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2,840,024

BASEBALL SEWN COVERS

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The present invention relates to baseballs having covers sewn with a novel form of seam. More particularly, the invention relates to a ball sewn by the apparatus disclosed in United States Letters Patent No. 2,747,529, granted May 29, 1956, upon an application filed in the name of the present inventor, of which application the present one is a division.

A baseball cover usually is assembled from two pieces of soft tanned horsehide leather, each cut in bilobate, or more accurately in elliptic lemniscate, form and applied to the outer spherical surface of a ball foundation at right angles to each other with the narrower interconnecting section of one piece disposed in edge abutting relation to and between the lobes of the other. The abutting edges of the cover pieces are sewed together by threads passing through the pieces across the joint between their abutting edges and alternately over and under each marginal portion at the same angle to the abutting edges. The seam uniting the edges of the cover pieces heretofore has been sewn only in a commercially acceptable manner when inserted with two threads entering opposite cover pieces and passing alternately under and over each cover piece.

Various attempts to provide a substitute seam for sewing baseballs not employing the regular under-and-over type seam, commonly inserted by hand, have been made but such substitute seam usually has not been acceptable. It is, accordingly, an object of the present invention to provide a baseball or other spherically shaped article sewn with a seam which is not readily distinguishable from the usual one but which has many advantageous features not found in the usual one. Further objects are to provide an acceptable baseball seam which is more uniform and reliable than has been possible heretofore and also to provide a manner of finishing a baseball seam with a desirable form of self-adjusting fastening.

The improved baseball of the present invention is provided with a sewed cover composed of two bilobate pieces joined together with stitches passing over, through and under the marginal portions of the pieces along their abutting edges, in which there are two threads, each passing over, through and under the marginal portion of one piece exclusively, and at the same angle to the edge and into sliding interlocking engagement with the other thread passing in a similar manner, exclusively through the margin of the other piece. In the ball embodying this feature of the invention the seam is finished at its ends by bringing four end sections of two threads forming the seam into sliding interlocking relation at a single point, the advantage of this arrangement being that excessive tension in any one end section of thread will be transferred to one or more other end sections with a self-adjusting action. Thus, the danger of breaking the thread along one of its end sections will largely be eliminated. This feature of the invention is also applicable with advantage to hand inserted seams.

These and other features of the invention, as herein-

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after described and claimed will be apparent from the following detailed specification taken in connection with the accompanying drawing in which,

Fig. 1 is a view of a completely sewn ball embodying the present invention, the ball being shown in a special cover holder,

Fig. 2 is an enlarged view of a portion of an improved seam inserted in a baseball cover with the cover partially folded back to illustrate the manner of completing the seam at its ends; and

Fig. 3 is a similar view illustrating the arrangement of the threads in a fully completed seam.

The usual form of baseball established by regulation and tradition has an elastic center, surrounded by compactly wound layers of worsted and cotton to provide a spherical cover supporting foundation of limited resiliency. The external dimensions of the ball foundation are maintained uniformly within narrow tolerances and a covering is applied in the shape of two bilobate pieces 6 and 8 fitted about the ball foundation with the interconnecting section of one piece disposed with edges abutting the lobes of the other piece. The edges of the pieces are drawn against each other to give them a spherical close fitting form and to avoid exposure of the foundation or the edges themselves, thus providing a comparatively smooth, pleasing appearance. To fasten the edges of the cover pieces together and to draw them neatly into abutment, stitches are inserted, the exposed threads of which form a seam of herringbone configuration centered along the line of abutment. The seam ordinarily is composed of two threads, crossing each other along the abutting cover edges, each thread of which is doubled to provide greater strength without additional thickness. In the illustrated sewn ball of Fig. 1 and elsewhere in the drawing, two single threads 10 and 12 are shown in order to avoid confusing delineation, although the use of double threads is contemplated in order to provide an appearance exactly the same as that in a baseball with the usual hand sewn seam. Thus each exposed thread of the usual seam passes alternately over and under opposite abutting edges of the cover pieces. While the over-and-under alternate edge type of sewing is effective to draw the cover pieces securely together with their edges in abutting relation and to hold the pieces rigidly in this relation throughout the life of the ball, the rigidity of this type of seam frequently is a disadvantage when taking into consideration the use to which a baseball is put.

When a conventional baseball is struck with a bat or engages other nonyielding objects, it is subject to impact which the yielding center is intended to absorb through deformation. In absorbing the impact, however, the center of the ball is flattened in line with the point of impact and the outer surface of the ball foundation elsewhere bulges to exert tension on the ball cover, particularly in the neighborhood of a plane intersecting the cover at right angles to the line of impact. In bulging, a localized stretching action is applied to the cover so that an unusual strain is produced in the stitches. Since the threads in the stitches are connected directly from one cover piece to the other in the conventional ball, the stretching strain more than likely acts to enlarge the perforations along the edges of the pieces with the result that as soon as the ball foundation resumes its original spherical shape, contracting around the area of previous bulging, the stitches will be somewhat loosened, the material from which the cover is made not having sufficient elasticity to cause the size of the sewing perforations to contract to their original shapes. On account of the rigidity of the seam, there is little or no opportunity for localized adjustment of tension between

stitches to compensate for deformation in the ball under such impact or strain.

In the illustrated ball, the seam composed of threads 10 and 12 is formed by passing each thread in a continuous circuit over the marginal portion of one cover piece, through a perforation in the marginal portion of the cover piece, across the edge and back under the marginal portion to a succeeding perforation in the same marginal portion. Thus each thread does not pass over and under alternate marginal portions of the cover pieces as in the conventional baseball seam. In this respect, each thread in the present ball forms a type of individual over-edge seam, assisting in reinforcing the edge of each piece. Connection between the edges is obtained by interlocking the portions of the thread passing across the abutting edges of the pieces, the points of interlocking engagement between threads being obscured by the abutting edges of the pieces. The arrangement of the seam in this manner tends to give greater flexibility and resiliency to the cover when the sewn ball is subject to impact. Because of the interlocking relation between the threads, there also is an opportunity for sliding movement in addition to that obtained in the usual over-and-under type of seam. The edges of the pieces are, for this reason, capable of limited relative lengthwise movement along localized areas through the action of the threads sliding along each other at the points of interengagement. With interlocking threads a better adjustment of tension in both threads is obtained than is possible with the over-and-under type of seam. Furthermore, in forming the present improved seam, there is less opportunity to overtension the threads, than with the conventional seam, particularly in starting a seam. When either thread forming the present seam is tightened, it brings the opposite thread interlocked with it against the edge of the cover piece across which it is carried, enlarging the area of pressure on the edge by spreading its thicknesswise and providing greater resistance to tension in the thread than is met with the conventional under-and-over type of seam.

With the conventional type of baseball seam, the cover pieces are cut from a hide with a die which not only forms the configuration of each cover piece but also punches out perforations along the edge of the piece through which the sewing threads are later inserted. The perforations punched along the edge of each cover piece are not spaced equal distances apart but ordinarily have wider spacing along the interconnecting section of each bilobate configuration and narrower spacing along the edges of the lobes, so arranged as to impart equal amounts of tension to the cover pieces throughout their individual areas during sewing. The manner of perforating a cover piece in this way is disclosed in United States Letters Patent No. 442,147, granted December 6, 1890, upon application of B. F. Shibe. Since the perforations are punched while the hide is in a flat condition, substantial deformation occurs in the pieces as they are stretched over the ball foundation. If there are local weak areas in a cover piece, then greater localized stretching will occur along these areas, causing the line formed by the abutting edges to assume an irregular curvature. To facilitate conformity of a cover piece, it is common practice to moisten it sufficiently to render it soft and pliable. However, moistening aggravates localized stretching. To obviate this difficulty, the perforations in the illustrated cover pieces are not preformed but are pierced only after the cover pieces have been stretched into close fitting relation to the spherical foundation of the ball. Piercing the perforations after the pieces are brought into close fitting relation to the ball foundation is accomplished with the use of a ball holder in a particularly desirable and advantageous manner more fully disclosed in inventor's patent above noted.

If the preferred type of seam is to be inserted with

overedge threads, the thread 10 is drawn through each loop formed in the thread 12 and also exclusively through the cover piece 6, not passing through the cover piece 8. Each thread thus is passed exclusively through a marginal portion of one cover piece only and into sliding interlocking engagement with the other thread. Thereafter, it is necessary to tighten both threads simultaneously. In tightening both threads any variation in the line of seam being inserted may be compensated for by tightening one thread somewhat more tightly than the other to compress the edge of one cover piece more than the edge of the other cover piece, the tightened thread sliding across the other interlocked with it. In this way the line of the seam and its appearance may be kept uniform in accurate conformity with the edges of the ball holder, comprising clamping members 14 and 16 which act as gages in this respect.

The end of a seam is finished in a manner corresponding generally to that employed in prior manual sewing operations. For this purpose the ends of thread are led between the abutting edges of the cover pieces (Fig. 2) and passed inside the cover through the ball foundation (Fig. 1) until they emerge through perforations in the cover pieces at some distance along the seam from the seam end. After tightening the threads securely in place (Fig. 3) they are severed close to the surface of the cover pieces where they emerge.

Where a seam of the preferred type is sewn, however, it is desirable to interlock the threads at both the beginning and final end of the seam, there being four end sections A, B, C and D of threads. The threads are brought together into sliding interlocking relation at a single common point before being passed into the ball foundation. An effective fastening is provided for the ends after being carried into the foundation, in which fastening the tension is self-adjusting.

The arrangement of the seam, however, is such that all the interlocking sections of the thread ends A, B, C and D are concealed by abutting edges of the cover pieces, the edges being brought into abutment rather than folded back, as shown in Figs. 2 and 3. If the several thread ends are carried inside the cover and through the ball foundation along radiating paths, all at different angles to each other, no pronounced enlargement at the beginning and final ends of the seam will be noticeable. After sewing a seam in the machine it is necessary in finishing the seam end to employ a conventional hand needle 18 (Fig. 1).

The nature and scope of the invention having been indicated and a particular embodiment having been described, what is claimed is:

1. A baseball having a sewed cover composed of two bilobate pieces joined together with the interconnecting section of each piece disposed between the lobes of the other and with stitches passing through the marginal portions along the abutting edges of the pieces, in which there are two threads, each passing over, through and under successively, the marginal portion of one piece exclusively, at the same angle to the edge of that piece, both under and over, and into sliding interlocking engagement with the other thread passing in the same manner, exclusively through the marginal portion of the other piece.

2. A baseball having a sewed cover composed of two bilobate pieces joined together with the interconnecting section of each piece disposed between the lobes of the other and with stitches passing through the marginal portions along the abutting edges of the pieces, in which there are two threads, each passing over, through and under successively, the marginal portion of one piece exclusively, at the same angle to the edge of that piece, both under and over and into sliding interlocking engagement with the other thread passing in the same manner, exclusively through the marginal portion of the other piece, the threads being tightened to an extent

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which will cause their points of interlocking engagement to be concealed by the abutting edges of the pieces.

3. A baseball having a sewed cover composed of two bilobate pieces joined together with the interconnecting section of each piece disposed between the lobes of the other and with stitches passing through the marginal portions along the abutting edges of the pieces, in which there are two threads, each passing under, through and over the marginal portion of one piece exclusively, at the same angle to the edge of that piece, both under and over and into sliding interlocking engagement with the other thread passing in the same manner, exclusively through the marginal portion of the other piece, the

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four end sections of threads being brought together into interlocking relation at a single point.

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