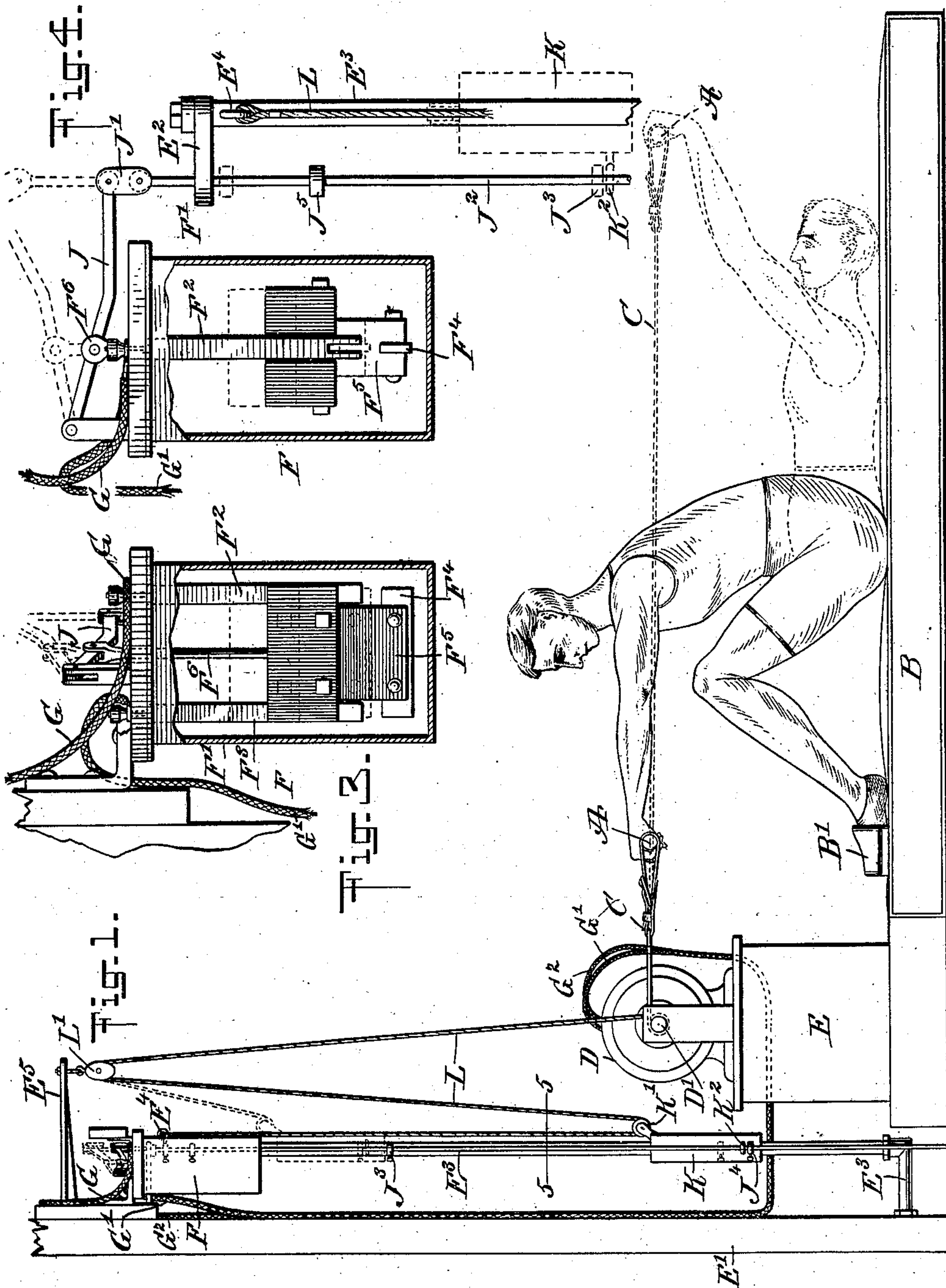


No. 857,447.

PATENTED JUNE 18, 1907.

J. J. COOPER.
EXERCISING APPARATUS.
APPLICATION FILED OCT. 22, 1906.

2 SHEETS—SHEET 1.



WITNESSES
John J. Cooper
Rev. H. H. H. H.

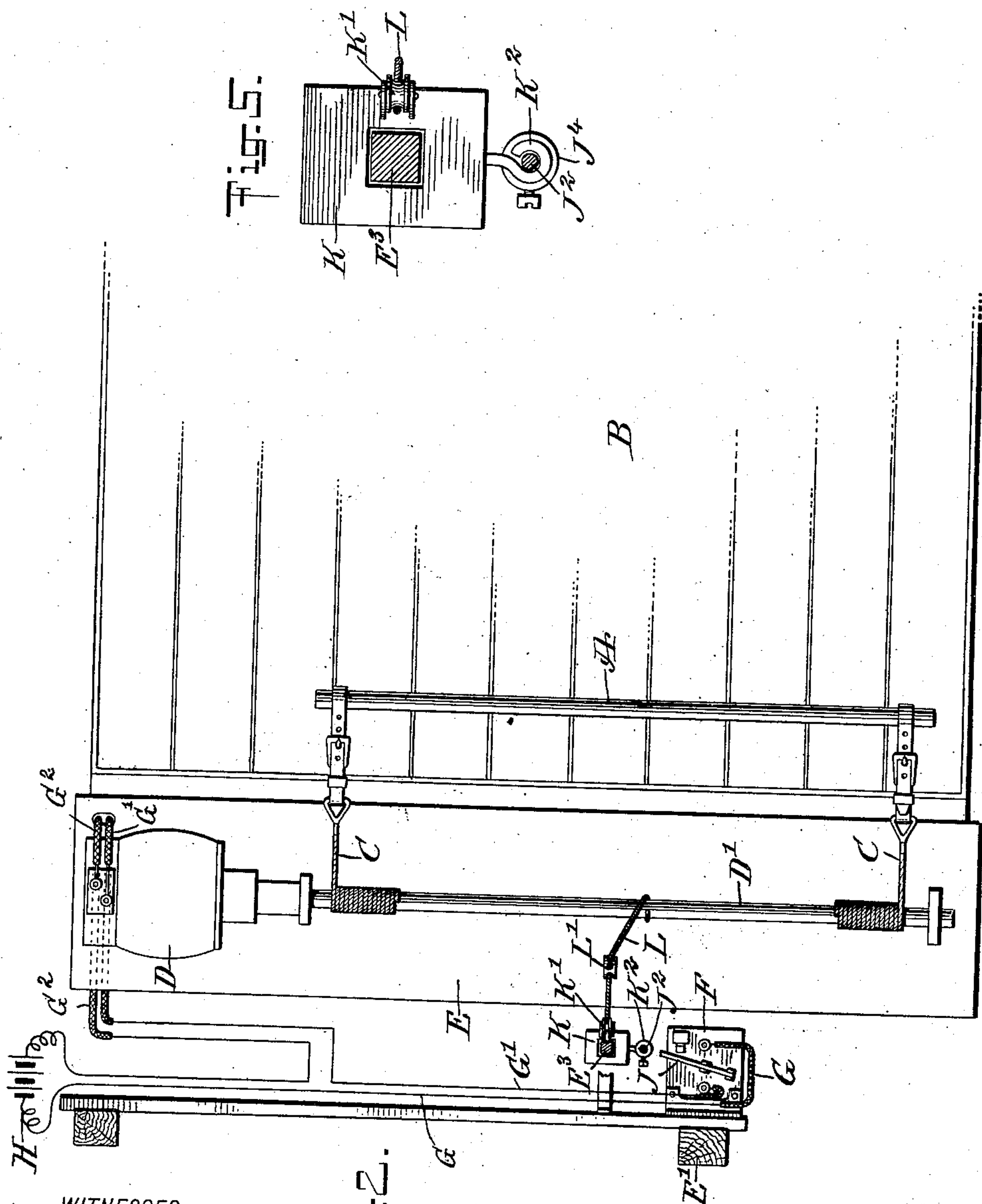
INVENTOR
John J. Cooper
BY *Munn & Co*
ATTORNEYS

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WITNESSES
John J. Cooper
Rev. G. H. Foster

INVENTOR
John J. Cooper
BY *Mumma & Co*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHN J. COOPER, OF NEW YORK, N. Y.

EXERCISING APPARATUS.

No. 857,447.

Specification of Letters Patent.

Patented June 18, 1907.

Application filed October 22, 1906. Serial No. 339,989.

To all whom it may concern:

Be it known that I, JOHN J. COOPER, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Exercising Apparatus, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved exercising apparatus, arranged to produce an exceedingly healthy action of the various members of the human body, notably the muscles, intestines and other vital organs, with a view to invigorate the body and to cure constipation, to reduce obesity, etc.

The invention consists of novel features and parts and combinations of the same, which will be more fully described herein-after and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the improvement; Fig. 2 is a plan view of the same; Fig. 3 is an enlarged sectional side elevation of the switch; Fig. 4 is a front elevation of the switch and part of the mechanism for opening and closing the same, the switch casing being shown in section, and Fig. 5 is an enlarged sectional plan view of part of the switch operating mechanism, the section being on the line 5—5 of Fig. 1.

The pull bar A is adapted to be taken hold of by the user of the exercising apparatus, the user, as shown in Fig. 1, being seated on a mattress or other suitable support B having a brace or retainer B' for the feet of the user. The pull bar A is held on the ends of ropes or cables C winding up and unwinding on the shaft D' of the motor D mounted on a support E forming a part of the support and arranged to bring the shaft D' of the motor to a proper height relative to the user seated on the support B. The motor D is preferably an electric motor and is started and stopped by the use of a switch F in such a manner that normally the switch is open and the power shut off from the motor D, and when the user has pulled the bar A into a rearward direction, as indicated in dotted lines in Fig. 1, then the switch F is closed so as to start the motor D, whereby the ropes C are wound on the motor shaft D', and con-

sequently the user is pulled back by power to the original position, and when the latter is reached the switch F is again opened to stop the motor D: thus the motor D is intermittently actuated, that is, a portion of the exercising of the user is done by his own exertion, while the remainder is forced by the action of the motor D.

The switch F is constructed as follows: The switch casing F' of the switch is preferably attached to a wall or other steady support E', and into the casing F' extend the contact arms F², F³ connected at their outer ends with the wires G, G', of which the wire G is connected with a source of electrical energy H, and the wire G' is connected with the motor D connected by the wire G² with the source of electrical supply H. The lower ends of the contact arms F², F³ are forked and are adapted to be engaged by a contact bar F⁴ held on an insulating block F⁵ mounted to slide on the arms F² and F³ and having a rod F⁶ extending upwardly through the top of the casing F' to connect at its outer end with a lever J fulcrumed on the casing and pivotally connected by a link J' with a vertically disposed rod J² mounted to slide in suitable bearings E² attached to a support E³. On the support E³ is mounted to slide up and down a block K provided with a pulley K' hung on a rope L, attached at one end to an eye E⁴ carried by the support E³. The rope L after leaving the pulley K', passes up over a pulley L' suspended from a bracket E⁵ attached to the support E'. The rope L after leaving the pulley L' winds on the shaft D', but in the opposite direction to the rope C, so that when the shaft D' is turned by the operator pulling the pull bar A rearwardly, then the rope L winds up on the shaft D', thus raising the block K. When the shaft D' is turned by the motor D then the rope L unwinds and the block K slides down on the support E³. On the block K is secured an eye K² through which passes the rod J² provided with collars J³, J⁴ adjustably secured on the rod J² by set screws. Now when the block K is drawn upward on the user pulling the pull bar A rearwardly, as above described, then the eye K² finally engages the collar K³ and lifts the same and the rod J², so as to impart an upward swinging motion to the lever J whereby the contact bar F⁴ is raised and moved into engagement with the contact bars F², F³. When this takes place the switch is closed and the elec-

tric current passes to the motor D so as to actuate the same, with a view to turn the motor shaft D' and to wind up the rope C and to unwind the rope L. When the block K moves into a lowermost position at the time the pull bar A returns to its normal position, then the eye K² engages the collar K⁴ and pushes the rod J² downward so that the lever J is caused to swing downward, thereby moving the contact bar F⁴ out of engagement with the contact bars F², F³, to open the switch and stop the motor D. The rod J² is provided near its upper end with a stop collar J⁵ adapted to engage the bearing E² to limit the upward sliding movement of the rod J².

The operation is as follows: When the several parts are in the position illustrated in Fig. 1, the motor D is at rest, and when the user now pulls the pull bar A rearwardly the ropes C rotate the motor shaft D' thereby winding up the rope L and lifting the block K. When the user reaches the end of his rearward stroke the block K lifts the collar J³ and the rod J² to raise the contact bar F⁴ into engagement with the contact bars F², F³, thus closing the circuit for the motor D and hence starting the latter. The motor D now rotates its shaft D' in the reverse direction to wind up the ropes C and to unwind the rope L. The winding up of the ropes C causes a forward drawing of the pull bar A and hence a forceful forward movement is given to the user to bring the latter back to the starting position shown in Fig. 1. The unwinding of the rope L causes a descent of the block K without disturbing the closing position of the switch parts until the block K engages the collar J⁴ and moves the same downward, thereby opening the switch F and shutting off the current from the motor D. Thus the latter comes to a standstill at the time the pull bar and the user reach the starting position. From the foregoing it will be seen that the motor is intermittently active for bringing the user back to the starting position without physical exertion on the part of the user while the latter is compelled to exert physical force during the forward stroke. The resistance to be overcome by the user in the forward stroke consists mainly in rotating the shaft D' and the parts carried thereby as well as lifting the block K and throwing the contact bar F⁴ in engagement with the contact bar F², F³, and the said resistance can be increased or diminished by increasing or decreasing the weight of the block K.

By the arrangement described the exercising devices are capable of being actuated by the user of the apparatus during a portion of the stroke, and means are provided for starting, running and stopping the motor during the remainder of the stroke. It will also be noticed that the motor switch is controlled by the exercising means to start the motor on the forward stroke given to the ex-

ercising means by the user of the apparatus, and to stop the motor at the end of the return stroke of the exercising means; that is, the motor is started and stopped during a period of the full stroke given to the exercising means by the user of the apparatus.

The position of the user of the exercising apparatus can be varied according to the requirement of his physical development, and the form of the motor D and other parts of the apparatus may be greatly varied without deviating from the spirit of my invention, and hence I do not limit myself to the particular detail construction of the apparatus as shown and described.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. An exercising apparatus comprising a motor, exercising devices actuated in one direction by the user of the apparatus, and means for causing the motor to actuate the exercising devices in the reverse direction.
2. An exercising apparatus comprising a motor, exercising devices directly connected with the said motor, and controlling means for the said motor for the latter to actuate the said exercising means intermittently.
3. An exercising apparatus comprising a motor, exercising devices directly connected with the said motor, and means controlled jointly by the said motor and the said exercising devices to successively actuate the exercising devices by the user of the apparatus and the said motor.
4. An exercising apparatus comprising a motor, exercising devices having a forward and a return stroke, and capable of being actuated by the user of the apparatus during a portion of the stroke, and means for starting, running and stopping the motor during the remainder of the stroke.
5. An exercising apparatus having exercising devices having a forward and a return stroke, a motor for actuating the said exercising devices and means for starting and stopping the motor during a period of the full stroke given to the exercising means by the user of the apparatus.
6. An exercising apparatus comprising a motor, exercising devices directly connected with the said motor, and a starting device for the said motor and controlled by the said exercising devices.
7. An exercising apparatus comprising exercising means, a motor for actuating the same, and stopping means controlled by the said exercising means for stopping the motor.
8. An exercising apparatus comprising exercising means, a motor for actuating the same, and a stopping and starting device for the said motor and controlled by the said exercising means.
9. An exercising apparatus comprising exercising means, an electric motor for actuat-

ing the said exercising means, and a switch controlled by the said exercising means to start and stop the motor.

5 10. An exercising apparatus comprising exercising means having a forward and a return stroke, an electric motor for actuating the said exercising means, and a switch controlled by the said exercising means to start the motor on the forward stroke given to the
10 exercising means by the user of the apparatus and to stop the motor at the end of the return stroke of the exercising means.

15 11. An exercising apparatus comprising an electric motor, a pull bar having ropes adapted to wind up and unwind on the motor shaft, and automatic means for starting the motor at the end of the forward stroke of the pull bar and for stopping the motor at the end of the return stroke of the pull bar.

20 12. An exercising apparatus comprising an electric motor, a pull bar having ropes adapted to wind up and unwind on the motor shaft, a switch for stopping and starting the motor, and means connected with the motor shaft
25 and the said switch for throwing the latter in or out.

13. An exercising apparatus comprising an electric motor, a pull bar having ropes adapted to wind up and unwind on the motor shaft,

a switch for stopping and starting the motor, 30 means connected with the motor shaft and the said switch for throwing the latter in or out, the said means comprising a rope winding and unwinding on the motor shaft, a guide pulley for the said rope, a block on the
35 said rope, and a rod connected with the said switch and having collars for engagement by the said block.

14. An exercising apparatus comprising an electric motor, a pull bar having ropes adapted to wind up and unwind on the motor shaft, a switch for stopping and starting the motor, means connected with the motor shaft and the said switch for throwing the latter in or
40 out, the said means comprising a rope winding and unwinding on the motor shaft, a guide pulley for the said rope, a block on the said rope, a rod connected with the said switch and having collars for engagement by
45 the said block, and means for adjusting the said collars on the said rod. 50

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

JOHN J. COOPER.

Witnesses:

THEO. G. HOSTER,
JNO. M. RITTER.