Specification of Alanson Abbé : preventing and alleviating spinal disorders.

Contributors

Abbé, Alanson.

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SPECIFICATION

OF

ALANSON ABBÉ.

PREVENTING AND ALLEVIATING SPINAL DISORDERS.

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Preventing and Alleviating Spinal Disorders.

ABBÉ'S SPECIFICATION.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, ALANSON ABBÉ, of Great Russell Street, Bloomsbury, in the County of Middlesex, Doctor of Medicine, send greeting.

WHEREAS Her present most Excellent Majesty Queen Victoria, by Her Royal Letters Patent under the Great Seal of Great Britain, bearing date at Westminster, the Fourth day of August, in the ninth year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the said Alanson Abbé, Her especial license, full power, sole privilege and authority, that I, the said Alanson Abbé, my executors, administrators, and assigns, and such others as I, the said Alanson Abbe, my executors, administrators, or assigns, should at any time agree with, and no others, from time to time and at all times during the term of years therein mentioned, should and lawfully might make, use, exercise, and vend, within England and Wales and the Town of Berwick-upon-Tweed, and in all Her Majesty's Colonies and Plantations abroad, and in the Islands of Jersey, Guernsey, Alderney, Sark, and Man, my Invention of "IMPROVEMENTS IN APPARATUS FOR PREVENTING AND ALLEVIATING SPINAL DISORDERS;" in which said Letters Patent is contained a proviso obliging me, the said Alanson Abbé, by an instrument in writing under my hand and seal, particularly to describe and ascertain the nature of my said Invention, and in what manner the same is to be performed, and to cause the same to be inrolled in Her Majesty's High Court of Chancery within six calendar months next and immediately after

the date of the said in part recited Letters Patent, as in and by the same, reference being thereunto had, will more fully and at large appear.

NOW KNOW YE, that in compliance with the said proviso, I, the said Alanson Abbé, do hereby declare that the nature of my said Invention, and the manner in which the same is to be performed, is particularly described and ascertained in and by the following description thereof, reference being had to the Drawings hereunto annexed, and to the letters and figures marked thereon (that is to say):—

The object of the present Invention is the construction of an instrument or apparatus which when applied to the body will very considerably assist in supporting the same, and thereby prevent fatigue, and it will also prevent the spine of persons of weakly constitution from becoming distorted by over fatigue or other causes, and it may also be employed for correcting or alleviating such distortions when from inattention or other causes they may be found to exist. Various instruments or apparatus have from time to time been invented for the purpose of curing spinal affections, but as far as I have seen these instruments have been constructed on erroneous principles, and therefore, as far as I am aware, have failed in accomplishing the desired effect. The plans hitherto adopted to cure spinal affections consist in casing the body in a nearly rigid frame, and in supporting that part of the body which is weak. Now it is very well known that if the muscles and tendons of the body are not allowed to act that they will very soon lose their muscular power, and will fail to act and maintain the body, or the different parts of the body, in their proper and upright positions, and thereby the very object which it is sought to effect, namely, the straightening and strengthening these parts, is defeated, and the contrary result will take place immediately the artificial supports are removed. In constructing my improved instruments I have always borne these facts in mind, and while supporting and endeavouring to straighten the distorted parts, I have at the same time adopted some plan for strengthening these parts by calling into action the muscles connected therewith. By the peculiar construction of my improved apparatus I am enabled to effect these objects without much interfering with the freedom of action of the wearer, so that a person who is not in any way distorted in figure may, without inconvenience, wear one of these instruments, which will be found a very great relief and assistance to any one whose avocations require that they should remain standing for any considerable length of time, every facility being given for the natural movements of the body, such as bending backwards and forwards, or sideways, or moving the arms in any direction; and as it will always require some slight degree of muscular exertion to

overcome the elasticity of the various parts of the apparatus, it follows that whenever any movement is made the apparatus will always tend to bring the parts into a quiescent position again, and this continual action of the muscles against the elastic power of the instrument will tend greatly to strengthen them without at all fatigning the wearer when engaged in ordinary avocations. My improved instrument consists of two or more distinct elastic framings made of metal, wood, whalebone, or other analogous elastic material, but I prefer metal, for various reasons, such as strength, lightness, and durability of these framings. When two only are employed, the upper one is made to embrace the body or back, and the lower one the hips, and they are connected together by a joint which allows the body to bend over on either side. These framings are further connected together by means of elastic webbing, or any other convenient and suitable elastic material, on either side of the joint, so as to maintain the framing and the body in an upright position, or tend to do so. But in order that my Invention may be fully understood, I have shewn in the accompanying Drawings various views of stays or corslets for the back, constructed on my improved plan, and intended both for the use of persons having distorted spines as well as those who require some vertical support, but whose spines are not distorted.

Fig. 1 represents a view of the outer side of the instrument or apparatus, and Fig. 2 a similar view of the inner side, or that which goes against the body. Fig. 3 represents a view of the skeleton frame before any of the covering is added, and which is composed of two distinct framings, A and B, connected together by means of a tongue *b*, that is jointed to the upper frame at *a*. This tongue *b* slides into a socket made in the lower frame at *c*, and is firmly held therein by means of a pin or stud fixed on the inner side of the spring *d*, which, when it is required to detach the two framings, may be pushed on one side, as it turns on a stud below. The pin at the upper end of the spring enters into a corresponding hole made in the tongue piece *b* for that purpose, and thereby firmly retains it in its place until the pin is removed by pushing the spring *d* on one side, as above mentioned. The joint *a* allows the upper frame to be moved over on either side, according to the inclination of the body; but as the two framings are further connected together by the elastic webbing, which may be made of any strength, the tendency of the elastic webbing *e*, *e*, will always be to pull the framing back again into its proper position, when forcibly stretched over or extended by a movement of the body It will therefore be understood that if the spine is distorted so as to force the framing out of an upright position, the elastic webbing will be constantly exerting a feeble force to draw the spine into its proper position. This con-

stantly acting force will, though but of slight power, have much greater and a more beneficial effect than a greater power acting periodically or from time to time. The apparatus is of course applied to the back, the middle straight bar, with its joint *a*, representing the vertebræ, and is made of thin steel, in order to give a proper degree of elasticity, so as to allow the body to bend forward with ease. The front part of the instrument is furnished with straps or bands made of some elastic material, and which are made to embrace the chest and abdomen, and are furnished with holes and laces so as to admit of their being laced up in order to make the corslet fit or attach itself closely to the figure behind. This object is further effected by means of the elastic arm straps *g*, *g*, which allow the arms to be brought forward without inconvenience or restraint, and always keep the corslet in close contact with the back. The framing may be covered over with a platted fabric, as seen in the Figures, or any other suitable fabric; but care must be taken to fix the fabric firmly to the centre bar, in order to preserve its form, and prevent it from altering. This object in the present instance is effected by making a long slit down the centre bar, as seen in Fig. 3, and fastening the platted fabric through this slit, or it may be secured by means of rivets or other fastenings, which will prevent it from getting out of shape. The elastic webbing *e*, *e*, is not connected directly to the lower or hip framing B, but to a number of straps *h*, *h*, *h*, *h*, furnished with hooks, as seen in Figs. 1 and 2. By means of these straps, which pass through loops *i*, *i*, *i*, *i*, at the lower end and inside the framing B, as seen in Fig. 2, the tension of the elastic webbing may be increased or diminished on either side, by merely hooking the end thereof into the hooks *j*, *j*, of the lower framing, higher up or lower down. I would here observe, that as the spine becomes gradually straightened and made to assume a proper position by means of the improved instrument, it will become necessary from time to time to alter the length of the apparatus. This is provided for by the tongue piece *b*, which may be slidden in or drawn out of its socket in the lower framing, and firmly retained at any particular height by means of the stud in the spring piece *d*. It will now be understood that if the body of a patient bends over to the right of the centre of gravity, the straps *h*, *h*, on the opposite side, must be hooked up a hole or two, so as to increase the tension or force of the opposite side, which is thereby continually exerting a force to draw the body back again into its proper position. In Figure 5 I have shewn another plan of making the elastic connection between the upper and lower framing. In this latter plan the elastic medium, which may be either of caoutchouc or metallic spring or other elastic substance, is connected at one end to one side of the centre piece, and at the other end to the upper

part of the lower framing. By this means a similar effect is obtained, but I prefer the first described plan, which has been found fully to answer the purpose. Fig. 6 represents another plan of obtaining the requisite degree of elasticity and lateral resistance in the joint at the lumbar region, which is effected by means of a spiral spring and barrel connected to this joint, as seen in the Drawing. The frame is constructed upon the principle shewn in Fig. 1, in all its leading features, with a single addition of a spiral spring placed at the joint F, and so arranged that the force of the spring is made to incline the body either to the right or left, as the case may require. The force of the spring may be varied at pleasure by winding, on the same principle as the main spring in a watch, and held in any desired force by a ratchet fixed upon the barrel to which the spring is attached, or the spring may be arranged according to any of the various methods in use for such or similar purposes. It is obvious that the action of the spring may be reversed by detaching it from the frame and turning it round, so that it may be made to act on any curvature of the lower part of the spine. If the body is thrown to the right side by a curvature affecting the lumbar or dorsal region, and the spiral spring is arranged so as to throw the body to the left, when the muscles moving the body upon the pelvis are in a state of inaction it is evident that the whole force of the spring is exerted to overcome the deformity, and to bring the body into its normal condition, and yet allow the free action of every muscle. Fig. 7 represents an instrument which is intended to act upon three curves at once, or by removing the upper part Y it then acts only upon two curves, viz^{t}, the lumbar and dorsal curves; but with the additional apparatus Y, the lumbar, dorsal, and cervical curves are acted upon at the same time by the elastic forces K, K, and varied in each portion as the particular circumstances of each case may require. The action between the parts E and H is the same as described in Fig. 4, and the application is the same. The action between H and M is precisely the same in principle. The action between M and Y is also the same. If the instrument be applied to a case of three curves, the part E is secured to the hips *a*; then the part H is secured to the waist, or rather the lower part of the dorsal region embracing the lower part of the chest. Now if the elastic force of the left side (the instrument being applied to the back) be increased to a sufficient degree to straighten the dorsal curve, the whole body above that portion will be carried to the left of the centre of gravity, consequently the muscles acting upon the dorsal and cervical curves will be brought into vigorous action to maintain the centre of gravity, and by doing so will powerfully aid the restoration of

these curves, which are usually secondary. But to aid and greatly facilitate the operation of the natural action of the muscles thus vigorously brought into action, I introduce the elastic force between H and M, and by increasing the elastic force on the right side so as to preponderate over the elastic force of the left I aid the muscles in their efforts at restoration just in proportion to the degree of force the right elastic increases that of the left, so that the force of the muscles and the unequal elastic force is brought to bear directly upon the dorsal curve, the effect of which is to throw the head to the right, past the centre of its gravity. Here again I have precisely the same effects and results. The elastic force between M and Y on the left side must be increased in its force beyond the right side, and you aid the muscles in restoring the cervical curve. Each of these joints P, O, and F, may be operated upon by a spiral spring, as at F in Fig. 6, or any other known arrangement of a spring may be made to produce the same result. In all these arrangements the principle is the same, viz^{t}, to act upon any part of the body by an elastic force which at the same time that the elastic force is exerted allows the muscles acted upon their normal motions. All other instruments, as far as I know, confine the muscles acted upon within certain limits, and many of them prevent their motion altogether; whereas these instruments enable you to give any support to the body, or any part of it, you desire, and at the same they allow the natural action of the muscles, and thus constantly increase their energy, while you restore the balance of muscular power and the distorted parts to their natural relative position. By varying the machinery the principle is applicable to all parts of the body and all forms of distortion. I would here observe, that I prefer that the upper part Y of the frame should be constructed in such a manner that it may be easily detached, so that it may be removed entirely from the frame, if required. This object may be effected by constructing it upon the plan shewn in Figures 1 and 2.

Having now described my Invention, and the manner of carrying the same into effect, I would observe, that I do not mean or intend to confine myself to the precise arrangement of parts herein shewn and described, as other means may be devised of effecting the purpose proposed by me without departing from the nature of my Invention, which I consider to consist of the following points, and therefore wish to claim them as the Invention secured to me by the herein-before in part recited Letters Patent, viz^{t}:—

First, the employment of two or more principal parts or frames, two of which, A and B, are connected together by a centre joint situated in the lumbar region, as shewn in Figures 1, 2, and 3, and the other frame or frames

are connected by similar joints, as shewn in Figs. 6 and 7. I claim such apparatus when applied to the body and constructed in such a manner as to allow by its elasticity of anterior and posterior motion of the body.

Second, the employment of elastic substances for further connecting the two principal parts together, so as to create an elastic force that shall be constantly acting on a distorted part so as to bring it gradually back again to its proper position.

In witness whereof, I, the said Alanson Abbé, have hereunto set my hand and seal, this First day of January, in the year of our Lord One thousand eight hundred and forty-six.

ALANSON (L.S.) ABBÉ.

AND BE IT REMEMBERED, that on the same First day of January, in the year above mentioned, the aforesaid Alanson Abbé came before our Lady the Queen in Her Chancery, and acknowledged the Specification aforesaid, and all and every thing therein contained, in form above written. And also the Specification aforesaid was stamped according to the tenor of the Statute in that case made and provided.

T. W. FARRER.

Inrolled the Fourth day of February, in the year above written.

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A.D. 1845. Aug. 4. N° 10201.
ABBE'S SPECIFICATION.

3 SHEETS

FIG. 1.

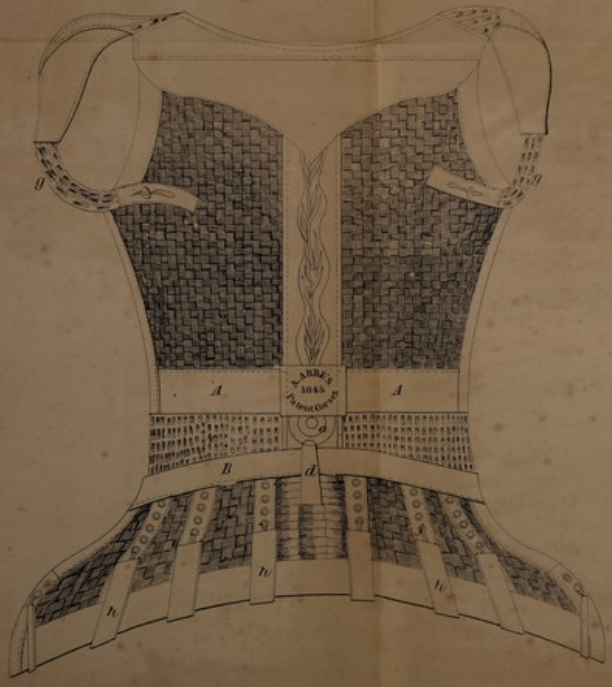
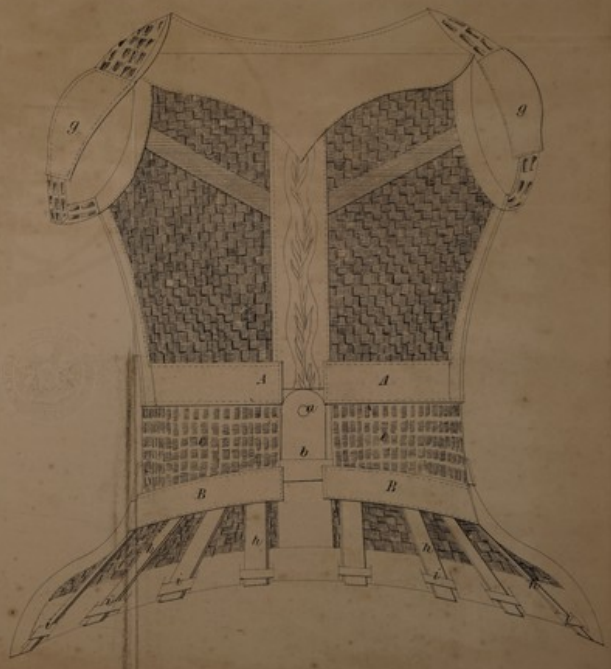


FIG. 2.



The enrolled drawing is sealed

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ABBE'S Specification.

(2 SHEETS)

FIG. 3

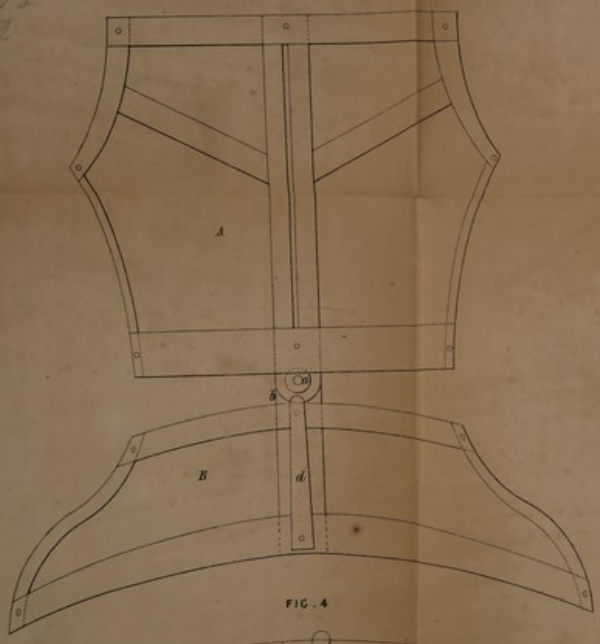

FIG. 5.

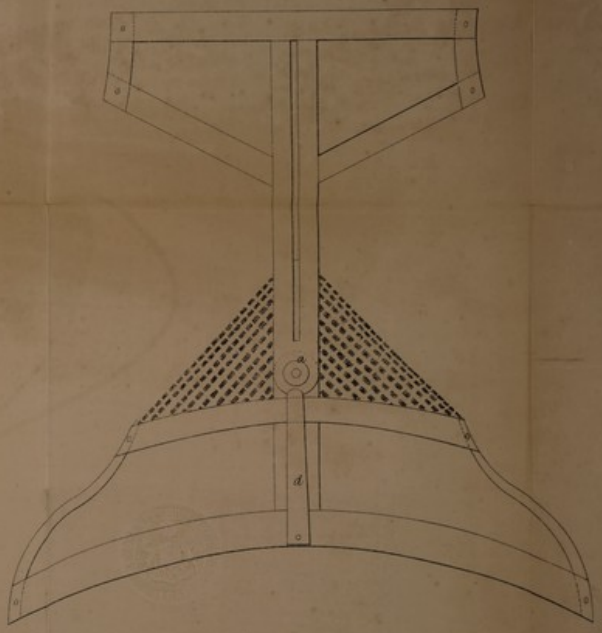

FIG. 4

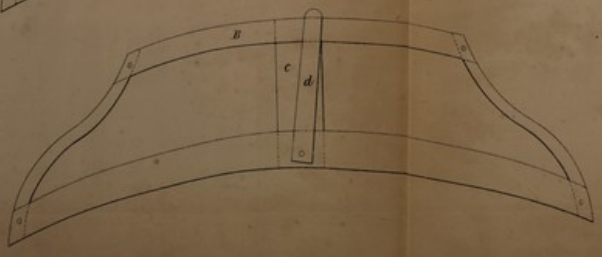

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FIG. 7.

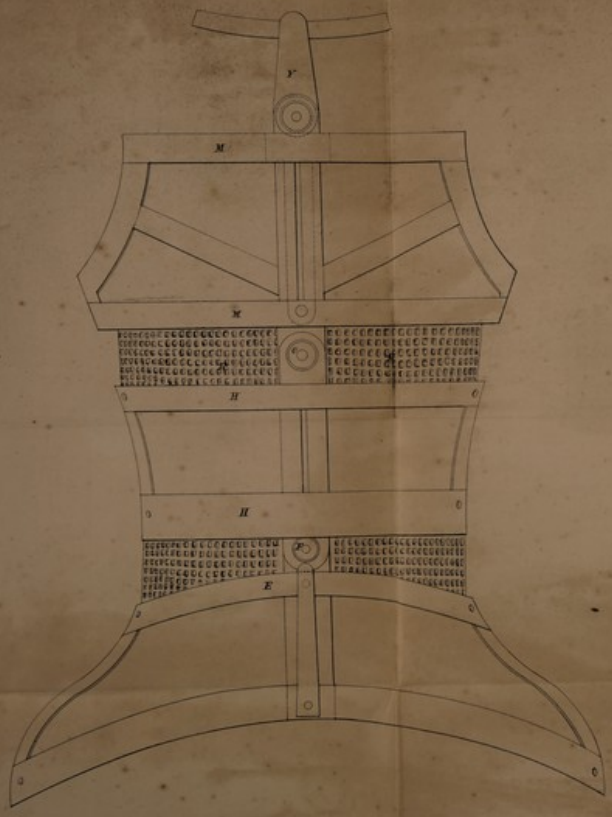
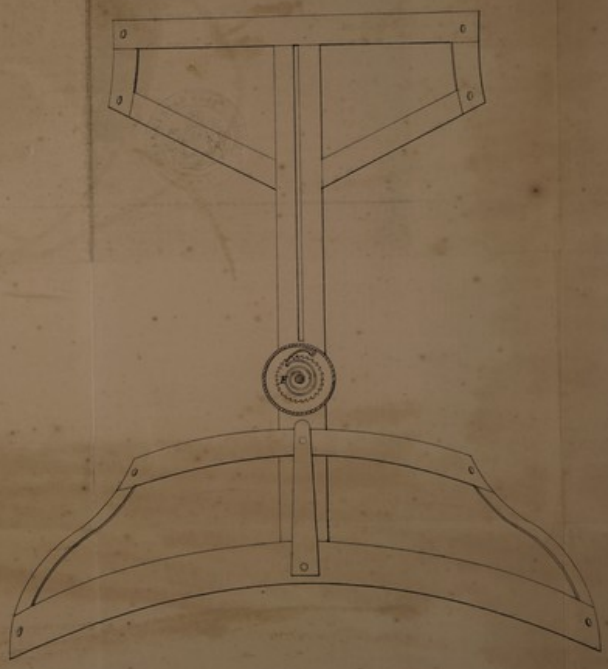


FIG. 6.



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