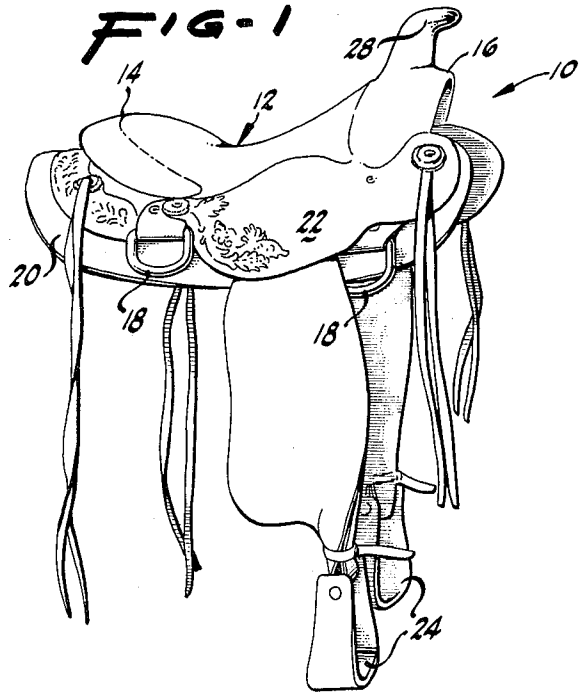
July 5, 1966 S. W. HOAGLIN 3,258,894

SADDLE

Filed Dec. 2, 1963 2 Sheets-Sheet 1

FIG-1



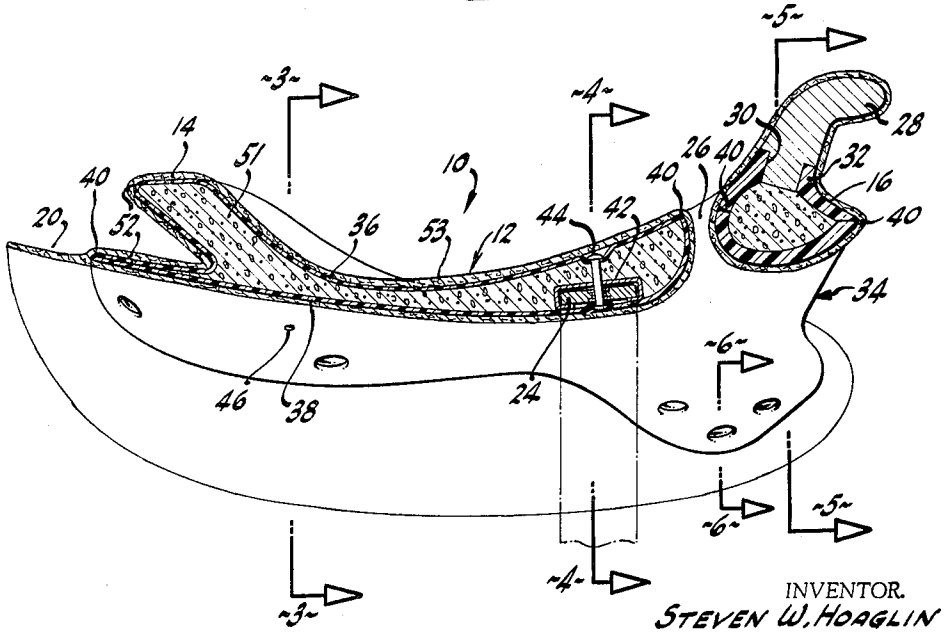


FIG-2

INVENTOR.
STEVEN W. HOAGLIN

BY

Mellin and Hanscom
ATTORNEY

July 5, 1966 S. W. HOAGLIN 3,258,894

SADDLE

Filed Dec. 2, 1963 2 Sheets-Sheet 2

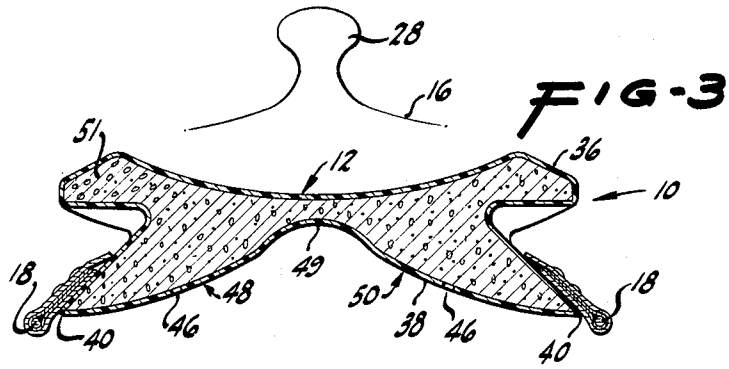


FIG-3

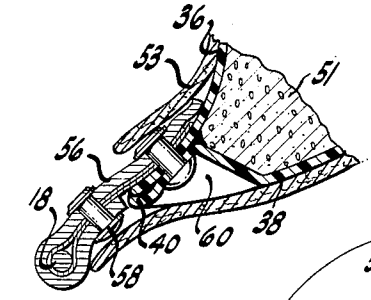


FIG-6

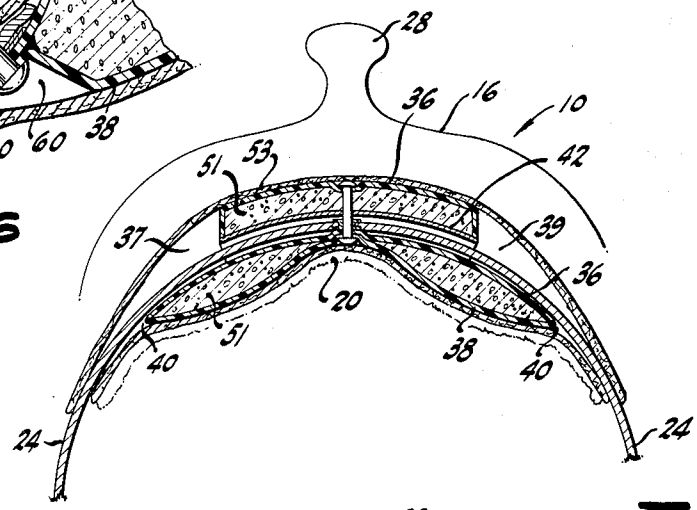


FIG-4

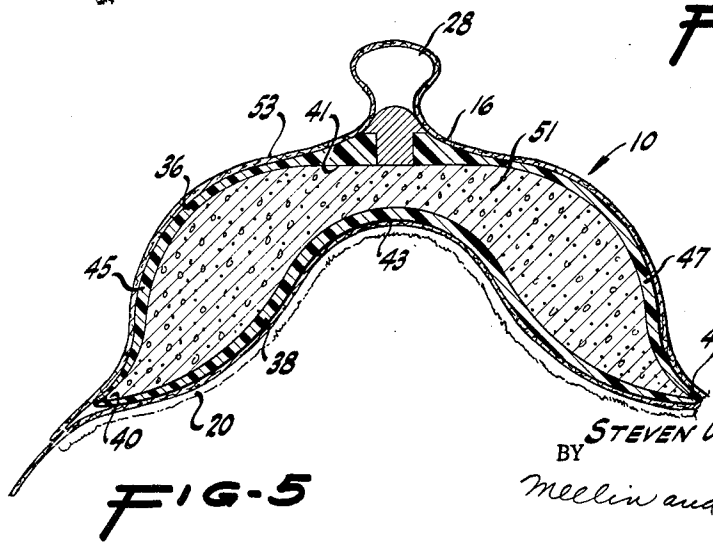


FIG-5

INVENTOR.
STEVEN W. HOAGLIN
BY
Mellin and Hanscom
ATTORNEYS

United States Patent Office

3,258,894

Patented July 5, 1966

3,258,894

SADDLE

Steven W. Hoaglin, Alamo, Calif., assignor to J. V. Le Laurin, Jr., La Mesa, Calif.

Filed Dec. 2, 1963, Ser. No. 327,445
2 Claims. (Cl. 54—44)

This invention relates to saddles, and more particularly to a unitary saddle construction combining the tree and groundseat into a single lightweight unit of unusual strength and low cost.

In the past, western saddles have customarily been constructed from a wooden saddle tree forming a frame consisting of the fork and the cantle connected by a pair of spaced side bars. This assembly was usually covered with rawhide. The opening in the center of this frame was then covered with a thick leather groundseat attached to the frame and forming the yieldable seat portion of the saddle. The complexity of this wooden construction, and the strength properties required of it, made the conventional saddle quite heavy. At the same time, its parts had to be hand-shaped, thereby entailing considerable manufacturing cost and preventing machine production of the leather parts to an accurate fit. Proposals have been made to construct a saddle tree of hollow cast metal in order to obtain light weight and rigidity. This expedient, however, was also unsatisfactory because the metal casting was not sufficiently yieldable to provide proper comfort for both the rider and the horse.

The present invention solves these problems by providing a saddle in which the tree and the groundseat are formed as a single unit consisting of a glass fiber-reinforced resin shell filled with rigid plastic foam. This construction is sufficiently rigid to give the saddle the required structural strength, and yet it is sufficiently yieldable under impact stresses to provide adequate riding comfort without requiring any special yieldable accessories. At the same time, the unitary construction of the saddle lends it unusual strength and therefore permits its manufacture in a size not heretofore possible. In addition, the inventive construction is inherently of very light weight and lends itself to mechanized manufacturing procedures which greatly reduce its cost.

It is therefore the primary object of this invention to provide a lightweight, unitary, rigid and strong saddle tree construction which is nevertheless sufficiently yieldable to assure ridiing comfort without the aid of additional resilience devices.

It is a further object of this invention to provide a saddle construction in which a combination saddle tree and groundseat is formed of a glass fiber-reinforced resin shell filled with rigid plastic foam.

It is still another object of this invention to provide a saddle construction which permits the fork height to be reduced and the gullet height to be increased so as to provide improved leverage for roping.

These and other advantages of this invention will become apparent from the following specification, taken in connection with the accompanying drawings in which:

FIG. 1 is a perspective of a saddle constructed according to the present invention;

FIG. 2 is a longitudinal, vertical cross section of the saddle of this invention at its center;

FIG. 3 is a transverse vertical cross section along line 3—3 of FIG. 2;

FIG. 4 is a transverse vertical cross section along line 4—4 of FIG. 2;

FIG. 5 is a transverse vertical cross section along line 5—5 of FIG. 2; and

FIG. 6 is a detail section along line 6—6 of FIG. 2 showing the method of attachment of accessories such as the cinch rigging ring.

Basically, the inventive concept consists in forming both the saddle tree and the groundseat as a single unit from a molded shell of yieldable glass fiber-reinforced resin and then filling the interior of the shell with rigid (but also yieldable) polyurethane foam. This construction gives the saddle sufficient rigidity to permit a substantial reduction of the cross section of the fork which heretofore was the principal structural member of the saddle. As a result, it is possible to reduce the fork height and increase the gullet height, and to thus reduce the tilting moment exerted on the saddle by the pull of a rope on the horn during roping operations. At the same time, the shell-and-foam construction, though rigid enough to maintain its shape under static loading conditions, is sufficiently yieldable under the dynamic impact loads occurring in motion to flex or "give" slightly during riding, particularly at the relatively thin portion or arch running longitudinally along the center of the saddle. This construction therefore makes it unnecessary to provide any resilient pads between the saddle and the horse other than conventional leather skirts lined with woolskin. The inventive construction also makes it unnecessary to cover the seat portion of the saddle with a thickness of leather greater than the minimum necessary to provide adequate friction to prevent the rider from sliding off the saddle.

In accordance with the foregoing, the expression "rigid but yieldable" has been used in this case to signify the characteristic of being sufficiently hard to resist compressional deformation under the influence of normal static loads, and yet sufficiently resilient to yield enough under impact stresses to resiliently absorb impact stresses of such magnitude as would otherwise injure or unduly fatigue the horse or the rider.

Referring now to the drawings, FIG. 1 shows the saddle of this invention generally at **10**. The saddle **10** has a central seat portion **12** formed integrally with the cantle **14** and fork **16**. The cantle **14** may be of any desired shape, it being shown in this instance with a Cheyenne roll. Rigging rings **18** and decorative accessories such as the skirt pockets **20** and seat jockeys **22** are provided as necessary or desired. Appropriate means, discussed in more detail hereinbelow, are provided for attaching the stirrups **24**, and a grip hole **26** is provided for easy handling of the saddle. The horn **28** may be made of cast aluminum and may be provided with a leather covering if desired.

Turning now to FIG. 2, it will be noted that the horn **28** is bonded at **30** to the neck **32** formed as part of the shell **34**. The shell **34** is preferably molded by any convenient technique from two half shells **36**, **38** joined along a bonded seam **40**.

If desired, a tunnel **42** may be provided within the shell **34** to receive the stirrup leather which may be held in place by a bolt **44**. On the other hand, the tunnel **42** may be omitted if separate swivel mountings for each stirrup are to be provided in the recesses **37**, **39**.

In order to provide maximum strength at the fork where the maximum strain during roping occurs, the shell **34** may be made considerably thicker at the neck and down to the swell **45**, **47** than in the rest of the saddle. As a matter of example, the shell may be ¼" thick at the neck as compared to 1/16" at the remainder of the saddle. However, the construction of this invention, because of its greater rigidity than the conventional wood construction, permits the fork height **41** to be reduced and the gullet height **43** to be increased as compared to a conventional saddle, so as to provide better leverage for roping.

When the two half shells **36** and **38** have been bonded together along the seam **40**, a mixture of polyurethane and foaming agent may be introduced into the cavity

defined by the shell **34** through, for example, the neck **32** and appropriate injection openings **46** in each of the side bars **48**, **50** connected by the arch **49**, under the cantle board. Appropriate vent openings **52** will, of course, have to be provided at places determined by the manufacturing process and jigs to allow the escape of air entrapped within the shell **34**.

When the foaming process has been completed and the polyurethane foam **51** has hardened, the horn **28** is then also bonded to the neck **32**, and the saddle tree is complete. The seat portion **12** including the roll **14** may now be covered with a thin covering **53** of chap leather (shown in dot-dash lines), both for decorative purposes and to provide friction for the otherwise very slippery surface of the shell **34**, and the accessories such as the rigging rings **18**, skirt pockets **20**, and seat jockeys **22** may be affixed. Bark tanned leather is preferably used for the covering of the saddle portions other than the seat portion **12**, such as the skirt pockets **20** and the horn and neck. It should be noted that since the saddle tree is molded and is therefore of great dimensional accuracy, the leather parts used on it may all be machine-stamped and still be assured of an accurate fit.

FIG. 6 shows a preferred method of attachment of the accessories, such as the rigging rings **18**. The leather strap **56** which carries the rigging rings **18** is attached to both the upper half shell **36** and the lower half shell **38** by means of a rivet **58**. At the place where the rivet **58** is to be inserted, an indentation **60** is formed in the lower half shell **38** so as to bring it against the upper half shell **36**. The half shells **36**, **38** therefore form an annular seal around the rivet hole, and they may be bonded together at that point. In this way, the rivet hole for rivet **58** can be formed without the risk of the polyurethane foam **51** escaping into the rivet hole, and the rivet **58** can be crimped into position without crushing the foam **51**.

It will be seen that the present invention provides a saddle construction which is superior to presently known saddles in strength, weight and cost, and which is better suited for roping than the saddles presently known. Obviously, the invention is capable of being carried out in many embodiments, of which the one shown is merely illustrative. Therefore, I do not desire to be limited by the embodiment shown and described herein, but only by the scope of the following claims.

I claim:

1. A saddle tree comprising a pair of shell members of glass fiber-reinforced resin forming a fork, cantle, side trees, and groundseat combined into a single unit, said unit having an interior cavity extending throughout substantially the entire extent of said unit, said cavity being filled with rigid polyurethane foam, and the groundseat portion of the upper of said pair of shell members being covered with a thin layer of leather bonded to said shell member.

2. A saddle tree comprising a pair of shell members of glass fiber-reinforced resin forming a fork, cantle, side trees, and groundseat combined into a single unit, said unit having an interior cavity extending throughout substantially the entire extent of said unit, said cavity being filled with a rigid plastic foam, and the groundseat portion of the upper of said pair of shell members being covered with a thin layer of leather bonded to said shell member.

References Cited by the Examiner

UNITED STATES PATENTS

1,462,885	7/1923	Hawkins	54—44
2,153,326	4/1939	Crouter	54—46
3,047,888	8/1962	Shecter et al.	5—361

SAMUEL KOREN, *Primary Examiner.*

HUGH R. CHAMBLEE, *Examiner.*