No. 799,270. PATENTED SEPT. 12, 1905.

E. ROLAND.

EXERCISER.

APPLICATION FILED NOV. 1, 1904.

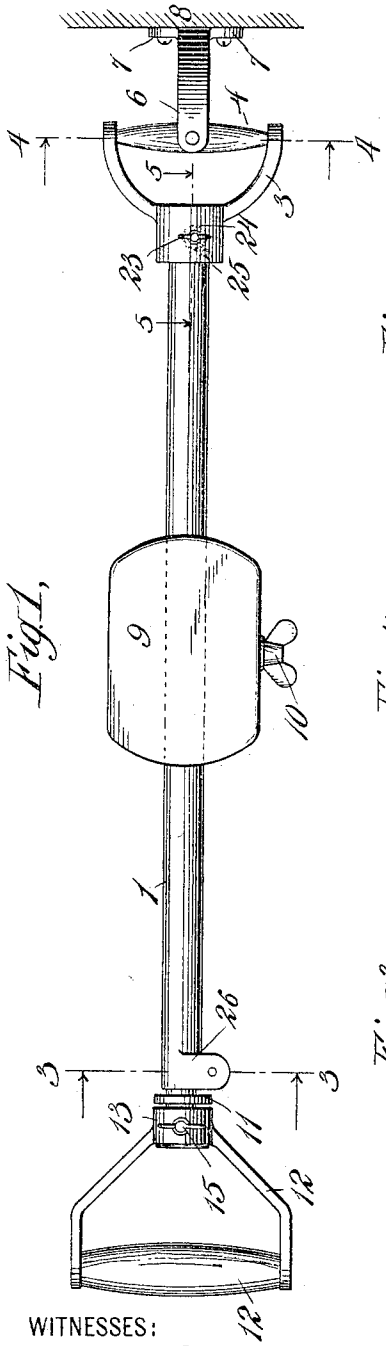


Fig. 1.

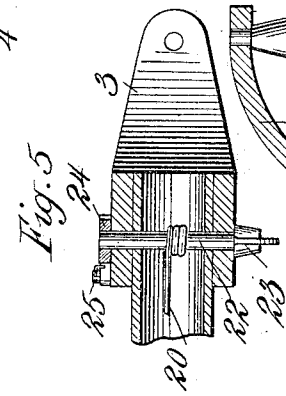


Fig. 5.

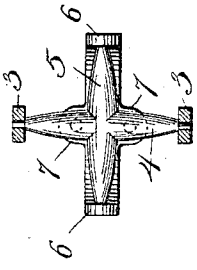


Fig. 4.

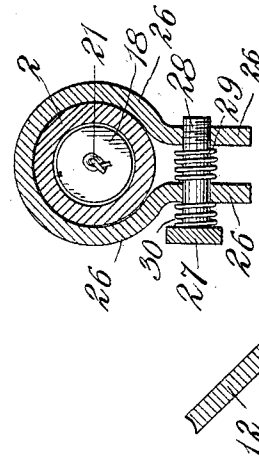


Fig. 3.

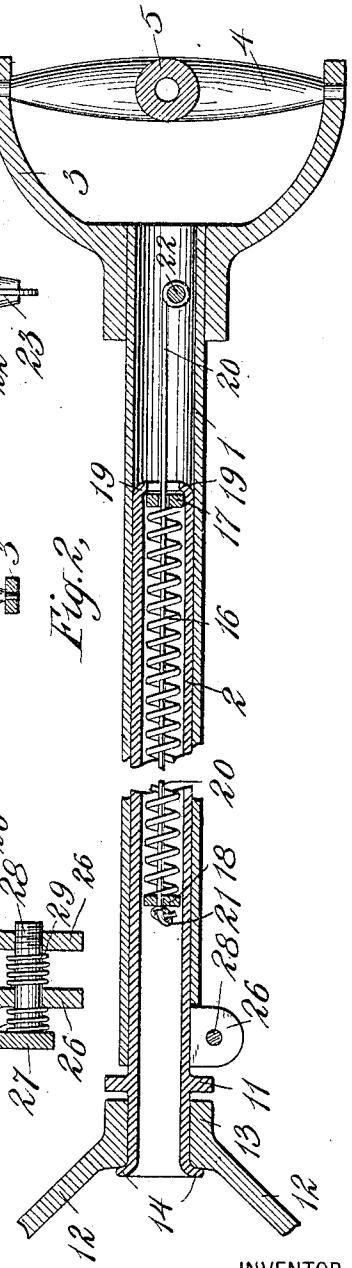


Fig. 2.

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EXERCISER.

No. 799,270. Specification of Letters Patent. Patented Sept. 12, 1905.

Application filed November 1, 1904. Serial No. 230,935.

To all whom it may concern:

Be it known that I, ERIC ROLAND, a subject of the King of Sweden and Norway, and a resident of the city, county, and State of New York, have invented certain new and useful Improvements in Exercisers, of which the following is a specification.

My said improvements comprise an exerciser having an adjustable weight which may be shifted into positions of greater or less leverage to make the force required to operate the exerciser greater or less, depending upon the strength and the individual needs of the user. It further comprises other adjusting means suiting the exerciser to persons of varying strength, as well as comprising various attachments to make the device more universally available to carry out the various movements usually performed with this class of apparatus.

The accompanying drawings show some of the forms which my improvements may take.

In the drawings, Figure 1 is a plan view of an apparatus embodying my improvements. Fig. 2 is a middle horizontal cross-section of Fig. 1. Fig. 3 is a vertical cross-section along the line 3 3 of Fig. 1. Fig. 4 is a view, partly in cross-section and partly in elevation, along the line 4 4 of Fig. 1 seen in the direction of the arrows. Fig. 5 is a vertical cross-section along the line 5 5 of Fig. 1 looking in the direction of the arrows.

Describing now the various figures, in which the same numerals of reference designate corresponding parts, 1 is a tube within which the tube 2 is adapted to telescope until it strikes against a flange 11 on the inner tube. A handle 12 is suitably attached to the inner tube, preferably so that it may swivel thereon. In this instance it is attached by the hub 13 of the handle, being inserted over the end of the inner tube during the course of manufacture and then forming the flanges 14 on said inner tube to hold the handle in place. The hub 13 of the handle is preferably larger than the diameter of the tube, so that it may freely swivel thereon, and is provided with the set-screw 15, by which the hub and handle can be fixedly secured to the inner tube in case the swiveling action of the handle is not desired.

The entire device is suitably attached to the wall 8 or any other suitable support by means of screws passed through the retaining-plate 7. There will preferably be a universal joint arranged between this retaining-plate 7 and the telescoping members. The drawings herein show a universal joint of the well-known type comprising the members 3, 4, 5, and 6.

To secure together the tubes 1 and 2, suitable means must be employed which will allow the inner tube to be withdrawn from the outer tube by the muscular power of the user and which will allow at the same time said tubes to telescope one within the other automatically when that power is relaxed. In this instance the means comprises the spiral spring 16, which is suitably secured in place between the washers 17 and 18, the washer 18 preventing the inner tube from being withdrawn by the pull of the operator in using the apparatus. To accomplish this function, the washer 18 is held in stationary position by means of the wire 20, which is secured at one end 21 to the washer, passes through the coils in the spiral spring, thence through the washer 17, and at the other end is secured to the rotatable pin 22, which is suitably mounted in the end of the outer tube. (See Fig. 5.) This pin 22 is provided at one end with the head 23 and at the other with the ratchet-wheel 24, against which engages the pawl 25. By twisting the said head 23 the pin 22 may be rotated and the wire 20 wound on the pin, thereby shortening the distance between the washers 17 and 18 and to that extent compressing the spring 16, the said ratchet and pawl serving to prevent the accidental reverse rotation of the pin. The washer 17 is prevented from being forced out of the end of the inner tube under the action of the spiral spring by means of the flanges 19, provided on the ends of the inner tube.

The outer tube may preferably be provided with the suitable clamping sides 26 (shown in detail in Fig. 3) for the purpose of requiring the exercise of greater or less power on the part of the operator to twist and rotate the inner tube within the outer. The bolt 27, provided with the threaded end 28, is adapted to adjustably connect the clamping sides 26 together. A spring 29 is provided surrounding the bolt and situated between the clamping sides, the purpose of which is to release

the clamping action of the sides 26 on the inner tube to the extent that the bolt 27 is unscrewed. A spring 30 is also provided between the head of the bolt 27 and the clamping sides in order to more nicely regulate the degree of the clamping action as the bolt is turned either to tighten or to release the clamping sides from the inner tube.

A weight 9 is provided, which is adapted to slide along the outer tube and to be adjustably secured thereto by means of the set-screw 10.

The operation of my exerciser is as follows: There will preferably be two of the devices shown in Fig. 1 secured to the wall at a suitable distance apart and on a level of about the shoulders of the average user. The weights 9 will then be adjusted at the positions on the device suited to the strength and requirements of the operator, it being obvious that when the weights are nearer the wall that their leverage will be at a minimum, whereas this leverage will increase as the weights are approached nearer and nearer to the operator, so that the operator will be called upon to put forth his maximum effort when the weights are adjusted in their extreme outward position. As the operator goes through the various movements the inner tube will reciprocate back and forth within the outer tube, the force of the operator serving to withdraw the inner tube from the outer and the power of the spring 16 serving to telescope the tubes within each other. The degree of power required to extend the tubes will vary with the compression of the spring 16, which can be regulated to suit the requirements of the operator by operating the pin 22 and twisting the wire 20 more or less around the pin 22. The universal joint by which the device is connected to the wall permits of upward and downward movements, &c., and the handle 12, which is preferably left loose on the inner tube for most movements, gives the operator still greater freedom as he goes through the various exercises. In order to provide for the twisting movements of the inner tube within the outer in order to strengthen the wrists, &c., the set-screw 15 will be tightened, so as to rigidly secure the handle 12 to the inner tube, and the clamping sides 26 will be more or less firmly clamped against the inner tube by the adjustment of the bolt 27. In this way the device may be adjusted to require more or less twisting force to turn the inner tube within the outer.

Without enumerating equivalents and without describing all the forms which my improvements may take, what I claim, and desire to secure by Letters Patent, is—

1. In exercising apparatus, the combination of a longitudinally-extensible member, suitably attached to a support at one end, and adapted to be grasped at the other end, and a weight longitudinally adjustable on said member; substantially as and for the purposes set forth.

2. In exercising apparatus, the combination of telescoping members, one of which is suitably attached to a support, and the other of which is adapted to be grasped by the user, and a weight longitudinally adjustable on said telescoping members; substantially as and for the purposes set forth.

3. In exercising apparatus, the combination of telescoping members, one of which is suitably attached to a support, and the other of which is adapted to be grasped by the user; means adapted to automatically telescope said members, and a weight longitudinally adjustable on said members; substantially as and for the purposes set forth.

4. In exercising apparatus, the combination of telescoping members; means comprising a spring adapted to normally telescope said members; means for adjusting the tension of said spring; and a weight longitudinally adjustable on said members; substantially as and for the purposes set forth.

5. In exercising apparatus, the combination of a tubular member, a member telescoping therewith; a spring adapted to automatically telescope said members; a universal joint adapted to connect one of said members to a suitable support; a suitable grasping device on the other of said members, and a weight longitudinally adjustable on said members; substantially as and for the purposes set forth.

6. In exercising apparatus, the combination of a tubular member, a member telescoping therewith; a spring adapted to automatically telescope said members; a universal joint adapted to connect one of said members to a suitable support; a suitable grasping device on the other of said members; a weight longitudinally adjustable on said members; and adjustable clamping means between said members adapted to more or less impede rotation of the telescoped member; substantially as and for the purposes set forth.

7. In exercising apparatus, the combination of telescoping members, one of which is suitably attached to a support, and the other of which is adapted to be grasped by the user; and means adapted to automatically telescope said members; substantially as and for the purposes set forth.

8. In exercising apparatus, the combination of telescoping members, one of which is suitably attached to a support, and the other of which is adapted to be grasped by the user; means adapted to automatically telescope said members; and adjustable clamping means between said members adapted to more or less impede rotation of the telescoped member; substantially as and for the purposes set forth.

9. In exercising apparatus the combination of telescoping members, one of which is suitably attached to a support, and the other of which is provided with a swiveling handle adapted to be grasped by the user; said handle; means adapted to automatically telescope said member; and a weight longitudinally adjustable on said members.

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

ERIC ROLAND.

Witnesses:
E. W. SCHERR, Jr.,
JOHN G. HONEY.