United States Patent [19]

Sinner

[11] **3,722,886**

[45] **Mar. 27, 1973**

[54] **MOVABLE STAND FOR A BASKETBALL GOAL**

[75] Inventor: **George A. Sinner**, Casselton, N. Dak.

[73] Assignee: **Teamakers, Inc.**, Casselton, N. Dak.

[22] Filed: **May 11, 1971**

[21] Appl. No.: **142,234**

[52] **U.S. Cl.** ..... **273/1.5 R**, 248/42

[51] **Int. Cl.** **A63b 63/04**

[58] **Field of Search** ..... 273/1.5 R; 248/42

[56] **References Cited**

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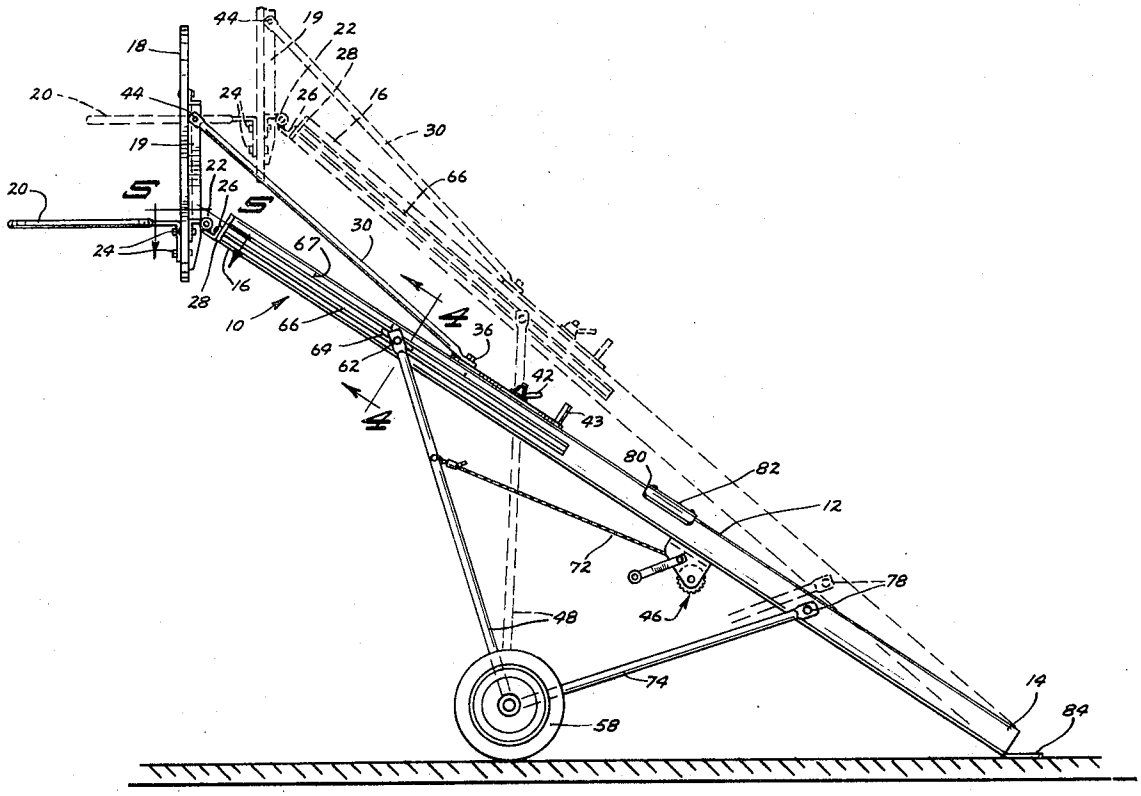
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Primary Examiner—Richard C. Pinkham
Assistant Examiner—Paul E. Shapiro
Attorney—Burd, Braddock & Bartz

[57] **ABSTRACT**

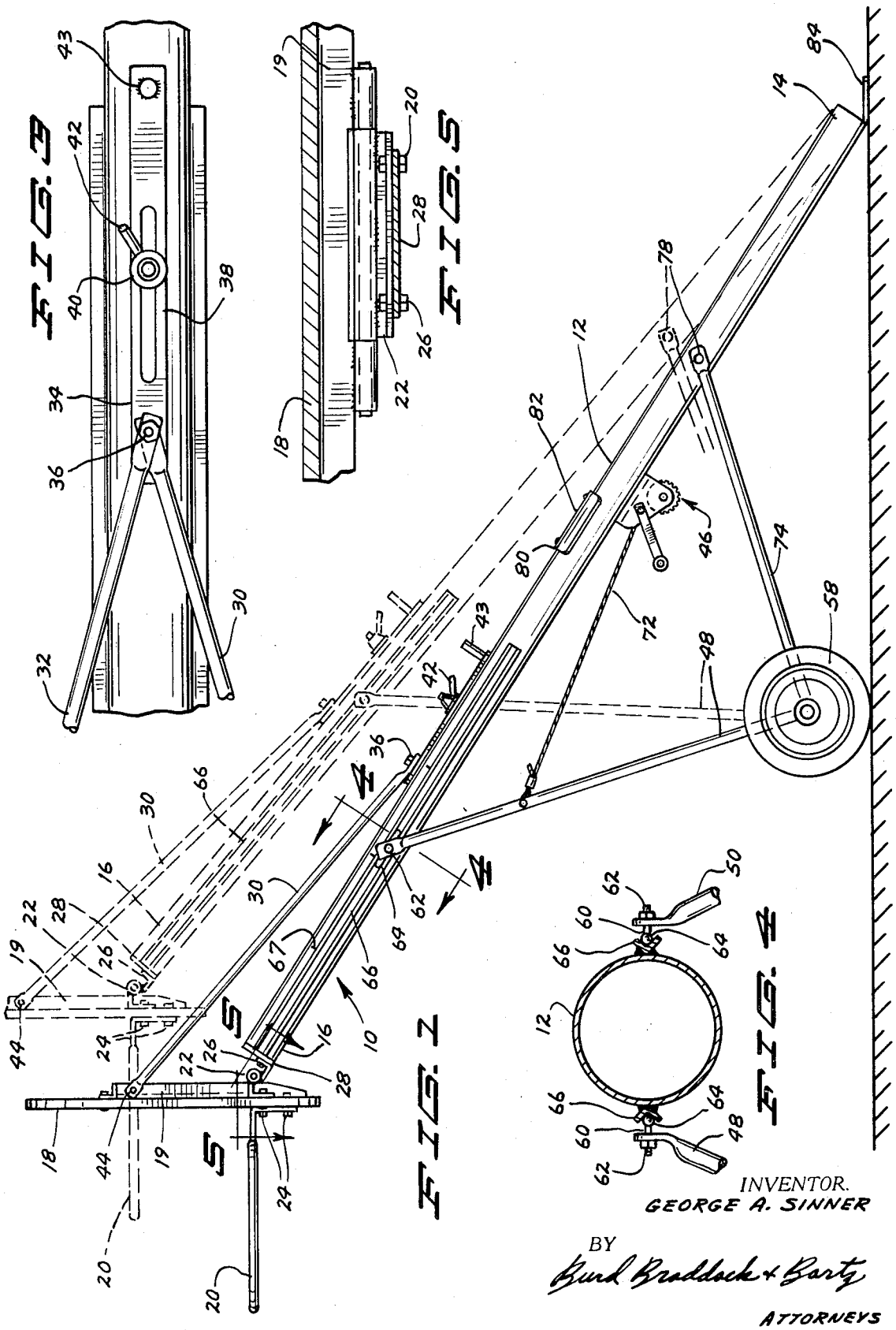
A stand for a basketball goal has as its main member an elongated tube which, at one end, has a basket and a backboard mounted thereon and which runs at an inclined angle of roughly 30° to 45° from that point to a ground supported end. The tube is supported at its mid-portion by a movable carriage so that the basket and backboard are removed far enough from the carriage to provide the players with a relatively large run-under room. The tube running at an inclined angle from the backboard to the ground provides a relatively great effective longitudinal dimension of the stand which creates a rigid and firm support for the backboard which will have relatively little give or springiness. A winch mechanism is provided to raise and lower the basket and backboard and means is provided for adjusting the backboard to remain vertical with respect to the ground as the height is adjusted. At the ground supported end of the tube means is provided so that the stand may be secured to a motor vehicle or bolted to a solid surface. The lower end of the tube may be filled with any suitable ballast material to add mass and increase stability.

17 Claims, 5 Drawing Figures



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2 Sheets-Sheet 1



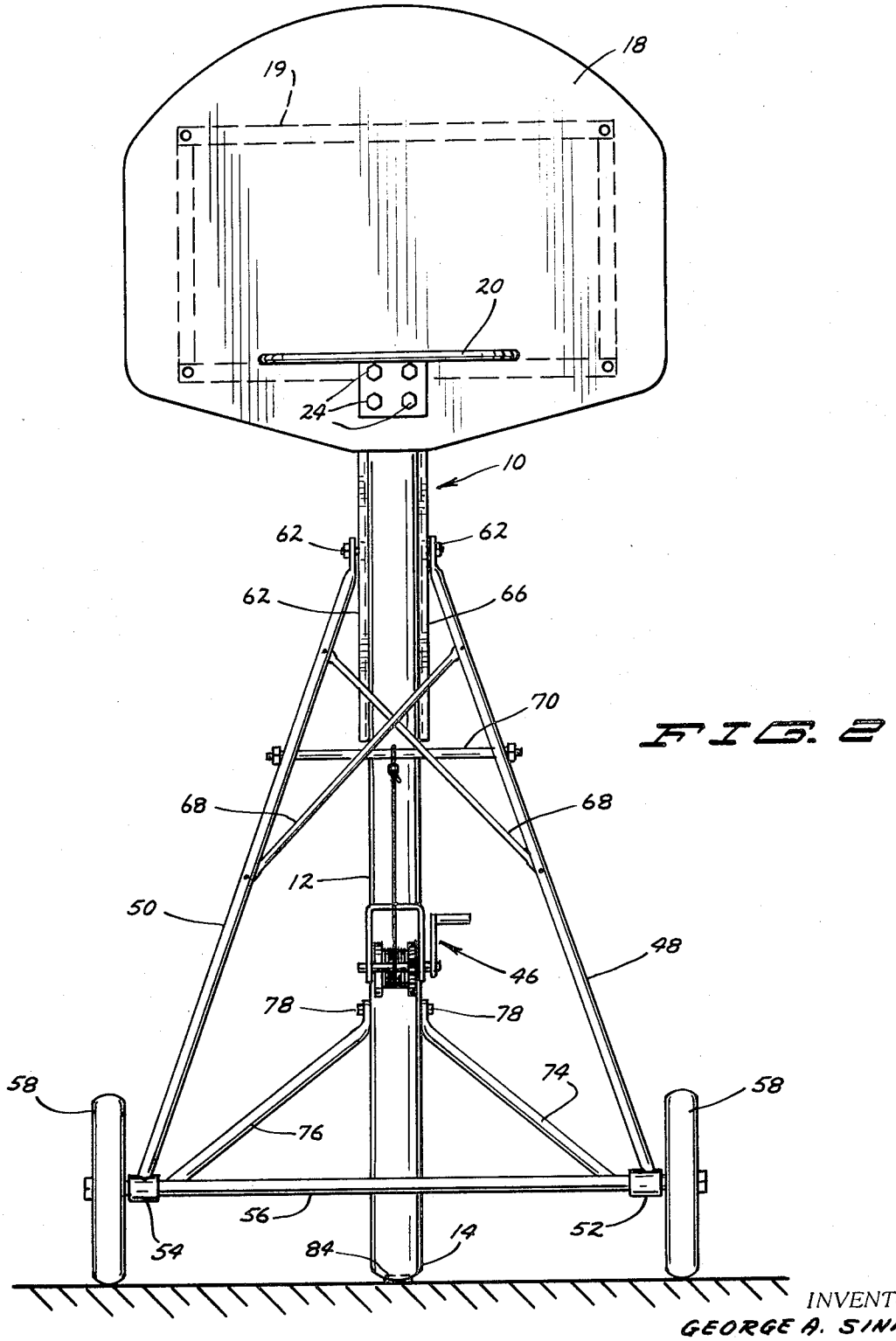


FIG. 2

INVENTOR.
GEORGE A. SINNER
BY
Burd Braddock & Bartz
ATTORNEYS

MOVABLE STAND FOR A BASKETBALL GOAL

BACKGROUND OF THE INVENTION

This invention relates to a movable basketball stand for supporting basketball baskets and backboards, either indoors or outdoors, and having a relatively great effective longitudinal dimension to create a firm and rigid support for the basketball and backboard.

At the present time, basketball goals of a portable nature are generally relatively heavy and cumbersome to move. One such basketball goal is shown in U.S. Pat. No. 3,025,058 in which the basketball goal is tipped backwards in order to roll the goal and support the weight of the goal on the pair of wheels 13, 13. As may be seen, the further the basketball stand is tipped away from the perpendicular, the greater the weight which must be supported by the mover thereof.

The basketball stand shown in U.S. Pat. No. 3,137,502 provides a relatively large distance of run-under room for basketball players, as best shown in FIG. 3 of the patent, as well as a relatively compact size when folded for storage, as best shown in FIG. 6 of that patent. However, it would be desirable to have a less heavy and complicated mechanism which could be purchased more inexpensively.

Although U.S. Pat. No. 1,924,811 shows a basketball goal which folds to a more compact unit for storage, it still requires a substantial amount of room and requires a relatively heavy platform to provide a base. This basketball goal could not be folded into an extremely compact structure for shipment. Also, a relatively heavy-duty gear system is required for operation of the backboard and basket between playing and storage positions. In addition, when in its playing position, the rigidity and strength of the stand is dependent upon the gears and there is no single member extending substantially from the backboard to the platform to provide a rigid structure. This same characteristic is noted in the previously mentioned U.S. Pat. No. 3,137,502 in which the various structural members of the unit are hinged together so that it may fold for storage.

The structure shown in U.S. Pat. No. 3,427,025 is substantially similar to the structure of the previously mentioned U.S. Pat. No. 3,025,058, except that additional wheels are provided so that the basketball goal may be moved without tipping from the vertical. Although this basketball stand may be adjusted for height, it would be desirable to have a greater amount of run-under room. This same disadvantage is present in the structure shown in U.S. Pat. No. 3,025,058. These two patents also have the disadvantage of a relatively short effective longitudinal dimension, that is, the dimension of the supporting structure behind the basketball basket and backboard. The rigidity and firmness of the mounting of the basket and backboard are related to the strength of the supporting supporting structure and the length of this structure extending behind the backboard. The structure shown in U.S. Pat. No. 3,025,058 is mounted on a single vertical post which may freely vibrate back and forth at the top end thereof giving a relatively non-rigid and firm support to basketball backboard. U.S. Pat. No. 3,137,502 does not have this disadvantage. The structure supporting the backboard is braced extensively by members which form a rigid triangular type framework so that any tendency to vibration of the backboard back and forth transversely is prevented by this structure which is braced against movement on the supporting surface at a relatively great distance from the basketball backboard. Comparison between the figures of this patent and U.S. Pat. No. 3,025,058 make these differences clear.

It is now clear that there is a need for, and that it would be desirable to have a basketball stand providing a relatively rigid and firm support for a basketball basket and backboard along with a relatively good distance of run-under room for the players without a substantial and complex mechanism. Such a basketball stand should be of the type which is portable and which may have the facility for being adjusted to different heights, including a relatively compact height for storage under bleachers of the type commonly found in schools. In addition, it would be an added advantage if such a basketball stand could be shipped in an extremely compact lightweight form. If a basketball stand were to have a combination of all these features and be relatively inexpensive, it would be suitable for purchase and use by individuals as well as institutions.

SUMMARY OF THE INVENTION

A stand is provided for a basketball basket and backboard which has the advantages of substantial run-under room for players, a relatively rigid and firm support for the backboard to prevent undesirable vibration and a relatively compact form when packed for shipping. In addition, this basketball stand may be used indoors and outdoors and may be towed by a motor vehicle. In the form of the invention shown, means is provided for adjusting the height of the basket above the ground and the basket may be lowered nearly to ground level if desired for storage in a room having a low ceiling or beneath the bleachers or stage in a gymnasium.

In the form of the invention shown, this basketball stand has as its main structural element an elongated member in the form of a large diameter tube which supports the basketball backboard and basket and inclines generally at an angle of 30° to 45° with respect to the supporting surface through a relatively long distance to the other surface supported end which rests directly on the surface. A pair of wheels supports this tube through a framework at a point which slightly overbalances the basketball goal so that the surfaces or ground supported end of the tube will rest on the ground. In the form of the invention shown, one portion of this framework is a movable support mounted to guides rigidly secured to the tube and a winch is provided to operate between the tube and the movable support to raise and lower the basketball stand.

As the metal tube is raised and lowered by the interaction of the winch and the wheeled framework supporting the tube, the angle of the tube with respect to the ground changes and the backboard will not remain in the desired vertical orientation. The backboard is hingedly mounted at the bottom thereof to a mounting plate secured to the end of the tube and a pair of braces pivotally mounted to the top of the backboard extends backwardly and downwardly to a lockable sliding clamp which has a handle for causing the adjustment of the backboard by movement on the hinge mounting so that the backboard may be brought to a vertical position after the height has been adjusted.

A fill opening is provided in the tube, just behind the pair of wheels which supports the tube at the mid-portion, in the form of the invention shown, so that the tube may be filled with ballast to add additional weight and stability to the stand.

At the ground supported end of the tube, a plate is provided which extends out from the tube in a direction away from the basketball backboard and which may be used as a hitch for towing the stand by a motor vehicle as well as providing a means for rigidly securing the ground supported end of the basketball stand to a playing area surface.

Because the basketball stand is supported on a single elongated member extending at an inclined angle away from the basketball backboard, the stand is relatively vibration free because of the attenuation of the horizontal vibration forces. The inclined member creates a large effective longitudinal dimension for vibration damping. Substantial run-under room is provided for the players to exercise their skill and creates an additional safety factor in reducing the likelihood of a player being injured by running into the stand. In addition, the stand may be easily moved by a single person since the weight of the stand tends to be balanced over the wheels, without the attendant danger of overbalancing the unit, causing it to tip over. It will be appreciated that, although the unit may be lowered nearly to ground level for movement so that the basketball backboard will move under overhead objects, the lifting of the ground supported end will cause a substantial lowering of the backboard without mechanically operating the winch to reduce the height of the structure. This is particularly useful, since in one form of the invention, the tube is rigidly secured to the wheels by a framework at a fixed height, but would still be easily capable of manipulation under overhead objects, such as door frames.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is a side view of one form of a basketball stand according to the present invention;

FIG. 2 is a front view of the basketball stand shown in FIG. 1;

FIG. 3 is an enlarged detailed view of a portion of the basketball stand shown in FIG. 1 and which is part of the means for adjusting the basketball backboard to a vertical orientation with respect to the ground;

FIG. 4 is an enlarged cross sectional view along lines 4—4 of FIG. 1; and

FIG. 5 is an enlarged detailed plan view along line 5—5 of FIG. 1.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the figures, a basketball stand **10** has an elongated tubular member **12** extending from a ground supported end **14** at an inclined acute angle upwardly to a basketball goal supporting end **16**. A basketball backboard **18** with a basket **20** mounted thereon is secured to the goal supporting end **16** of the elongated member by a hinge **22**. The basketball backboard has a frame **19** of angle iron on the back side thereof to which one ear of the hinge **22** is welded. Bolts **24** extend all the way through the backboard **18**, securing, in part, the frame **19** to the back of the backboard and the basket at the front side thereof. An end plate **28** is welded to the goal supporting end **16** of the elongated member **12** and the other ear of the hinge **22** is bolted to this plate using bolts **26**.

A pair of pipe braces, **30** and **32**, are pivotally mounted to the upper portion of the frame **19** of the backboard, one brace being mounted at either side thereof. Both braces converge extending backwardly and downwardly to be secured by a nut and bolt combination **36** to a sliding clamp **34**, which is in turn secured on the upper surface of the tube **22**. The clamp has a slot **38** running longitudinally thereof and oriented in the longitudinal direction of the tubular member **12**. A bolt **40**, secured to the member **12**, extends through the slot **38** and a wing nut **42** thereon secures the clamp in a fixed position as desired and releases the clamp for movement as desired. By sliding the clamp **34** back and forth, the backboard will pivotally rotate on the hinge **22** and the pivotal mountings **44** of the braces **30** and **32** to the upper portion of the frame **19** of the backboard, allowing the angle of the backboard to be adjusted with respect to the ground to achieve the optimum vertical orientation desired for use. A handle **43** is provided on the sliding clamp **34** so that the user may easily operate the clamp as desired.

A hand operated winch **46** is used for height adjustment of the goal supporting end of the tubular member **12**, in order to raise or lower the basketball backboard and basket to suit the height and skills of the players. Obviously, for younger players the basket could be kept at an appropriate height, below regulation height, and for older more skilled players the basket could be raised to regulation height. The winch is mounted on the under side of the tubular member **12** and slightly displaced from the middle of the tube towards the ground supported end thereof. The winch cable **72** is connected to a cross bar **70** which in turn is secured to a pair of supporting legs **48** and **50**. The supporting legs are secured at their lower ends to sleeves **52** and **54**, respectively, which are rotatably mounted on an axle **56**. A pair of wheels **58**, **58** are provided at the outside ends of the axle which is sufficiently long to provide a relatively wide stance for the basketball stand so as to provide a high degree of rigidity and lateral stability when in use and when in transit. The supporting legs **48** and **50** extend generally upwardly and are biased slightly forwardly to be movably secured to the member **12**.

The movable connection of the upper ends of the supporting legs **48** and **50** are formed using T-shaped elements **60**. The base portion of the T is provided with threads so that a nut **62** may be used to secure the base portion of the T through the upper ends of the supporting legs **48** and **50**, as best seen in FIG. **4**. The cross portion of the T-shaped elements **60** is formed from a rod **64** which is longitudinally oriented with guides **66** formed of angle iron and welded to either side of the tubular member **12**. In the form of the invention herein disclosed, guides **66** are formed of right angled iron which are welded to the tube with the apex welded to the extreme outside periphery of the tube **12** so that the flanges extend in either direction at an angle of 45° with respect to the tangent of the tube at the point where the corner of the angle iron is secured. As may best be seen in FIG. **1**, the angle iron extends generally from the

mid-portion of the tube **12** forwardly to the goal supporting end **16** thereof.

As will be appreciated from the dotted line showing of FIG. **1**, the supporting legs **48** and **50** may be moved nearly to the vertical to achieve maximum height of the basket, which would be regulation height, or lower, as illustrated in the solid line showing of FIG. **1**. It may also be appreciated that the stand may be lowered nearly to ground level by letting out the winch cable **72** allowing the T-shaped elements **60** and the legs **48** and **50** to slide nearly to the goal supporting end of the angle irons **66**, **66**. Indicia **67**, three of which are shown, indicate with reference to leg **48** the height of the basket.

Bracing members **68**, **68** are provided between the supporting legs **48** and **50** in an X configuration with the two members secured together at the cross-over point, as best shown in FIG. **2**, in order to hold the legs together so that the T-shaped elements will not be released from the guides **66**.

Alternatively, the movable connection of the legs **48** and **50** to the tube **12** may be provided in many different ways, such as by the use of nylon or steel rollers in U-shaped channels secured to the tube **12**.

Connected to the axle **56** and extending backwardly, generally horizontally, towards the ground supported end of the tube **12**, are a pair of braces **74** and **76** which are pivotally mounted at either side of the tubular member **12** by means of a bolt an nut combination **78** which extends in a sleeve, not shown, all the way through the member **12** so as to secure both braces **74** and **76**.

A ballast fill opening **80** is provided in the tube **12** at a position slightly to the rear, that is towards the ground supported end **14**, of the tubular member **12** so that gravel or other ballast may be provided to add to the weight of the structure and make it more firm as a result of increasing its mass. A cover **82** is provided for the gravel fill opening **80** and which may be bolted or otherwise secured in place.

At the bottom ground supported end **14** of the member **12**, a ground plate **84** is welded thereto and extends outwardly at an angle so that is approximately parallel with, and in contact with, the ground when the basketball goal is elevated to the regulation height. This ground plate will have a hole therethrough so that the plate may be bolted to an anchoring device, a concrete apron for example, when the structure is outside in the open, or to a gymnasium floor, if the structure is used inside. In addition, this plate may provide an attachment point to be adapted to an ordinary car or trailer hitch of any one of several types so that the basketball stand may be towed behind an ordinary motor vehicle.

In use, by operation of the winch to release the winch cable **72** to its full length, the stand may be lowered to be nearly horizontal with respect to the ground so that it may be stored in a room with a low ceiling, or under a low overhang, or beneath the bleachers or stage of a gymnasium. In addition, one form of the invention, having an essentially identical appearance to the showing of FIGS. **1** and **2** but without an elevation adjustment feature so that the basketball goal must remain at a fixed elevation, may be moved through doorways and other low overhead obstructions by lifting the ground supported end so that the tube **12** is generally horizontal with respect to the ground, causing the stand to have a relatively low height for such transportation. Handles may be provided as desired to facilitate movement of the stand.

It is intended that basketball stands according to this invention may be provided with sufficiently large wheels **58** and a sufficiently strong axle **56** so that it may be used outdoors and towed over highways at reasonable speeds. The stand is sufficiently rugged and simple so that it may be used by individual families as well as institutions. The structure may be disassembled and shipped in a relatively compact kit form by placing the axle and all of various legs, braces and rods within the tube **12** for shipping purposes. The stand may be shipped essentially as a piece of pipe, except for the wheels and the basketball goal.

It will primarily be appreciated that a basketball stand has been provided of efficient and simple construction which provides a relatively great run-under room for players and a substantially long effective longitudinal dimension which will cause vibration created by basketballs striking the backboard to be transmitted directly through the elongated member to the ground supported end **14**. In the form of the invention shown, tube **12** forms the elongated member running diagonally downwardly from the backboard to be supported on the playing area surface and acting to transmit the horizontally directed components of vibration to the playing area surface.

When the basketball stand includes a ground plate **84** which is properly engaged with the playing area surface, whether by rigid attachment or frictional contact, this stand will have tremendous vibration resistance, thereby providing a desirable "feel3" of the backboard for professional players. It is, of course, understood that the basketball stand need not have a ground plate and that satisfactory performance may be had with the ground supported end of the tube frictionally engaged with the playing area surface.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. An athletic equipment stand for supporting a basketball goal above a playing area surface comprising:

an elongated member, having an goal supporting end and a surface supported end, said member disposed at an acute angle with respect to the playing area surface and inclining from the elevated goal supporting end downwardly to the surface supported end, and

support means for supporting the goal supporting end of said member above the playing area surface,

at least one leg connected at one end to the support means,

means movably mounting the opposite end of said leg to said elongated member,

at least one brace pivotally attached at one end to said member and connected at the opposite end to the support means,

said leg and said brace being pivotally movable about the support means relative to one another, and

means to pivot the leg relative to the brace whereby the goal supporting end of the elongated member is selectively raised and lowered.

2. The structure of claim 1 where said member is inclined with respect to the playing area surface at an angle within the range of 30° to 45°.

3. The structure of claim 1 and further comprising means for engaging the surface supported end of said member with the playing area surface.

4. The structure of claim 1 wherein said surface supported end of said member is secured to a generally flat ground plate at an angle so that said ground plate is substantially parallel to and in substantial contact with the surface on which said stand is supported.

5. The structure of claim 1 wherein said support means for supporting said member is comprised of a frame extending between the surface on which said stand is located and said member to cooperatively support said member at a point between the surface supported end and the goal supporting end so that the center of gravity is disposed on the surface supported end side of said frame causing the stable position of said stand to be that position with the surface supported end resting on the surface.

6. The structure of claim 5 wherein said frame includes a pair of wheels disposed on an axle mounted transversely of the direction of orientation of said member so that said stand may be moved with said wheels supporting the weight thereof.

7. The structure of claim 1 wherein the basketball goal supported by said goal supporting end includes a basketball backboard and basket and wherein said member is an elongated tubular member extending to the ground from said backboard to create a relatively great effective longitudinal dimension of said stand causing said backboard to transfer any vibratory movement caused by playing activities through said member to the surface supported end.

8. The structure of claim 1 wherein said member is a hollow tube having an opening for admission of ballast to the surface supported end thereof.

9. The athletic stand of claim 1 wherein said stand has a pair of said legs and wherein means for movably mounting said legs to said member includes:

a pair of guides associated with said member and running generally longitudinally thereof, and

a pair of elements, one secured to each leg for movement in one of said guides respectively.

10. The athletic stand of claim 1 wherein the basketball goal supported by said goal supporting end is a basketball backboard and basket and further comprising means for adjusting the basketball backboard to the vertical with respect to the playing area surface.

11. The athletic stand of claim 10 wherein said means for adjusting said basketball backboard includes:

a pivotal hinge mounting the lower portion of said backboard to the goal supporting end of said member,

a pair of second braces pivotally mounted to an upper portion of said basketball backboard and extending generally longitudinally of said member, and

a sliding clamp slidably mounted at a mid-portion of said member and having said second braces secured thereto, said clamp being slidably mounted for back and forth movement to move said second braces and the top of said backboard back and forth pivotally on said hinge for adjustment of said backboard to the vertical with respect to said playing area surface.

12. The athletic stand of claim 11 and including means for locking said slidable clamp in a predetermined position.

13. An athletic equipment stand for supporting athletic equipment above a playing area surface comprising:

an elongated member, having an equipment supporting end and a surface supported end, said member disposed at an acute angle with respect to the playing area surface and inclining from the elevated equipment supporting end downwardly to the surface supported end,

means for supporting the equipment supporting end of said member above the playing area surface,

a pair of braces pivotally mounted to said member proximate to the ground supporting end thereof and extending generally horizontally with respect to the playing area surface towards the equipment supporting end thereof,

an axle, having a pair of wheels mounted thereon, connected to said braces,

a pair of legs secured to said axle and pivotally movable with respect to said braces and extending generally upwardly toward the equipment supporting end of said member,

means for movably mounting said legs to said member, and

means coacting between said member and said movably mounted legs to cause relative movement back and forth of said legs with respect to said member to cause raising and lowering of said member with respect to the playing area surface.

14. The structure of claim 13 wherein said means for movably mounting said legs to said member includes:

a pair of guides associated with said member and running generally longitudinally thereof, and

a pair of elements, one secured to each leg for movement in one of said guides respectively.

15. The structure of claim 13 wherein the athletic equipment supported by said equipment supporting end is a basketball backboard and basket and further comprising means for adjusting the basketball backboard to the vertical with respect to the playing area surface.

16. The structure of claim 15 wherein said means for adjusting said basketball backboard includes:

a pivotal hinge mounting the lower portion of said backboard to the equipment supporting end of said member,

a pair of second braces pivotally mounted to an upper portion of said basketball backboard and extending generally longitudinally of said member, and

a sliding clamp slidably mounted at a mid-portion of said member and having said second braces secured thereto, said clamp being slidably mounted for back and forth movement to move said second braces and the top of said backboard back and forth pivotally on said hinge for adjust-

ment of said backboard to the vertical with respect to said playing area surface.

17. The structure of claim 16 and including means for locking said slidable clamp in a predetermined position.

* * * * *

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UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,722,886 Dated March 27, 1973

Inventor(s) George A. Sinner

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

On the title page, the name of the assignee is incorrectly shown as "Teamakers, Inc.". The name of the assignee should be --Teammakers, Inc.--.

Signed and sealed this 27th day of November 1973.

(SEAL)
Attest:

EDWARD M.FLETCHER,JR.
Attesting Officer

RENE D. TEGTMEYER
Acting Commissioner of Patents