

A. L. Wood.

Apparatus for Treating Diseases.

N^o 97744.

Patented Dec. 7. 1869.

Fig. 1.

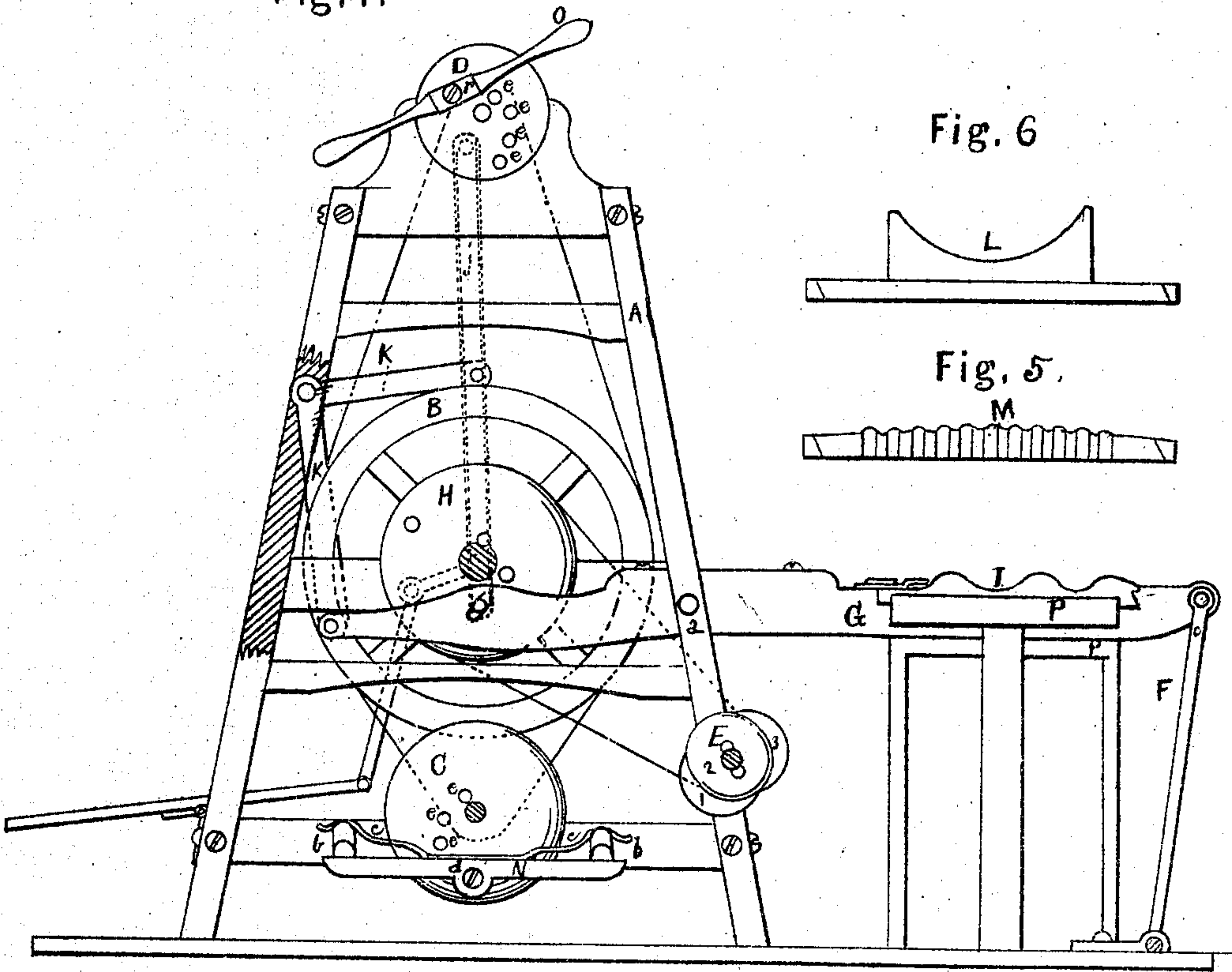


Fig. 6

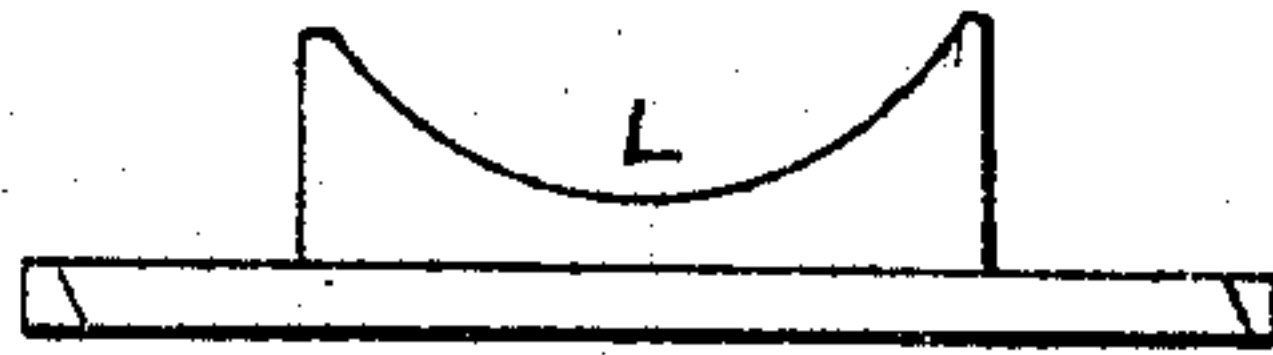


Fig. 5.



Fig. 3

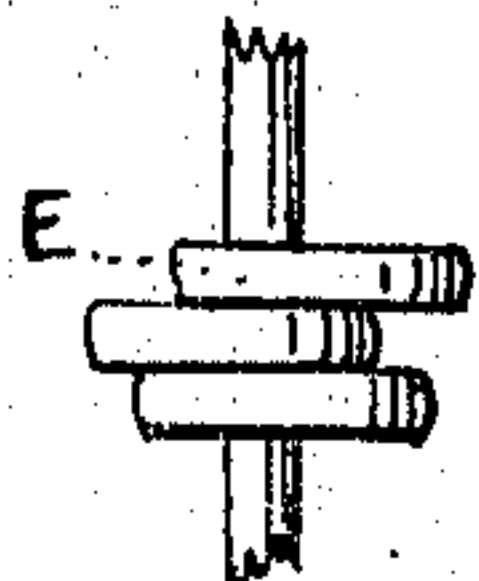


Fig. 2.

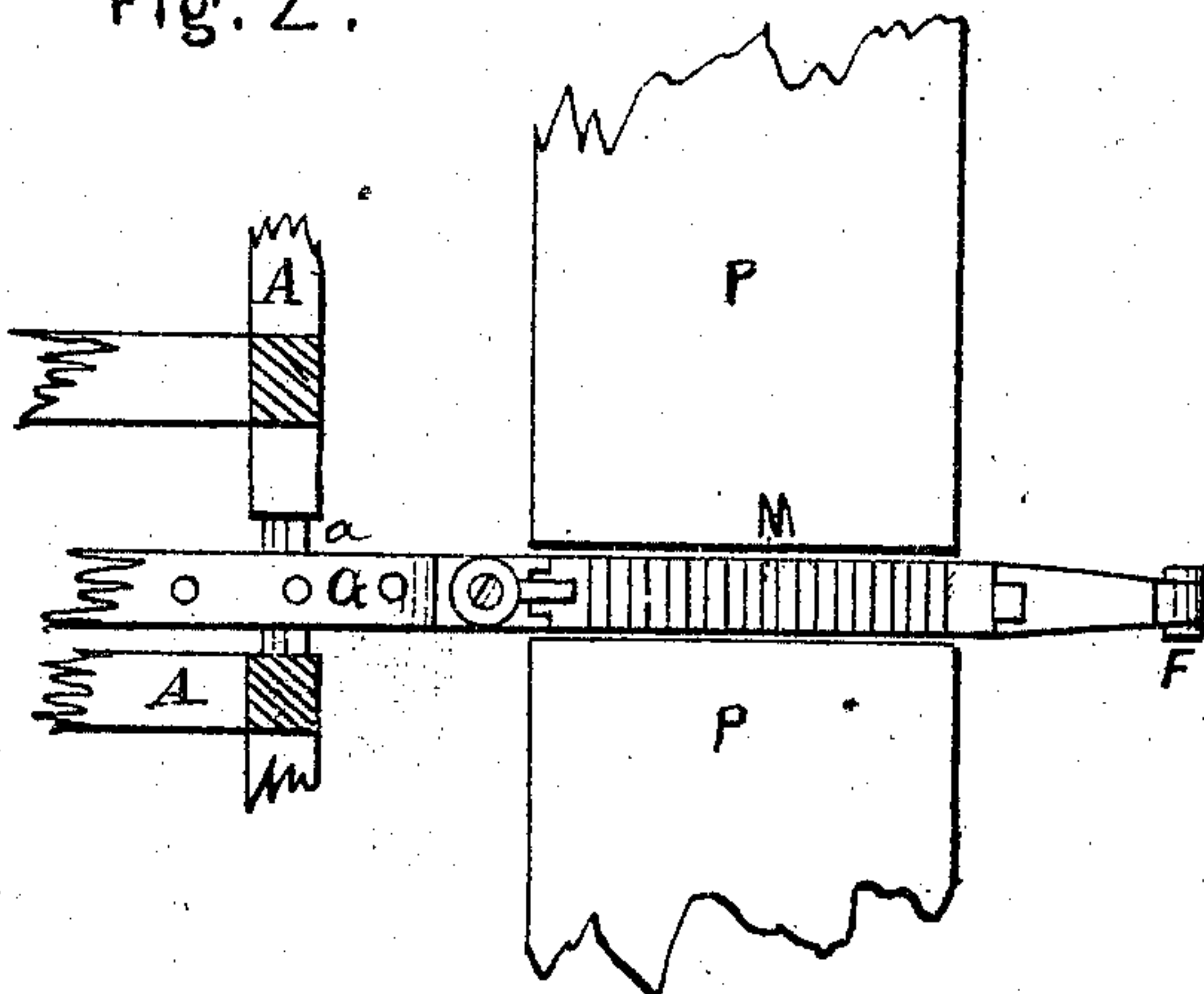
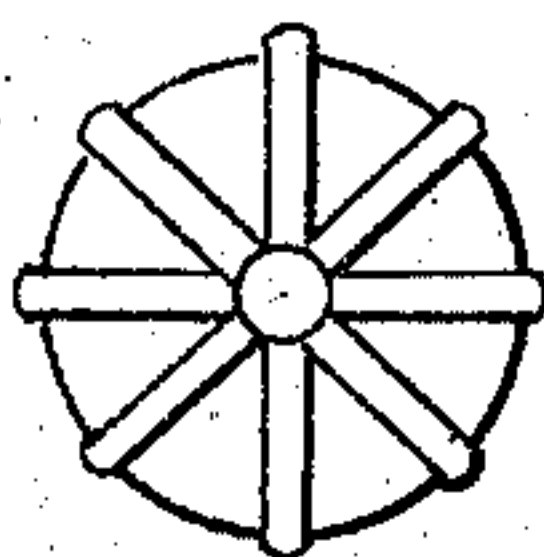


Fig. 4.



Witnesses:

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ALLEN L. WOOD, OF NEW YORK, N. Y.

Letters Patent No. 97,744, dated December 7, 1869.

IMPROVED APPARATUS FOR TREATING DISEASES BY MECHANICAL MOVEMENT.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, ALLEN L. WOOD, of the city, county, and State of New York, have invented a new and improved Mechanical Apparatus for Medical Use in the Treatment of Diseases; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation, constituting a general view of my apparatus:

Figure 2 is a plan view of the vibrating bar G, tables P P, and a portion of the frame A;

Figure 3 is an edge view of the rotating cam-disk E;

Figure 4 is a front view of the rotary rubbing-disk;

Figure 5 is a side view of the reciprocating rubber M; and

Figure 6, a side view of the attachment L.

Like letters designate corresponding parts in all of the figures.

The object of my invention is to devise a machine in which mechanical action is adapted to produce motion of various kinds, in a manner applicable to the treatment of various diseases, with salutary effect; and

It consists essentially in the employment of certain mechanism, whereby circular or rotary motion, properly converted and applied, is made to perform the several operations of rubbing, kneading, and giving vibratory and other action to the muscles and various parts of the system.

As represented in the drawings, A is an upright frame, of any suitable size and form, furnishing support for the bearings of the shaft of the main driving-wheel B, and also of the several disks C, D, and E.

The main wheel may be driven by any suitable power, whether steam, animal, or mechanical, its motion being communicated to the spindles by means of bands or gearing.

An effective agent, or medium, for the application of motion of various kinds to the patient, by means of different special appliances, is the vibrating bar G, one end of which is sustained by a pivoted standard, F, and the opposite one connected with the disk H, or to other moving parts, as will hereafter be described. Thus arranged, it is capable of imparting vertical, horizontal, or circular vibrations.

Tables or platforms P P are placed on either side of said bar, on which the patient is supported, with the part to be operated upon lying upon and across the bar, the upper surface of which is provided with a friction or rubbing-device, or with cushions adapted to the particular mode of operation required.

In the application of kneading, the attachment shown at I, fig. 1, is applied to the top of the vibrat-

ing bar, the opposite end of which is connected with the disk H, by means of a bolt, which admits of the free rotation of the disk.

The effect of this rotation is to produce a circular vibration of the part I, which (the patient lying on the tables, in such position that the abdomen or other part to be operated upon is in contact with it,) closely simulates the operation of kneading, the effect being heightened by the undulations on the surface of I.

The motion thus obtained, being an elliptical vibration, differs from a regular vibration upon the same plane, which is liable to become wearisome to the patient from its monotony.

The motion of bar G may be converted into a vertical vibration by detaching the bar G from the disk H, and suspending it from the disk D above, by means of the connecting-rod J, shown in dotted red lines.

In this case, the lateral vibration of the bar is prevented by friction-guides, one of which is shown at a, which admits only of motion in a vertical direction.

The vibrations are also increased in rapidity by the disk D being driven at a more rapid rate than the former.

With the last-described, and also with a horizontal motion, the attachment L, which is adapted to receive the side or limb of the patient, may be used.

The horizontal motion is obtained by connecting, with the rod J, the horizontal arm of the elbow-lever K, shown in red in fig. 1, and disconnecting the lower end of said rod from the bar, and connecting the bar to the vertical arm of the lever, whereby the motion is converted into one consisting of rapid vibrations on a horizontal plane.

This is adapted to friction or simple rubbing, and the attachment mainly employed is shown at M, which consists of a series of transverse ribs, alternated with grooves or spaces between.

Rapid circular vibrations are obtained by detaching the lower arm of the elbow-lever, and connecting the bar again with the rod or pitman J, while the latter is attached to the horizontal arm of the lever K, which so controls its movement as to produce again the circular or elliptical motion, the same as obtained from the disk H, but with the increased rapidity of disk D.

The vibrating bar may be made of sufficient length to receive a number of these attachments, and thus be made serviceable to a number of patients at the same time; and it is preferable to extend one in each direction from the driving-shaft, so that the power is applied centrally of the resistance, rather than on one side.

It will be seen that the combination of any machine readily admits of its being extended to any

number of patients desired at the same time, by employing adequate power to drive it.

The attachments for friction, kneading, &c., are preferably covered on the surface with leather, and may be stuffed with any suitable material, possessing but a slight amount, if any, of elasticity.

To give like motion to the feet of the patient, I employ the disk C, which is driven from the shaft of disk H, and at a greater speed, to the face of which I affix, by means of a bolt or pivot, *d*, at its centre, a bar, N, fig. 1, having at each side of said pivot, which forms its axis, a foot-piece, *b b*.

To these, the feet of the patient are secured by the spring-holder *c*, which gently presses them down, or they may be held by a strap, which buckles fast.

The rotation of the disk imparts like motion to the axis *d*, which carries the centre of the bar around in a true circle, while the extremities on which the feet rest, are free to follow the uniform rotation, or to oscillate, as the case or comfort of the patient may require, thereby securing the greatest advantage of remedial motion, that of exercise without fatigue or uncomfortable restraint.

For motion to the hands and arms, I affix, in the same manner, a bar, O, fig. 1, to the disk D.

This bar is grasped by the hands of the patient, on either side of its axis *r*, the motion being the same as that of the feet.

The axis of these bars, as also of the vibrating bar, may be adjusted to a greater or lesser distance from the centre of the disk, to increase or diminish the motion, by means of the several holes *e e*, or an equivalent slot, or other device.

It is sometimes desirable to produce the kneading-operation by the direct application of the rotary motion, and to this end, I provide a shaft or spindles, on any convenient part of my machine, to which I attach a rotating head, consisting of a series of cams, as represented at E, in which the eccentric or cam-portions, 1, 2, 3, successively revolve, on different planes, in contact with the abdomen, or other parts of the invalid's person, he lying on couches placed on either side.

Rotary friction or rubbing is produced by means of the disk, shown in fig. 4, consisting of a disk, the face

of which is provided with radial or otherwise formed ribs or ridges.

These are attached to the end of a rotating or oscillating shaft, and may be applied with equal advantage in a vertical position, as above or below the part operated on, or by horizontal presentation.

This device operates very advantageously by the oscillating motion of a rock-shaft, which may be obtained in any ordinary and well-known manner.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. As an instrument of hygienic treatment, the vibrating bar G, having a rotary motion at the end actuated, and its opposite extremity connected with a vertical vibratory support, for producing the operation of kneading and vibrating through the medium of fixed or removable attachments, for the purpose substantially as shown and described.

2. In combination with the bar G, the pitman J and elbow-lever K, for converting the circular vibratory into vertical and horizontal vibratory motion, substantially as set forth.

3. In combination with the vibrating bar G, operating as described, the removable leather-covered, ribbed, rubbing-attachment M, substantially as described.

4. The foot and hand-rests or bars, having continuous rotary motion given by the disk at the point of attachment, substantially as shown and described.

5. The radially-ribbed rubbing-disk, fig. 4, operated by any suitable mechanism, either by rotary or oscillating motion, substantially as set forth.

6. The compound cam-wheel E, for producing a kneading-effect by rotary motion, substantially as shown and described.

7. Extending the usual opening for the operation of the vibrating-devices through the entire length or breadth of the table on which the patient rests, so that the bar G may operate for the entire length or breadth of said table, substantially as set forth.

In witness whereof, I have hereunto signed my name, in the presence of two subscribing witnesses.

Witnesses:

ALLEN L. WOOD.

JONA. AUSTIN,
KATE N. JONES.