Specification of Timothy Sheldrake : curing deformities of the human body.

A.D. 1797 . . . . . N° 2157.

SPECIFICATION

OF

TIMOTHY SHELDRAKE THE YOUNGER.

CURING DEFORMITIES OF THE HUMAN BODY.

LONDON:
PRINTED BY GEORGE E. EYRE AND WILLIAM SPOTTISWOODE,
PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY:
PUBLISHED AT THE GREAT SEAL PATENT OFFICE,
25, SOUTHAMPTON BUILDINGS, HOLBORN.
Price 7d.
1856.

A.D. 1797 . . . . . N° 2157.

Curing Deformities of the Human Body.

SHELDRAKE'S SPECIFICATION.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, TIMOTHY SHELDRAKE, the younger, of No. 50, in the Strand, in the County of Middlesex, Truss Maker, do send greeting.

WHEREAS His most Excellent Majesty King George the Third, by His Letters Patent under the Great Seal of Great Britain, bearing date at Westminster, the Twenty-fourth day of January, in the thirty-seventh year of His reign, did give and grant unto me, the said Timothy Sheldrake, my exors, admiors, and assigns, His special licence, sole priviledge and authority, that I, the said Timothy Sheldrake, my exors, admiors, and assigns, during the term of years therein expressed, should and lawfully might make, use, exercise, and vend, within England, Wales, and the Town of Berwick-upon-Tweed, my "NEW INVENTED METHOD OF CURING ALL THE DEFORMITIES OF CHILDREN OR OTHERS, WHICH ARISE FROM OR ARE CONNECTED WITH DISTORTION, IN THE FORM OR COMBINATION OF BONES THAT EXIST IN THE DEFORMED PART;" in which Letters Patent there is contained a proviso, obliging me, the said Timothy Sheldrake, under my hand and seal, to cause a particular description of the nature of my said Invention, and in what manner the same is to be performed, to be inrolled in His Majesty's High Court of Chancery within one calendar month next and immediately after the date of the said recited Letters Patent, as in and by the same (relation being thereunto had) may more fully and at large appear.

NOW KNOW YE, that in compliance with the said proviso, I, the said Timothy Sheldrake, do hereby declare that my said Invention is defined and described as follows (that is to say):—

Sheldrake's Method of Curing all the Deformities of Children or Others.

My new invented method of curing all deformities or distortions in the legs, feet, arms, or other parts of children or others (provided they are not in their nature incurable), whether such deformities or distortions arise from or connected with the improper form of one or more bone or bones, or by the improper combination of two or more bones, or by the improper form and improper combination of any number of bones that exist in the deformed or distorted part, is, by the continual, repeated, and varied application of a spring or springs, to be constructed, adapted, and applied with bandages, and by instruments, in such manner that the spring or springs which constitute the efficient part of such applications shall be constantly acting to correct the disease, and shall have their powers varied, modified, and increased, as circumstances shall require, so as to diminish the deformities or distortions by degrees until they are finally eradicated. This is the general nature of my Invention; a more particular description of it, and the manner in which it is to be performed, I will now state in various instances, as particularly and distinctly as the nature thereof will admit.

In the first place, I shall illustrate the method of treating those distortions or deformities which arise from the improper form of bones, by explaining the treatment of curvature in bones of the leg, which is one of the most frequent diseases of that description; whether the bones bend inwards, outwards, or forwards, is of no consequence, as the principle on which the remedy is to be applied is the same in all.

Figures 1 and 2, hereunto annexed, represent a child's leg bending outwards; the lines marked with the letters *a*, *b*, *c*, in both Figures, represent the curved spring intended to correct this deformity. It is evident that if this spring is, by bandage or otherwise at *a*, *d*, and *c*, *e*, in Figure 1, or *b*, *d*, in Figure 2, brought into contact with the leg, the inside of the knee, as at *d*, in Figure 1, and *a*, in Figure 2, and bottom of the leg, which correspond with the ends of the spring, will form resting points for the spring to act from, while its reaction by producing pressure on the projecting part of the curve of the leg reduces the bone towards its natural state. The same effect will be produced by either of these methods, the difference between the modes of producing the effect being that in Figure 1; the bandages *a*, *d*, and *c*, *e*, form the resting points, and pressure is made upon the curve of the bone by the spring at *b*; but in Figure 2 the ends of the spring *a* and *c* form the resting points, and the reaction of the spring produces pressure from the bandage *b*, *d*, upon the curve of the bone. I shall now proceed to shew particularly the manner of constructing the instrument for curing the deformities of the leg, upon the principles already laid down, by which means those who may hereafter practice this

method will be better enabled to determine in what manner they will apply these principles in the cure of such distortions or deformities as may be intrusted to their care. The instrument I use to cure curvature in bones of the leg is constructed as in Figures 3, 4, 5, 6, and 7, hereunto annexed, and is described in manner following, that is to say:—The foot price *a*, *b*, *c*, *d*, *e*, in Figure 3 and 4, is made of calf skin or any other moderately stiff leather, in form of a common half boot, and to lace in front, with the sole of iron or any other strong metal; and to cure a bone, curved like Figure 1, I fix on the outside of this sole a piece of iron, steel, or other convenient metal *f*, *g*, in Figures 3 and 4, to go in a perpendicular direction as high as the ancle joint at *g*, in Figures 3 and 4; with this I connect, by means of a joint, another piece of iron, steel, or other convenient metal *a*, *b*, in Figure 5, to go as high as the knee; upon this I rivett (but it may be otherwise fixed) transversely, as many pieces of tin or other metal, *c*, *d*, *e*, *f*, &c., in Figure 5, each about half an inch wide, as will reach from the ancle to the knee, and so long as to be equal to about half the circumference of the leg the whole way. I continue another piece of iron, steel, or other convenient metal *a*, *b*, in Figure 6, and *h*, *i*, in Figure 3, to the hip joint; this is connected with the leg by a joint at the knee *h*, in Figure 3, and *b*, in Figure 5, to allow the knee to move in its natural directions, and is fixed by a swivel joint, to allow the hip to move in its natural direction, to a bandage *c*, *d*, *e*, in Figure 6, and *k*, *l*, *m*, *n*, in Figure 3, that goes round the waist, and on the outside of that iron, steel, or other convenient metal *a*, *b*, in Figure 5, which bears the transverse pieces of tin, I fix a spring *a*, *b*, *c*, in Figure 7, whose curve is similar to the line marked *a*, *b*, *c*, in Figures 1 or 2; this I call the skeleton of the instrument; the foot piece is lined with any soft materials to prevent it from galling the foot; the side of the leg is guarded in the same manner, and covered with strong leather or any other convenient material, to go all round the leg; the rest of the bandage may be covered in the usual manner. To apply this apparatus, the foot must first be laced tight into that part that is intended to receive it, *a*, *b*, *c*, *d*, *e*, in Figure 3; the part, Figure 5, which is composed of tranverse pieces of tin, &c., is then to be moulded as near to the form of the leg as possible, the leg bandage *o*, *p*, *q*, *r*, in Figure 3, is to be laced round the lower part of the leg as tight as it can be borne, and fixed to remain so by means of the strap *w*, *x*, in Figure 3; the upper part is then to be laced as tight as may be, and fixed to remain so by means of the strap *v*, *u*, in Figure 3, and the strap *s*, *t*, in Figure 3, fastened round the knee to keep it in its place, and finally, the bandage *k*, *l*, *m*, *i*, *n*, in Figure 3, to be made fast round the waist. If the principles I have laid down are attended to, it will be evident that the skilful application of this bandage, according to the process I

have described, the spring *a*, *b*, *c*, in Figure 7, which is the efficient part, and which is, as before stated, fixed or fastened to Figure 5, will be brought into action upon the curve of the leg; and by regulating the bandages, &c., that action may be modified and encreased until the bone is made perfectly strait; the above is the instrument I make and use, when the spring is to be placed on the outside of the leg. When the spring is to be placed on the inside of the leg, the instrument I make and use differs only in this, that it is made to reach as high only as the inside of the thigh will allow, and is fastened round the thigh by a bandage fixed at the top of the instrument, instead of being fastened round the waist by the bandage fixed by the swivel joint to the top of the instrument.

In the second place, I shall exemplify the method of curing deformity or distortion from improper combination of bones by explaining the method of treating that deformity, which is occasioned by the knees bending inwards, while the bones of the leg and thigh are individually perfect and straight, which is one of the most frequent specimens of this class of diseases. Figures 8 and 9 represent a leg of this kind, the lines *a*, *b*, *c*, in each Figure represent the curved spring intended to cure this deformity. In deformities or distortions from curvature of bones, the bones alone are objects for attention, everything that covers them being merely passive; but in deformities or distortions from improper combination of bones, the muscles, tendon, and ligaments connected with them become equally objects of attention, being sometimes merely deranged in consequence of the improper combination of bones; but at other times some disease or derangement in the muscles, tendon, or ligaments have been the original cause of the deformity. In the deformity represented in Figures 8 and 9, where the derangement of the connecting ligament of the joint, the loss of power in the muscles of the leg, and consequent diminished capacity for locomotion in the patient, are merely consequences of the derangement in the relative position of the bones, the means proposed to remove that original disease will likewise obviate all the consequences; but in that class of deformities which originate in some defect of the muscles, tendons, or ligaments in the parts affected, our attention must be principally directed to supply or remedy that defect which is the producing cause, or the consequences can never be removed, or even palliated with much effect; this it is proposed to do effectual'y by my Invention.

I exemplify the method of constructing instruments for curing diseases of the latter class, occasioned by improper combination of bones, according to the method I have invented, by describing the manner of making instruments to cure that deformity, which is occasioned by the knees

bending inwards, as drawn in Figures 8 and 9. I make the foot-piece *a*, *b*, *c*, *d*, *e*, in Figure 10, of this instrument exactly the same as described in the preceding case, in Figures 3 and 4; to this I connect, by means of a joint or spring *f*, *g*, *h*, in Figure 10, to go from the ancle-joint at *f* to the hip at *h*. If i place the instrument outside the leg, as in Figure 9, which I think is the preferable mode, or from the ancle to the top of the thigh, if on the inside, as in Figure 8, the spring *f*, *g*, *h*, is made of two pieces united by a joint parallel to the knee, as at *g*, in Figure 10, to allow the knee to move in its natural direction. If these instruments are for both legs, they are connected by a bandage round the waist, as I have already described, as *i*, *k*, *l*, *m*, *n*, in Figure 10; between the spring and the leg I place a splint of metal or other convenient substance, as in Figure 3, fastened to the inside of the spring, to cover as much as may be necessary of that side the leg, to guard it from pressure from the spring, and to form one of the resting points; the other is formed by the bandage *k*, *l*, *m*, in Figure 10, to which the spring is fixed on the hip. If the instrument is to be placed on the inside the leg, it is made as high only as the inside of the thigh will allow, and is fastened round the thigh by a bandage fixed to the top of it. These parts constitute the skeleton of the instrument. To apply it, I fix the foot-piece *a*, *b*, *c*, *d*, *e*, in Figure 10, on the foot, in the manner I have described in the preceeding case; I then lace a bandage *n*, *o*, *p*, *q*, in Figure 10, round the knee, upon which are fixed four loops *r*, *r*, *s*, *s*, in Figure 10, videlicet, two above and two below the knee-joint; I likewise fix a bandage to the splint *t*, *u*, *v*, *w*, in Figure 10, which is then laced on the leg. I have, besides, two strong straps to the spring *x*, *y*, in Figure 10, one above and the other below the knee-joint; I then pass these straps through the loops *r*, *r*, *s*, *s*, on the knee bandage in Figure 10, and fasten them to the spring *f*, *g*, and *g*, *h*, above and below the knee-joint at *g*, which by these means are bound to the limb, and the reaction of the spring *f*, *g*, and *g*, *h*, draws the limb into its proper place. Upon applying this, with what I have said on the general principle, as applied to Figures 8 and 9, the action of this instrument will be easily comprehended.

In the next place, I shall instance two diseases which may be referred to as striking examples of this last species of deformities or distorcions from improper combination of bones, videlicet, when a wry neck is produced either by contraction of the sterno-mastoideus muscle on one side, or the loss of power in the same muscle on the other side the head, or in those distortions of the legs occasioned by contraction of the gastrocuemii muscles and tendo-Achilles, when that contraction is the original cause of the disease, or by loss of power in the antagonist muscles when the contraction of the gastrocuemii muscles and tendo-

Achilles is only one of the consequences of that want of power however produced. In all these cases, the curative intention is the same, and by my Invention is effected by adopting a spring or springs to supply the deficiency of action in those muscles.

Thirdly, I shall exemplify the method of curing those defects which arise from defects of muscular action, whatever may be the cause of that defect, by my method of curing that distortion of the leg and foot which is occasioned by contraction of the gastrocuemii muscles and tendo-Achilles, or by want of power in those muscles whose office is to counteract the above mentioned. In this kind of disease the heel is drawn up and the toe pointed straight forwards, with more or less rigidity, according to circumstances. The curative intentions are to place the limb in its natural position, and restore (if possible) the natural action of the muscles. I examine the diseased part to discover what muscle is deficient in contractile power, and consider in what direction that muscle would draw the parts if in its natural state. I then provide and apply a spring whose power is equal to the natural power of the defective muscle, and whose curve is such that when bound on the limb its reaction will draw it as much as possible towards its natural state. If the disease is occasioned by defects in the action of more than one muscle, I provide a separate spring to imitate and supply the action of each of the defective muscles, and apply them separately and alternately, varying their powers and action until the whole disease is eradicated. I apply these springs in the following manner:— I provide a splint of tin or other convenient substance to cover one half the leg, and serve as a basis for the springs to act from. This splint is lined with leather, wool, or other convenient substance, to prevent it from galling the part. It is then bound on the leg with any kind of bandage that may be convenient. I then bind the spring in such a direction that its reaction will draw the limb as much as possible towards its natural state, and leave it in this condition for one, two, or three days, according as the circumstances of the case will permit. I then unbind it and alter its direction, &c., so that it may produce a farther effect; or if it is a complex case, and various springs are necessary, I apply a different one for the same or a like space of time, and thus proceed gradually until the cure is compleat.

There is another species of deformity, arising from or connected with improper combination of bones, that may be materially benefited by this Invention, videlicet, in curvation of the spine, and its manifold consequences. Upon this subject I shall lay down a simple proposition, which those who are acquainted with the structure of those parts will comprehend, and then more particularly explain the application of it. All the mechanical methods of treating this disease that have

as yet been practised are reducible to two, videlicet, first, to produce extention of the spine by suspending the weight of body from the head; and secondly, by firmly embracing the head and pelvis, and by mechanical means lengthening the space between them. It may be said with truth that either of these means will have effect, but my Invention added to these makes a material improvement upon them. My principle, as applied to this disease, I thus demonstrate:—Let the curved line *a*, *b*, *c*, in Figure 11, represent the distorted spine, the lines *d*, *e*, and *f*, *g*, at the top and bottom thereof, the parts of any apparatus fixed on the head and pelvis; it is obvious that if such apparatus is firmly fixed on those parts, and afterwards sufficiently lengthened, the curved spine that is extended between them must in the end become strait. But my improvement is to add springs properly adapted to press at the same time on the projecting part of the curve, by which means the extention is accelerated and facilitated, so that the curve will be straitened in much less time and with less force and less inconvenience to the patient than by any other method.

I shall now proceed to the application of my Invention to cure distortions of the spine, which are the most complex and most varied of diseases arising from improper combination of bones, and which I thus demonstrate:—Figure 12 represents the instrument for curing that disease, invented and made public by me sixteen years ago, and which is no part of my present Invention or included in this Patent. *a*, *b*, *c*, *d*, *e*, *f*, is the part intended to fix on the pelvis; *g*, *h*, *i*, is the part to fix on the head; and *i*, *k*, the back which connects the two; on this is the spring catch *l*, which falls into notches *n*, *n*, in the upright bar *c*, *d*, *e*, *f*, as it is raised and thus produces extention. The Figure 13 represents the back view of a patient with distorted spine, and, in consequence, projection of the ribs and enlargement of the scapula on one side, with a proportionate diminution of those parts on the other side; and Figure 14 represents the spinal machine (which, forming no part of my present Invention, it is unnecessary for me to describe) with additions upon the principles of this Invention, consisting of a pad *a*, *b*, *c*, *d*, properly guarded and connected with springs *e*, *e*, and *f*, *f*, fixed to the back of the machine at *e* and *f*, and intended to press on the projecting ribs; another pad *h*, *i*, *k*, connected by springs with the inside of the back of the machine, and intended to press on the projecting scapula. One elastic spring strap connected with it is intended to depress the elevated shoulder *h*, *g*, *k*, and a similar one *l*, *m*, *n*, to raise that which is below its proper situation.

Whoever considers the general principles of this my Invention in this its application to the class of diseases at present under consideration, will see that these additions, upon the principle I have already described

are a part of my present Invention and included in this Patent, and are a material improvement to my former method of treating this disease. To such persons as may in future practice this method of curing these distortions, &c., the following rules which I adhere to will be useful, in addition to what is before stated, in aiding their own judgment and experience, in the application of this my method, videlicet,

First:—In curvature of bones a small force should be at first applied, and afterwards gradually increased to the utmost extent that can be applied without injury to the soft parts which lie under the instruments; and,

Secondly:—In improper combination of bones, or defect of muscular action, the force to be used should be something more than the parts affected would exert if in their natural state.

In witness whereof, the said Timothy Sheldrake hath hereunto set his hand and seal, the Twenty-third day of February, in the thirty-seventh year of the reign of our Sovereign Lord George the Third, by the grace of God of Great Britain, France, and Ireland King, Defender of the Faith, and so forth, and in the year of our Lord One thousand seven hundred and ninety-seven.

TIMOTHY (L.S.) SHELDRAKE, JUN^R.

Signed and sealed in the presence of

JOHN BARTON,

JOSEPH HUTCHINSON,

Remembrancer's Office,

Guildhall, London.

AND BE IT REMEMBERED, that on the Twenty-third day of February, in the year of our Lord 1797, the aforesaid Timothy Sheldrake, Junior, came before our said Lord the King in His Chancery, and acknowledged the Specification aforesaid, and all and every thing therein contained and specified, in form above written. And also the Specification aforesaid was stampt according to the tenor of the Statutes made for that purpose.

WALKER.

Inrolled the Twenty-third day of February, in the year of our Lord One thousand seven hundred and ninety-seven.

LONDON:

Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,

Printers to the Queen's most Excellent Majesty. 1856.

A.D.1797. Jan. 24. N° 2157.
SHELDRAKE'S SPECIFICATION.

(1 SHEET.)

94

FIG. 1.

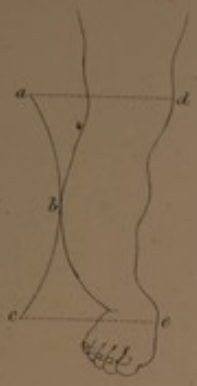

FIG. 2.

FIG. 8.

FIG. 9.

FIG. 3.

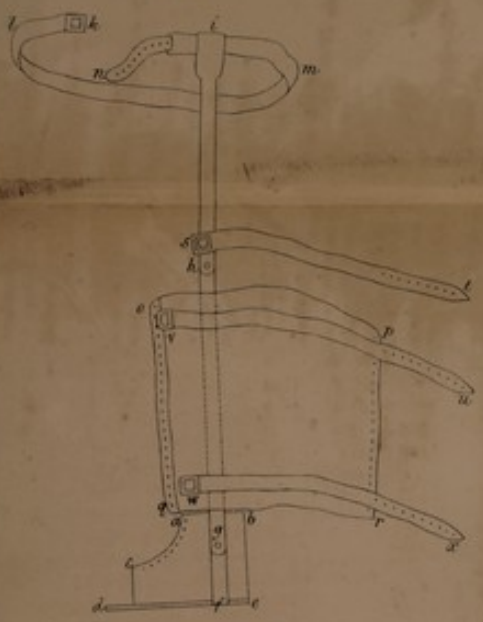

FIG. 6.

FIG. 10.

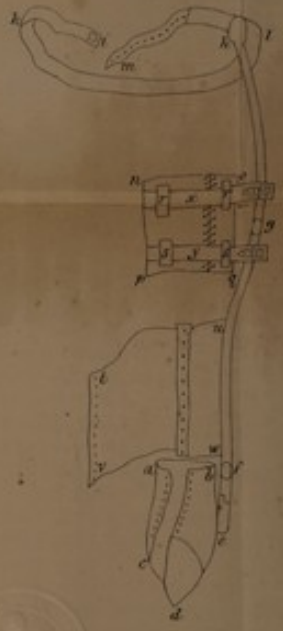

FIG. 7.

FIG. 5.

FIG. 4.

FIG. 13.

FIG. 12.

FIG. 11.

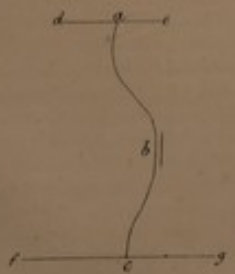

FIG. 14.

The enrolled drawing is not coloured.

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Printers to the Queen's most Excellent Majesty. 1858.