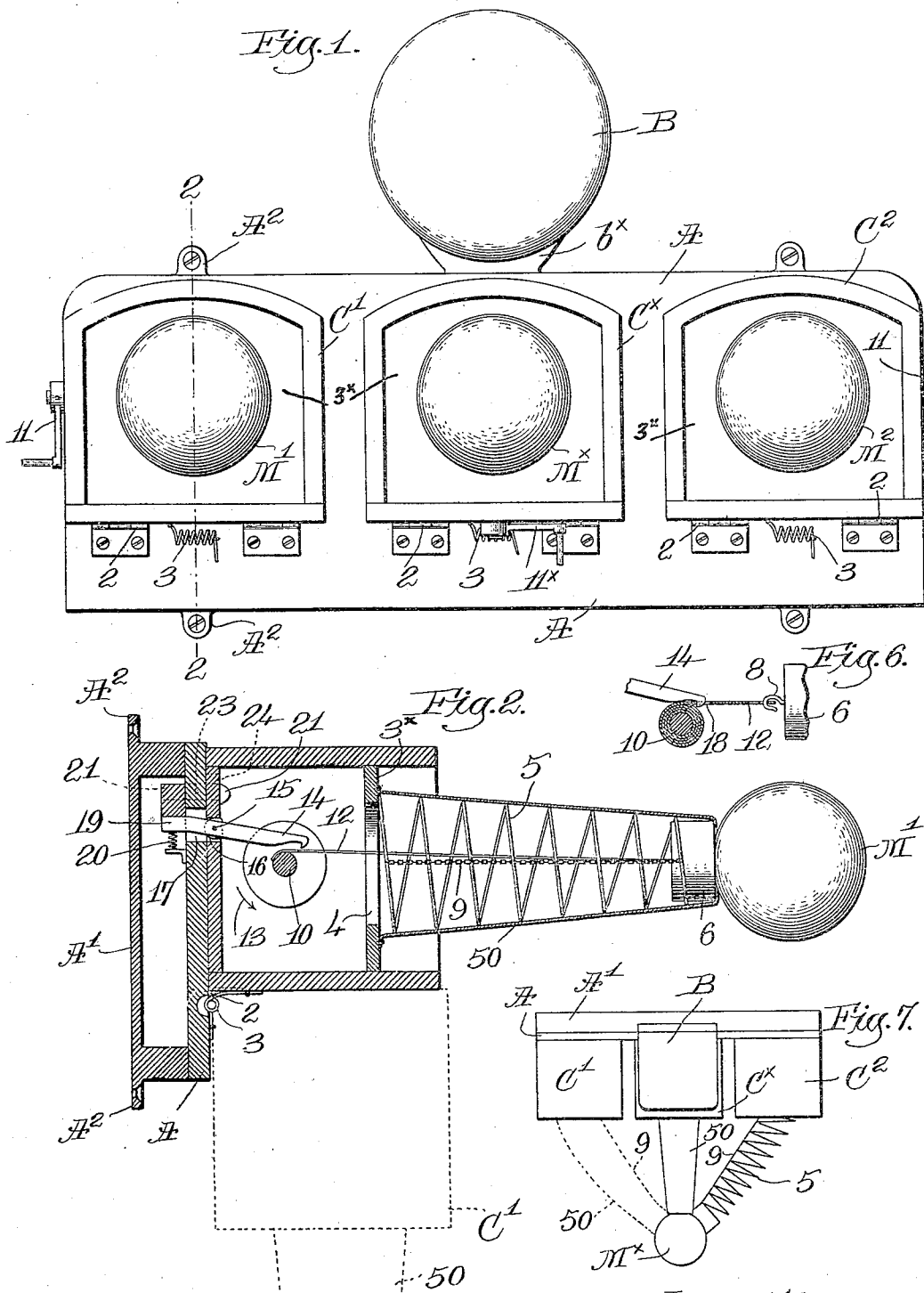


W. F. VALENTINE.
EXERCISING APPARATUS.
APPLICATION FILED JUNE 3, 1909.

931,818.

Patented Aug. 24, 1909.

2 SHEETS—SHEET 1.

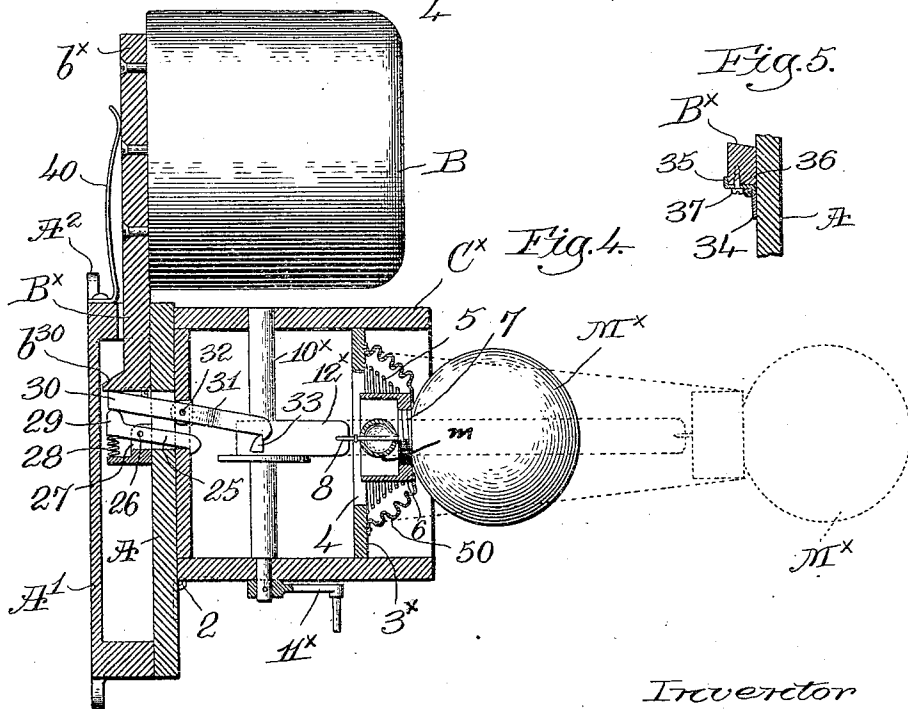


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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

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EXERCISING APPARATUS.

931,818.

Specification of Letters Patent. Patented Aug. 24, 1909.

Application filed June 3, 1909. Serial No. 499,844.

To all whom it may concern:

Be it known that I, WILLIAM F. VALENTINE, a citizen of the United States, and resident of Leominster, county of Worcester, State of Massachusetts, have invented an Improvement in Exercising Apparatus, of which the following description, in connection with the accompanying drawing, is a specification, like characters on the drawing representing like parts.

This invention has for its object the production of novel exercising apparatus so constructed and arranged that quickness, skill and agility will be called forth on the part of the user while at the same time amusement as well as benefit will result.

The general arrangement and operation of the apparatus embodying my present invention simulates boxing or sparring, a series of striking members being provided and so governed that when a blow of a certain character is delivered by the person using the apparatus the latter will deliver automatically a return blow of a predetermined character. That is, according to the nature of the blow struck by the user, whether direct, or a right or left hand swing, the return blow will vary in its character, and thereby the user is exercised in dodging the return blow.

Various novel features of construction, arrangement and operation embodied in my invention will be fully described in the subjoined specification and particularly pointed out in the following claims.

Figure 1 is a front elevation of an exercising apparatus embodying one form of my invention, in readiness for use; Fig. 2 is a vertical sectional detail taken on the line 2—2, Fig. 1, looking toward the right, but showing the striking member released and just prior to the movement of its casing into inoperative position, shown by dotted lines; Fig. 3 is a rear elevation of the apparatus, shown in Fig. 1, with the protective cover removed; Fig. 4 is a vertical section taken on the line 4—4, Fig. 3, through the center of the apparatus, showing the central striking member retracted and in readiness to be released, its released position being shown in dotted lines; Fig. 5 is a detail, to be referred to, on the line 5—5, Fig. 3; Fig. 6 is a detail partly in section of the locking means for one of the striking members at the side of the apparatus; Fig. 7 is a top plan view, on

a smaller scale, of the general features of the apparatus, to show the substantially common point at which any of the striking members delivers its blow.

In the present embodiment of my invention A is a back, of wood or metal, and of suitable size to support the various parts of the apparatus, the back having attached to it a protective cover A', Figs. 2 and 4, and in practice the apparatus is preferably secured to the wall of a room at the proper height, or to any other suitable support by means of apertured ears A².

Upon the front of the back A I mount in a horizontal row three box-like casings, C¹, C², pivotally connected at their lower edges by suitable hinges 2 with the back, so that the casings may extend horizontally from the back, or they may swing down into dotted line position, Fig. 2.

Buffer or cushioning springs 3 serve to prevent the dropping of a casing with too much of a shock.

Near its open front end each casing is provided with a partition 3^x having a central opening 4, and a spirally coiled actuating spring 5 is fixedly attached at its base to the outer face of the partition.

A tubular socket-piece 6 is fixedly attached to the free, outer end of the spring and is internally screw-threaded to receive the base 7 of a striking member, see Fig. 4, the base having attached to it a hook 8 extending through the socket-piece.

Each of the three actuating springs is provided with a socket-piece, and each co-operating base 7 has an attached striking member, which in practice will be a padded or cushioned ball-like device, covered with leather or canvas, and herein for convenience I have indicated the three striking members by the reference letters M¹, M², see Fig. 1.

The central spring 5 when free to expand moves its attached striking member M¹ in a substantially horizontal, straight path forward at right angles to the back A, but the springs of the members M² and M³ have their coils connected along the inner sides of the same by a light chain, or other flexible means, as at 9, Figs. 2 and 7, shorter than the expanded length of the spring. When these springs expand their striking members M² and M³ travel in slightly curved paths toward each other, to what is substantially a common point, as shown diagrammatically

in Fig. 7. Consequently whichever compressed spring is released its striking member will move to a given point, which is the same, practically, for all three of the striking members.

Referring to Figs. 2 and 6, each of the end casings C' and C'' has mounted in its back of the partition 3* a transverse, rotatable shaft 10 having an operating crank or handle 11, Fig. 1, on its outer end exterior to the casing, and a preferably metallic, flexible tape 12 is attached at one end to the shaft, its other end being led through the opening 4 and through the center of the spring 5 to the hook 8, which passes through a hole in the tape. By rotating shaft 10 in the direction of arrow 13, Fig. 2, the tape is wound up, as shown in Fig. 6, compressing the spring in the manner shown in Fig. 4 and retracting the connected striking member, as shown. To retain it retracted I provide a hooked latch 14, pivoted at 15 in registering openings 16, 17 in the rear wall of the casing and the back A, Fig. 2, the hook of the latch entering a hole 18, Fig. 6, in the retracting tape 12, the tail 19 of the latch projecting beyond the back A and being elevated by a light spring 20, to operatively position its hooked end, see Figs. 2 and 3. A second hooked latch 21 having its rear end or tail lifted by a spring 22, Fig. 3, is pivoted at 23 and extends through an aperture in the back A and enters an opening 24 in the rear wall of the casing, to normally retain it horizontal.

The relative position of the tails of the pairs of latches is clearly shown in Fig. 3, and now referring to Fig. 4 the center casing C* is locked in horizontal position by a hooked latch 25, pivoted at 26 and passing through an opening in the rear wall of said casing. The ear 27 on which this latch is pivoted also supports a spring 28 which normally depresses the hooked end of said latch, the tail of the latter having a lump 29 thereon, upon which rests the tail 30 of a latch 31 pivoted at 32 in the rear wall of the casing. This latch 31 locks the striking member M* in retracted position, see full lines Fig. 4, by engaging a lug 33 on the retracting band or tape 12*, attached to the hook 8 and wound around the rotatable shaft 10*. Said shaft in this instance is journaled in the top and bottom of casing C* and has an operating handle 11* at its lower end, as there is no room for such handle at either side of the casing, as will be manifest. Supposing a striking member to be retracted and locked by its latch in such position, with its casing held horizontal by its latch, it will be manifest that release by the first latch will permit the spring 5 to expand and move its attached striking member forward to deliver a blow, and as the casing latch is immediately released

thereafter the casing will swing downward and the extended spring and attached striking member will also drop. By this combined action the apparatus in operation closely imitates the act of a person who delivers a blow and then drops the hand and arm.

It will be understood that the spring-locking latches move with the casings when the latter swing down, but the latches which lock the casings in horizontal position are mounted on the back A.

To restore a released casing to normal position the user of the apparatus merely swings such casing up into horizontal position and its latch operates automatically, but to position the striking member the proper shaft must be rotated to retract such member, and its latch will lock it automatically.

I have provided means to release any one of the retracted striking members by the impact of a blow delivered by the person using the apparatus, and for this purpose a member to be struck is provided. Herein this member is a substantially cylindrical pad or cushion B located above the casing C* and of sufficient depth, Fig. 4, to project well forward into convenient position to be struck by the first. Member B is rigidly attached to an upright support b* secured to or forming part of an elongated releasing member or bar B* having a limited rocking movement and also a longitudinal movement, the lower edge of the bar having at its central portion a lip b³⁰ to engage the tail 30 of the latch 31, Fig. 4. Hinge-leaves 34 fixed to the back A below said bar B* are pivotally connected with flanged leaves 35 longitudinally slotted at 36, best shown at the left, Fig. 3, for the shanks of headed screws 37 by which the leaves 35 are connected slidably with the bar. The bar B* can thus rock with relation to the back A if the member B is struck a square blow, and the bar can also slide longitudinally if the member B be struck with a right or left hand swing, springs 38 between shoulders on the bar and abutments 39 on the back A centering the bar, see Fig. 3.

A suitable spring 40, Fig. 4, attached to the cover A' bears against the support b* and normally pushes the member B forward into the position shown in Fig. 4. Slots 41 in the releasing bar B* receive the shanks of headed retaining studs 42, which permit longitudinal movement of said bar but positively limit its rearward swing, and take up the thrust of a straight blow delivered upon the member B.

At each end of the releasing bar I provide cam faces 43, 44, which engage similarly beveled faces formed on the rearwardly projecting parts of the hooked latches 14 and 21, respectively, so that if said bar is moved

longitudinally one or the other pair of such latches will be rendered inoperative according to the direction the bar is moved.

If the member B is struck a swinging blow with the left fist of the operator, the releasing bar B^x will be moved to the right, Fig. 1, and the cams 43, 44 at the right-hand end thereof will cause the striking member M² to be released, as well as the casing C², so that the member M² will deliver a blow upon the right of the person using the apparatus, and the release of the casing causes the member M² to drop after delivering its blow. A right hand swing upon member B will cause the striking member M¹ to deliver a blow upon the left of the user, while a straight or direct blow upon B rocks the bar B^x, its toe b³⁰ depresses the tail 30 to release the member M^x, and the lump 29 is depressed to release the casing C^x. Thus the user knows from the character of the blow what kind of a blow will be returned, but the striking members M^x, M¹, M² act with great rapidity and it requires quick thought and action on the part of the user to avoid the return blow.

I prefer to loosely inclose the several actuating springs 5 in loose flexible sleeves 50 of light cloth or other flexible material, so arranged as not to interfere in any way with the operation of the apparatus.

As shown in Fig. 4 I prefer to mount a bell-metal sphere *m* loosely on the straight shank of each hook 8, so that when the striking member hits the person using the apparatus the sphere is thrown violently against the metal base 7 and a ringing sound is emitted, showing that a hit has been made.

When the three striking members have been operated the apparatus must be re-set by hand, in a manner apparent from the foregoing description.

The cover A¹ protects the parts of the latch-releasing instrumentality and also the rearwardly-projecting ends of the various latches, as will be manifest.

My invention is not restricted to the precise construction and arrangement herein shown and described, as various changes or modifications may be made by those skilled in the art without departing from the spirit and scope of my invention as set forth in the annexed claims.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. In exercising apparatus, a plurality of spring-actuated striking members, means to lock them in retracted position, a member to be struck, and means governed by movement thereof when struck to effect automatically the release of a striking member.

2. In exercising apparatus, a plurality of spring-actuated striking members, locking means to retain them retracted, means to

govern the direction of movement of a striking member when released, a member to be struck, and means governed by movement thereof when struck to effect the release of a predetermined striking member. 70

3. In exercising apparatus, a plurality of spring-actuated striking members, locking means to retain them retracted, means to govern the direction of movement of a striking member when released, a member to be struck, movable in different directions according to the direction of the blow delivered thereupon, and separate releasing means between said member and the several striking members, to effect release of a striking member according to the movement of the to be struck. 75

4. In exercising apparatus, a series of spring-actuated striking members movable in different directions to a substantially common point, means to lock said members in retracted position, a member to be struck, and means governed thereby to release a certain striking member according to the direction of the blow delivered upon the member to be struck. 80

5. In exercising apparatus, a series of spring-actuated striking members movable in different directions to a substantially common point, means to lock said members in retracted position, a member to be struck, and means governed thereby to release a certain striking member according to the direction of the blow delivered upon the member to be struck, combined with means to drop each striking member into inoperative position after its operative movement has been effected. 85

6. In exercising apparatus, a member to be struck, a spring-actuated member to deliver a blow, means to retain the latter in retracted position, and a releasing device therefor actuated by movement of the member to be struck due to impact of a blow thereupon. 90

7. In exercising apparatus, a member to be struck, a spring-actuated member to deliver a blow, locking means to retain the latter retracted, means to release it by movement of the member to be struck, and means to permit movement of the striking member to inoperative position after spring-induced movement thereof. 100

8. In exercising apparatus, a back, a casing pivotally connected therewith, a latch to retain the casing horizontal, a striking member, an actuating spring attached at one end to said member and at its other end fixed in the casing, means to retract the striking member and compress its spring, a latch to lock the said member in retracted position, a member to be struck, movably mounted on the back, and means actuated by movement of said member when struck to release said latches and thereby cause the 110 115 120 125 130

striking member to spring outward from the casing and thereafter drop as the casing swings down from horizontal position.

9. In exercising apparatus, a hinged casing, means to normally retain it in horizontal position, a spiral spring fixed therein, a striking member on the free end of the spring, means to retain said member retracted and the spring compressed, a member to be struck, and means connected therewith and actuated by its movement when struck to effect release of the striking member and permit the casing to drop down from horizontal position thereafter.

10. In exercising apparatus, a striking member, a coiled actuating spring fixed at one end and at its other end attached to said member, manually operated means to retract said member and compress the spring, a latch to retain the striking member retracted, means to govern the path of movement of the striking member when impelled by expansion of its spring, a member to be struck, and means operated by movement thereof when struck to act upon the latch and release the striking member.

11. In exercising apparatus, three spring-actuated striking members arranged side by side, latches to hold said members in retracted position, means to cause the endmost striking members when released to travel in paths curving inward to a common point, a member to be struck, mounted above the striking members and adapted to move back or laterally in either direction, and a latch-releasing device coöperating with all three latches and operated by movement of the member to be struck, to release any one of the striking members according to the direction given to said member to be struck when a blow is delivered thereupon.

12. In exercising apparatus, a member to be struck, a spring-actuated member to deliver a blow, means to retain the latter in retracted position, an audible alarm adapted

to sound when the striking member hits an object, and means actuated by movement of the member to be struck to effect release of the striking member.

13. In exercising apparatus, a back, a series of casings hinged thereto side by side, latches to hold the casings in horizontal position, a spiral spring mounted in each casing and having a striking member on its free end, means to retract each striking member and compress its spring, a latch to hold each striking member retracted, a member to be struck, located above the casings, a latch-releasing bar attached to said member, connections between the back and said bar, permitting swinging and sidewise movement thereof, and cams on the bar coöperating with the casing latches and the spring-locking latches, to effect release of certain latches in accordance with the direction in which said releasing bar is moved.

14. In exercising apparatus, a spring-actuated striking member movable in a forward direction, other spring-actuated striking members, at opposite sides of the first-named member, the members at the side moving outwardly and in curved paths toward a common point, means to retain said striking members retracted, a member adapted to be struck and movable rearwardly and laterally, an instrumentality operated by said member when struck to release one of the striking members, and means governed by said instrumentality to effect downward movement of a released striking member after its spring-induced movement takes place.

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

WILLIAM F. VALENTINE.

Witnesses:

JOHN C. EDWARDS,

THOMAS J. DRUMMOND.

It is hereby certified that in Letters Patent No. 931,818, granted August 24, 1909, upon the application of William F. Valentine, of Leominster, Massachusetts, for an improvement in "Exercising Apparatus," an error appears in the printed specification requiring correction, as follows: In line 81, page 3, before the words "to be struck" the word *member* should be inserted; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 14th day of September, A. D., 1909.

[SEAL.]

F. A. TENNANT,
Acting Commissioner of Patents.