Specification of Joseph Amesbury : apparatus for supporting the human body.

Contributors

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A.D. 1839 . . . . . N° 8008.

SPECIFICATION

OF

JOSEPH AMESBURY.

APPARATUS FOR SUPPORTING THE HUMAN BODY.

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Apparatus for Supporting the Human Body.

AMESBURY'S SPECIFICATION.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, JOSEPH AMESBURY, of Burton Crescent, in the Parish of Saint Pancras, and County of Middlesex, Surgeon, send greeting.

WHEREAS Her present most Excellent Majesty Queen Victoria, by Her Letters Patent under the Great Seal of Great Britain, bearing date at Westminster, the Twentieth day of March, One thousand eight hundred and thirty-nine, in the second year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the said Joseph Amesbury, Her especial licence, full power, sole privilege and authority, that I, the said Joseph Amesbury, my executors, administrators, and assigns, or such others as I, the said Joseph Amesbury, 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 expressed, should and lawfully might make, use, exercise, and vend, within England, Wales, and the Town of Berwick-upon-Tweed, my Invention of "CERTAIN APPARATUS FOR THE SUPPORT OF THE HUMAN BODY;" in which said Letters Patent is contained a proviso that I, the said Joseph Amesbury, shall 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 Her said 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 Joseph Amesbury, do hereby declare that the nature of my said Invention,

and the manner in which the same is to be performed, are particularly shown and described in and by the Drawings hereunto annexed, and the following description thereof (that is to say):—

In the course of my experience as a medical and surgical practitioner I have found that not only the bony structure, but in many cases also the soft parts of the human body, require well-adapted support, sometimes for ease and comfort, and sometimes as a remedy for the prevention or removal of disease. These cases arrange themselves into several classes, which are for the most part distinguishable by their causes, and the removal of the effects of which require the assistance of mechanical support. That part of my Invention which I call my "simple support" is used instead of the common stays, and its advantages consist in giving comfortable support to the abdomen in children, growing persons, and others, in whom it is desirable to effect this purpose, and at the same time to increase the capacity of the chest. In certain cases of slight unnatural fulness of the abdomen, with or without flattening of the sides of the chest, this support is used with a curative intention. In these cases it exerts a gentle pressure upon the abdomen, and is found highly beneficial in enlarging the chest, in restoring the natural figure of the body, and the healthy action of the affected parts. Figure 1 in the annexed Drawing represents this "simple support" as it is commonly employed. It is for the most part composed of the usual materials employed in the structure of stays or corsets, but with the following variations:—A, A, in Figure 1, represent gaps made by cutting out angular pieces in the lower front part of the body support here shewn, and which can be opened or closed more or less, as required in use, by the following contrivance:—B, B, represent three tapes, which are firmly secured at one end of each to the insides of the gaps A, A, and are passed through eyelet holes formed on the outer sides of the gaps A, A. They are then united together and attached to two stronger tapes C, C, which are passed through a loop in front D, and can be tied tighter or slacker as may be required. Buckles E, E, E, and corresponding straps F, F, F, are affixed on the back parts of this support, and on putting it upon the body of the wearer the two lower straps should be loosely fastened to their corresponding buckles, the arrangement of tapes in the front of the support having been also previously loosened. The arrangement of tapes at the bottom of the front should then be tied sufficiently close over the lower end of the front spring G, G, (which is here shown as inclosed or covered, but is shown separately in Figures 2 and 3,) to keep this part of the spring close against the lower part of the abdomen, and when this is done the back of the support is to be comfortably fastened by means of the buckles and straps or laces, so as

to leave the upper part which surrounds the chest rather looser upon the body than the lower part which covers the abdomen. In Figure 1 the back parts are represented as being to be secured together partly by buckles E, E, E, and straps F, F, F, and partly by eyelet holes and a lace; but they may also be secured by buckles and straps only, and be properly padded underneath, and as shewn at E, E, E, E, E, in Figure 5. Figure 4 represents a front view of tempered steel back springs, which are introduced into the support, Figure 1, at H, H, H, H. These springs may be either bent or straight, as may suit the state and condition of the wearer and the object to be accomplished. In cases where the shoulder blades are prominent, approaching to deformity, it is better to employ straps and buckles to close the back of the support, instead of doing it partly by straps and buckles and partly by lacing, on account of the greater command which straps and buckles afford in maintaining the shoulder blades in their natural positions. The arrangement above described enables me not only to give general support to the body, but also to produce partial pressure where it is required, for the purpose of affording comfortable support, or correcting incipient deformity, or removing local disease.

Another part of my said Invention consists in an apparatus to be applied in greater degrees of abdominal fulness, and to which the apparatus just described is not so applicable. This fulness may arise from constitutional debility, partial weakness of the muscles, internal disease, or other causes. This apparatus is nearly similar to that already described, but is provided with additional contrivances to render it more applicable and effectual in various cases where the enlargement is greater. Figure 6 represents this support. Here the gaps A, A, are extended higher up, and are closed more or less, partly by means of laces I, I, and tapes J, J, which are independent of each other; the tapes being intended to confine the lower part of the support firmly, whilst the laces I, I, admit of partial self-adjusting and regulating pressure through the whole extent of those laces. In cases, however, where it is desirable to compress the parts more or less and still more partially, as in certain cases of tumour or rupture, I effect this object by substituting buckles and straps in place of laces, and as shown in Figure 7, where, however, tapes are likewise shewn for confining the lower part of the support. In other respects this support is made similar to that already described. In some cases, where it might be desirable to give additional strength to the upper portion of the steel busk G, represented separately at Figures 8 and 9, I add an extra piece of tempered steel K, as represented in Figure 10 viewed in front, and Figure 10* sideways. This additional piece is united with the other part by

means of rivets or otherwise. This support may also be secured behind, either by straps and buckles and a lace, or entirely by straps and buckles, and as shewn at Figures 11 and 31. Figure 12 is an edge view of one of the two back springs H, H. This support is used, in the cases above mentioned, with a curative intention, and with the most beneficial effect, as by its influence the protruding abdomen is supported and gradually reduced to its natural figure. In cases of mesenteric disease, accompanied with a great degree of abdominal enlargement, and with or without flattening of the sides of the chest, its curative influence is very remarkable. This state of the abdomen, which frequently resists all other remedial agents, readily yields under the operation of my "reducing support." In cases of abdominal rupture and in cases of weakness of the abdomen, accompanied with protrusion, my "reducing support" will be found a great relief and benefit in sustaining and strengthening the parts affected. In the case of pregnancy many persons require the front of the body to be supported, and numerous contrivances have been introduced to accomplish this desirable object, but hitherto with little advantage to the wearer. During this state of the body it is necessary to be especially careful that the support which is given be easy and comfortable, and at the same time safe. The apparatus used should assist the wearer in sustaining the weight without injurious pressure. After childbirth also there is commonly a degree of fulness and laxity of the abdomen which frequently cannot be removed without a well-adapted support. I have been enabled to succeed in my endeavours to relieve the female under these circumstances who may stand in need of support, either before or after childbirth, by the use of my "adjustable support," which is worn as long as is desirable. By means of my improved support the weight of the child is carried as it were in a pouch, which either adapts itself or admits of being adapted to suit the varying form of the wearer, and by a peculiar arrangement the weight of the child is in a great measure transferred by the use of this support from the front of the body of the mother to the back of her hips, where it is more easily carried. The adjustable support admits of being adapted by the mother herself to suit her own feelings, and so as to support the front of the body without injury to the child. After delivery the adjustable support allows of being easily accommodated to suit the altered condition of the body, and should then be made to bear upon the front of the abdomen, so as to assist in the restoration of the muscles and other parts which have been stretched and weakened during the progress of pregnancy. Figure 13 is a representation of this "adjustable support" viewed nearly in front; and Figure 14 the same viewed from behind, and showing its various parts in connection; Figure 15

represents the inside of the upper front, and also the hinder and side parts; and Figure 16 is an inner view of the front and lower part shown separately. The back of this support nearly agrees with those represented in Figures 6 and 11, and may be secured either by buckling and lacing or buckling only, H, H, being the back springs or supports. In order, however, to render the construction and connection of these two parts, Figures 15 and 16, more evident, I have added another, Figure 17, representing a displayed view of this support seen in front, and it is further illustrative of the manner in which the different parts are connected. L, L, in Figures 13, 14, 15, and 17, represent portions of the support intended to cover the hips of the wearer; and M, M, Figures 13, 16, and 17, the lower front or abdominal portion of it, and which is united with the back parts by means of the hip portion L, L, and with straps and buckles or otherwise. In order to enable the wearer to accommodate this support to the variable changes of the abdomen, I have invented an extending, contracting, and adjustable steel busk, shown at Figure 18, composed of two principal portions N and O, shown with the two parts in connection in Figure 18, which is a front view, and sideways in Figure 19, the lower part N being likewise shown in its place in Figure 16. The two parts N and O are united by means of screws and nuts P and Q, Figures 18 and 19. The screw and nut P, when fitted on, are so managed as to allow the parts N and O to slide upon each other, but the screw and nut Q are made capable of being bound tight in the manner now to be described. The uppermost letter Q in Figure 20 represents the binding screwed nut as having two gaps or notches in it to receive the fork or key R, shewn in front in Figure 21, and sideways in Figure 22. In order to prevent the screw Q from turning round in the act of tightening the screwed nut Q, a web or fin is formed upon it, which is fitted into a hole Q, seen in Figure 23, and secured there by riveting with a pin the nut to the part Q, in which is seen a hole by the side of the hole Q, to receive the pin after it has passed through a hole in the head of the screw. The screw then enters into the slit made in the part N, and then has fixed upon it a screwed nut, which has two gaps in it for the convenience of turning it with the key R, Figure 21. After the screwed nut is put on, the end of the screw is lightly spread out by hammering it, to prevent the screwed nut from coming entirely off and being lost. The screw P and its screwed nut are likewise applied nearly in a similar manner to the upper end of the lower part of the spring busk N, as shown separately in Figure 18*, but as its screwed nut need not be moved upon the screw so it has no gaps or notches made in it for the key R to enter. S, S, in Figures 18 and 23, represent two clips formed on the edge of the lower end of the piece O, and

made to fit the piece N, and which must be slidden underneath them previous to affixing the binding nuts P and Q; by this arrangement it will be seen that the parts O and N of the busk are capable of being extended and contracted lengthways as required in use, and being retained at any required length by tightening the binding screwed nut Q. Small holes are provided near the outer edges of the parts N and O of the busk for the purpose of affixing it by means of silk or thread stitches to the other parts of this support. In order to show one of the alterations made in the general shape of the adjustable steel busks, Figures 18 and 27, by sliding the two parts N and O of them upon each other, I have given a representation of one of them upon a greater scale at Figures 32 and 33, Figure 32 representing it in the lengthened state, and Figure 33 as when shortened. I have likewise shown by dotted lines, in Figure 32, the alteration above mentioned, as it would be quite impossible to show the very numerous changes which occur in lengthening and shortening it, but which I find in my practice to be most admirably suited to the changes of shape continually occurring during the progress of pregnancy, as well also to the total alteration of form in the abdomen afterwards. And I can so regulate my adjustable steel busks as to meet these changes most perfectly, and likewise accomodate the busks to the pleasurable feelings of the wearer, a desideratum hitherto attempted in vain. In lengthening and shortening these "adjustable steel busks" I likewise weaken and strengthen them in particular places with great benefit, as for instance in Figure 32, the part O* becoming single on lengthening or extending the busk instead of being double in that part N* and O*, as shewn in Figure 33, or the shortened state of it, it is evidently become more flexible or yielding than when that part of it was double. On the contrary, by sliding the two springs N, O, upon each other so as to shorten the busk, its strength is increased especially in its upper part. This additional strength is afforded partly by the steel springs or plates being doubled to a greater extent, and partly by the two curves N* and O* oposing each other, as shewn in Figure 33, also in proportion; as the two parts N and O are drawn out so as to increase the length of the busk, the whole busk becomes weaker throughout, and these two actions of strengthening and weakening are more or less in proportion to the lengthened or shortened state of the busk. These alterations in strength or weakness are very important in the use of the busk, as the wearer requires it to be in the strongest or most unyielding state, and especially at its upper part when she needs it to be shortened, as for instance after childbirth, and she also requires it to be weak or yielding in its action throughout its whole length, as it should be from time to time elongated during the process of pregnancy. The enlarged Figures at

34 also afford an opportunity of showing the parts Q, Q, Q, of the screw and screw nut Q more perfectly. The lower part of the piece N of the busk is placed in a pocket T, provided for it in the abdominal portion M of the suppor, and as shewn in Figures 13, 16, and 17, and to the upper inner edge of this pocket T a strap U is attached, which is passed up within an enclosure formed in the front of the upper portion of this support, as shewn in Figures 15, 17, and 26 at V, together with the upper part O of the busk, and is then passed through a horizontal slit made in the part O at W, as shewn in Figures 18, 23, and 26, and which said slit is rounded off at its edges to prevent it from galling the strap U when passed through it by means of a plate of metal X which is affixed to the busk for that purpose. It also passes through a horizontal slit made in the front part of the support, as shewn in Figures 17 and 26, and is then passed through a buckle Y, which is affixed to the upper part of the abdominal portion M, M, of this support, used as shown in Figures 13, 16, and 17. Care should be taken before this support is applied to the body of the wearer to adjust the parts N and O of the front spring or busk to a proper length suitable to the person. If the busk should be too long or too short the locking or binding nut Q, which is placed in the middle of the fore part of the busk under the loose abdominal portion M of the front of the support, should be unscrewed a little by means of the key R; when the screwed nut has been turned usually about once round the upper and lower portions of the busk will be loosened, and then the part N below the nut should be shifted upon the part O above or be drawn out from time to time, as may be required. When the busk is thus adjusted to its proper length the parts N, O, of it should be locked or bound together by turning the screwed nut Q in the opposite direction; as soon as this is done and all the side straps, tapes, and laces are loosened the support is ready for use. In applying this support the wearer should place the front of it low upon the body, and then introduce the two lower straps F, F, behind, as shewn in Figure 17, within their corresponding buckles E, E; when this is done the tapes J, J, shown in Figures 13 and 17, should be tied over the lower end of the busk, and as shown in Figure 13, and where there is a loop fixed through which one or both of them should be passed to keep them in their place; these tapes should be tied sufficiently tight to bring the lower end of the busk close to the body. The whole of the back parts of the support should then be fastened comfortably close by means of straps and buckles, or straps and buckles and a lace, as seen in the view of the hinder part of the support, Figure 14; next the gaps Z, Z, Figure 15, must be comfortably secured by lacing in the manner shewn in Figures 13 and 17; and, lastly, the side straps *a*, *a*, &c. of the abdominal portion M

must be secured in their corresponding buckles *b*, *b*, *b*, &c., as shewn in Figures 13, 14, and 17, and the upper tapes *c*, *c*, of the abdominal portion M be passed round the body and tied in front in that manner which is felt the most agreeable, the cloth or other material forming the abdominal portion of the support being kept in a state of tension upwards by means of the strap U and buckle Y, as seen in the side view, Figure 25, and in the front view, Figure 13. The breast covers *d*, *d*, in Figures 13, 15, and 17, are secured by means of tapes, buttons, and button holes, or any other manner. In order the more conveniently to remove the busk N, O, from the cloth or other materials of the support, as may be desirable for the purpose of washing them, instead of securing it thereto by stitching, in the manner above described, I have provided holes in the parts N and O, as shewn at *e*, *e*, *e*, &c., in Figure 27, and corresponding eyelet holes are formed through the interior and exterior coverings of cloth, through which and through the holes in the busk, tapes must be passed and be firmly secured by tying in front. *f*, *f*, in Figures 13 and 17, represent flaps of clothing intended to close the apertures between the hip and the abdominal portions of this support during the advanced period of pregnancy; these are loosely and temporarily attached by means of ribbons or otherwise, and may be removed when not required. In some cases it is desirable to sustain the whole line of the human body or trunk by means which allow of great facility of application without altering the proper adjustments by which the support is made to act upon the particular parts. I attain this object by using two back springs or standards *j*, *j*, Figure 28, which in use can be drawn together or made to operate by straps and buckles placed between them. Here the buckles for adjustment *g*, *g*, *g*, *g*, project laterally from the right edge of one spring or standard and from the left edge of the other, where they receive their corresponding straps *h*, *h*, *h*, *h*, which are attached to the cloths or other soft materials of the support; the buckles and straps or other fastenings, such as buttons and button holes, or systems of laces and eyelet holes, or any other arrangements which will not derange the proper action and effect of the adjusting straps and buckles used in putting on or taking off the support, are placed between these two springs, as seen at *i*, *i*, where buckles and straps are employed. This Figure 28 is taken from Figure 92 annexed to the Specification of my former Patent, entitled "Certain Apparatus for the Relief or Correction of Stiffness, Weakness, or Distortion of the Spine, Chest, or Limbs," dated the Fourth day of April, One thousand eight hundred and thirty-seven; but with these exceptions the adjusting buckles and straps *g*, *h*, Figure 28, are carried all the way up the back instead of being partly buckles and straps and partly laces, as shewn in Figure 92 of my

former Patent, as above referred to, and two steel springs or standards are employed in place of one only, as shewn in Figure 92. I can also provide a means for facilitating the opening or closing this support in front as well as behind without disturbing the adjusting buckles and straps, as follows:—Figure 29 represents the manner of accomplishing this object; *k*, *k*, *k*, *k*, represent the places of two steel busks or springs affixed in the usual manner to the cloths forming the soft materials of the support. These standards or springs can be united or brought together and retained by means of buckles and straps, as shewn at *l*, *l*, in that Figure 29, or else by buttons and button holes, or by systems of laces and eyelet holes, or be tied or fixed in any other manner which will not alter or derange the proper action and effect of the adjusting straps and buckles, which are in this case placed behind in the manner shewn in Figure 92 of my former Patent, but with this exception, that the back spring or standard has buckles all the way up, as shewn in Figure 30. I use that part of my apparatus which I have called my "simple support," Figure 1, in slight cases of abdominal fulness where support is required; where there is a greater fulness I employ what I call my "reducing support," Figures 6 and 7; this differs from my "simple support," Figure 1, in the arrangement of the laces, as in Figure 6, or buckles and straps in the front, as in Figure 7, and by which arrangement the support is better adapted to produce the effect for which it is applied. This arrangement of laces or of buckles and straps enables the operator or the wearer to act gradually upon the protuberant abdomen or upon tumours projecting from the abdomen, as in cases of large rupture, as the circumstances of the different conditions of the parts may require. This support operates like the former one in giving a steady support to the abdomen in cases where it is applicable without bearing or pressing unnecessarily upon the chest. My "adjustable support," particularly shewn in Figures 13, 14, 15, 16, and 17, is contrived for cases in which the protuberance of the abdomen is still greater or the tumour more extensive, and where variations in the shape to a still greater extent are likely to take place. In cases of unnatural curvature of the spine I combine parts of either of the above-described contrivances, as the case may require, with some of the parts of my apparatus which I use in cases of spinal curvature, and which I call my "spine support," and which will be found described at large in my former Patent above referred to, but in which no particular provisions are shewn to adapt it to the several conditions of the abdomen or soft parts of the body, for which support my present Patent is especially but not exclusively obtained. In Figure 29 the exterior or outward adjusting straps *h*, *h*, *h*, *h*, are similar to those shown in Figure 28, and as also seen in

Figures 82 and 92 of my former Patent, the lower straps 104 being likewise similar to those in Figures 82 and 92; so likewise the shoulder pieces 100, Figure 84, and 100, 100, Figure 29, are similar in the two Patents, but with slight variations made to adapt them to the particular cases; for instance, I have now under my care married ladies having spinal distortions and who are also in a state of pregnancy, and consequently require a support adapted to both those cases. In these more complex cases I employ parts of my "spine support," which are already shewn and described in Figures 29 and 30, and which are particularly indicated by the letters *g*, *h*, *i*, *j*, and also by 100, 100, and 104, 104, in Figure 29. These parts of my "spine support" are used in connection with those parts of my "adjustable support" shewn and described in Figures 13, 14, 15, 16, & 17, with the adjustable spring shown at Figure 18. In these cases the compound body support might be closed up behind in the manner shown in Figure 28, or with one standard only, as is shown at Figure 92 of my former Patent, as for spinal curvature. The parts of the front of this compound body support are to be adjusted and used in the same manner as the separate parts already described are to be used in cases of pregnancy or otherwise, and where no distortion of the spine exists. In cases of considerable enlargement of the abdomen, but which, however, may not be such as to require the use of the adjustable spring, Figure 18, the contrivance of laces and tapes shown at A, A, and J, J, Figure 6, or the buckles and straps and tapes, shown in Figure 7, might be used in connection with those parts of the spinal support above described or alluded to. By this arrangement the support might be better adapted to the particular case under treatment. In slight cases of protuberance of the abdomen, the apparatus shown at A, A, and C, C, in Figure 1, may be advantageously adapted to the "spine support," and used in connection wit it.

I now proceed to declare, firstly, that I disclaim the right to the exclusive use of any part or parts of the said apparatus separately which part or parts were previously known and in use.

Secondly, I disclaim the exclusive right to the use of any of the various parts of the said apparatus, however variously constructed, and which are hereinmentioned and described, that were previously known and in use, except when I use the said part or parts in new and useful combination or combinations.

Thirdly, I disclaim the exclusive right to the use of any of the different materials of which the various parts of the said apparatus are composed, excepting so far as the said materials are used by me in the construction of such part or parts of the said apparatus as are new in principle, or in new and useful combination or combinations.

Fourthly, I claim the various apparatus herein described in new and useful combinations together, or in various new and useful combinations suitable to the circumstances of each particular case; and such of the said apparatus or parts thereof as I am entitled to claim to use separately, I claim so to use separately and exclusively, as well as in new and useful combination or combinations with other part or parts of the said apparatus herein mentioned and described.

Fifthly, I claim the exclusive right to the use of the old or known part or parts of the said apparatus, so far as the same are or may be used in new and useful combination or combinations with the said newly constructed part or parts thereof therein described.

And, sixthly, I do hereby declare that the apparatus, as the same are herein described, made, used, combined, and constructed, do together make up "my apparatus for the support of the human body," or that part of the person especially which is commonly called "the trunk."

Having thus described the construction of the various apparatus, and the manner of their application in use, I now proceed to distinguish those parts which I particularly claim, as believing the same to be new; and with the exception of those parts which I do so claim, I expressly disclaim the other portions of the said apparatus, except when used in new combinations as before mentioned. In the apparatus shown in Figure 1, I claim the improvements made in the parts indicated at A, A, B, B, C, C, in combination with the buckles and straps indicated at E, E, E, F, F, F, and either with eyelet holes above, as seen in this Figure, and which are used with laces in part to close the back parts of this support, or with the buckles all up the back, as indicated at E, E, &c., Figure 5, with their corresponding straps. I close up the back partly with buckles and straps and partly with a lace, when the person is slender and does not require the shoulders to be particularly supported; but in cases where the person is fat or disposed to corpulency, and in cases of slight malposition of the shoulders, to remedy which the shoulders require to be especially supported, I use buckles and straps all up the back parts. When this construction is employed, the support is made to produce upon the shoulders and shoulder blades much of the effect of the common backboard, but for the most part without its inconvenience or unsightly appearance. In more aggravated or extreme cases of malposition of the shoulders, I can produce a more powerful effect by the addition of braces attached to the back parts of the support; when these are used in connection with this support, they are passed from the back parts round the shoulders, one round each shoulder, and are then buckled together behind with that degree of tightness which the case may require, and as shewn at Figure 31 at *m*, *m*. In either of these constructions,

combination, or several combinations, I claim these several parts in connection with other parts which are usually made in common stays or corsets, and by this combination or combinations I am able to give support to those parts of the human body which need it, and without producing improper pressure upon any part. I claim the exclusive use of this, which I call my "simple support," in its various combinations in such cases as may indicate that its employment would be useful to the wearer. I would here observe, that I can vary the modes of closing the gaps shown at A, A, Figure 1, more or less by buckles and straps, or by buttons and button holes, or by hooks and eyes, or by the sides being tied together by several sets of tapes, and in a variety of other ways, as likewise by the introduction of elastic cloth or by cloth with wire springs, &c., which may be used with or without tapes or other comparatively unyielding fastenings, as above mentioned; but that plan which I have represented is the best, according to my present experience, for the comfort and benefit of the wearer. I can also use for closing the back parts systems of tapes or laces or other fastenings, but I know not of any construction or plan so good for this purpose as those I have described. I also claim the mode of closing the lengthened gaps shown at A, A, in the combination represented in Figure 6, by the tapes and laces as at I, I, and J, J, or by straps and buckles and tapes, as shewn in Figure 7, or by straps and buckles only, instead of straps and buckles and tapes in combination with either or any of the modes of closing the back parts already described, and as also shown in Figures 1, 5, 6, and 11, and with or without braces attached to the back parts of the support, and used as above described. I can also use for closing the gaps in front A, A, systems of tapes or laces or other fastenings as above mentioned, as the same might be used for closing the gaps in that combination of my apparatus shown in Figure 1, and in other Figures illustative thereof. I use laces to close the gaps shewn in the combination, Figure 6, with tapes or other partial fastenings at the bottom, when the object is to give a general support to the abdomen from the lower to the upper parts. And I use straps and buckles instead of laces, when the object is to bear more especially upon particular parts of the abdomen, as in some cases of rupture and of swellings or tumours. I also claim any local or partial strengthening or weakening of the steel busks by widening, narrowing, thickening, or thinning them, or by applying additional plates or springs thereto, and as shown at Figures 10 and 10*, and as the case may require, as new in principle and useful in application, and either when applied with my patent "body supports," or independently. I also claim the partially strengthened steel busk as new and useful in combination with those parts of my apparatus which I have already claimed. The use of busks made upon these principles is to give greater

strength where it is needed, to prevent pressure where it is generally improper to apply it, and to bear up or support the breasts in certain cases more effectually, while at the same time greater flexibility is allowed in those parts of the busks which in use are applied to the lower parts of the abdomen, and where greater flexibility is in certain cases more especially required.

I likewise claim the compound alterable and conveniently adjustable steel busks shown in Figures 18, 19, 27, and as shown in parts in Figures 18*, 20, 23, 24, and on an enlarged scale in Figures 32, 33, and 34, and whether used separately or in combination with those parts of my apparatus shown in Figures 13, 14, 15, 16, 17, and 25, and as herein described, and also in combination with parts of "my spine support," as described in my former Patent above mentioned, and as shown in Figure 30, and also in Figure 29 at 100, 100, and 104, 104, and at *h*, *h*, and with parts also indicated in Figure 28, and already described in my former Patent, as the same might be applicable; but in the latter Figure 28 there is likewise provided an additional central set of straps and buckles, shewn at *i*, *i*, for the convenience of putting on and taking off the support without disturbing the adjustment of the buckles and straps *g*, *h*, and which said arrangement I likewise claim with or without its combination with other parts of my "body supports." By the contrivance of central straps and buckles the wearer is enabled to put on or take off the support without disturbing the arrangement of the side straps and buckles as determined by the operator. This central arrangement of straps and buckles might be used in connection with parts of my "spinal support," or with my adjustable busks and other parts of my "body supports," as may be required. I claim the adjustable busks as being new in principle and combination in their various applications to the human body, the principle being extension or contraction in length, and weakening or strengthening the busks as may be required in use.

I likewise claim the enabling the operator or wearer, as the case may require, to regulate and adjust the position of the abdominal portion of my apparatus, shown separately in Figure 16, and in combination in Figures 13 and 14.

I also claim the abdominal portion, Figure 16, in its combinations with the adjustable busks, and as the same are connected with the upper, back, and lateral parts of my apparatus, already claimed, in combination or combinations, or as the said abdominal portions and busks are combined with those parts shown in Figure 15, and in combination in Figures 13, 14, 17, and with the several modes of fastening the back parts, already claimed, in

combination, and also with the several modes of connecting the lateral part of the abdominal portion with the other parts of my apparatus, shown in Figures 13, 14, 15, and 17, and as either of those several modes, connections, or any of them, might be applicable to the particular case or cases; I, however, prefer the plan of laces and tapes, as partly shewn in Figure 6, for connecting the abdominal portion laterally to the other parts of my apparatus, or of straps, buckles, and tapes, as seen in Figure 13.

I also claim the gaps represented in the front and middle part of my apparatus at Z, Z, Figure 15, and as also shown with connecting laces in Figures 13 and 17.

I also claim the arrangement of central straps, buckles, and springs in front, as shown at *k*, *l*, *k*—*k*, *l*, *k*, in Figure 29, in connection with my "spinal support," in order to enable the wearer to put on or take off the support with more facility than when straps and buckles behind are employed, and also without disturbing the arrangement of the side adjusting straps and buckles, as determined by the operator, and as in connection with parts of my body supports. In Figure 29 are also seen two gaps A, A, closed by means of straps, buckles, and tapes, and which may be used when required. These several supports, each being complete in itself for the particular use to which it is applied, form together my apparatus for the support of the human body, as the same may be applicable separately or in combination, and especially to that part of the person usually termed the trunk or body, and either in health or diseased. It will be seen from what I have before stated that I have provided for the support of the human body in various conditions in which the same individual may be found at different periods of life. For instance, at one time a female may require that combination of my apparatus which I have called my "simple support;" afterwards, from an alteration in her condition, she might stand in need of a variation more suited to her altered condition, and which she might procure in that variation of my apparatus which I term my "reducing support." This might serve its purpose for the time. Then again, from a further alteration in her state, she may require a still greater variation in the needful apparatus to meet the altered circumstances which have taken place in her body, and which she may find in that variation and combination of my apparatus which I have named my "adjustable support." In the case, however, of spinal deformity likewise existing at the time she would find assistance in the combinations of my spinal with my body supports. These combinations of my spinal with my body supports I also claim as new, as the same are suited to such cases. In

general appearance certain combinations of my apparatus vary but little from the ordinary stays or corsets, but in mechanical effect they differ much from them, giving to the wearer or the operator the power of producing a modified and easily determined degree of effectual support or bearing upon those parts of the body which in the female especially are considered to require it, without necessarily bearing upon other parts of the body where pressure is not needed, and might even be injurious. This principle of combination I claim as new in its application to stays or corsets. My "body supports," which I claim as new in their several combinations, are made upon this principle; and in carrying it into effect I combine in my Invention parts of the ordinary stays or corsets which are useful in mechanical action with my newly invented parts, thus producing apparatus having the general form of stays or corsets, but which in use are found much more comfortable and advantageous to the wearer, and by which the injurious consequences the ordinary stays are deemed to produce can be easily avoided. The several combinations above mentioned may be made with the shoulder braces above described, and used to supply the place and produce the effects of abdominal belts and of backboards, as the same may be required, and have been used separately with stays or otherwise. I claim the several body supports herein mentioned as combinations each of which might be made to produce certainly and effectually the advantages hitherto sought to be obtained by abdominal belts, backboards, and the ordinary stays worn together. I can produce by either of my body supports, made to suit the particular case, as above stated, the benefits hitherto sought to be obtained by three independent apparatuses, namely, the ordinary stays, backboards, and abdominal belts, and which might also be made and advantageously used for all the objects sought to be obtained by ordinary stays or corsets separately, the ordinary stays and backboards, or the ordinary stays and backboards and abdominal belts when worn together. This principle of combination I claim as new, and include the same in my Invention. I claim also the privilege of using any material or materials that may be fit and proper in the construction of my supports herein mentioned, as the same may be required in their several combinations.

In witness whereof, I, the said Joseph Amesbury, have hereunto set my hand and seal, this Nineteenth day of September, in the year of our Lord One thousand eight hundred and thirty-nine.

JOSEPH (L.S.) AMESBURY.

Amesbury's Apparatus for the Support of the Human Body.

DUCKWORTH.

AND BE IT REMEMBERED, that on the Nineteenth day of September, in the third year of the reign of Her Majesty Queen Victoria, the said Joseph Amesbury came before our said Lady the Queen in Her Chancery, and acknowledged the instrument aforesaid, and all and every thing therein contained and specified, in form above written. And also the instrument aforesaid was stamped according to the tenor of the Statute made in the fifty-fifth year of the reign of His late Majesty King George the Third.

Inrolled the Twentieth day of September, One thousand eight hundred and thirty-nine.

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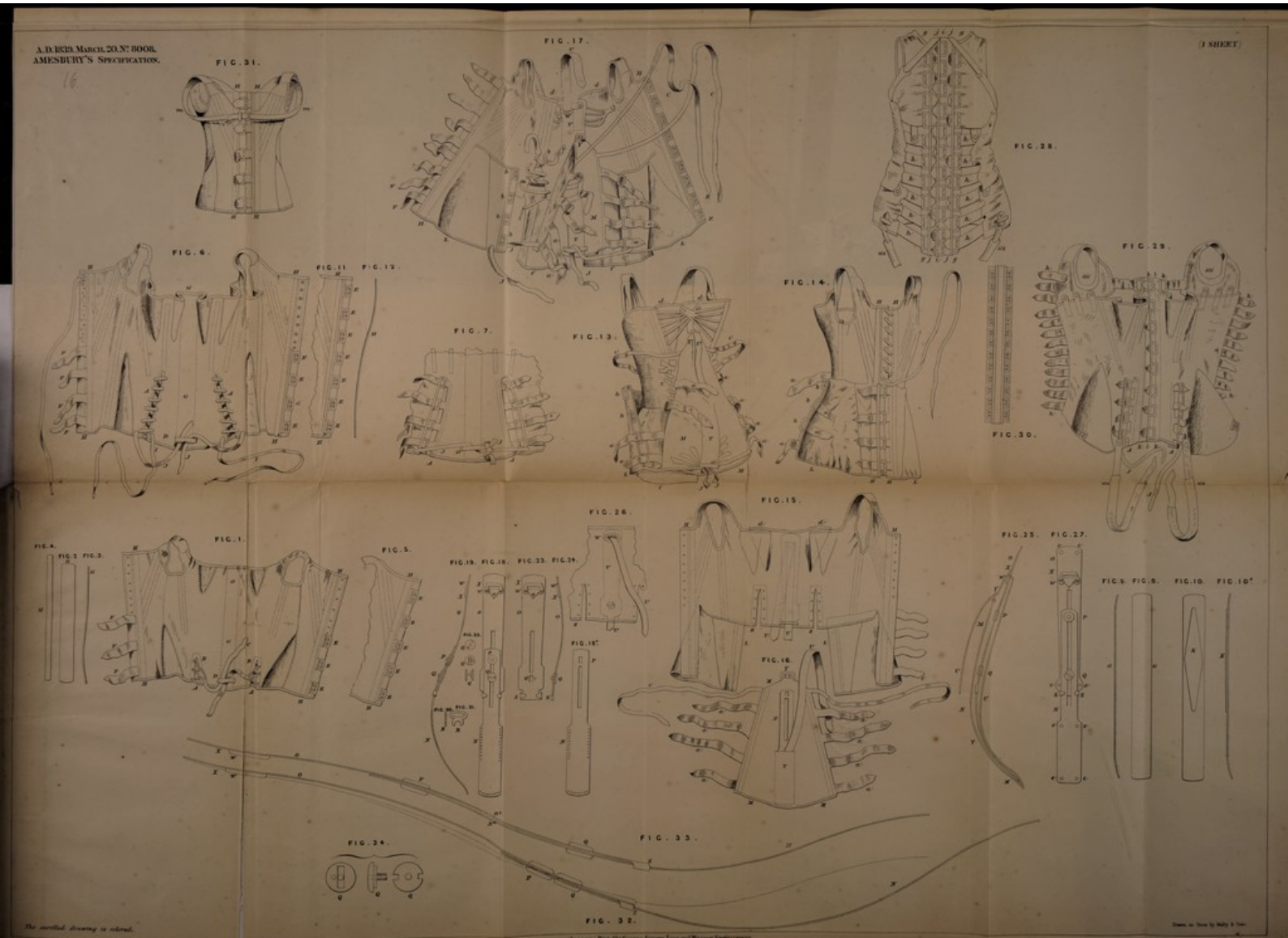
1 SHEET



The enrolled drawing is colored.