This invention relates in general to certain new and useful improvements in swing-hoops and, more particularly, to a swing-hook having self-contained anti-friction means.

All types of installations for children's playgrounds, backyard play areas, and the like, include some sort of swing. Usually such swings consist of a horizontal bar or tube suitably supported at its ends in any conventional manner so as to extend above the ground at some appropriate height. The bar or tube is provided with depending elements having horizontal pintles and swing-hooks, which rockably support depending chains and the usual seatboard attached to the lower thereof. At the present time it is conventional practice to fit the eye of the swing-hook with some kind of ball-bearing assembly which serves as an anti-friction element around the pintle, but such ball-bearing assemblies are comparatively expensive, require occasional lubrication, and readily become rusted as a result of exposure to changing outdoor weather conditions. Furthermore, the downward and outward pressures exerted upon such ball-bearing assemblies during use cause uneven wear which rapidly impairs and ultimately destroys the efficiency of the ball-bearings. In fact, the ball-bearings quickly become out-of-round and then wear flat.

It is, therefore, the primary object of the present invention to provide a swing-hook with a self-contained anti-friction bushing which will not rust, corrode, or otherwise be adversely affected by weather conditions.

It is another object of the present invention to provide a swing-hook in which the anti-friction material serves both as a rotary and as a thrust bearing.

It is also an object of the present invention to provide a swing-hook having an anti-friction bearing which is not adversely affected by eccentric forces.

With the above and other objects in view, my invention resides in the novel features of form, construction, arrangement, and combination of parts presently described and pointed out in the claims.

In the accompanying drawings:

Figure 1 is a fragmentary perspective view of a child's swing equipped with swing-hooks constructed in accordance with and embodying the present invention;

Figure 2 is a fragmentary front elevational view of the top bearing assembly including the swing-hook of the present invention;

Figure 3 is a side elevational view of the swing-hook of the present invention; and

Figure 4 is a sectional view taken along line 4—4 of Figure 3.

Referring now in more detail and by reference characters to the drawings, which illustrate a preferred embodiment of the present invention, there generally designates a child's swing consisting of a top-bar 1 having clevis-like bearing brackets 2 welded or otherwise rigidly secured to the underside thereof. Each of the bearing brackets 2 integrally includes spaced parallel ears 3, 3', which are respectively provided with aligned apertures 4, 4', for receiving a horizontal bearing pin or pintle 5 having an enlarged head 6 at one end and being threaded, at its other end for engagement within a nut 7. Interposed between the inner face of the nut 7 and the proximate face of the ear 3 is a conventional lock washer 8.

Rockably mounted on each pintle 5 between the ears 3, 3', is a swing-hook 9 formed of relatively heavy wirestock or light rod-stock in a shape somewhat resembling a figure 8, thus including an upper eye-portion 10 and a lower hook-portion 11. Snugly but rotatably, seated in, and extending through, the eye-portion 10 is a spool-shaped nylon bushing 12, the outer face of which is formed with an annular groove 13 of approximately semi-circular cross-sectional shape and conforming closely to the cross-sectional shape of the swing-hook 9, as shown in Figure 4. Internally, the bushing 12 is axially drilled or otherwise formed to provide a concentric bore 14 sized for close-fitting rotative engagement around the pintle 5.

The bushing 12, furthermore, projects equidistantly on opposite sides of the eye-portion 10 and is provided with flat end-faces 15, 15', for anti-frictional engagement against the inner faces of the ears 3, 3'.

Conventionally attached to the depending hook-portions 11 are swing-chains 16, which are, in turn, attached at their lower ends to a horizontal seatboard 17 to form the complete swing A.

The swing-hook 9 with its self-contained anti-friction bushing 12 will rock to-and-fro easily and quickly without rusting, corroding, or even squeaking and will not require any lubrication. Furthermore, the bushing 12, having flat end-faces 15, 15', to bear against the ears 3, 3', will also act as a thrust bearing in itself and thrust forces, therefore, will not tend to bind the free-swinging action of the swing-hook 9. Finally, and of utmost importance, is the fact that the nylon bushing 12 possesses a rather unexpected and unpredictable property, namely that of limited elasticity. Apparently as the weight of the child erupts downward and outward compressive force on the top-side of the bushing 12, it squeezes down very slightly in this region so that the underside is comparatively more free. Consequently, the bushing will rotate with the eye-portion 10 as the child swings through an arc of movement, but at the moment when the swing-seat 17 reaches the uppermost limit of its swing, at which point its velocity momentarily becomes zero just prior to the commencement of downward swinging movement, the radial or centrifugal stress on the chains 16 slackens very materially and may even drop to zero momentarily, whereupon the compressive forces on the bushing 12 are momentarily released. For some unexplainable reason, the bushing springs back to become somewhat loose on the top-side and somewhat tight on the opposite side, so that on the reverse swing, it will ride with the pintle 5 rather than with the eye-portion 10. This unique property causes the bushing 12 to "walk" gradually around so that no one portion is subjected to excessive wear.

It should be understood that changes and modifications in the form, construction, arrangement, and combination of the several parts of the swing-hooks may be made and substituted for those herein shown and described without departing from the nature and principle of my invention.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. A swing-hook assembly comprising a bracket formed with a pair of spaced parallel substantially rigid ears, said ears having axially aligned apertures, a bolt-like pintle passing through, and non-rotatively secured in, said apertures and having a smooth bearing portion between said ears, said pintle, furthermore, having an enlarged head on one end and a nut threaded on the other end, a
tubular nylon bushing of limited elasticity rotatably mounted on said smooth bearing portion and provided with thrust bearing-forming flat end faces engageable with said ears, said nylon bushing, furthermore, being provided around its outer surface with a peripheral groove, and a swing-hook formed with a circular eye-portion and a hook-like member depending therefrom, said eye-portion having a minimum internal diametral size substantially equal to the minimum internal diametral size of the groove whereby the eye is embracingly disposed around the bushing and being rotatably mounted in said peripheral groove so that when the swing-hook swings to and fro along an arcuate path during use, the nylon bushing will, during some portion of such arcuate path, rotate with respect to the pintle, and will, during other portions of such arcuate path, rotate with respect to said eye-portion.

2. A swing-hook assembly comprising a bracket formed with a pair of spaced parallel substantially rigid ears, said ears having axially aligned apertures, a bolt-like pintle passing through, and non-rotatively secured in, said apertures and having a smooth bearing portion between said ears, said pintle, furthermore, having a nut threaded on one end, a tubular nylon bushing of limited elasticity rotatably mounted on said smooth bearing portion and provided with thrust bearing-forming flat end faces engageable with said ears, said nylon bushing, furthermore, being provided around its outer surface with a peripheral groove, and a swing-hook formed with a circular eye-portion and a hook-like member depending therefrom, said eye-portion having a minimum internal diametral size substantially equal to the minimum internal diametral size of the groove whereby the eye is embracingly disposed around the bushing and being rotatably mounted in said peripheral groove so that when the swing-hook swings to and fro along an arcuate path during use, the nylon bushing will, during some portion of such arcuate path, rotate with respect to the pintle, and will, during other portions of such arcuate path, rotate with respect to said eye-portion.

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