



## LXI. Description of a mechanical substitute for leeches, in bleeding

Mr. J. Whitford

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**LXI. Description of a mechanical Substitute for Leeches, in Bleeding. By Mr. J. WHITFORD, of St. Bartholomew's Hospital\*.**

*To the Society for the Encouragement of Arts, Manufactures, and Commerce.*

GENTLEMEN,—I HAVE taken the liberty of offering myself a second time to your notice, and to lay before you a small apparatus I have lately invented, as a substitute for leeches : a desideratum particularly to be cherished, when it is recollected that in severe frosts leeches cannot always be procured, and very often at too great a price for the afflicted necessitous to obtain. My invention consists of a small spring instrument, with three triangular-pointed lancets, which can be regulated to any degree of depth that may be required; the rest of the apparatus is a small exhausting syringe, with three glasses, of different sizes, to be applied as the nature of the case may require; as frequent complaints have been made by medical men, who were in the habit of using the exhausting syringe and glasses for cupping, that after they had applied the glass, in the usual way, with the pump, if they withdrew the syringe from the glass for the purpose of applying others, the air would frequently get under the valve and cause the glass to fall off; and I feel happy in stating, that I have completely succeeded in the improvement I have made on the cup of the glass, which will prevent the possibility of that occurrence. Notwithstanding the many alterations I have been making on the apparatus for the last four years, I found that I was in the exact situation, as to the mode of applying the glasses, as gentlemen who were in the habit of using the exhausting syringe and glasses for cupping. I could but apply one glass at a time without the danger, if I removed the syringe, of the glass falling off, as it most frequently happens you have occasion to apply two or more leeches. I found it therefore necessary to make a further improvement on the instrument, that you might apply as many glasses at a time as you might think proper, which is done as follows:—I made a small stop-cock, on the cap of the glass, under the valve, which when the glass and syringe is used in drawing up the skin, by turning the stop-cock, makes it completely airtight, so that it is impossible for the glasses to fall off, until you may think proper to remove them. I have the pleasure of presenting several certificates from some of the most respectable of the faculty, who have obligingly given me their opinion; and if you, gentlemen, should require further explanation respecting my

\* From *Transactions of the Society for the Encouragement of Arts, &c.* for 1813.—The Society's lesser silver medal was voted for this communication.  
artificial

artificial leeches, I will with pleasure attend your summons ; and remain,

Your most obedient, grateful,  
and very respectful servant,

St. Bartholomew's Hospital,  
Nov. 18, 1812.

J. WHITFORD.

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*Certificates.*

SIR,—I HAVE had frequent opportunities of using your leech-instrument, and am happy to inform you that it has answered far beyond my expectation. I have found it particularly useful in many cases where the indigent class of people have stood in need of leeches, but from the high price could not procure them. I have also found it very convenient in two cases, where the patients had a great aversion even to the sight of the leech, consequently the instrument proved to them its most beneficial effects.

I am, sir, yours, &c.

W. H. ELLIOTT,

City Dispensary, Oct. 20, 1812.

Apothecary to the City Dispensary.

To Mr. J. Whitford, &c. &c. &c.

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SIR,—HAVING attentively examined the instrument you put into my hands, as a substitute for leeches, I am of opinion that it will afford a valuable means of supplying any deficiency of that very useful reptile, which, from its dearth and scarcity, cannot be employed in many cases.

I am, sir,

Your very obedient servant,

Finsbury Dispensary, St. John-Street,  
Nov. 13, 1813.

MICHAEL BARTLETT.

To Mr. J. Whitford, &c. &c. &c.

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SIR,—I HAVE made use of your artificial leech, and, from my experience, I think it will prove of great utility. In cases where leeches are necessary I think it will answer every purpose, and in many instances will be preferable. The operation can be performed much cleaner, with considerably less fatigue to the patient, and the quantity of blood taken away can be ascertained with more accuracy than if drawn by the natural leech. The extravagant price of leeches often puts it out of the power of the lower class of people to procure them ; and frequently, when procured, they will be found sickly, and their power of action so languid as to disappoint the hopes of the patient, and the expectation of the practitioner ; a disappointment which is prevented by the artificial leech : and where prompt and immediate bleeding by leeches

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leeches is necessary, the possession of the artificial leech appears to me obvious and very desirable.

I am, &c.

Aldersgate-street. Nov. 18, 1812.

J. DEARING.

To Mr. J. Whitford, &c. &c. &c.

WE are of opinion that the instrument produced by Mr. Whitford cannot supersede the use of leeches, but that it may occasionally prove a useful substitute for them.

(Signed)

JOHN PEARSON,  
JAMES WILSON,  
THOMAS FAMS DEN,  
J. C. CARPUE,  
THOMAS MAINWARING,  
S. COOPER,  
HENRY EARLE.

November 24, 1812.

I HAVE used Mr. Whitford's leech-instrument, and approve the same; I consider it a very ingenious contrivance, and that it will become an excellent substitute for leeches.

Charter-House-Square, Nov. 24, 1812.

J. W. SPRY, Surgeon.

To C. Taylor, M.D. Sec.

SIR,—I HAVE great pleasure in being enabled to say, that whenever I have used your artificial leech, it has fully answered my expectations; and I cannot help thinking, that during the winter season, when leeches are so exceedingly expensive, and when generally they are more wanted, it will prove a valuable substitute. The addition of the stop-cock, as it will preserve a more *perfect vacuum*, will enhance its value.

I am, &c.

105, St. John-Street.

JOHN BARNETT, Surgeon.

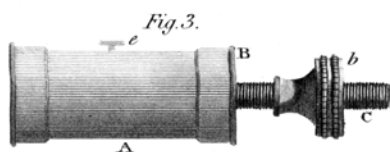
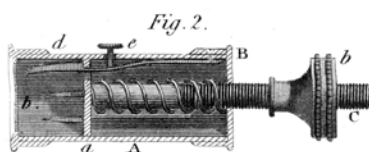
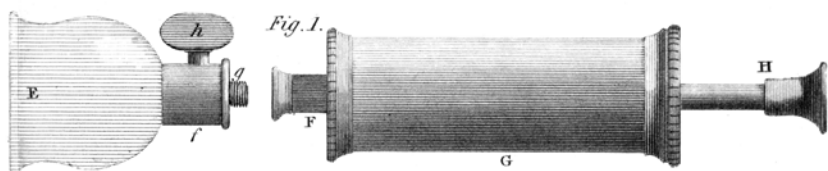
To Mr. Whitford, &c. &c. &c.

*Reference to the Engraving of Mr. J. WHITFORD's Mechanical Substitute for Leeches. Plate IV. figs. 1, 2, 3.*

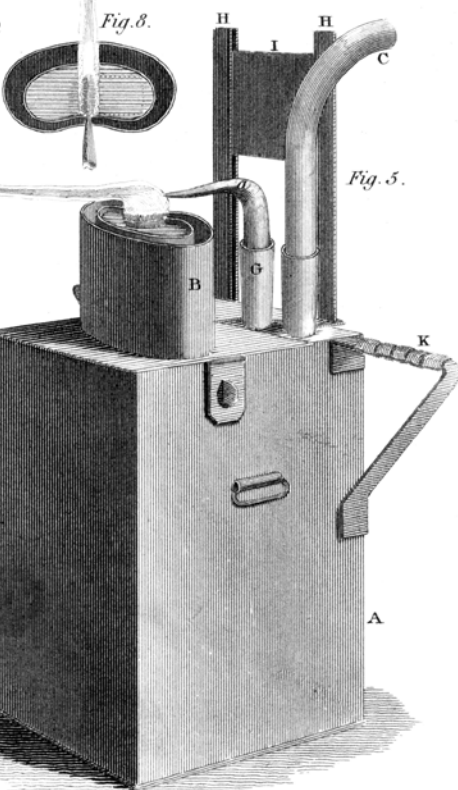
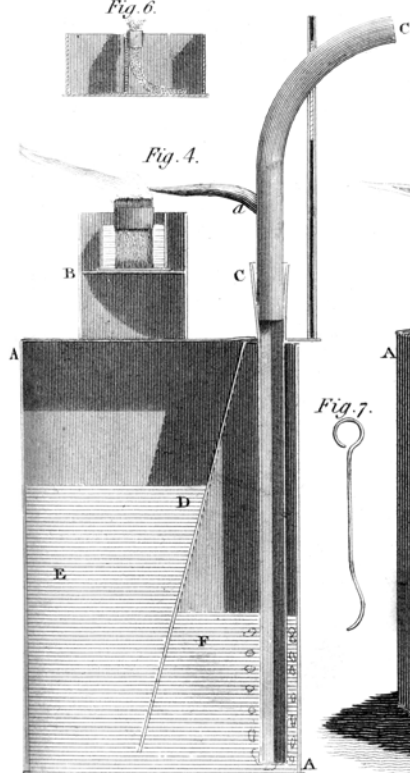
THIS instrument operates nearly in the same manner as the scarificator and cupping-glass, but in a more delicate way; the piercing instrument being provided with sharp points, instead of lancets, so as to make three very small punctures in the skin (instead of incisions, as by the scarificator); upon these a small glass cup is applied, and a syringe used to exhaust the air from it, and increase the flow of the blood.

Figs. 2 and 3 show the form of the instrument, called the leech;

*M.J. Whitford's Mechanical Substitute for Leeches.*



*M<sup>r</sup>. John Tilley's Hydro Pneumatic Blow-pipe.*



leech; the former being a section through the middle of it, and the latter showing its outside; it is a brass tube A, having a cover B at one end, through which a screw C passes; this screw has a circular piece of brass *a* fixed upon it, which slides in the tube, and carries the three piercers *b*; a spiral spring surrounds the screw, and presses upon the piece *a*, so as to force it always towards the open end of the tube; but a milled nut *b*, upon the screw C, prevents it going too far; *d* is a small spring catch, fixed within side the tube, and having a button *e* proceeding from it, through the side of the tube; the catch passes through a small square hole in the piece *a*, and has a kind of hook formed upon it, of a similar shape to the hook of a door latch; this, when the screw C is drawn back, by pulling its nut *b*, retains it as shown in the figure, the spring being fully bent; and in this state the open end of the tube is to be applied upon the part where the bleeding is to be performed; then, by pressing upon the head of the button *e*, the spring catch *d* is discharged, and the spring throws the piece *a* forward, causing the points *b* to enter the skin, and make the punctures, the depth of which is regulated at pleasure by the nut *b*; which being screwed along the screw C, allows the points to protrude as far beyond the end of the tube as the operator's judgement directs, when the spring is discharged.

Fig. 1. is the syringe and cupping-glass, to be applied after this operation; E is a small glass bell, of which there are several of different sizes provided; it has a brass cap *f*, terminating in a screw *g*, by which it is attached to the end F of the syringe G; this exhausts the air, when the handle H is drawn out in the usual manner; a small valve of bladder being tied over the aperture in the end of the screw *g*, to prevent the re-entrance of the air when the handle of the syringe is returned; *h* is a small stop-cock, to shut up the passage when the exhaustion is complete, as the valve alone would sometimes be insufficient to prevent the leakage of the air when the syringe is unscrewed.

LXII. *Hints to Cultivators of the Sugar Cane.* By C. BLACKFORD, Esq. of Jamaica\*.

THE tenacity of cane liquor, which resisted the power of white lime to decompose and neutralise its substance, having been suggested to me, and in some instances confirmed by my own observation, it has occasioned me much painful solicitude to divine why the effect should not be the same in all cases. I was well aware, that the richer the liquor the more temper lime was necessary; the weaker juices more readily deposited its more

\* From the Jamaica Royal Gazette of November 1813.