

Shewington 21st May 1857

My Dear Sir

When I wrote on the 12th Inst, I hoped that the result of bolting down the upright & diagonal wood Cylinder Shaft supporters-would have produced a more favourable result; but on again trying over yesterday, I regret today it was not so. True, all shake or vibration in the woodwork for a yard or more upwards-from the floor has disappeared, but the vibration towards the top of the supporters, & between them where the Double Pulley revolves on the Shaft, remains just the same; indeed if anything worse; for now the hanging Stone perceptibly trembles-which it did not at the former trial. Old Baxter seems of my opinion, that altho' the pull is now directly upwards,-yet as it is only from one end of the Cylinder Shaft, & with a long working Strap, and the Shaft, ^{itself} 13 feet in length- that the least inequality in the Strap-or even an increase or decrease of speed in the engine, sets the upper part of the supporters (tho' which the shaft runs)-in motion; their upper ends not being sufficiently, nor equally stay'd, they having no diagonal timbers on the side towards the wall; as the bulge of the two Vats

LETTER 1851 CONCERNING VIBRATIONS OF MILL SHAFT

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Shevington 21st May 1851

My Dear Sir,

When I wrote on the 12th Inst, I hoped that the result of bolting down the upright & diagonal wood Cylinder Shaft supporters would have produced a more favorable result; but on again trying over yesterday, I regret to say it was not so. True, all shake or vibration in the woodwork for a yard or more upwards from the floor has disappeared, but the vibration towards the top of the supporters, & between them where the double Pully revolves on the Shaft, remains just the same; indeed if anything worse; for now the hanging Stone perceptibly trembles – which it did not at the former trials. Old **Baxter** – seems of my opinion, that altho' the pull is now directly upwards, – yet as it is only from one end of the Cylinder Shaft, & with a long working Strap, and the Shaft itself 13 feet in length – that the least inequality in the Strap – or even increase or decrease of Speed in the Engine, sets the Upper part of the Supporters (thro' which the Shaft runs) – in motion; their upper ends not being sufficiently, nor equally stay'd, they having no diagonal timbers on the side towards the wall; as the bulge of the two vats

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prevented such being put up, and their support on that side is confined to two long cross pieces, resting against the Cooperage wall. Again there is only one Screw Ball – fastening the top of the diagonal timbers to the Uprights, & that does not penetrate into the end of end of the cross beam from the wall as it should do, but is made tight by a nut above it, and I remember telling Miller at the time that I feared being deficient in Strength there; but he thought otherwise. As I find it difficult to describe what I want to say, as clearly as I wish – I have attempted a rough Sketch, & between the two, I hope You will be able to glean my meaning. We now contemplate substituting for the present slender cross pieces from the wall, 2 stronger pieces of timber, resting upon two stones (Gill is letting into) & projecting 6 Inches each from the wall, thro' which they will be bolted & nutted underneath; - these pieces of timber will be morticed on to the tops of the uprights No 1 & 2 [*note in margin: as shown by the dotted Line in Sketch*] & pass onwards about 4 feet further – so as to let their ends into a Cross timber – tightly braced at each end onto the 2 adjoining Iron Pillars, supporting the cross beams of the building; and

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if deemed advisable this can be further stayed against the pedestal timber on which the Washing Vat opposite rests; in line with the Shaft pully, & equidistant between the two uprights.

[*illegible*] foreman who called here yesterday – has made me nervous in what I am about, by stating – that the main fault, & one he thinks we can never cure, – rests in the length of the Cylinder Shaft itself, which is too long (however strong it may be) without any center bearing, to permit of its being driven at the Speed we require, without producing powerful vibration; as he says, practice in Cotton Spinning factories has proved – that a Shaft longer than 9 feet – will not run steady at any speed; and ours is “13 feet long from bearing to bearing”; still, I will hope he has frightened me without due cause – if we can only sufficiently strengthen the upper post of the Supporters, between which the Pullys revolve, as well as we have done the other end of the Shaft between Vats 2 & 3.

The Kiln No 1. stands the heat admirably, & turns out very good Lime, with little or no [*illegible*] of air being admitted at the pull out door, except

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just after a fresh charge is put into the Kiln, but leaving the charge hole at the top constantly open. On drawing the charges possibly abo^t 1/8 proves insufficiently burnt, & is again returned into the furnace – the unburnt stone comes from the bottom of the Kiln, & putting in a bottom layer of coke – produced no adequate effect. I hope the contents of the Crystal Palace affords You ample occupation & amusement & am

My Dear Sir

Ever faithfully Yours

John [*illegible*]

To Cha^s Scarisbrick Esq

To Charles Scarisbrick Esq

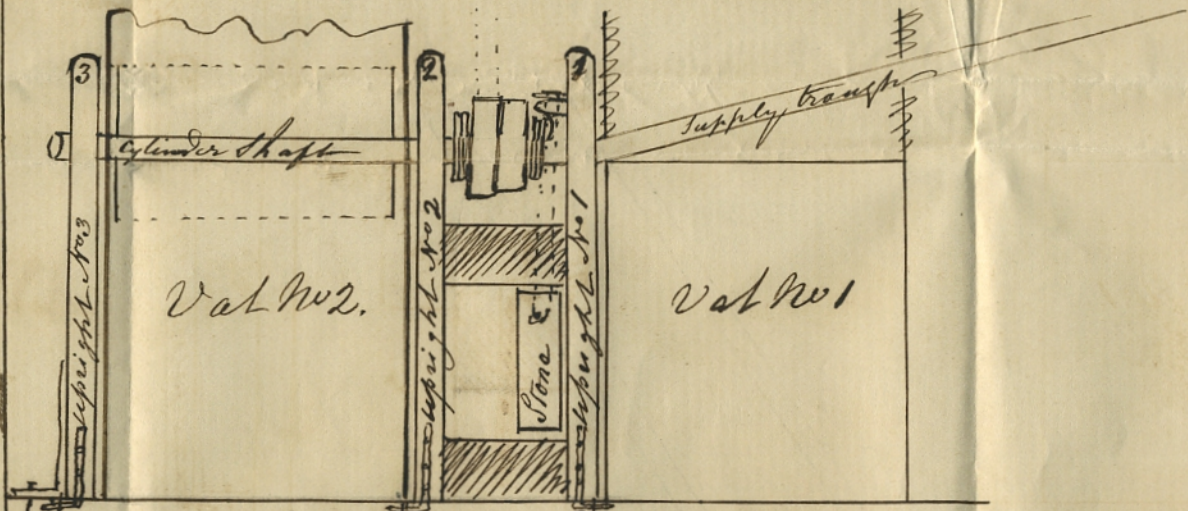
Suffolk Street

Pall Mall East

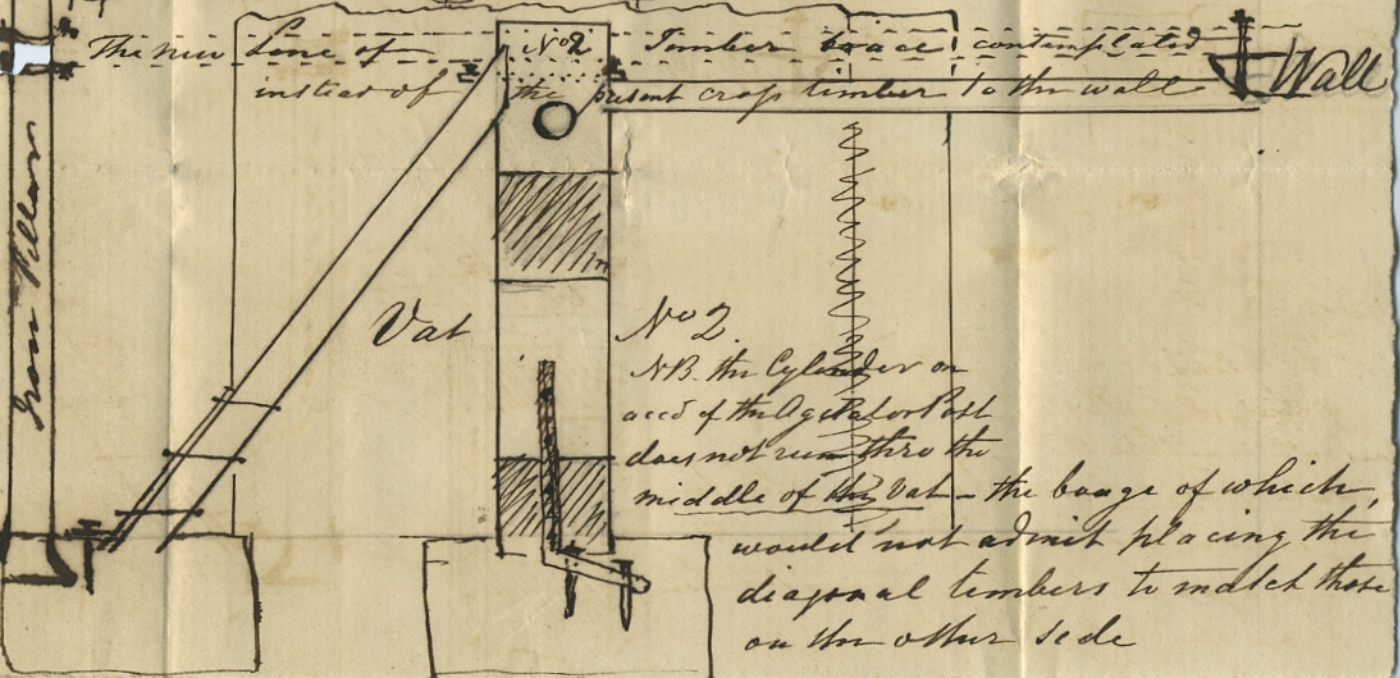
London

N^o 11.

[*Seperate sheet with sketch included*]



The new Line of indicated of the putout cross timber to the wall Wall



No. 2.
 N.B. the Cylinder on
 acct of the upright post
 does not run thro the
 middle of the Vat - the barge of which
 would not admit placing the
 diagonal timbers to match those
 on the other side