



US 20080220949A1

(19) **United States**
(12) **Patent Application Publication**
YANG

(10) **Pub. No.: US 2008/0220949 A1**
(43) **Pub. Date: Sep. 11, 2008**

(54) **ADJUSTABLE HEAVY BAG/SPEED BAG FRAME WITH PISTON ASSIST**

Publication Classification

(75) Inventor: **STEVE YANG, Houston, TX (US)**

(51) **Int. Cl.**
A63B 69/22 (2006.01)
(52) **U.S. Cl.** **482/90**

Correspondence Address:
MALIN HALEY AND DIMAGGIO, PA
1936 S ANDREWS AVENUE
FORT LAUDERDALE, FL 33316 (US)

(57) **ABSTRACT**

(73) Assignee: **TECHNICAL KNOCKOUT, INC., HOUSTON, TX (US)**

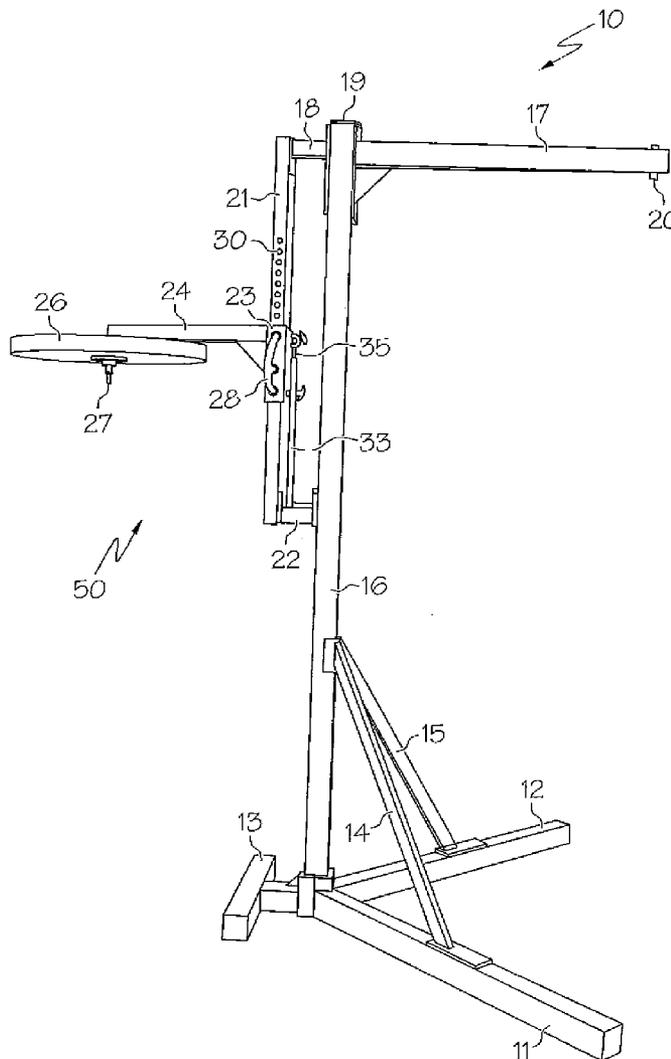
A boxing equipment frame assembly, wherein the frame assembly is capable of supporting a plurality of punching bags including a speed bag and a heavy bag. The frame assembly includes a speed bag support assembly that includes a sliding bracket. The bracket serves as the means of connecting the speed bag support assembly to the main equipment frame. By using a sliding bracket that moves independently of the main support frame, the height of the speed bag can be adjusted without displacing any of the additional components attached to the frame. A piston is provided to apply a continuous upward force to the sliding bracket. In applying a continuous upward force the user has to put in less effort and a greater degree of control is achieved in adjusting the height of the speed bag.

(21) Appl. No.: **12/044,244**

(22) Filed: **Mar. 7, 2008**

Related U.S. Application Data

(60) Provisional application No. 60/893,708, filed on Mar. 8, 2007.



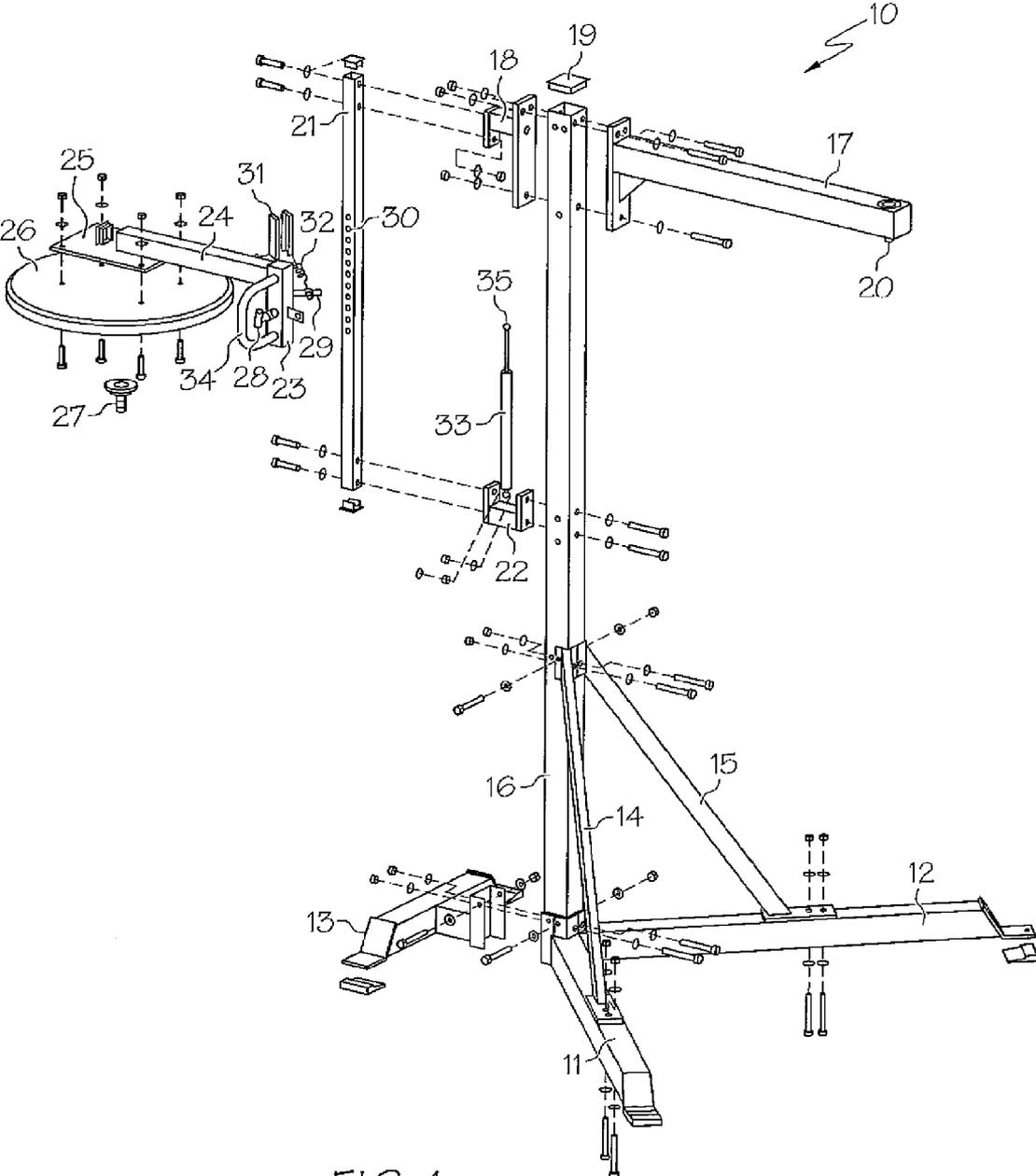


FIG. 1

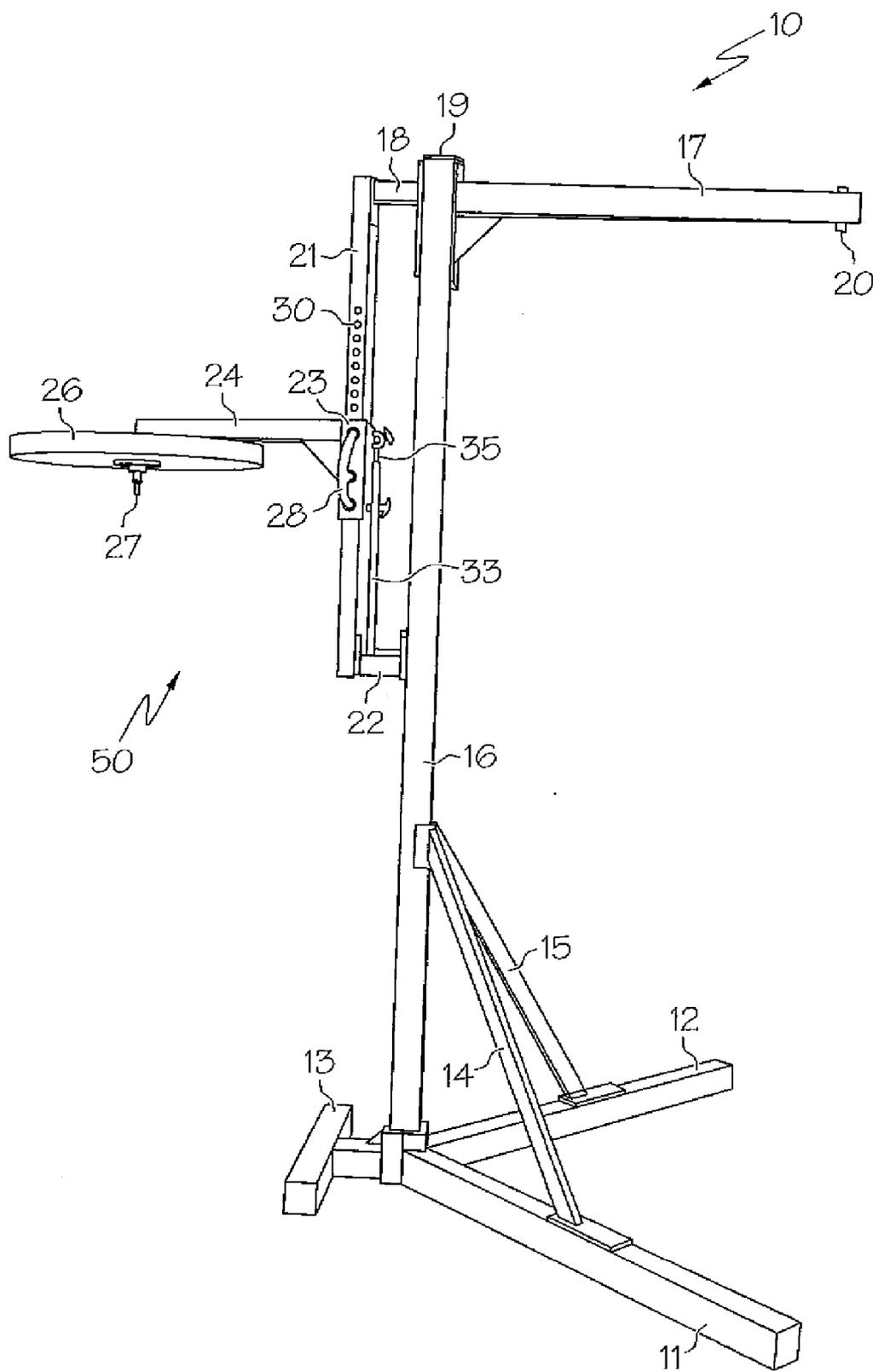


FIG. 2

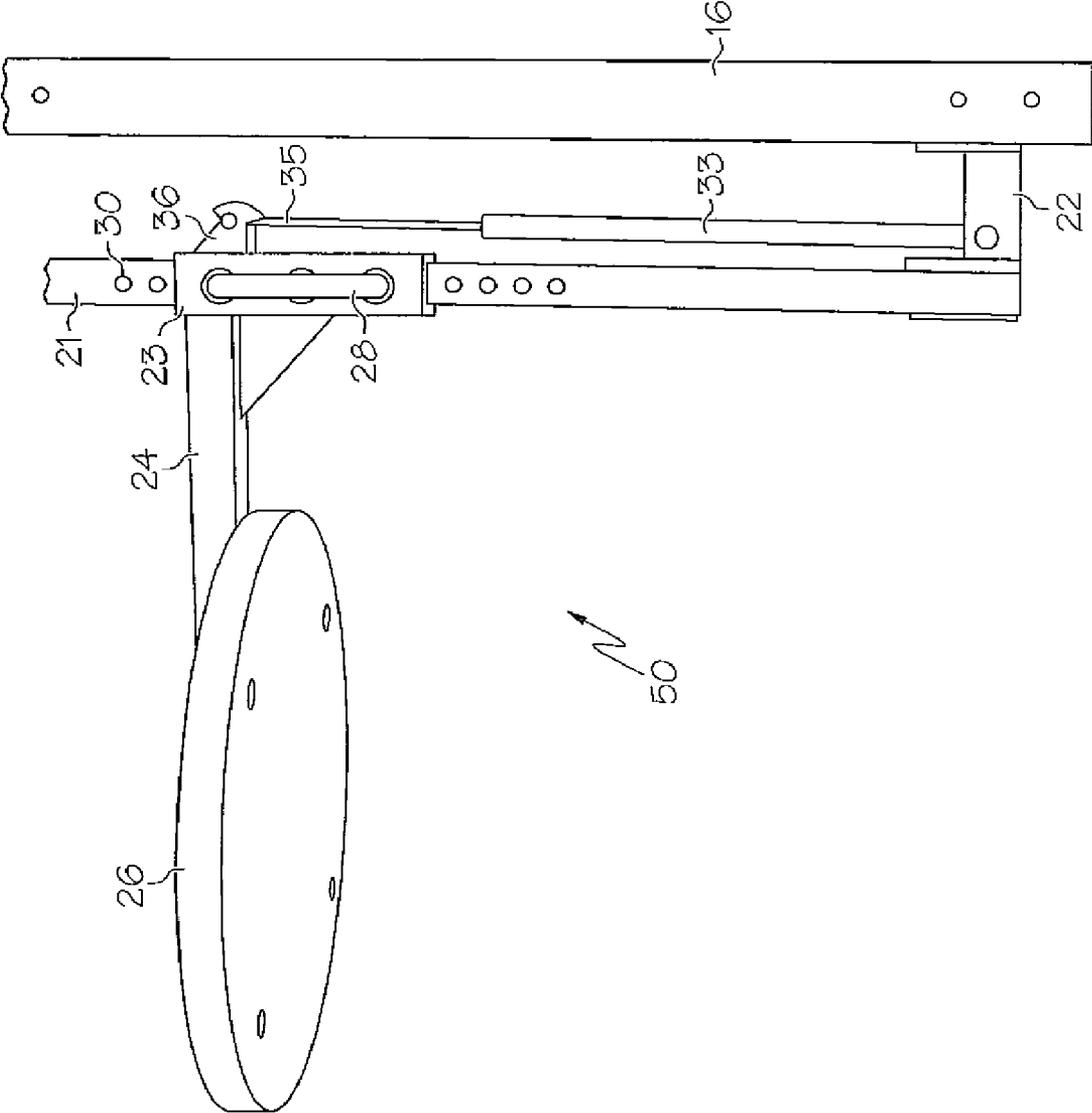


FIG. 3

ADJUSTABLE HEAVY BAG/SPEED BAG FRAME WITH PISTON ASSIST

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This utility application claims priority on and from U.S. Provisional Patent Application Ser. No. 60/893,708 filed on Mar. 8, 2007.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT
N/A

BACKGROUND OF THE INVENTION

[0002] 1. Field of the Invention

[0003] The present invention relates to boxing equipment and more particularly pertains to an easily and efficiently adjustable frame with platforms and structural members which can support a heavy bag and a speed bag. The present invention is user friendly in that it allows for relatively quick and simple adjustments in the height of the platform which supports a boxing bag.

[0004] 2. Description of Related Art

[0005] Punching bags were originally used by boxers to improve overall punching techniques. Recently, punching bags are being used by people who are not boxers, but want to receive the strength and aerobic benefits achieved through performing the motion of punching. Furthermore, punching bags are now used as source of stress relief by many people. Typically an entire boxing apparatus includes multiple bags of different sizes and designs for performing various punching exercises. These boxing apparatuses usually include a large heavy bag and a smaller speed hag. Both bags are mounted onto a frame that provides support while the bags are operated.

[0006] Punching bag support frames and other exercise apparatuses are detailed extensively throughout the prior art. These devices and apparatus typically address the problems associated with adjusting the height of the boxing bags or other exercise equipment. In particular for boxing bag support frames, the support structure from which the bags are mounted, such as platforms, bars, rigid arms and the like are adjusted.

[0007] Adjustable frames for supporting exercise equipment has significant applications for basketball goal systems. Specifically, U.S. Pat. No. 4,951,944 issued to Morgan discloses a basketball goal that is mounted onto a telescopically adjustable support frame. This support frame uses a series of linear actuators to raise and lower the upper member of the support frame, subsequently raising and lowering the basketball goal.

[0008] U.S. Pat. No. 5,133,547 issued to Pardi describes a self-adjusting basketball goal that incorporates two pivoting member attached to a support frame. The pivoting members protrudes out from the top end of the support frame and include all upper and lower member. The lower pivoting member is locked into position by a telescopically adjusting extension from the main support frame. As the telescopic extension is displaced, the lower pivot member rotates about the pivot axis formed at the top of the main support member, thereby allowing the goal to be raised and lowered to a specific height.

[0009] U.S. Pat. No. 6,884,189 B2 issued to Fair, relates to an adjustable basketball goal system. This design incorpo-

rates moveable and slidable sleeve that are operated through a pulley system to adjust the height of the basketball goal.

[0010] While, exercise equipment utilizing adjustable frames is used extensively in basketball goal systems, it also extends for use in boxing exercising apparatuses, and particularly the structures used to support the boxing bags. U.S. Pat. No. 6,220,992 B1 issued to Shafik discloses a boxing frame for both speed bags and heavy bags, which utilizes a multi-purpose bracket and pin assembly to position the height of the speed bag platform. This device is also for attachment to a tread mill. The disadvantage of the invention disclosed in the '922 patent is that the system uses a simple bracket and pin for adjusting the height of the speed bag. The bracket and pin adjustable members have a number of disadvantages including difficulty in removing the pin, and inconvenience in actually displacing the adjustable member within the bracket, particularly as the bracket becomes worn with continued use.

[0011] U.S. Patent Publication No. US2006/0025286 A1 issued to Shipes, discloses a rotatable frame assembly for a boxing heavy bag. The frame assembly consists of a rotatable shaft and a transverse member. The rotatable shaft is driven by a motor which can be remotely controlled. In rotating the shaft, the heavy bag is displaced, thereby mimicking the movements of an opponent. The main disadvantage of this invention is that the heavy bag height can not be adjusted based upon the preference of various users.

[0012] U.S. Pat. No. 5,050,866 issued to Fucci discloses a punching bag support frame with at least two (2) telescoping sections, one being a tooth/gear assembly and the second being an internal pressure safety cylinder within the main frame to assist with controllability of the unit. The pressure cylinder can be located, in an alternative embodiment, outside the main frame, and is designed to assist the rack and pinion gear assembly to ease movement of the upper assembly. The disadvantage of this invention is that the entire frame assembly is moved, so that if a heavy bag is also attached to the frame, the height of the heavy bag is adjusted with the height of the speed bag. Furthermore, in adjusting the main support frame, a powerful pressure cylinder must be used to drive the movement as the main support frame is rigid and extremely heavy.

[0013] However, none of the prior art references, either alone or in combination with one-another, teach or suggest the novel aspects of the instant invention, nor the mechanical designs relating to the secondary, independent and vertically adjustable speed bag frame that is attached to a main support frame. Consequently, there continues to exist a need for an efficient, simple, user friendly and structurally sound design for an adjustable frame for boxing speed bags or heavy bags. Furthermore, this design must allow for the independent adjustment of the height of various components that are attached to the main support frame.

BRIEF SUMMARY OF THE INVENTION

[0014] The present invention relates to an improved design for manufacturing, assembling and using adjustable boxing frames for supporting speed bags or heavy bags. The adjustable support frame is conventional in that it includes a main support piece and two extension support assemblies that are used to attach a heavy bag and a smaller, generally circular speed bag to the main support piece. The entire assembly frame is supported by base members that sit on the floor and extend outwards from the bottom end of the main support piece. The pieces that are used to support both the speed bag

and heavy bag are rigidly secured to the main support piece, so that in operation of the bags displacement of the entire frame is assembly is neutralized by the base members.

[0015] The speed bag support assembly includes a sliding bracket that encloses a vertical strut that is attached to an extension piece. The sliding bracket is attached to a platform support member that extends horizontally out of the sliding bracket. The platform, upon which the speedbag is attached to and operated on, extends from the bottom of the platform support member. The platform, platform support member and sliding bracket are all rigidly secured together, so that as the bracket is displaced vertically, the platform displaces with respect to the bracket. The displacement of the platform, in turn causes the adjustment of the height of the speed bag. The use of a displaceable bracket surrounding a strut piece that extends outward from the main support piece, allows the height of the speed bag to be adjusted independently from the rest of the entire support frame, thus fixing the height of the heavy bag.

[0016] The bracket is locked and unlocked into position through the insertion and removal of a pin. The pin extends through the bracket and through apertures on both sides of the strut piece thus locking the bracket into a specific position. By locking the bracket into a position the speed bag remains at a fixed height. In order to adjust the height of the speed bag, the turn knob is activated allowing the pin to be pulled through the apertures in the strut piece and out from the side of the bracket. A handle extends from the opposing side of the bracket that provides the user with a means of displacing the bracket.

[0017] The advantage of the present invention is the addition of a piston that is mounted to the main support piece. The end of the piston is coupled to the moveable bracket that surrounds the strut piece. As the bracket is displaced upward, and subsequently the height of the speed bag is raised, the piston assists the user by providing an upward force against the bracket. Furthermore, as the bracket is moved downward, the piston continues to apply an upward force, thus allowing the user to easily control the descent of the bracket and subsequent speed bag which can be heavy and awkward to control.

[0018] Accordingly, it is a primary object of the present invention to provide an improved adjustable frame for mounting and supporting a variety of boxing bags.

[0019] It is an additional object of the present invention to provide a superior design for adjustable boxing equipment frames, which are cost effective, operationally efficient, and user friendly

[0020] It is yet another object of the present invention to provide an improved boxing equipment support frame which incorporates an auxiliary piston assist mechanism.

[0021] It is still another object of the present invention to provide an improved boxing equipment support frame which allows for the independent adjustment of the height of a specific boxing bag without displacing other boxing bags that are supported by the frame.

[0022] In accordance with these and other objects which will become apparent hereinafter, the instant invention will now be described with particular reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

[0023] FIG. 1 shows an exploded view of the components that make up the entire boxing frame.

[0024] FIG. 2 shows a side perspective view of the complete boxing frame.

[0025] FIG. 3 shows a side perspective view of the adjustable speed bag support assembly.

DESCRIPTION OF THE INVENTION

[0026] FIG. 1 illustrates an exploded view of the components of the preferred embodiment of the entire boxing frame 10, while FIG. 2 shows a side perspective view of the complete boxing frame 10. Referring to both FIGS. 1 and 2, the boxing frame consists of a main support piece 16 that extends vertically in a perpendicular direction to the surface upon which the boxing frame 10 rests upon. The main support piece 16 is constructed from any suitable high strength material that can be but is not limited to steel. The piece 16 is hollow to decrease the weight of the overall frame 10 and can be of any geometrical shape. In the preferred embodiment, the main support piece 16 is four sided to provide surfaces for the mounting of the additional components that make up the boxing frame 10.

[0027] A left and right base frame leg 12 and 11 and a base cross frame leg 13 are attached to the bottom of the main support member 16. The base legs 11, 12, and 13 limit the side to side displacement of the main support member 16, thus allowing the member 16 to extend vertically up from the planar surface upon which it rests. Two diagonal struts 14 and 15 are connect the main support member 16 to the left and right base frame legs 11 and 12 at points located away from the connection at the base of the main support member 16. These diagonal struts 14 and 15 help to ensure that horizontal displacement of the main support member is limited.

[0028] The top of the hollow main support member 16 is covered with a cap 19 to improve the appearance of the overall boxing frame 10. A heavy bag extension support member 17 is attached to the top of and extends perpendicularly from a side surface of the main support member 16. A mounting shaft 20 extends from the distal end of the bottom side of the heavy bag extension support member 17. The mounting shaft 20 is used to secure the heavy bag to the extension support member 16. The heavy bag extension support member protrudes from the same side of the main support member 16 as the left and right base frame legs 11 and 12 are attached to. This ensures that the main support member 16 can adequately hold the weight of the heavy bag without falling over.

[0029] The speed bag support assembly 50 includes a top extension piece 18 that is attached to the top end of the main support member 16 on the opposing side from which the heavy bag support member 17 is mounted. The distal end of the extension piece is coupled to the top of a vertical strut member 21. The vertical strut member 21 can be of any shape and constructed from any suitable high strength material such as steel. A bottom extension piece 22 is connected to the bottom end of the vertical strut member 21 and the main support member 16. Both the bottom and top extension pieces 18 and 22 protrude from the main support member 16 the same horizontal distance, so that the vertical strut member 21 is parallel to the main support member 16.

[0030] A sliding bracket 23 encloses around the vertical strut member 21 and moves in a linear direction along the longitudinal length of the strut member 21. A horizontal extension member 24 is monolithically attached to and protrudes from the side of the sliding bracket 23. A square support plate is coupled to the bottom side on the distal end of the horizontal extension member 24. The square support plate 25

serves to create a surface with a large area on which the circular speed bag operation plate 26 is mounted. This circular speed bag operation plate 26 is attached to the bottom end of the square support plate 25. A mounting swivel 27 extends from the bottom of the circular operation plate 26 and is used to directly attach the speed bag to the entire speed bag support assembly 50. The circular operation plate 26 is used as a surface that the speed bag makes contact with and subsequently bounces off of during the operation of the bag.

[0031] Referring now to FIGS. 1-3, and in particular FIG. 3, a side perspective view of the speed ball support assembly 50 is shown. The speed ball support assembly 50 includes a mounting swivel 27, the operational plate 26, the square plate 25, and the horizontal support member 24 which are all coupled together to the sliding bracket 23, so that as the sliding bracket moves the attached components displace. Subsequently, as the attached components are displaced the overall height of the speed ball changes a specific distance with respect to the overall displacement of the attached components. As mentioned previously, the sliding bracket 23 displaces in a linear fashion along the longitudinal direction of the vertical strut 21. Two plastic brushings 31 are inserted into the sliding bracket 23 to aid in the movement of the sliding bracket 23. In using a separate support assembly from the main support member, the height of the speed ball can be changed independently without moving the main support member 16 and corresponding additional attached punching bags.

[0032] The sliding bracket 23 is locked into place on the vertical strut 21 through the use of a simple pin locking mechanism. The locking mechanism consists of a turn knob 23 and pop pin 29 which are utilized to secure and maintain the sliding bracket 23 at any desired height level or position about the vertical strut 21. The vertical strut 21 contains a series of apertures through opposing sidewalls of the strut 21. Once the desired height of the speed ball is achieved, pop pin 29 protrudes through an opening on the side of the sliding bracket 23, through apertures located on opposing side walls of the vertical strut 21 and into the turn knob 23 on the opposing side of the sliding bracket 23.

[0033] In order to release the sliding bracket 23 from a locked position, the turn knob 28 is activated, allowing for the removal of the pop pin 29. The pop pin 29 is pulled out from the opposing apertures 30 in the sides of the vertical strut 21 and through the opening in the sliding bracket 23. A wire 32 connects the pop pin 29 to the sliding bracket 23 and ensures that the pop pin 29 is not lost while it is disengaged. After the pop pin is disengaged, the sliding bracket 21 can be displaced vertically.

[0034] The novelty of the present invention comes through the use of a piston member 33 to help in moving the sliding bracket 21 and subsequent speed ball to a desired height. The piston 33 can be a pneumatic, hydraulic, tension spring, or electric extendable or retractable type member. The bottom extension piece 22 holds the piston 33 in the space between the vertical strut 21 and the main support member 16. The end of the sliding shaft 35 of the piston 33 is attached to the sliding bracket 23 through a protrusion 36 that extends from the back of the sliding bracket 23 into the space between said bracket 23 and the main support member 16.

[0035] In the movement of the sliding bracket 21, the piston member 33 provides an independent and substantial force to assist the user, in lifting or lowering the speed bag and corresponding speed bag support assembly 50 to the desired height

for performing boxing exercises. A handle 24 extends from the side of the sliding bracket 21, allowing the user to move the entire speed bag support assembly 50 up and down. In adjusting the height of the speed bag to taller position, the speed bag support assembly can be heavy and awkward to move. The piston 33 applies a constant upward force to the sliding bracket 23, thus aiding the user in moving the entire assembly up. Furthermore, by reducing the force that the user needs to apply in lifting the speed bag, a greater degree of control is achieved. While the speed bag support assembly 50 is disengaged and being lowered, the piston 33 continues to apply an upward force. This applied upward force prevents the sliding bracket 23 and the corresponding entire speed bag support assembly 50 from crashing down. Furthermore, a higher degree of user control is achieved as the support assembly 50 is lowered.

[0036] Without the method of using a piston 33 to assist in adjusting the height of the speed bag, weight or strength limitations would be encountered by certain individuals, who may not be able to operate the equipment by themselves. Further, people may misjudge the weight of the support assembly 50 causing inadvertent movement and injury. Throughout all operations, the piston assist applies appropriate force on the platform assembly, to provide stability, control and ease of movement for the user. It is much easier and safer for the user to manipulate the platform, and allows the person to use minimal force and energy in adjusting the height of the punching bag.

[0037] The components that make up the entire boxing frame 10 are attached together through any suitable means. In the preferred embodiment the components are coupled together through the use of screws. By using screws, the entire frame can be shipped to any location in a compact unassembled form, and the customer can then manually assemble the entire boxing frame 10. Furthermore, using screws to secure the pieces together reduces the overall manufacturing costs of the frame 10.

[0038] In another embodiment of the present invention, the heavy bag is coupled to the main support member through a piston assisted support assembly. While the piston used in the heavy bag support assembly provides a much greater force than the piston used in the previously mentioned speed bag support assembly, the operation and advantages that are achieved remain the same. These advantages include an increase in the overall control and a reduction in the required effort for the process of adjusting the height of the heavy bag.

[0039] The instant invention has been shown and described herein in what is considered to be the most practical and preferred embodiment. It is recognized, however, that departures may be made therefrom within the scope of the invention and that obvious modifications will occur to a person skilled in the art.

What is claimed is:

1. An adjustable boxing speed bag and heavy bag apparatus, comprising:
 - frame means for supporting said apparatus, said frame means including a base means, a lower section and an upper section;
 - said upper section including heavy bag support means, said heavy bag support means for detachably receiving a heavy bag;
 - said upper section further including speed bag support means, said speed bag support means for detachably receiving a speed bag;

said upper section further including separate adjustable means for selective movement and positioning of said speed bag support means; and said upper section further including auxiliary piston means for assisting said adjustable means for displacement of said speed bag support means.

2. The apparatus of claim 1, wherein said base means includes a plurality of support legs.

3. The apparatus of claim 2, wherein said frame means includes a generally vertical central support member secured to said base means;

said heavy bag support means being a generally horizontal support member secured to said frame means upper section.

4. The apparatus of claim 3, wherein said speed bag support means is comprised of a speed bag support platform and a generally horizontal support member, said horizontal support member secured to said upper section adjustable means for selective movement and positioning of said speed bag support means.

5. The apparatus of claim 4, wherein said adjustable means for selective movement and positioning of said speed bag support means is comprised of a generally vertical support member, said vertical support member being offset from, and secured to, said frame means vertical central support member;

said adjustable means vertical support member being generally parallel to said frame means vertical central support member;

said speed bag support means being vertically adjustable about said adjustable means vertical support member.

6. The apparatus of claim 5, wherein said auxiliary piston means for assisting said adjustable means for selective movement and positioning of said speed bag support means is interposed said adjustable means vertical support member and said frame means vertical central support member.

7. The apparatus of claim 6, wherein said adjustable means for selective movement and positioning of said speed bag support means further includes a slidable bracket, said slidable bracket positioned about said adjustable means vertical support member and moveable thereon.

8. The apparatus of claim 7, wherein said auxiliary piston means is secured at one end to said slidable bracket.

9. The apparatus of claim 8, further comprising a generally horizontal bracket interposed said adjustable means vertical support member and said frame means vertical central support member;

said auxiliary piston means secured at an opposite end to said generally horizontal bracket.

10. The apparatus of claim 8, wherein said slidable bracket further includes removable pill means for positioning said speed bag support means;

said adjustable means vertical support member further including a plurality of apertures;

said pin means removably insertable within said plurality of apertures for adjustable movement of said speed bag support means.

11. An adjustable boxing speed bag and heavy bag apparatus, for adjusting the height of a speed bag, comprising:

a frame for supporting said apparatus, said frame including a base with a plurality of support legs;

said frame having a generally vertical central frame member, a lower section and an upper section;

said upper section including a generally horizontal heavy bag support member, said heavy bag support member for detachably receiving a heavy bag;

said upper section further including a generally horizontal speed bag support member and a speed bag platform secured at one end thereto, said speed bag platform detachably receiving a speed bag;

said upper section further including a separate adjustable assembly for selective movement and positioning of said speed bag support member;

said adjustable assembly including a vertical support member, said adjustable assembly vertical support member being generally parallel and offset from said frame central vertical member, said vertical support member being secured at opposite ends to said frame central vertical member;

an auxiliary piston for assisting said adjustable assembly for displacement of said speed bag support member;

said auxiliary piston having telescoping components and being selectively expandable and contractible; and

said auxiliary piston secured to said adjustable assembly.

12. The apparatus of claim 11, wherein said adjustable assembly further includes a slidable bracket, said slidable positioned about said adjustable assembly vertical support member;

said auxiliary piston secured at one end to said slidable bracket;

said auxiliary piston being interposed said adjustable assembly vertical support member and said frame central vertical member; and

whereby said speed bag support member can be raised or lowered about said adjustable assembly vertical support member, said piston providing additional load assistance and controlled movement of said speed bag support member.

13. The apparatus of claim 12, wherein said slidable bracket further includes one or more removable pins for positioning said speed bag support member;

said adjustable assembly vertical support member further including a plurality of apertures; and

said one or more pins being removably insertable within said plurality of apertures for adjustable movement of said speed bag support member.

14. The apparatus of claim 13, wherein said slidable bracket further includes a handle secured thereto.

15. The apparatus of claim 13, wherein said adjustable assembly vertical support member, said auxiliary piston, and said frame central vertical member are secured in a generally parallel manner, and are generally coplanar.

* * * * *