont., and Ottawa.

Philadelphia, 1789, Benjamin Franklin bequeathed £100,000 for the erection of wa-terworks. They were beggn in 1799 and the first water was supplied in 1801. By report, dated Feb. 15, 1883, popu-lation 847,170, daily consumption 103.000

That Husband of Mine practical authority and in their specification | call herself an engineeress and add M. E. to Is three times the man be was before he be-gen using "Wells' Health Renewer." \$1. s three times and the second s

Verify any statement, Some one must play the part of a Joseph Some one nut play the part of a Joseph Hume in these matters, and it seems to have fallen to my lct. J. V. has given me a word "boldly" which I will venture to use. I boldly say that the Toronto water-works from their inception have been sub-ject to gross mismanagement and lack of engineering skill of which I will have something to say by and by anoth the blunders north and south of the engine house.

house. In conclusion I hope that whoever the committee may call to their aid in the selection of an engine, they will do their duty dispassionately and without prejudice. CHARLES MARTIN, C. E. Toronto, Oct. 17, 1883.

BRADABLE PARAGRAPHS.

Tried in Toronto -Mrs. Mary Thompson of Toron to reports the re-moval of eight feet of rape-worm by the use of one bottle of Dr. Low's Pleasant Worm Syrup. This medicine is reliable for all kinds of worms that afflict children or adults.

Dr. G. J. Arnold of Boston accider tally shot himself, but the public believed that he intended to commit suicide. Realizing that he could not recover, he sent for a justice of the peace and made a deposition declaring that the shooting was uninter tional. He died in an hour,

What It Has Dene, Mrs. George Simpson, Toronto, says: I have suffered severely with corns and was unable to get relief from treatment of any kind until I was recommended to try Hallo-way's Corn Cure. After applying it for a few days I was enabled to remove the corn, root and branch—no pain whatever, and no inconventence in using it. I can heartily recommend it to all suffering from corns.

Governor Murray of Utah joins in the complaint that the Edmunds anti-mormon-act is a failure. He declares that mormon-ism is stronger and more aggressive than ever. Only about one mormon in five is a polygamist, but altogether they can outvote -Mother Graves' Worm Exterminator

stroying worms. See that you take no other and you will be satisfied. Brewster, attorney general, wants it dis-tinctly understood that he is in Washington now only to do honor to Lord Coleridge. He will leave town as soon as possible and remain away until November, when the denser from general meson will have

danger from malarial poison will hav

- passed. A Great Source of Eyll. -Every farmer will admit that one of the most destructive evils to good crops is that of worms or parasites that prey upon vegetable life; other species of worms infest the human aystem and are productive of much suffering and ill health. Free-man's Worm Powders will effectually rid the system of this trouble, are pleasant to take and contain their own eathartic. FROM THE PRESIDENT

Sitting Bull is disheattened and

BUL U:

Arranged specially for the Toronto World William E. Chandler, J. A. J. Creswell, Zschariah Chandler, John Sherman and William Walter Phelps are among Wash-ington's delinquent tax payers. RAILWAYS. GRAND TRUNK. Union Station foot of York or Simcoe Streate Rast. Montral Day Express.... Lightning Express..... "Night Express Kram's Fluid Lightning

Is the only instantaneous relief for neural-gia, headache, toothache, etc. Rubbing a few drops briskly is all that is needed. No taking nauseous medicines for weeks, but one misuice's application removes all pain and will prove the great value of Kram's Fluid Lightning. Twenty-five cents per bottle at F. T. Burgess' drug store, 364 King atreet east. King street east.

The steam laundry at Corpus Christi

Tex., has been forced to suspend. The com-petition of the Mexican washerwomen was too much for it.

Cantion. —We advise all who are afflicted with a cough or cold to beware of opiates and all medicines that imother and check a cough su denly, as serious re-suits surely follow. Hagyard's Pectoral Balsam bosens and breaks up coughs and colds in a safe and Static ____ There is a man in New York who manu

factures diamonds for actresses to lose. They are sold at so much a quart. Philadelphia has a preacher who believes in popular texts. His latest was "Baseball from a theological standpoint."

Catarth of the Bladder. Stinging irritation, ioflammation, all kid-ney and urinary complaints, cured by "Buchu paiba." \$1.

General Sherman has made a study of the character of Cassius, and would like to try his luck on the stage. S. Bartlett of Waco, Tex., has becom

hopelessly insane on religious matters by reading Talmage's sermons.

-Many people suffer from distressing attacks of sick headache, nauses, and other billous troubles, who might easily be cured by Burdock Blood Bitters. It cured Lottie Howard, of Buffalo, N. Y., of this complaint and she praises it highly. A Common Annoyance

A mustang pony has been trained to de-liver newspapers at Pleasant Plains, Staten

An Eastern scientist has discovered that ladies faint not from tight lacing, but from tight hair dressing.

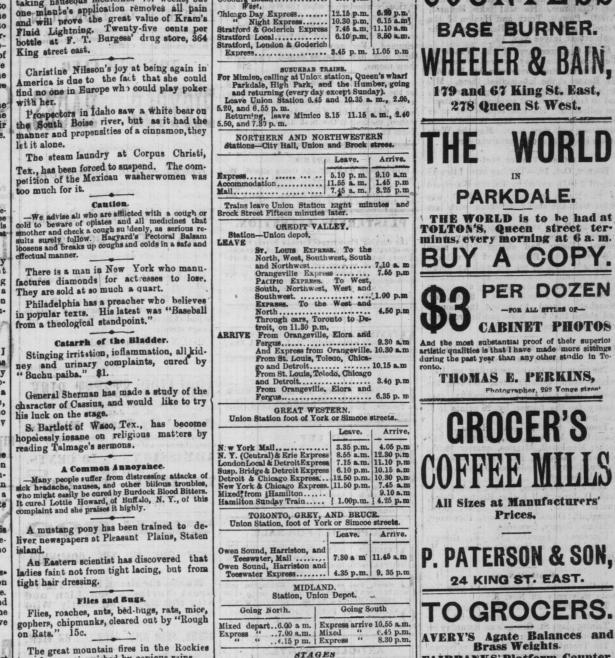
Flies and Bugs. Flies, roaches, ants, bèd-bugs, rats, mice, gophers, chipmunks, cleared out by "Rough on Rats." 15c.

The great mountain fires in the Rockies have been extinguished by copious rains Holman of Indiana is said to have as kindly a regard for a cent as Bill English.

OF BAYLOR UNIVERSITY.

Independence, Texas, Sept. 26, 1882.

.20 p.m.



TRAVELLERS' GUIDE.

Leave. | Arrive.

6.52 a.m. 11.07 a.m. 8.07 a.m.

7.27 p.m. 12.37 p.m. 6.07 p.m.

9.22 a m 6.17 p.m 9.03 a.m

CROCER'S All Sizes at Manufacturers' P. PATERSON & SON,

24 KING ST. EAST. TO GROCERS. AVERY'S Agate Balances and Brass Weights FAIRBANKS' Platform, Counter, Even Balance, EGLINGTON STAGE.

Leaves Bay Horse hotel, Yonge street, 11.10 a.m 30 p.m., 5 p.m. and 6.20 p.m. Arrives 8.45, 9.55 a.m., 2.30 and 6 p.m THORNHILL STAGE. Leaves Bay Horse hotel, Yonge street, 3.30 p.m. Arrives 10.30 a.m. Mail stage leaves Clyde hotel, King street east .20 p.m.

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Can be kept quiet and comfortable by wearing around its little neek one of NORMAN'S ELECTRIC TEETHING NECKLACES. They are better than all the soothing syrup in christendom. They give no shocks and are comfortable. Price 50 cents. Sold by all druggists. Ask for them and take no other. CRYING BABIES.

FEVER AND AGUE

Do not throw money sway on wholesale remedies when NORMAN'S ELECTRIC BELTS will cure you. Use one and you will find immediate benefit. Every one is guaranteed genuine. Circular and consulta-tion free. A. Norman, 4 Queen street east, Toroato.

BABY

Babes cry because they suffer. Their little gum-are inflamed; and their bodies are more or less fe-verish. If you will tie around their necks one of NORMAN'S ELECTRIC TEETHING NECKLACES you will see a wonderful change for the better; their suffering will case and their general health im-prove. Ask for Norman's, take no other, and you will be pleased. Price 50c. CONSTIPATION

is entirely overcome by using NORMAN'S ELEC-TRIC BELTS. No injury can result, and they are pleasant to wear. Try one sud be cured. Guaran-teed genuine. Circular and colsultation free. A. Norman, 4 Queen street cast, Toronto. BILIOUSNESS

And all disorders of the stomach and liver are cor-rected by using NORMAN'S ELECTRIO BELTS. Try one and be convinced. Guaranteed genuine. Circulars and consultation free. A. Norman 4 Queen street east, Toronto.

FEMALE TROUBLES. Ladies are benefitted more by NORMAN'S ELEC RIC BELTS than by all the science of medicine hey are comfortable and durable. Guaranteed gen ine. Circular and consultation free. A. Norman Queen street east, Toronto.

LUMBAGO.

Those who are suffering from this disease will ind a friend in NORMAN'S ELECT: 10 BKLTS then all other remedies fail. Ask your druggist for . Guaranced genuine. Circular and consultation ree. A. Norman, 4 Queen street east, Toronto.

WEAKNESS

And lassitude yield to the influence of NORMAN S ELECTRIC BELT when all other remedies fail. Try one and you will suffer no longer. Every belt guar-anteed. Circular and consultation free. A Nor-man, 4 Queen street east, Toronto. **CABINET PHOTOS**

THOMAS E. PERKINS, DR. FELIX LE BRUN'S Photographer, 293 Yonge stre

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A Guaranteed Cure fo Gonorrhies and Glest. Sale pleasant and reliable. No bad effects from its use. Does not interfere with business or dust. Prior \$2 per box or 8 boxes for 85. Written guarantees issued by every duly authorized agent to refund the money if three boxes fail to cure. Sent, postage prepaid, on receipt of price. DR. FELIX LE BRUN & CO., 58 South Halsted Street, Chicago, Ill., Sole Proprietors. Authorized agent for Toronto, F. T. Burgess, Druggist, 364 King Street East.



MJ Andrews, M.D.



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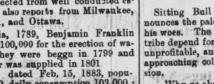
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St. West.

B. Steplenson of the Bound Methodist Ch ay in regard to new treatment

Ont., Canada. rch 17, 1883. won & Son : Dear la 13th instant to limost too good to cured of catarrh, sim I have had no ase and never fells I have tried so-starrh, suffered so-starrh, suffered so-starrh, sthat is realize that I am

mine was a very as aggravated and the throat as well es, and I thought three treatments,

the threatestiments, us the two sent ankful that I was and by you. The two sent and I shall glady remedy so some of the sent sent many themks, B. STRPSERSON.

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al has hair more

tong on the rods transmitted by the gear to "Ae engine shaft, the immense friction on the gear and counter shaft is a considerable the gear and counter shaft is a considerable loss of power, and the risk of breaking is very great, no such feat as this has ever yet been attempted in any country. J. V. carefully avoids giving the diameter of the pumps at Cleveland. The contrast direct action. The loss of friction by gear is saved as also the wear and tear and risk of breakage. In this case pumps of 1.8 in diameter are equals 254.469 x140x4 equals 71 tons, and the column of water thrown by each engine is the same. The largest geared engines a yet set t work is 4,000,000 imperial gallons in 24 henry and the colum of is England is at Richmond, Surrey, where I expect to find some special feature. I shall hear from there in due course, as also from Fowler & Co, of Leeds, whose works

 hours, and the only waterworks using such ia England is at Richmond, Surrey, where I expect to find some special feature. I shall hear from there in due course, as also from Fowler & Co. of Leeds, whose works I am well acquainted with, and several others.
 I must confess I pay but lit le attontion to my Engineer just now for though I have been largely engaged in engine building I have previously, solely from my knowledge and experience.
 I hours of the stroke and 2 double action pumps 28 sec. dia by 8 ft. stroke, the other 70 stroke ican patent medicine man, has \$5,000,000 in her own right and is strikingly beautiful, of course. She is now in Paris, and has had many offers of marriage from counts, dukes and other beggars.

so sec. dia by 8 ft. stroke, the other 70 sec. or Oversh.t wheels, will John Venabes tell ne how they crist be driven except by gear. The loss of power is of no consequence; it does r... to cost anything, and the risk of breadowns is provided for nusly by ceing duplicated where any delay is of im-portance. The blast furnace I mentioned, which J. V. so enceringly alludes to, was built by the Vorton Iron company near Stockton-on-ses, from designs by Mr. Player, who, on with the state. The state in the state of the state. The state is provided for nusly by completion, moved to the state. The state is provided for subly by the Vorton Iron company near Stockton-on-tes, from designs by Mr. Player, who, on the state. The state is provided to the state of the

ortance.
The blast furnace I mentioned, which J.
V. so enceringly alludes to, was built by the Norton Iron company near Stockton-on Tees, from designs by Mr. Playter, who, on Tees, from designs by Mr. Playter, who, on the above are specified to have steel gear 18 inches wide How would the principle work on a lean ore 33 per cent from the Eston mines near Middlesboro, with a 3½ Ib. blast. In 1869 aucher furnace of the same dimensions, 27 min. 6 sec. dia. of numerous at the capital.

Laton mines near Middlesboro, with a 32 ib. blast. In 1869 aucther furnace of the same dimensions, 27 min. 6 sec. dia. of boshes and 110 feet high, was built con-tiguous to it, that the same hoist might serve both. During the past twenty years I do not know of any furnaces being built of less than 20 to 23 feet diameter of both. "In the good old days of yore" they were much smaller as shown from records I have as far back as 1610, which is a tew years before they built. I am sware there are geared blast engines, but only of small dimensions; there was one in use where I was articled in 1834 As regards my remarks on steam conden sation and receivers between the cytinders succession.

but only of small dimension of the compound engines, but a dimension of the compound engines, but it do not much admire them. We have proof not far off that John Venables is the ignorance, not I. In Mr. Robbs report of this examination of the compound engines of bis examination of the compound engines. of his examination of the compound engines t London, Ont., waterworks. On Nov.

The principle of construction of a pump-ing engine should be direct action-as great t London, Ont., waterworker 3, 1882, there is this paragraph: "The cranks being at right angles, there is a 'steam receiver' between the cylinders" I said that the best of the duties given at various works in J. V.'s Cleveland report at various works in J. V.'s Cleveland report at various go they are because the I said that the best of the duties given at various works in J. V.'s Cleveland report the parts of ingress and egress, especially the parts of ingress and egress, especially the latter, should rather exceed the area of the bait of the parts of ingress and egress, especially the latter, should rather exceed the area of the bait of the parts of ingress and egress, especially the latter, should rather exceed the area of the bait of the parts of ingress and egress, especially the latter, should rather exceed the area of the bait of the parts of ingress and egress, especially the latter, should rather exceed the area of the bait of the parts of ingress and egress, especially the latter, should rather exceed the area of the part exceed the area of the part of the parts of

to this subject. It is now upwards of 100 years since Boulton & Watt, now James Watt & Ca, fixed their first ergines to pump out the built more pumping engines than any other tirm in the world, can there be a higher when the the subject of t

reasons : -

3d. As a dressing. It has given entire satisfaction in every nstance.

AVER'S HAIR VIGOR is entirely free from uncleanly, dangerous, or injurious substances. It prevents the hair from turning gray, restores gray hair to its original color prevents baldness, preserves the hair and promotes its growth, cures dandruff and all diseases of the hair and scalp, and is, at the same time, a very superior and desirable dressing. PREPARED BY

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-If you would have appetite, flesh, color,

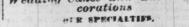
strength and vigor take Ayer's Sarsaparilla, which will confer them upon you in rapid Wm. Brinkerhoff insisted on sitting Geo. H. Cook's lap in a crowed New York 'bus. Cook objected, and Brinkerhoff whitped him. One hundred dollars and costs for Brinkerhoff.

Do Not Be Duped. -A recently advertised and highly puffed remedy for dealness has already been exposed as an unmiti-gated fraud. Not so with Hagyard's Yellow Oil; none name it but to praise. John Clark, of Mill-bridge testifies that it cured him of dealness.

Charley Allen of Socorro, N.M., has burro that recently fell over a precipice, coll-ing 1200 feet head over heels and escaped with only a few slits in his hide.

The Greatest Healing Compound Is a preparation of carbolic acid, vaseline and cerate called McGregor & Parke's Car-





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