

O. Halsted,
Exercising Machine,
N^o 3,480,
Patented Mar. 13, 1844.

Fig. 1.

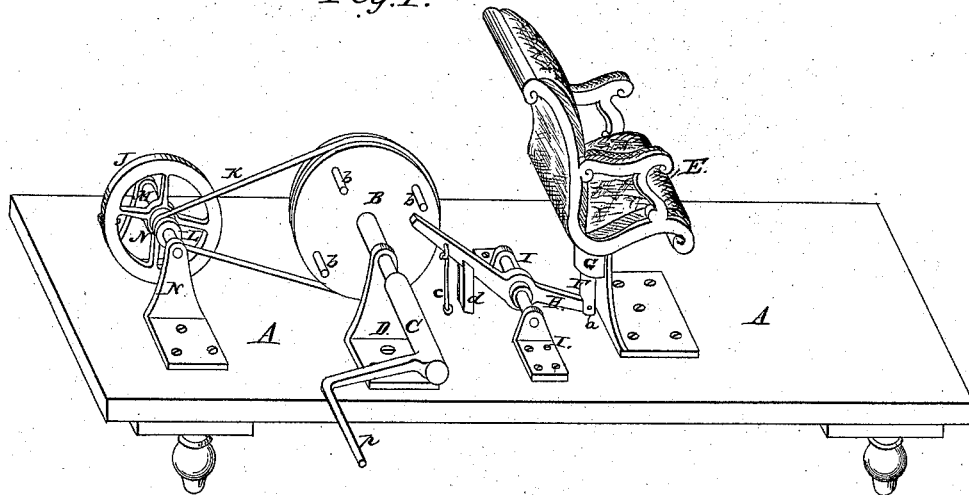
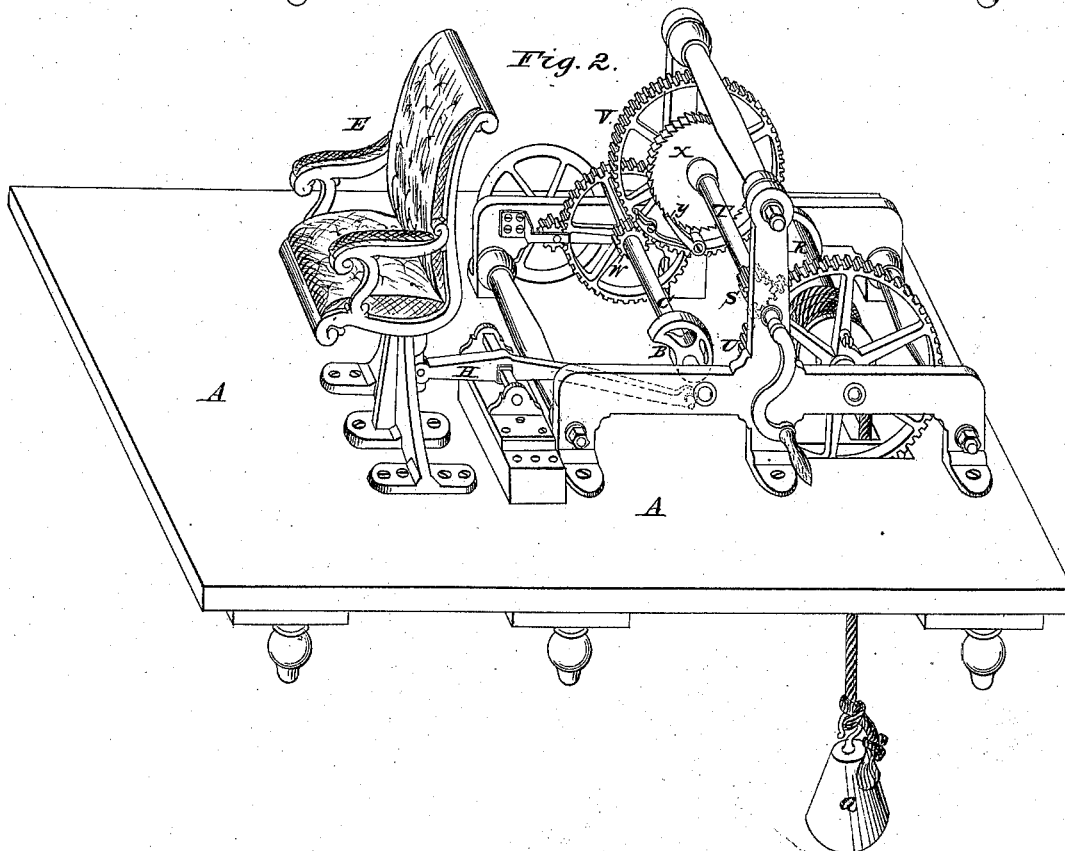
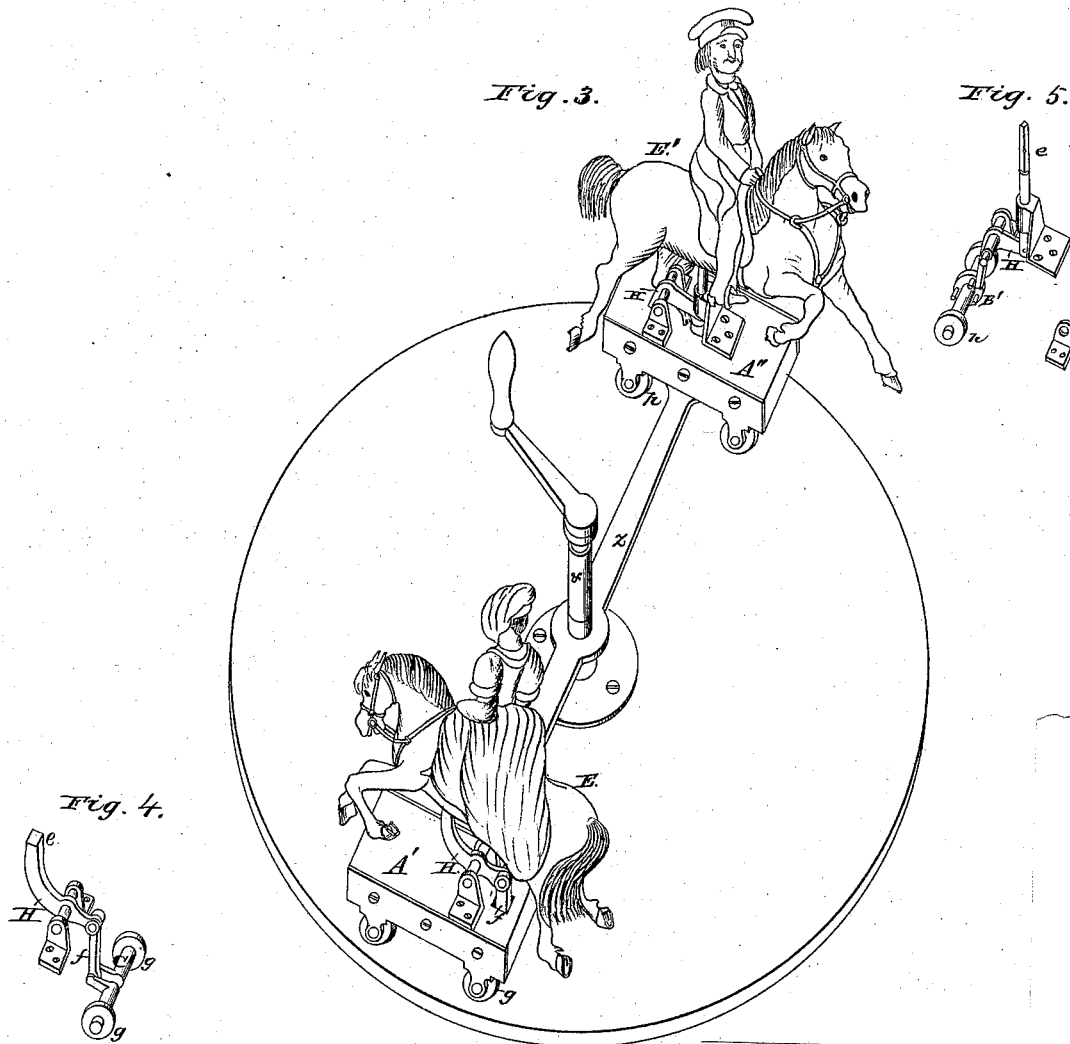


Fig. 2.



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Fig. 9.

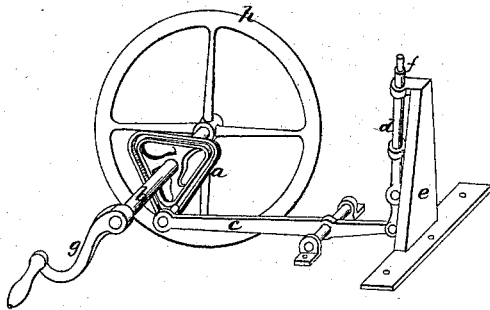


Fig. 10.

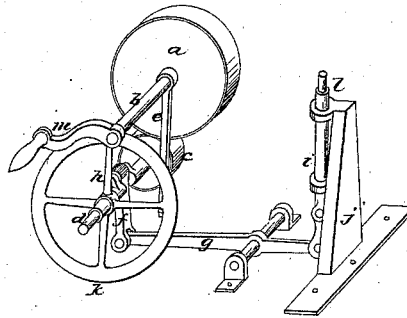


Fig. 11.

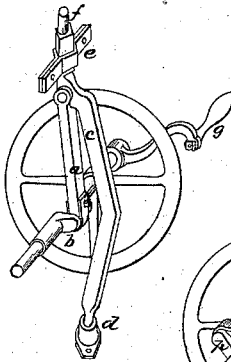


Fig. 8.

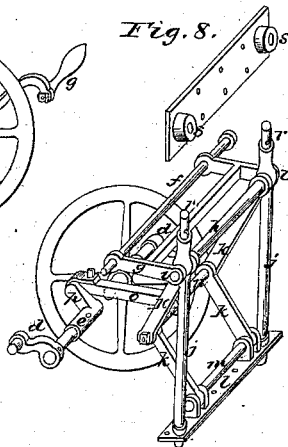
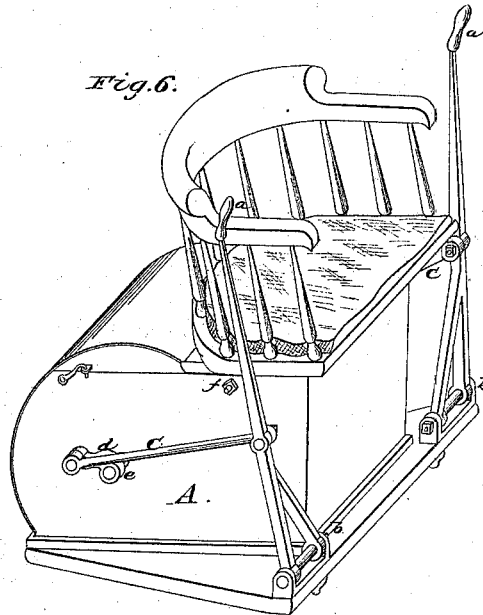


Fig. 6.



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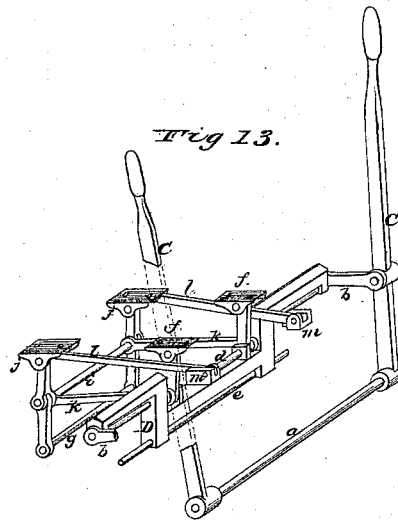
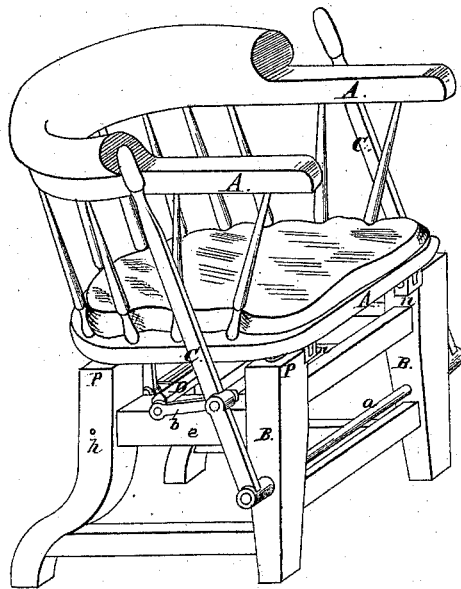


Fig. 12.



UNITED STATES PATENT OFFICE.

OLIVER HALSTED, OF NEW YORK, N. Y.

MACHINE FOR PRODUCING EXERCISE.

Specification of Letters Patent No. 3,480, dated March 13, 1844.

To all whom it may concern:

Be it known that I, OLIVER HALSTED, of the city and county of New York and State of New York, have invented a new and useful Machine for Dyspeptics and other Invalids; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a perspective view of a hand-machine. Fig. 2 is a perspective view of another variety of the same, arranged for operation by applying a sufficient weight. Fig. 3 is a perspective view of another variety of the same, designed for healthful exercise, as well as for the treatment of dyspepsia. Figs. 4 and 5 are views of parts in section, not clearly shown in Fig. 3. The letters of reference refer to corresponding parts in the several drawings, and the scale of inches indicates dimensions. Figs. 6 to 13 are illustrations.

The nature of my invention consists in giving to a seat, upon which the patient is placed an exercise similar to that given to the rider on a horse, with this difference, that, in the absence of all effort on the part of the patient, to retain his seat upon the chair of exercise, (which absence of effort is not obtained on horseback), he may relax the abdominal muscles, which is indispensable in order to stimulate the muscular coat of the stomach and at the same time restore the peristaltic motion of the bowels so that both resume their healthy action. This machine is used, in connection with other and previous means, as practised by me in the treatment of dyspepsia—and for healthful exercise as well as for invalids.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A A, Fig. 1, is a platform of any desirable length breadth and height, upon which is a cant-wheel B, upon the shaft C, placed on stand D, and a similar stand, not seen in the drawing, sustaining the opposite end of shaft C. The seat E is fastened to a pedestal rod F passing through, guided, and sustained by the stand G; the cant lever H rests on stands I, I, and is connected with the pedestal rod F, by passing into a slot or mortise at the lower end of the same at a, upon which the pedestal bears, and is made

to move up and down by the action of the cant-wheel B, working the lever H.

A fly-wheel J, is connected with the cant-wheel B, by the belt K, driving the small pulley L, on the shaft M, turning on stand N, N; the crank or winch P, puts the machine in motion. To counterbalance a portion of the weight placed on seat E, I suspend a weight upon the rod c, or attach a spring underneath the platform A A.

Operation: The patient being seated upon the chair E, the operator turns the crank P, which brings the cants *b b b* in contact with the cant lever H, forcing it down, tilting the same upon its journals, on stands I, I, raising the pedestal rod F, and the seat E, with it, until the cant leaves the lever by the movement of the cant-wheel B, the weight upon the seat causing it to fall, until the lever is checked by the strap *d*; and thus by the continual rotations of the cant-wheel, the undulations are maintained during the pleasure of the operator.

The use of the fly wheel J, is to equalize the labor of the cants upon the cant lever; I have sometimes placed the same of an increased and suitable diameter upon the shaft C, without the intervention of a multiplying shaft and pulley.

A variety of the same machine differing from the above described, is shown in Fig. 2, in which the weight Q propels the machine, causing the drum R, to revolve driving the pinion S, on the winch shaft T, by the cog wheel U.

The cant wheel B, Fig. 2, is accelerated, being a single cant in one revolution of the shaft upon which it is placed and driven by the cog wheel V, working into the pinions W, on the cant wheel shaft C, Fig. 2. The ratchet wheel X, is fastened to the crank shaft while the cog wheel V, upon the same shaft turns loose on its eye, being clutched by the spring catch Y, working into the ratchet wheel X, when the weight Q is acting upon the machine.

The necessary weight to operate this variety of the machine is several hundred pounds, being in due proportion to the reduction of speed and time. It is hardly necessary to add that to put it in motion, the operator winds up the weight Q, when it is self-acting during the descent or fall of the same.

The variety of the machine represented in Fig. 3 requires a more particular descrip-

tion. It embraces substantially the same principles, as the above described machines, with the addition of a progression in combination with undulating motion resembling more closely the effect produced in riding on horseback. I have denominated it in contradistinction to the others, "Exercising Vehicles." The part representing a male figure being an imitation of a trotting gait of a horse and that of the female figure an easy gallop, the former being designed for curative and invigorating purposes and the latter for pleasant recreation.

Upon a circular platform or carriage way are placed the trucks A' and A'' answerable in several respects to platforms A A, Figs. 1 and 2. The seats E E' (in this figure imitations of horses) are securely affixed to the ends of the cant levers H H at *e e*, shown in section in Figs. 4 and 5. The lever connected with the gallop motion is attached at the other end of the same by the shackle bar *f*, to the crank shaft C', Fig. 4, being a part of the axle of truck wheels *g, g, g*, Figs. 3 and 4, which truck wheels are fastened to the same in order, when in motion, to revolve the crank, and give motion to the seat.

Of the lever connected with the trotting motion (see Fig. 5) the end opposite to the seat is brought in contact with the cants on cant wheel B, in order that the rotations of the same may give motion to the seat, similar to the kind described in Fig. 1. The truck wheels *h, h*, are made fast to the axle. The trucks are propelled by the arm Z, upon the vertical shaft X, which may be driven by any sufficient power, such as horsepower or steam power, applied in any of the well known ways of attaching driving power.

Fig. 6. is a perspective view of another variety of the same machine; by this arrangement a person may exercise himself or be exercised by others; the handles *a, a*, turn on pivots or hinges at their lower ends at *b, b*, and are connected by the rods *c, c*, to crank *d*, Fig. 6, and a similar crank at the back side upon the shaft *e*, not seen in the drawings, these cranks correspond with those shown at *d, d*, Fig. 7; the shaft *e*, Fig. 6, runs on bushes inserted in the sides of the box A.

Fig. 7. is a sketch in skeleton of the internal parts of the machine represented at Fig. 6; the bolt *f*, is the same which is seen projecting through the side of the box A, Fig. 6, at *f*, Fig. 6, upon which the sway bar *g*, bears at its back end turning in eyes, the other end of sway bar *g*, is connected by eyes, to journals of cross bar *h*, at *i, i*, and serve to guide the pedestal rods *j, j*, in a vertical position while moving up and down; the levers *k, k, k, k*, are toggle-joints, connected at their top ends to cross bar *h*, and at their lower ends to the stand *l*, by

the pin *m*, the center pin *n*, forms the toggle, the shackle bar *o*, is connected at one end to the pin *n*, and the other end to crank *p*, on shaft *e*.

Fig. 8. is the pedestal or plate to which the chair is fastened, the eyes *s, s*, receive the tops of the pedestal rods *j, j*, Fig. 7, at *r, r*, being secured thereon by a cross pin. In operation, the crank *p*, moves the shackle bar *o*, and with it the toggle joints *k, k, k, k*, into a straight line by a quarter turn of the shaft *e*, raising the pedestal rods *j, j*, and with them the seat or chair; at another quarter turn of the shaft *e*, the toggle joints are bent at the opposite angle causing the pedestal rods to fall as at the beginning, at another one half turn of the shaft the same up and down motion is repeated, and thus by a full revolution of the shaft, the toggle-joints are twice straight and twice bent, making two undulations at each turn of the shaft.

Fig. 9. is another variety of the same machine shown in skeleton; the cam *a*, on shaft *b*, moves the tilt lever *c*, working the pedestal rod *d*, up and down in bearings, for that purpose in stand *e*, upon which at *f*, I place a pedestal or plate upon which the chair is fastened; in this arrangement the tilt-lever is vibrated up and down, three times to one revolution of the driving shaft *b*; the moving parts, excepting the fly wheel *h*, and crank *g*, are inclosed in a suitable box placed on a platform.

Fig. 10. is another variety in skeleton; the friction pulley *a*, on driving shaft *b*, moves the friction pulley *c*, on crank shaft *d*, being held together by the tightening bolt *e*, furnished with a nut and screw for that purpose applied underneath the platform, the shackle bar *f*, connects the tilt-lever *g*, with the crank *h*, moving the pedestal rod *i* in bearings in stand *j*; the seat plate is put on at *l*, and momentum is given to the machine by fly wheel *k*; a suitable box incloses all the moving parts excepting the crank *m*, and the upper end of the pedestal rod, and placed on a platform. A change of this arrangement is made by connecting the shackle bar *f* to a pedestal rod like the one shown in Fig. 11.

Fig. 11 is another variety in skeleton; the shackle bar *a*, connects the crank *b* with the pedestal rod *c*, moving it up and down in guide bush *d*, and boxes *e*; a seat plate is put on at *f*, and the moving parts except the crank *g*, are placed on a platform inclosed in a box.

Fig. 12, is a perspective view of another variety of the same machine; like the one described at Fig. 6, the person exercised, may perform it, or be exercised by others. A A A the chair or seat; B, B, a wood frame work corresponding with the platform in some of the other varieties, being in gen-

eral form like the lower part of an ordinary chair; C, C, are handles turning on a pivot bar at *a*, at the lower end, and connected by the shackle bar *b* with the rock bar D; the particular parts which compose this arrangement or variety are seen in skeleton at Fig. 13. It will be seen that four toggle-joints are employed, acting in pairs, one pair under the front, and the other pair at the back part of the seat. The pivot bar *c*, forms the lower joint of the front pair of toggle joints, and rest upon the side rail of frame B, B, Fig. 12, at *e*; the pivot bar *d*, the middle or center joint, and the top joints are its connection the steps *f f*; the pivot bar *g*, forms the lower joint of the back pair of toggle-joints and rests on frame B, B, Fig. 12, at *h*, the pivot bar *i*, the middle joint, and steps *j j*, the top joint; the shackle bars *k, k*, connect the front and back pair, of toggle joints; the sway bar, *l, l*, connect the back stands or steps, with the steps *m, m*, which are attached by screws to the top part of the front posts of the frame B, B, Fig. 12, at *n, n*, and serve to keep the seat in its proper position during its action up and down; the steps *f, f*, and *j j* are screwed to the bottom of the seat, and the same is thus attached to the frame, spiral springs are placed under the seat at the top of each post of the frame B, B, Fig. 12 as seen in part at *p, p*, they are sunk partly in the post and partly in the seat the better to keep their place and serve to counterbalance a part of the weight on the seat.

I have thus particularly described the mode of construction, and the use and operation of my invention, and in addition, I have given several varieties of machines illustrating the same general principles of action; these illustrations are given merely as examples, to show the different changes of form in the individual parts, to which my invention is susceptible, without departing from those principles of action by which I

produce a new and improved effect upon the stomach and bowels as herein set forth; which examples, are contained in the accompanying sketches, numbering from Fig. 6, to Fig. 13.

The contraction or rigidity of the abdominal muscles is the cause of the torpid state of the muscular coat of the stomach and peristaltic motion of the bowels, which, when relaxed, both are stimulated and resume their original healthy action, given by the exercising machines herein described; this effect is not fully attained, by exercise on horseback; owing to the causes explained in my declaration of the nature of my invention herein stated; I desire therefore that it may be clearly and distinctly understood that although the motion given by these chairs is analogous to that of the motion given to a rider on horse back being alike in some circumstances and effects—still it is not the same, or substantially the same, and is therefore novel and of new effect.

What I claim and desire to secure in Letters Patent is,

The giving of undulating or jolting motion to a chair by means substantially as herein described; for the purpose of curative treatment of dyspeptics and other invalids, and for healthful exercise; I do not mean to confine myself to the precise form of construction of the individual parts, but vary them as I may have occasion, without departing from the general principles of action herein set forth: to wit, the giving of undulating or jolting motion to a chair in contradistinction to a rocking or oscillating movement of the same, of which several examples of such variations are herein shown and specified.

OLIVER HALSTED.

Witnesses:

GEORGE F. HALSTED,
THOS. W. HARVEY.