

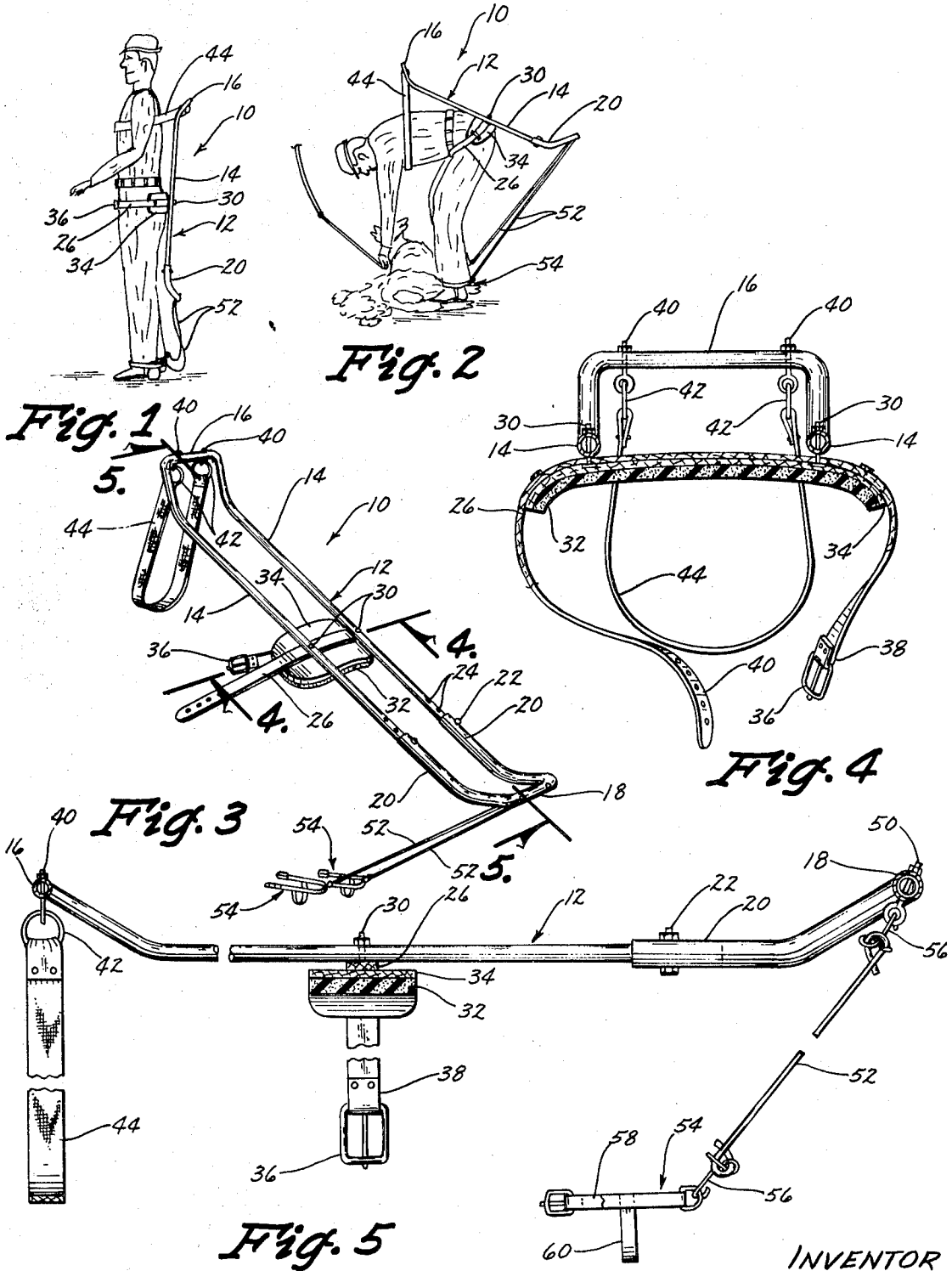
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BACK SUPPORT

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BACK SUPPORT

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7 Claims

ABSTRACT OF THE DISCLOSURE

A device having an elongated rigid member including spaced apart elements embracing the wearer's back. A pair of end portions flared outwardly away from the wearer's back are connected through straps to the wearer's chest and ankles and feet. A belt is secured to the pair of elements for engagement around the wearer's waist to hold the elongated member in place on the wearer's back. The weight of the wearer's upper body portion is carried in part through the elongated member connected to the ankles and feet through an elastic connecting means when the wearer is in a stooped position.

A particularly difficult problem in shearing sheep and other jobs requiring the operator to work from a stooped position is the fatigue and strain on the operator's back. Those jobs which require the operator to work in a stooped position frequently will require the worker to maintain that position for extended periods of time thereby placing an unusually great strain upon the worker's back body muscles.

This invention involves a back brace worn entirely on the back of the wearer leaving the wearer's front side completely free to perform normal work functions such as shearing sheep or the like. A person when in a stooped position with the use of this invention has his upper body weight transferred to his feet which are anchored on the ground thereby substantially relieving strain on the person's back muscles and improving his balance while in the stooped position.

The back brace of this invention does not cause binding, irritations or effect the person's circulation by the use of the non-restrictive connecting straps.

The back brace of this invention uses the buttocks of the wearer as the fulcrum and the brace is securely fastened in a gunholster fashion to the waist of the wearer. The back brace being secured to the wearer's feet eliminates disturbing the wearer's balance as is the case when it is secured to other points on the body below the waist. The wearer's feet are securely anchored on the ground and the lever arm is eliminated thereby making it impossible for there to be any rotational forces on the wearer's body below the waist.

The chest strap is held securely around the chest and under the wearer's arms near his armpits and thus provides a maximum lever arm measured from the fulcrum point at the buttocks of the wearer and additionally maintains the strap in a position that it will not interfere with the operator's arm movements. Additionally, it is seen that the back brace of this invention can be worn by women as well as men, the lift or chest strap embracing the body above the breasts.

In order to give the desired leverages and to fit different wearers, the elongated back member is telescopically extendable.

These and other features and advantages of this invention will become readily apparent to those skilled in the art upon reference to the following description when taken into consideration with the accompanying drawings, wherein:

FIG. 1 is a perspective view of the back brace of this

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invention being worn by a sheep shearer in a standing position;

FIG. 2 is a view similar to FIG. 1 but showing the worker in a bending working position shearing sheep;

FIG. 3 is a perspective view of the back brace unit only;

FIG. 4 is a cross-sectional view taken along line 4—4 in FIG. 3; and

FIG. 5 is a cross-sectional view taken along line 5—5 in FIG. 3.

The back brace of this invention is generally referred to by the reference numeral 10 and includes an elongated member or unit 12 comprised of parallel spaced apart side tubular members 14 interconnected at opposite ends by cross portions 16 and 18. The cross portions are flared outwardly away from the wearer's back. The side portions 14 are spaced apart less than the width of the wearer's back. The end portion 18 has leg portions 20 for telescopically receiving the end portions of the side portions 14 and are held together by set screws 22 selectively engageable with openings 24 to selectively provide the desired length to the back brace unit 12.

A waist belt 26 is carried by the back unit 12 and is secured to the side members by bolts 30. A back cushioning pad 32 is secured to the belt 26 for engaging the wearer's back and is formed of sponge rubber or the like. A sheet of backing material 34 is provided between the sponge rubber 32 and the belt 26. The belt 26 includes a conventional buckle 36 for securing the belt's free ends 38 and 40 about the wearer's waist and buttocks. The belt is normally worn somewhat loose such as a pistol holder.

The upper cross portion 16 includes a pair of eye bolts 42 extending towards the wearer and engaging the rings 44 provided in the ends of a chest lift strap 44 adapted to fit around the wearer's chest and directly under the arms across the arm pits of the wearer. The strap 44 is normally maintained in this position by the waist belt 26 holding the elongated elements 14 high on the wearer's back thus pulling the ends of the strap 44 up and back thereby maintaining the strap 44 out of the worker's way while working and also maximizing the lever arm length measured from the fulcrum across the buttocks of the wearer at the point of engagement by the belt 26 around the wearer's waist.

The lower cross piece 18 also has a pair of eye bolts 50 extending therethrough and engaged by the ends of a pair of elastic cords 52 adjustably connected to foot and ankle holsters 54. It is seen that the elastic cords 52 are selectively tied at their free ends to the hooks 56 connected to the eye bolts 50 and the foot holsters 54. The shoe holster 54 includes a strap 58 extending around the wearer's ankle and a strap 60 fastened thereon which extends around the wearer's foot and prevents the strap 58 from working up the wearer's ankle and thus eliminate any rotational forces about the feet at their anchoring points to the ground. Accordingly, the wearer's balance is improved and maintained by the elastic straps being connected at the point the feet are anchored to the ground.

In operation the unit 12 is mounted on the wearer's back by securing the belt 26 around the wearer's waist and the strap 44 around the wearer's chest with the feet being mounted in the foot holsters 54 connected to the lower end of the unit 12 through the elastic members 52. When the wearer is in the upright standing position of FIG. 1 the elastics 52 are relatively loose to permit a limited amount of bending before lifting action on the chest begins to permit reasonable body movement in a standing position including walking. When the wearer bends over to the position of FIG. 2 then the elastic cords 52 are stretched accordingly and transfer the overhang weight of the body to the wearer's feet anchored to the ground as

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the unit 12 pivots about a fulcrum on the wearer's buttocks. It is seen that maximum lifting leverage is provided by the strap engaging the wearer about the upper portion of his chest and the elastic cords 52 engaging the wearer at the lowermost portion of his body, at his feet. The outwardly flaring cross portions 16 and 18 also help to keep the back brace free of the body particularly on the front side such that there is no interference of normal body motions.

The back brace of this invention as seen supplies a steady pull or lift on the upper portion of the body which tends to relieve muscle strain and maximize pain relief as well as provide temper tension relief which results in relaxing the worker and enabling him to do better work for longer periods of time.

Some changes may be made in the construction and arrangement of my back support without departing from the real spirit and purpose of my invention, and it is my intention to cover by my claims, any modified forms of structure or use of mechanical equivalents which may be reasonably included within their scope.

I claim:

1. A back support, comprising, an elongated member rigid throughout its length and being of a size to extend from about the shoulders to the knees of the wearer and having connecting means at opposite ends thereof for engaging the wearer's chest at one end and under and around the feet at the other end,

belt means secured intermediate the ends of said elongated member in a position to bear upon the back side of the wearer on the buttocks with the buttocks serving as a fulcrum for said elongated member as the wearer moves between standing and stooped positions, said connecting means at at least one end including elastic means adapted to yieldably extend when the wearer is in a stooped position, said connecting means including a pair of connecting elements with foot engaging means at the ends thereof for engaging the feet of the wearer.

2. The structure of claim 1 wherein said other end of said elongated member includes a longitudinally extending outwardly flared end portion in engagement with said connecting means, and said flared end portion adapted

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to extend away from the wearer's body to maintain said pair of connecting elements away from the feet of the wearer when in a standing position.

3. The structure of claim 2 wherein said belt means secured to said elongated member is adapted to engage the wearer around the buttocks to hold the elongated member on the buttocks and said connecting means engaging said end portions being substantially loose when the wearer is in a standing position.

4. The structure of claim 1 wherein said elongated member is telescopingly extendable to fit the height of the wearer.

5. The structure of claim 1 wherein said belt means is adapted to maintain said one end of said elongated member high enough for said connecting means secured thereto to maintain engagement around the wearer's chest and directly under the wearer's arms when the wearer is in a stooped position.

6. The structure of claim 3 wherein said one end of said elongated member includes an outwardly flaring end portion and said elongated member is comprised of a pair of spaced apart elongated side members interconnected at their ends by said outwardly flared end portions, said side members being spaced apart less than the width of the wearer's back.

7. The structure of claim 6 wherein said pair of connecting elements are made of elastic material and include a strap means extending under each of the wearer's feet to hold the connecting element in place around the wearer's feet and ankles and to pull upwardly and inwardly on the wearer's ankles and feet when in a stooped position with the feet spread apart.

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