# United States Patent [19]

**Long**

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[54] **PUNCHING BAG AND MOUNT THEREFOR INCLUDING AUTOMATIC SPRING RETURN FOR THE PUNCHING BAG**


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[52] **U.S. Cl.** ..... **272/78**

[51] **Int. Cl.** ..... **A63b 69/24**

[58] **Field of Search** ..... 272/76, 77, 78, 61; 16/171, 172, 176, 180



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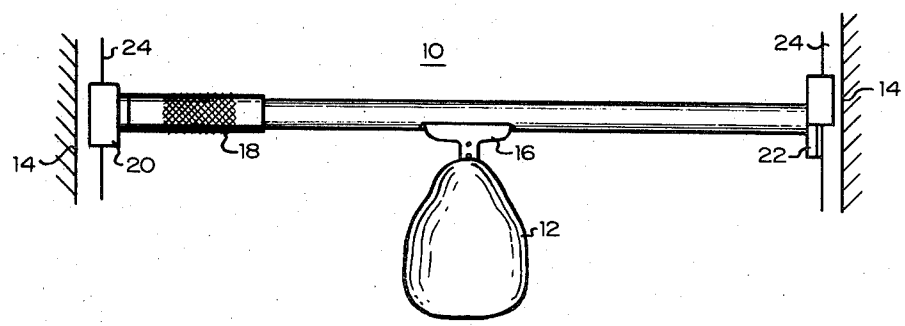
*Primary Examiner*—Anton O. Oechsle
*Assistant Examiner*—R. T. Stouffer



[57] **ABSTRACT**

A punching bag is mounted on a support member that is in turn pivotally mounted in a slotted tube and limited to pivotal movement solely about the longitudinal axis of the slotted tube. The support member is spring loaded against a stop portion of the slotted tube so that the punching bag will automatically snap back directly to its normal rest position each time it is struck. A length adjustment member may be coaxially mounted at one end of the slotted tube to adjust the over-all length of the slotted tube so that a pair of door frame engaging members mounted at the outer end of the length adjustment member and at the other end of the slotted tube may be employed to releasably mount the punching bag in a door frame. Alternatively, a pair of brackets may be mounted at opposite ends of the slotted tube so that the punching bag may be fixedly mounted on a wall.


**7 Claims, 9 Drawing Figures**



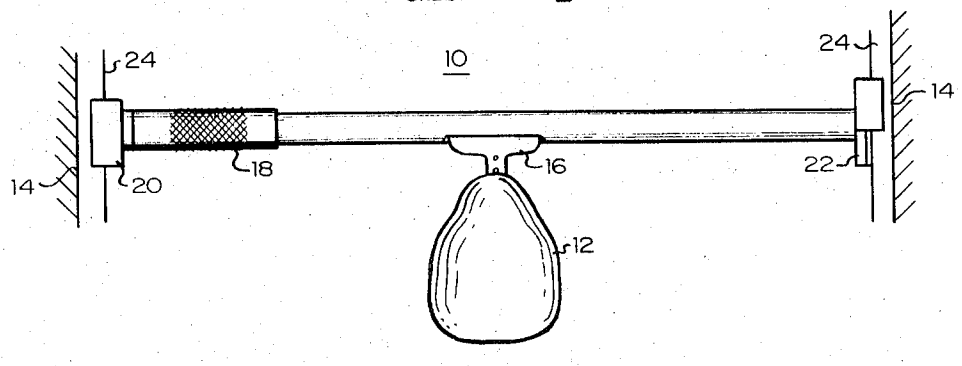



Figure 1

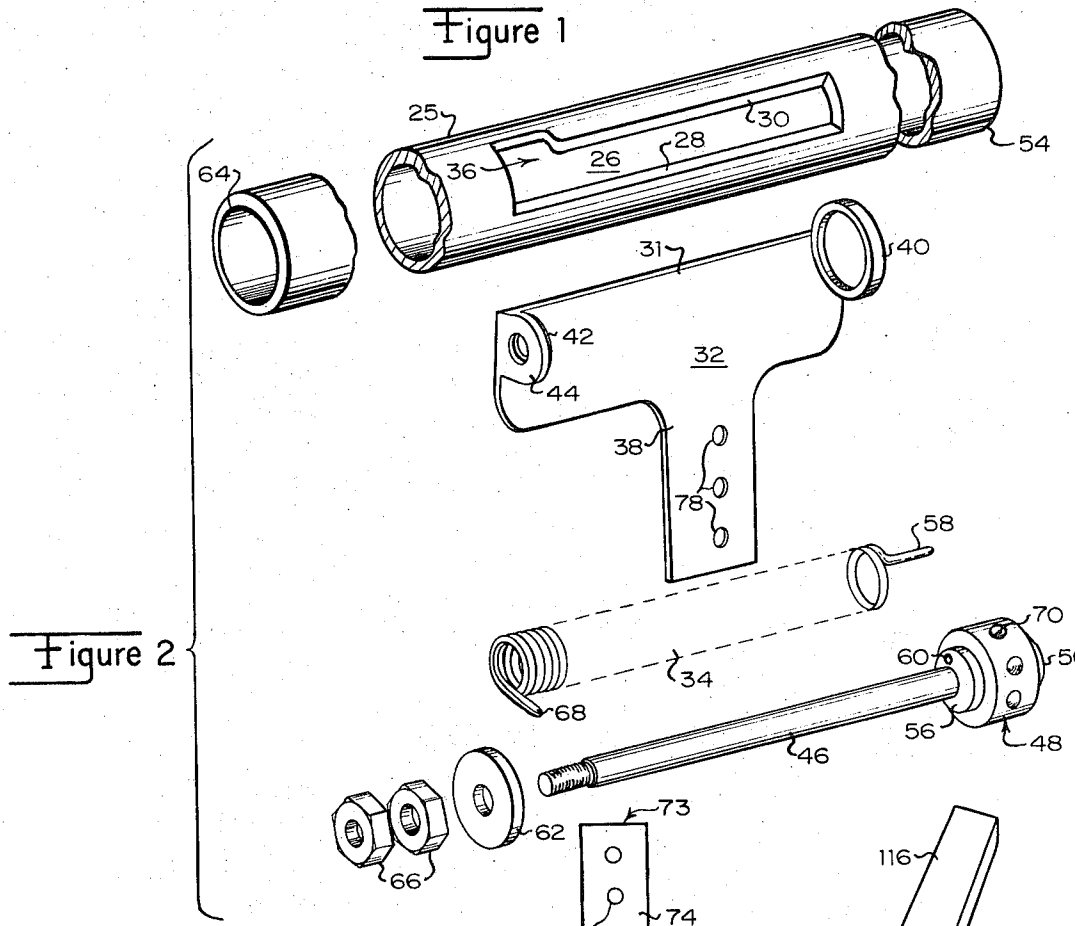



Figure 2

Figure 6

Figure 4

Figure 8

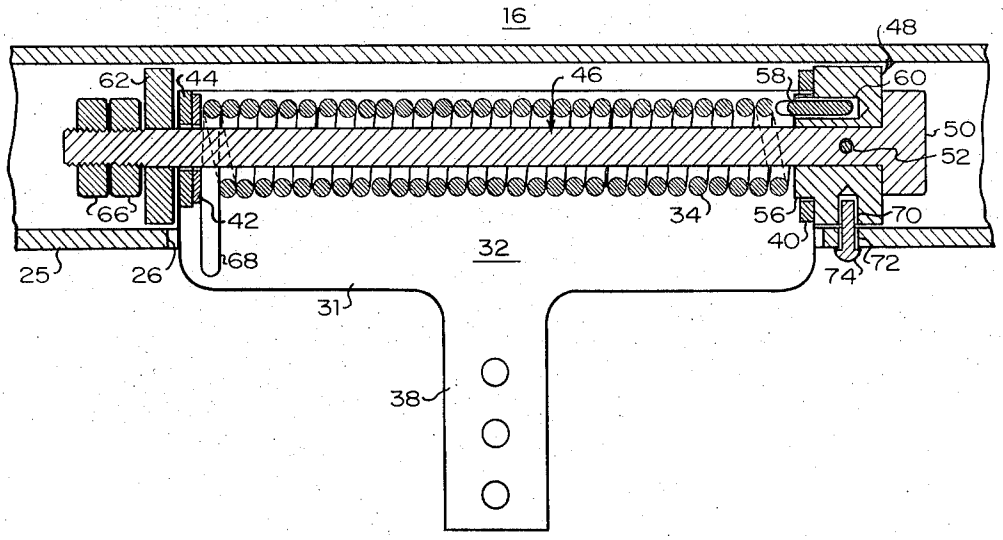



Figure 3

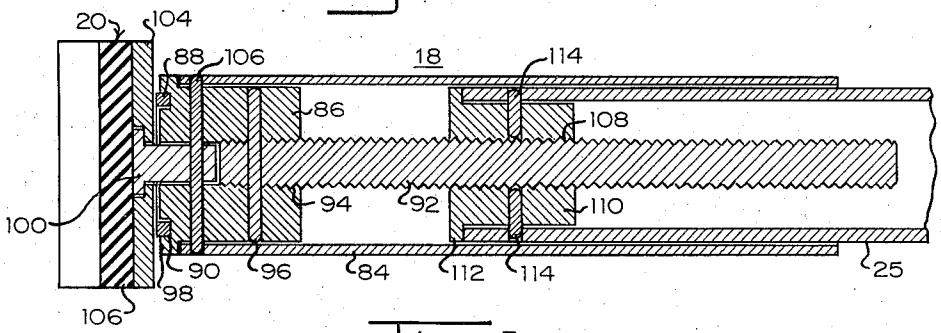



Figure 5

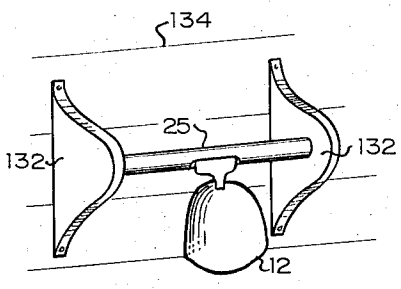



Figure 9

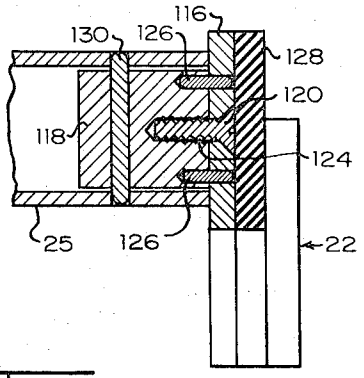



Figure 7

# PUNCHING BAG AND MOUNT THEREFOR INCLUDING AUTOMATIC SPRING RETURN FOR THE PUNCHING BAG

## BACKGROUND OF THE INVENTION

This invention relates generally to punching bags and, more particularly, to an improved snap back mount for a speed bag.

Conventional mounts for a punching bag typically allow the punching bag to swing freely in nearly any direction when it is struck and to continue swinging to and fro until friction forces gradually bring it to a stop in its normal rest position. In the case of a speed bag, this makes it very difficult for most people to time and position their blows as required to control the speed bag for the sustained periods of time necessary for optimum exercise. Some mounts for a punching bag have therefore been developed that employ elastic restraining cords to regulate the motion of the punching bag and cause it to return more directly to its normal rest position. See, for example, U.S. Pat. Nos. 658,554 and 712,000. However, these mounts do not completely limit the motion of the punching bag to single path and do not cause the punching bag to snap back directly to its normal rest position each time it is struck. Thus, it is also difficult for most people to maintain sustained control over a speed bag supported by these mounts.

Conventional mounts for a punching bag are typically fixedly attached to a wall or a door frame with screws or the like. See, for example, U.S. Pat. Nos. 658,554 and 712,000. Thus, they cannot be readily taken down and put away following each use, or moved around by or with the user, and are therefore typically relegated to more or less permanent placement in the garage or some other out-of-the-way place. Even more importantly, they cannot be readily adjusted to different heights for users of different height. Some portable mounts for a punching bag have therefore been developed. One of these portable mounts employs a plastic rod, on one end of which the punching bag is mounted and on the other end of which a suction cup is mounted to releasably secure the punching bag to a wall. See U.S. Pat. No. 3,114,546. However, this type of mount normally would not grip a wall with sufficient force to support more than a toy punching bag. Another type of portable mount that has been used for a toy punching bag comprises a strap-like loop attached to the toy punching bag so that it can be suspended from mounting bar or the like. See U.S. Pat. No. 1,637,561. However, such a mounting bar would in turn normally be fixedly secured to a wall with all of the disadvantages of the mounts mentioned above.

## SUMMARY OF THE INVENTION

The principal object of this invention is to provide an improved punching bag mount for enabling the user to quickly become proficient in striking and controlling the punching bag.

Another object of this invention is to provide an improved punching bag mount for limiting the motion of a speed bag to a single path, for loading the speed bag against movement from its normal rest position when it is struck, and for automatically returning the speed bag directly to its normal rest position each time it is struck.

Still another object of this invention is to provide an improved portable punching bag mount for quickly, simply, and releasably mounting the punching bag in a door frame or the like.



These objects are accomplished according to the illustrated preferred embodiments of this invention by employing a support member having a mounting portion coaxially positioned within a cylindrical tube and having a narrower neck-like portion that protrudes outwardly through a lengthwise slot in the tube. The mounting portion of the support member is pivotally mounted in the tube so that a punching bag attached to the neck-like portion of the support member is limited to pivotal movement along a single path about the longitudinal axis of the tube between a pair of angularly spaced lengthwise edges of the slot in the tube. A cylindrical coil spring coaxially supported within the tube spring loads the support member against one of the angularly spaced lengthwise edges of the slot. The punching bag attached to the neck-like portion of the support member therefore offers resistance to the user when it is struck and automatically snaps back directly to its normal rest position each time it is struck.

According to one of the preferred embodiments of this invention a length adjustment member is coaxially mounted at one end of the tube for turning movement about the longitudinal axis of the tube to adjust the over-all length of the tube. This permits a first door frame engaging member rotatably mounted on the outer end of the length adjustment member and a second door frame engaging member fixedly mounted at the other end of the tube to be engaged with a door frame or the like, thereby quickly, simply, and releasably mounting the punching bag in place. According to another of the preferred embodiments of this invention the length adjustment member and the door frame engaging members may be replaced by brackets or the like for fixedly mounting the punching bag on a wall.

## DESCRIPTION OF THE DRAWINGS

FIG. 1 is a front elevational view of a punching bag mount according to one of the preferred embodiments of this invention.

FIG. 2 is an exploded perspective view of the automatic snap back mechanism of the punching bag mount of FIG. 1.

FIG. 3 is an assembled half-sectional elevational view of the automatic snap back mechanism of FIGS. 1 and 2.

FIG. 4 is a back elevational view of the punching bag of FIG. 1.

FIG. 5 is an assembled half-sectional elevational view of the length adjustment mechanism and the associated rotatable door frame engaging member of FIG. 1.

FIG. 6 is a perspective view of the base plate of the rotatable door frame engaging member of FIGS. 1 and 5.

FIG. 7 is an assembled half-sectional elevational view of the fixed door frame engaging member of FIG. 1.

FIG. 8 is a perspective view of the base plate of the fixed door frame engaging member of FIGS. 1 and 7.

FIG. 9 is a perspective view of a punching bag mount according to another of the preferred embodiments of this invention.

## DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to FIG. 1, there is shown an improved punching bag mount 10 for quickly, simply, and releasably mounting a speed bag 12 in a door frame 14 or the like. This mount employs an automatic snap back mechanism 16 for limiting the speed bag to pivotal movement along a single path about the longitudinal axis of the mount, for loading the speed bag against movement from its normal rest position (shown in FIG. 1) when it is struck, and for automatically returning the speed bag directly to its normal rest position each time it is struck. Mount 10 also employs a length adjustment mechanism 18 at one end thereof for adjusting the over-all length of the mount so that a first door frame engaging member 20 rotatably mounted at the outer end of the length adjustment mechanism and a second door frame engaging member 22 fixedly mounted at the other end of the mount may be quickly, simply, and releasably engaged with the door stop molding 24, which is normally secured to the opposite sides of the door frame, to mount the speed bag in place.

As best shown in FIGS. 2 and 3, the automatic snap back mechanism 16 includes a cylindrical tube 25 having a lengthwise slot 26 formed in an intermediate portion thereof. Slot 26 has a pair of radially extending lengthwise edges 28 and 30 angularly spaced from about 45° to 90° apart to serve as stops for limiting the rearward and forward pivotal movement of the speed bag about the longitudinal axis of the tube 25. A mounting portion 31 of a support member 32 and a cylindrical coil spring 34 for spring loading the support member are slidably inserted into tube 25 through an enlarged end portion 36 of slot 26. Support member 32 and coil spring 34 are positioned so that a neck-like portion 38 of the support member protrudes outwardly through slot 26 and so that the coil spring is coaxially aligned between a first mounting ring 40 fixedly attached at one side of mounting portion 31 of the support member and a smaller second mounting ring 42 fixedly attached to a perforated bracket 44 at the other side of mounting portion 31 of the support member.

A mounting bolt 46 having a cylindrical bushing 48 coaxially mounted thereon and fixedly held in place next to head 50 of the mounting bolt by a mounting pin 52 or the like is then slidably inserted through the open right end 54 of tube 25 and into the first mounting ring 40, the cylindrical coil spring 34, the second mounting ring 42, and the perforated bracket 44. Mounting bolt 46 is positioned so that the first mounting ring 40 is rotatably supported upon a reduced diameter portion 56 of bushing 48, so that an axially extending end 58 of coil spring 34 is engaged in a corresponding hole 60 of bushing 48, and so that the second mounting ring 42 is rotatably supported upon a smooth portion of the mounting bolt adjacent to the threaded end thereof. An annular spacer 62 is slidably inserted through the open left end 64 of tube 25 and onto the smooth portion of mounting bolt 46 next to the perforated bracket 44. Annular spacer 62 is retained in this position by a pair of nuts 66 also slidably inserted through the open left end 64 of tube 25 and screwed into locking engagement with one another upon the threaded end of mounting bolt 46.

At this point, mounting bolt 46 and, hence, bushing 48 are turned clockwise via the open right end 54 of tube 25 until a laterally extending end 68 of coil spring 34 spring loads support member 32 against the lengthwise edge 28 of slot 26 and until a radially extending hole 70 in the periphery of the bushing is aligned with a corresponding radially extending hole 72 in tube 25. Mounting bolt 46 and, hence, bushing 48 are thereupon locked in this position by slidably inserting a headed mounting pin 74 or the like into the aligned hole 70 and 72. Several holes 70 are provided around the periphery of bushing 48 so that the force with which support member 32 is spring loaded against the lengthwise edge 28 of slot 26 may be adjusted by simply turning mounting bolt 46 and, hence, bushing 48 counterclockwise slightly to permit removal of pin 74, then further turning the mounting bolt and bushing to align another hole 70 in the bushing with hole 72 in tube 25, and thereupon reinserting pin 74 in these aligned holes.

Mounting rings 40 and 42, mounting bolt 46, bushing 48, spacer 62, and pin 74 serve to coaxially and pivotally mount the mounting portion 31 of support member 32 at a fixed position within tube 25 so that the support member and the speed bag attached to the neck-line portion 38 thereof are limited to pivotal movement along a single path about the longitudinal axis of the tube. Concomitantly, the angularly spaced lengthwise edges 28 and 30 of slot 26 serve to limit the rearward and forward movement of the support member and speed bag along this path, while coil spring 34 serves to spring load the support member and speed bag against movement from their normal rest position when the speed bag is struck and to automatically return the support member and speed bag directly to their normal rest position against the lengthwise edge of slot 26 each time the speed bag is struck. These features of the automatic snap back mechanism 18 enable the user to quickly become proficient in striking and controlling the speed bag.

As shown in FIG. 4, a suitable speed bag 12 for use with mount 10 is provided with a mounting member 73 having a narrow neck-like portion 74 with a plurality of mounting holes 76 formed therein for alignment with a corresponding plurality of mounting holes 78 in the neck-like portion 38 of support member 32. This permits the speed bag 12 to be fixedly bolted in place on support member 32 of the mount. The speed bag itself may simply comprise a firm pad of foam rubber or the like covered with vinyl or some other such material and secured in place on an enlarged portion of the mounting member 73 by a stiff backing 80 and a plurality of screws 82 at the back side of the speed bag.

As best shown in FIGS. 1 and 5, the length adjustment mechanism 18 comprises a cylindrical tubular length adjustment member 84 for telescopically fitting around tube 25. It also includes a cylindrical mounting member 86 having a bearing ring 88 positioned within an annular groove 90 in the outer face of the mounting member and having a threaded mounting bolt 92 screwed at the opposite face of the mounting member into a partially threaded hole 94 coaxially extending through the mounting member. Mounting member 86 and mounting bolt 92 are fixedly locked together by a mounting pin 96 inserted into a pair of aligned mounting holes radially extending therethrough and are slidably inserted into length adjustment member 84 until an annular shoulder 98 of the mounting member abuts

upon the outer end of the length adjustment member.

A headed mounting stud 100, which is rotatably positioned in a corresponding mounting hole 102 axially extending through a base plate 104 (best shown in FIG. 6) of the door frame engaging member 20 and which is captivated in place by a rubber cushion 106 bonded to the outer surface of the base plate, is then inserted into the unthreaded portion of mounting hole 94 in mounting member 86. Mounting member 86, mounting hole 92, and mounting stud 100 are coaxially positioned within length adjustment member 84 so that the door frame engaging member 20 may be freely rotated about the axis of the mounting stud and so that mounting holes radially extending through the length adjustment member, mounting member, and mounting stud are aligned with one another. A mounting pin 106 is thereupon inserted into these aligned mounting holes to hold mounting member 86, mounting bolt 92, and mounting stud 100 in place within length adjustment member 84 and to thereby hold bearing ring 88 and door frame engaging member 20 in place at the outer face of the mounting member. At this point, mounting bolt 92 is screwed into a threaded mounting hole 108 coaxially extending through another mounting member 110, which is coaxially positioned within tube 25 so that an annular shoulder 112 of mounting member 110 abuts upon one end of tube 25 and which is fixedly held in place by a pair of mounting pins 114 inserted from opposite sides into a single pair of aligned mounting holes radially extending through tube 25 and mounting member 110.

As best shown in FIGS. 7 and 8, the door frame engaging member 22 comprises a base plate 116 fixedly attached to a cylindrical mounting member 118 by a screw 120 inserted through a smooth countersunk hole 122 axially extending through base plate 116 and screwed into a threaded hole 124 coaxially formed in mounting member 118. A plurality of mounting pins 126 is also inserted into a like plurality of pairs of aligned holes axially formed in base plate 116 and mounting member 118 to prevent base plate 116 from turning relative to mounting member 118. These pins 126 and screw 120 are captivated in place by rubber cushion 128 bonded to the outer surface of base plate 116.

The door frame engaging member 22 is mounted in place by slidably inserting mounting member 118 into the end of tube 25 opposite from the length adjustment mechanism 18. Mounting member 118 is coaxially positioned within tube 25 so that base plate 116 abuts upon the end of tube 25 and so that a pair of mounting holes radially extending through tube 25 and mounting member 118 are aligned with one another. A mounting pin 130 is thereupon inserted into these aligned mounting holes to fixedly mount the door frame engaging member 22 in place.

By turning length adjustment member 84 either clockwise or counterclockwise about the longitudinal axis of tube 25, the over-all length of the mount 10 may be adjusted as required to firmly engage the door frame engaging members 20 and 22 with the door stop molding 24 of a door frame 14, thereby quickly, simply, and releasably mounting the speed bag 12 in place. The speed bag 12 may therefore readily be repositioned at different heights for users of different height, relocated by or with the user, or taken down and stored away following each use. However, as shown in FIG. 9, the length adjustment mechanism 18 and the door frame engaging members 20 and 22 may be replaced by brackets 132 for fixedly mounting the punching bag 12 on a wall 134 or the like.

All of the parts of the punching bag mount 10, except for the rubber cushions 106 and 128, may be formed from steel. However, the mounting ring 42, bushing 48, and bearing ring 88 are preferably formed of brass and lubricated to reduce wear, if the other parts are made from steel. The support member 32 of the mount and the mounting member 73 of the speed bag may be formed of case hardened steel for greater strength. Many of the parts of the mount may also be formed from other materials such as some of the tougher plastics.

I claim:

1. In combination a punching bag and a mount therefor, said mount comprising:
- a support member having the punching bag rigidly attached to one end portion thereof;
- a tubular member having a slot therein;
- means for pivotally mounting another end portion of said support member within said tubular member with said one end portion of said support member protruding outwardly from said slot to limit said support member and the attached punching bag to pivotal movement about the longitudinal axis of said tubular member between first and second angularly spaced edges of said slot; and
- a spring member for spring loading said support member against movement from a normal rest position against one of said first and second edges of said slot and for automatically returning said support member and the attached punching bag directly to the normal rest position after the punching bag is struck.

2. A mount as in claim 1 wherein said means includes:
- a mounting bolt having a bushing fixedly mounted at one end thereof, said mounting bolt being coaxially mounted at a fixed location within said tubular member; and
- a pair of mounting rings fixedly mounted at opposite sides of said other end portion of said support member, one of said mounting rings being rotatably supported upon a portion of said mounting bolt and the other of said mounting rings being rotatably supported upon a portion of said bushing at a fixed location within said tubular member.

3. A mount as in claim 2 wherein said spring member comprises a coil spring coaxially supported upon said mounting bolt between aid mounting rings, said coil spring having one end portion fixedly engaged with said bushing and another end portion spring loaded against said support member.

4. A mount as in claim 3 including:
- a length adjustment mechanism coaxially mounted at one end of said tubular member for adjusting the over-all length of said mount;
- a first door frame engaging member rotatably mounted at the outer end of said length adjustment mechanism; and
- a second door frame engaging member fixedly mounted at the other end of said tubular member.

5. A mount as in claim 4 wherein said length adjustment mechanism comprises:

a second tubular member telescopically fitting around a portion of said first-mentioned tubular member; and

a mounting bolt coaxially mounted within said second tubular member and screwed into mounting member fixedly mounted at said one end of said first-mentioned tubular member.

6. A mount as in claim 1 including:

a length adjustment mechanism mounted at one end of said mount for adjusting the over-all length of said mount;

a first mounting member mounted at the outer end of said length adjustment mechanism; and

a second mounting member mounted at the other end of said mount.

7. A mount as in claim 6 wherein:

said first mounting member is rotatably mounted at the outer end of said length adjustment mechanism; and

said second mounting member is fixedly mounted at the other end of said mount.

* * * * *