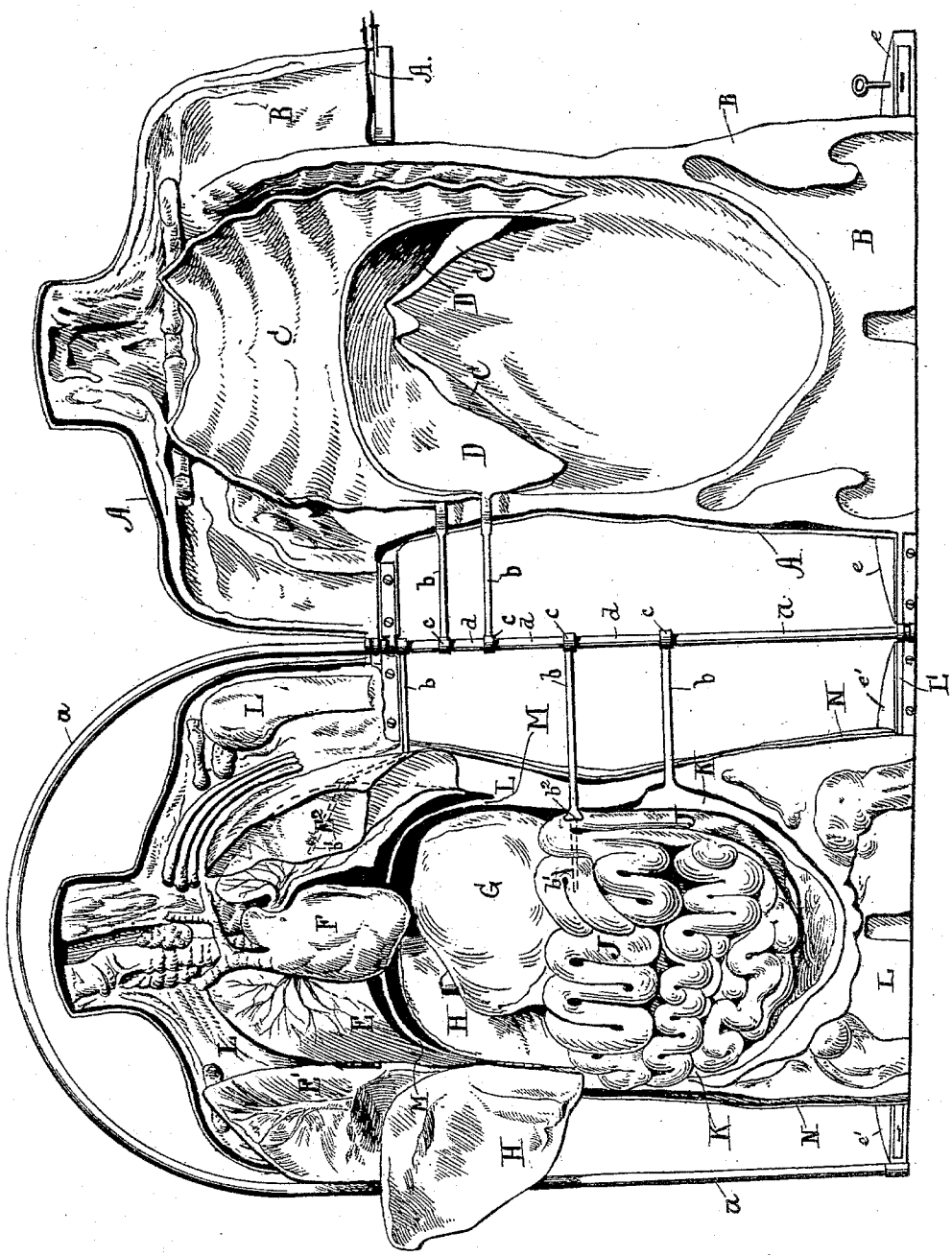
(No Model.)

D. T. LEE.

ANATOMICAL MODEL.

No. 411,816. Patented Oct. 1, 1889.



Witnesses.

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UNITED STATES PATENT OFFICE.

DAVID THORPE LEE, OF ST. JOHN'S WOOD, COUNTY OF MIDDLESEX, ENGLAND.

ANATOMICAL MODEL.

SPECIFICATION forming part of Letters Patent No. 411,816, dated October 1, 1889.

Application filed July 14, 1888. Serial No. 279,972. (No model.) Patented in England July 14, 1888, No. 10,251.

To all whom it may concern:

Be it known that I, DAVID THORPE LEE, of 1 Elm Tree Road, St. John's Wood, in the county of Middlesex, England, have invented a new and useful Improvement in Detachable Anatomical Models, (for which I have obtained patent in Great Britain, numbered 10,251, and dated July 14, 1888,) of which the following is a specification.

This invention relates to anatomical models or figures which are constructed in movable parts, and the principal object thereof is to so support and connect such parts that they may be easily movable from the main portion of the model and replaced and supported therein in their order.

A further object is to construct a strong and useful model for instructive purposes in which the separate organs or certain groups thereof may be detachable from their supports for separate use.

A further object is to so hinge and arrange the various supports of the parts that the model may be opened piece by piece, and each piece in its order folded back from the main portion of the model in such a manner as to take its relative place with the other previously-moved portions.

The following is an explanation of the invention as applied to a model of a trunk of a man and the organs therein, reference being made to the accompanying drawing, which shows the model open in front elevation, certain parts being folded back.

The principal part of the invention consists in hinging all organs or groups of organs or parts or groups of parts on the same common axis, but so that they are held at such distances therefrom as to maintain their relative place in the model. It will thus be understood that as the organs or parts are folded back they each arrive into their relative place with regard to those organs or parts previously folded back. Such a model therefore demonstrates the relative position of the parts as seen from the rear as well as from the front.

Thus in the accompanying drawing, A is the front half of the outer skin; B, the front half of the muscular tissues, &c.

C is the front half of the ribs; D, the front portion of the diaphragm.

E represents the lungs, they being cut vertically to show internal construction thereof; E′ E², the front portions, being hinged to the rear portion.

F is the heart, connected as a part to the lungs E, but detachable therefrom.

G is the stomach; H, the liver; J, the intestines. G H J may be all as one part, hinged to each other. The liver is preferably in two parts, and the front portion of the intestines may be hinged to the rear portion.

K is the rear wall of the abdominal cavity.

L is the main portion of the mold, being the back of the ribs, &c., and various bones.

M is the rear half of the diaphragm.

N is the rear half of the skin.

The method of hinging and supporting the parts is as follows: The main portion L may be fixed to a suitable base and continued laterally, as at L′, to support a vertical rod *a*, forming the hinge-pintle, and extended for strength over the top of the model down to the opposite side. This rod is preferably made of iron and covered with brass tubing. Each part or group of parts is supported upon a lateral arm *b*, integral with a boss *c*, threaded on the rod *a*. To support each arm at its proper height there are inserted on the rod between the boss pieces of tubing or sleeves *d*, which may be integral with the respective boss *c*, above or below them. Thus each arm forms a hinge pivoted on the rod *a* and separately movable. The larger or outer portions of the model are hinged twice to the rod on the one side, and when closed are fastened by hooks to the other portion of the rod *a*.

The separate parts are preferably made of papier-maché, colored. Some of the parts, more especially the organs having a substantial thickness and capable of being supported, as hereinafter shown, are detachable—for instance, the lungs or intestines. The arm *b*, supporting the same, terminates in a spike or pintle *b′*, fitting into a socket in the organ.

To prevent the organ being thrust too far on the pintle, there may be a flange b^2 on the arm to butt against the face of the organ. (See the support of the intestines.)

Such organ when folded out may be taken bodily from the model and replaced. Fur-

thermore, provision must be made to permit of the removal or swinging out from the body of the model of such organs or parts as overlap other parts. Thus in the model represented the rear part of the diaphragm M is integral with the part L, and the lungs E project downward behind the diaphragm. To permit the removal of the lungs, therefore, the pintle *b'* on the arm *b*, supporting the same, is directed slightly upward and the lungs swing thereon, as on a pivot. Thus in moving them the upper portion of the lungs is drawn outward and downward until the rear part is free to pass over the crown of the diaphragm.

For finish, and also securing of the model when closed, there is fixed on each of the outer skins A and N a half-oval piece of wood *e e'*, respectively cut out to fit the lower edge of the skin. These in the example extend at one end to the rod *a* and form the arms for the hinging of the skins. Then other ends abut when closed, and being provided with a suitable lock serve to secure the model. The back skin N folds back from the model. This piece N, as well as the pieces A and B, being large and serving as covers more or less for the parts, are connected when closed by hooks adapted to catch around the opposite part of the rod *a*. These hooks are pivoted on short flat plates.

Having now described my invention in reference to an example thereof, I claim—

1. An anatomical model composed of separate parts hinged upon one common axis.

2. An anatomical model composed of separate parts, in combination with hinged arms supporting said parts in their relative positions, all said arms being hinged on one common axis.

3. An anatomical model comprising, in combination, a frame, being a portion of said model, movable parts, being portions of said model, and arms supporting said parts in their relative position, all said arms hinged on a common axis.

4. An anatomical model comprising, in combination, a casing in two hinged parts, being a portion of said model, a number of separate parts, being portions of said model, and arms supporting said parts in their relative position, said arms being hinged on a common axis with the casing.

5. An anatomical model comprising, in combination, a base-plate, a rod on said base-plate, a casing in two parts, being a portion of said model and hinged on said rod, a number of separate parts, being portions of said model, and arms supporting said parts in their relative position and hinged on said rod.

6. An anatomical model comprising, in combination, a base-plate, a rod standing perpendicularly from said base-plate, a casing in two parts, being portions of the model, hinged on said rod, separate parts, being portions of said model, and arms supporting said parts in their relative position and hinged upon said rod.

7. An anatomical model comprising, in combination, a base-plate, a rod standing perpendicularly from said base-plate, a casing in two parts, being the exterior portions of the model, hinged on said rod, separate parts, being interior portions of said model and supported in relative position thereto, sockets in said parts, arms hinged upon said rod, and pintles on said arms engaging in said sockets for supporting said separate parts, for the purpose set forth.

8. An anatomical model comprising, in combination, a main stationary portion, a base therefor, a rod arranged vertically on one side of said portion, passing over the same and descending vertically on the other side of said portion, inner movable parts, arms pivoted on one side of said rod and supporting said inner parts in their relative position, distance-sleeves on said rod between the arms, outer parts forming coverings in detachable halves, pivoted on the one side of said rod each in two places, flanges on the lower edges thereof adapted to meet when said parts are closed, and a lock in said flanges remote from the pivots of the parts, for the purpose set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

DAVID THORPE LEE.

Witnesses:
W. I. HADDAN,
A. J. HADDAN.