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COLLAPSABLE SWING SUPPORT WITH RELEASABLE FASTENING MEANS

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2 Sheets-Sheet 1

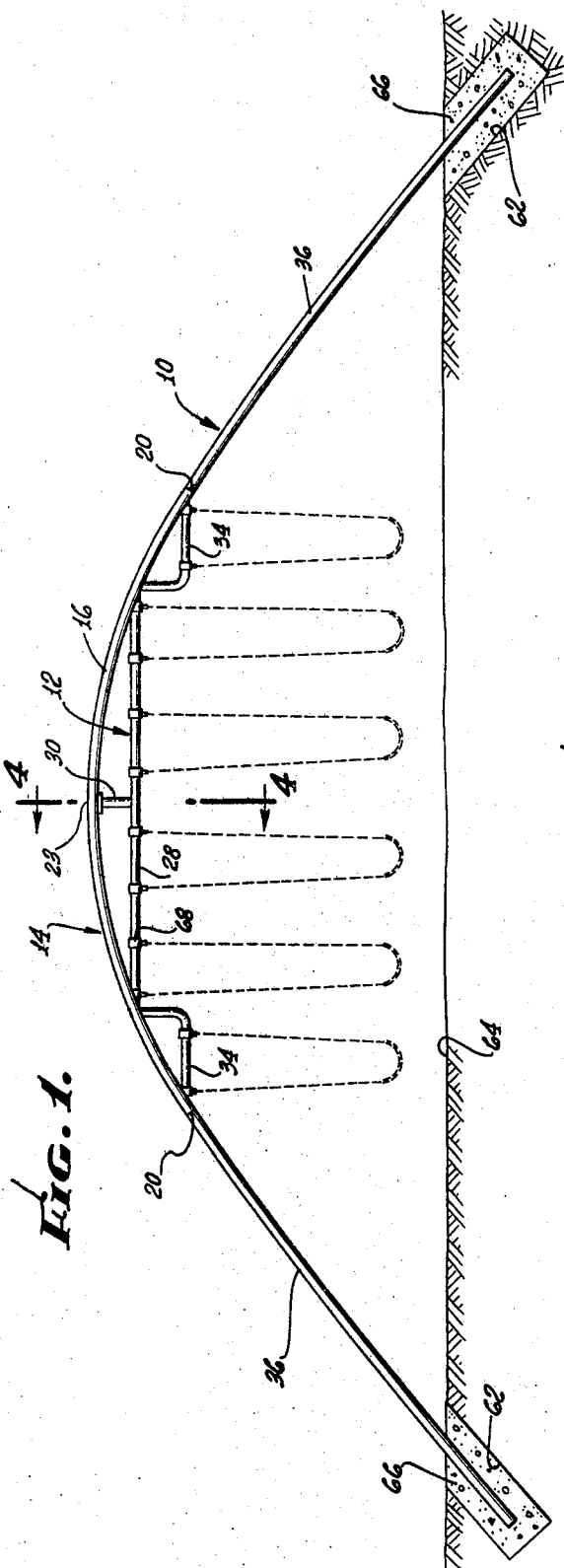


Fig. 2.

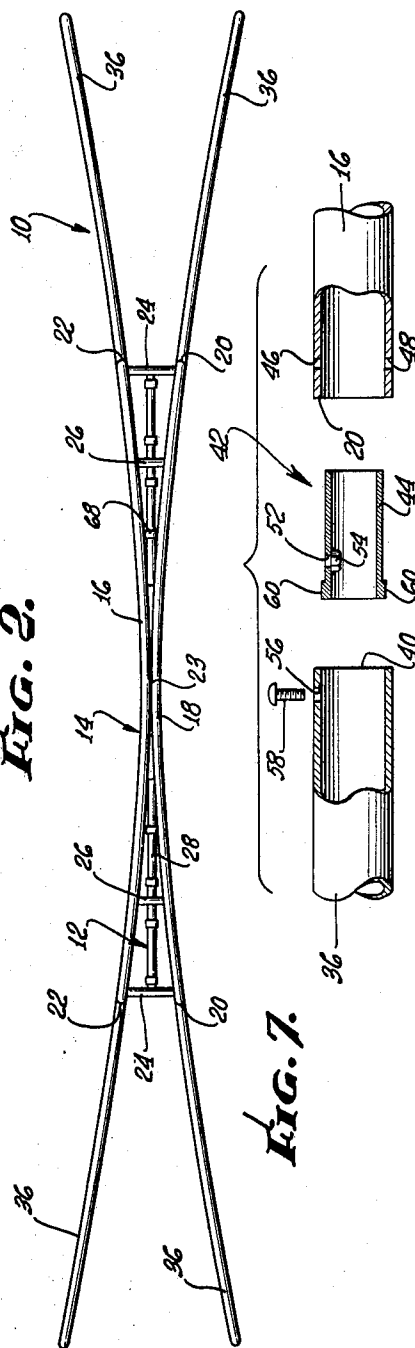


Fig. 7.

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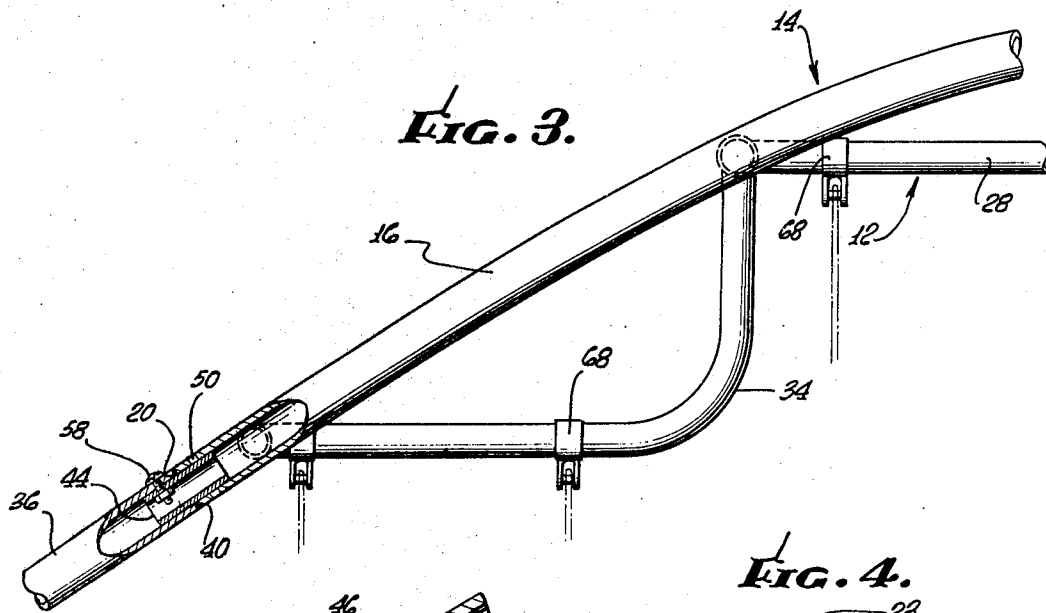
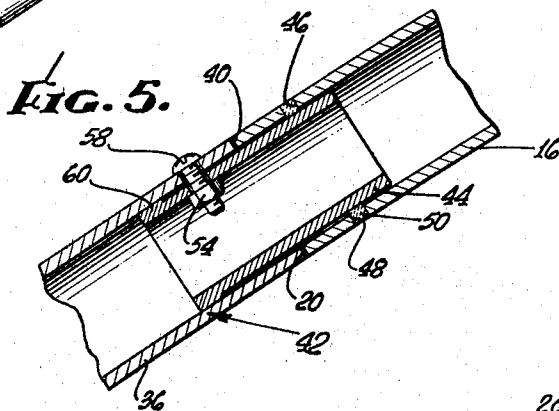
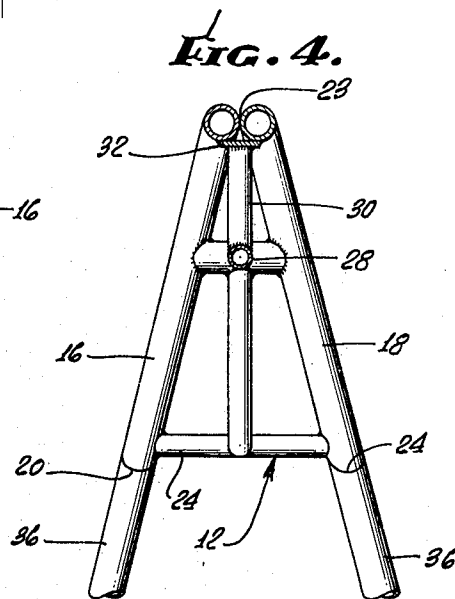
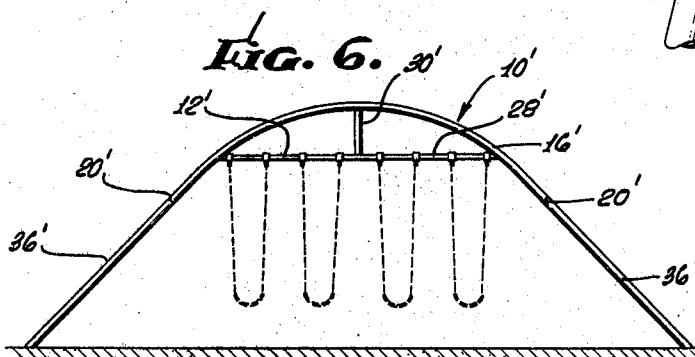
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## COLLAPSABLE SWING SUPPORT WITH RELEASABLE FASTENING MEANS

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3 Claims

### ABSTRACT OF THE DISCLOSURE

A recreational swing support of sectional construction including a single header section and a plurality of independent legs securable to the header to elevate the header above the ground. The legs and header section interfit with releasable locking means.

This invention relates to a playground swing support and more particularly to a swing support which includes an integral header section and detachable leg sections.

Heretofore swing supports of the type illustrated and described usually varying in length from ten feet up to sixty feet have been of a unitary single construction requiring the entire assembly to be fabricated and put together at the factory which has caused a considerable shipping problem in view of the overall length. Additionally, when structures of the length discussed above have been heretofore built there has been a considerable variance in tolerances so that it has never been possible to prepare an area for installation of the swing support prior to its delivery to the site of installation.

It is an object of this invention to provide a playground swing support which may be manufactured to more exacting tolerances than heretofore possible so that the area of installation may be prepared prior to the delivery of the swing assembly. Due to the construction of the present invention closer tolerances are able to be observed.

Another object of this invention is to provide a swing support that is built in pieces shipped in knocked down form and put together at the site of installation.

Another object of this invention is to provide a playground swing support including an integral or unitary header section and including means to receive a plurality of leg supports whereby the header section may be elevated above the ground.

Still a further object of this invention is to provide a playground swing support including tie means to maintain the legs and the header section of the swing support fixedly one to the other.

A further object of this invention is to provide a playground swing support which is easier to install at a site of use requiring a minimum amount of man hours and external equipment to accomplish the installation.

These and other objects of the invention will be made more apparent from a consideration of the description which follows taken in conjunction with the drawings.

In the drawings:

FIGURE 1 is a front elevational view of a playground swing support permanently installed and illustrating swings in phantom lines hanging from the swing support;

FIGURE 2 is a top elevational view of the swing support illustrated in FIGURE 1;

FIGURE 3 is a side elevational view of a portion of the swing assembly including a cross-sectional portion of the locking or tie means;

FIGURE 4 is a section cross-sectional view taken on line 4—4 of FIGURE 1 showing additional detail construction of the header portion of the swing support;

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FIGURE 5 is a detailed sectional view of the locking or tie means illustrated in FIGURE 3;

FIGURE 6 is a modified playground support swing illustrating a swing support having a total length less than the swing support illustrated in FIGURE 1; and

FIGURE 7 is an exploded cross-sectional view of the locking or tie means illustrated in FIGURE 5.

The playground swing support generally designated 10 in its preferred embodiment illustrated in FIGURE 1 is formed to create a parabolic arc including strut work generally designated 12 to receive and carry children's swings, climbing ropes, gliders etc. The strut work 12 is carried on an upper header section generally designated 14.

The playground swing support 10 is preferably constructed of standard weight steel pipe including a galvanized finish. The header section 14 includes a pair of arcuate pipe supports 16 and 18 terminating in ends 20 and 22 respectively. The arcuate pipe support members 16 and 18 contact each other midway between their respective ends 20 and 22 at the apex of their curves, as best seen in FIGURES 2 and 4. At this center point 23 the supports may be welded together or otherwise fixed in a permanent relationship one to the other. Each of the supports 16 and 18 are pre-bent or flared outwardly from the center point 23 as best seen in FIGURE 2, so that the respective ends 20 and 22 are spaced from each other a distance greater than the double thickness of the support members 16 and 18 at the center point 23.

The strut work 12 which actually receives the swings or other swinging playground equipment includes a pair of cross supports 24 which extends between the arcuate supports 16 and 18 adjacent the respective ends 20 and 22 thereof and act as a brace or support to maintain the arcuate supports in the flared position illustrated in FIGURE 2. Between the ends 20, 22 and the center point 23 additional cross supports 26 are positioned by welding or other means to additionally support the header section 14 in the flared position.

Extending between the respective cross supports 26 is a horizontal swing mounting bar 28. In order to create additional strength and support of swings which may depend from the swing mounting bar 28, a vertical riser 30 extends upwardly from the horizontal swing mounting bar 28 and is secured to a butt plate 32 by welding or other means. In turn the butt plate 32 is welded or otherwise secured to the arcuate supports 16 and 18 at the center point 23 as illustrated in FIGURE 4.

When a playground swing support of the length illustrated in FIGURE 1 is constructed there is provided a pair of right angle swing mounting bars 34 which extend from each of the cross supports 24 and 26 respectively such as illustrated in FIGURES 1 and 3.

It will thus be seen that the header assembly 14 heretofore described is an integral and unitary structure.

In order to elevate and support the header section 14 above the ground a plurality of leg members 36 are provided which are joined to the arcuate supports 16 and 18 by locking or tie means to be described. Each of the leg members 36 in the preferred embodiment illustrated in FIGURE 1 are vertically curved so as to complete the parabolic arc of the arcuate supports 16 and 18. Additionally as can be seen from FIGURE 2 the respective legs are pre-bent and flared outwardly so that the base of the pairs of legs 38 are widely spaced one from the other to stabilize the playground swing support 10. Each of the leg members 36 terminate in opposing upper ends 40 which are adapted to butt and engage ends 20 and 22 of the arcuate support members 16 and 18 so that a smooth uninterrupted surface such as illustrated in FIGURE 1 will be presented.

The locking or tie means generally designated 42 best illustrated in FIGURES 3, 5 and 7 includes a plug insert 44 which is fitted within the arcuate supports 16 and 18 at the respective ends 20 and 22 to a point where the insert 44 will extend at least as far as the respective opposed openings 46 and 48 in the arcuate support members 16 and 18. The openings 46 and 48 are used to receive a plug weld 50 so that the insert 44 is retained within the arcuate supports 16 and 18. As can be seen from FIGURE 5 a portion of the inserts 44 extends beyond the ends 20 and 22 of the supports 16 and 18 to receive and fit within the leg members 36 so that the ends 40 and 20 may be butted together as illustrated in FIGURES 1, 3 and 5.

The insert 44 is provided with an opening 52 and aligned with the opening 52 on the interior of the plug is a nut 54 which is welded or otherwise secured to the plug. As the legs 36 are each inserted over the inserts 44 and openings 56 in the hollow legs 36 are aligned with the openings 52 and nut 54 bolts 58 may be inserted therein and tightened within the nut 54 to hold the respective legs 36 in position with the arcuate supports 16 and 18. With the nut on the inside of the inserts 44 and bolts 58 may be drawn up tight so that there is a binding of the inserts 44 to the legs 36 and a tight securement of the legs 36 to the arcuate supports 16 and 18. It will also be noted that by proper placement of openings 56 and nuts 54 during construction their proper alignment during assembly will insure that the flared legs are properly positioned relative to the header section and geometrical continuity is followed.

To insure additional tight fitting and compensate for different tolerances the insert 44 is provided at the end adjacent the nut 54 with an annular collar 60 of a diameter at least as great as the circumferential dimension of the interior of a leg 36.

Once the playground swing support 10 is finally assembled as previously described it is then ready for mounting which is accomplished in the following manner: Predetermined holes 62 angularly disposed relative to ground level are dug in the ground 64 and concrete footings 66 are placed within the holes 62 and the free ends of the legs 36 are placed within the concrete footings, such as is illustrated in FIGURE 1, to anchor the assembly in place.

It has been found that where the header section 14 is of integral or unitary construction the variance in tolerances in the complete assembled swing support 10 is so minor and that the spacing and placement of holes 62 can be predetermined and dug prior to the arrival of the swing at the area where it is to be installed, thus eliminating a great deal of time and effort on the part of the installers. In other words the unitary header is stable and does not spring and flex where the legs would extend or contract, which would cause the overall change in dimensions.

Heretofore, swings of the general character have not possessed the rigidity of construction which is found in this invention. When the swing support is installed as is shown in FIGURE 1 and the swing hangers 68 are positioned on the strut work 12 to receive swings, gliders or climbing ropes, any weight placed upon the swings, gliders, ropes etc., will cause the playground swing support 10 to be flexed downwardly. However, with the unitary construction as described above, the downward vertical force on the swing support 10 is distributed through the vertical strut 30 to the horizontal swing mounting bar 28 and thus outward to the arcuate support members 16 and 18 so as to distribute the downward force on the unit and dissipate it outwardly to the arcuate leg 36.

FIGURE 6 of the drawings illustrates a modified form of the playground swing support 10'. The embodiment in this figure is representative of a smaller swing support where the parabolic arc is greater from ends 20' of the respective arcuate supports 16' and 18' and the leg segments 36' need not be curved such as the legs of 36 but

may be straight pipe sections to accomplish the complete parabolic arc.

Further, the strut work 12' while utilizing the vertical strut 30' and swing mounting bar 28' does not include the additional right angle swing mounting bars as in the preferred embodiment illustrated in FIGURE 1.

The locking or tie means illustrated and described for the preferred structure is preferably utilized in the modified structure to hold the header 10' and legs 36' together.

While the particular swing support herein shown and described in detail is fully capable of attaining the object and providing the advantages herein before mentioned, it is to be understood that it is merely illustrative of the presently preferred embodiments of the invention.

We claim:

1. In a playground swing support adapted to receive swing apparatus, said support having a pair of elongated, tubular, arcuate support members, said arcuate support members being joined at their apices and flared outwardly and downwardly therefrom, terminating in coplanar ends, said arcuate support members including strutwork to maintain said support members in said flared position and adapted to directly receive said swing apparatus, all forming a header section, a tubular leg member releasably connected to each of said ends of said arcuate support members of said header section to elevate said header section above the ground and generally continue the outward and downward flare of each of said arcuate support members terminating in generally widely spaced apart coplanar ends, the improvement of releasable locking means to connect each of said legs and a supporting member, said releasable locking means including a tubular insert of a diameter less than the interior diameter of said support member and said leg and having an annular collar at one end of a diameter generally corresponding with the interior diameter of said leg, said insert having a portion remote from said collar permanently inserted within said support member and generally annularly spaced therefrom, said collar and a portion of said insert being insertable in said leg, and releasable fastening means passing through said leg and said insert in a region other than said collar whereby said fastening means may be tightened to draw said insert toward said leg in locking tensioned relationship.

2. In a playground swing support as defined in claim 1, said releasable fastening means including a nut secured flush with a portion of the interior of said insert and aligned openings in said insert and said leg, and a screw bearing on said leg and insertable through said openings and threadably engaging said nut, whereby as said screw is threaded into said nut said insert may be drawn toward said leg.

3. In combination a playground swing support header section, tubular legs, said header section including tubular support members of a diameter generally corresponding with the diameter of said legs, and a fastening means including a tubular insert having an annular wall of an exterior diameter less than the interior diameter of said tubular support member and said tubular leg, a collar formed on the exterior annular wall of said insert adjacent one end thereof and having a diameter corresponding with the interior diameter of said tubular support member and said tubular leg, a threaded nut mounted flush against a portion of the interior wall of said insert and secured thereto and an opening in said wall communicating with said nut, said nut and opening being positioned other than through said collar, said insert being secured in said support member with said collar and a portion of said insert extending beyond said support member, said leg being snugly inserted over said collar and portion of said insert and butted to said support member, an annular space formed between the interior of said leg and the external face of said wall of said insert except around said collar, said leg formed with an opening alignable with the opening in said insert, a screw extending

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through said opening in said leg and adapted to threadably engage said nut and move said insert through said space toward said leg whereby said insert is tensioned and rigidly secured to said leg.

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