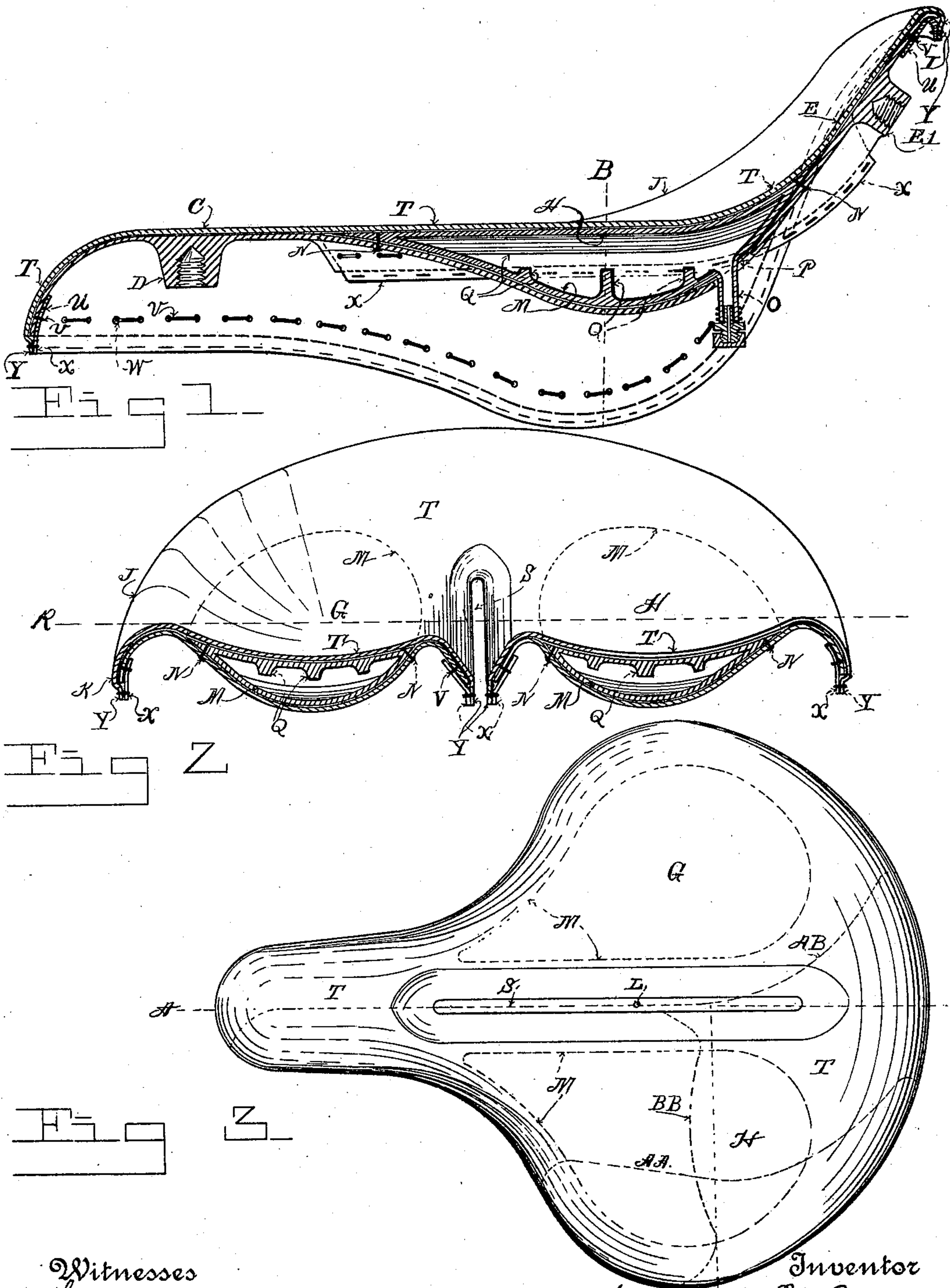


(No Model.)

S. D. VAN METER.
BICYCLE SADDLE.

No. 574,503.

Patented Jan. 5, 1897.



Witnesses
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UNITED STATES PATENT OFFICE.

SEYMOUR DOSS VAN METER, OF DENVER, COLORADO.

BICYCLE-SADDLE.

SPECIFICATION forming part of Letters Patent No. 574,503, dated January 5, 1897.

Application filed April 7, 1896. Serial No. 586,603. (No model.)

To all whom it may concern:

Be it known that I, SEYMOUR DOSS VAN METER, a citizen of the United States of America, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Bicycle Saddles and Seats; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in bicycle-saddles; and the objects of my invention are, first, to provide a saddle adapted to fit the contour of the buttocks and tuber ischii; second, to provide a saddle in which the horn cannot come in contact with the perineum; third, to provide a saddle having a flexible air-sack to receive the tuber ischii, of concaved contour and positioned in depressions arranged intermediate of the transverse sides of the saddle and its longitudinal center; fourth, to provide a cast or stamped metal saddle having a high cantle and a horn extending horizontally from the cantle and having a covering of leather which is adapted to fit snugly on the metal and to rest on the air-sacks and which is provided with concaved depressions adapted to receive the tuber ischii and registering over those of the air-sacks and the depressions in the metal frame; fifth, to provide an air-sack which cannot entirely collapse if punctured. I attain these objects by the mechanism illustrated and described in the accompanying drawings, in which—

Figure 1 represents a longitudinal section through Fig. 3 on line A. Fig. 2 represents a transverse section of the saddle on line B of Fig. 1. Fig. 3 represents a plan view of my improved saddle. In this view the dotted line A A designates the outline of a section at this point of the top or seat surface of the saddle. BB designates a transverse section of one-half of the saddle and is similar to one-half of Fig. 2, and A B the outline from the point of the horn to the top of the cantle at the saddle's longitudinal center.

Similar letters of reference refer to similar parts throughout the several views.

The base of the saddle comprises a thin sheet of either cast or stamped metal, preferably of either steel or aluminium. The horn C extends a suitable distance forward from the seat-center of the saddle in a horizontal line. At its point it is curved downward. In cross-section the horn is a semicircular shell of metal, the top and sides of the horn being curved downward. A depending portion D is formed in the horn, in which a hole is drilled and threaded, to which one end of a saddle-spring is secured. The spring, however, is not shown. E designates the cantle of the saddle. It blends upward from the horn and seat portions. A projection E', in which a threaded hole is formed, is adapted to be secured to the opposite end of said spring which supports the saddle on the bicycle. The cantle is concaved or dished transversely and is slightly concaved as it rises from the horn and the seat portions. Its highest point is in line with the center of the horn. From this center point it curves down with a downward-rolled edge, as at I, J, and K, with a sweep which is approximately concentric to a center L in the horn, to points far enough from the center of the horn to provide wide seat portions for the tuber ischii and the buttocks. From these points the outer edges curve in toward the horn, into which they blend by a curved sweep toward the center L and the cantle.

The seat or tuber ischii receiving portions G and H of the saddle are located on each side of the horn and at the base of the cantle. These comprise in the base or frame of the saddle a deep concaved recess of approximately a pear shape in plan, with the largest end toward the cantle and arranged on each side of the horn. Longitudinally of the saddle these recesses are deepest at the base of the cantle, the surface of its contour being carried down and curved toward the horn on each side of the center of the horn to an approximate distance of three-quarters of an inch in a full-size saddle below the level of the horn. From the deepest portion of the recess they curve upward in a long gentle sweep toward the point of the horn. In each of these curved recesses I place a concavo-convex sack M, which I form with a fin or feather-edge all round, which is adapted to blend into the constantly-varying contour of

the saddle at the point all around where the edges of the recesses blend into the normal surface lines of the saddle, so that the division between the two cannot be felt through the cover. This fin forms a solid margin all around each sack, and at suitable intervals I secure them to the base by rivets N, or they can be sewed to it by passing the threads through suitable holes formed in the base.

These sacks are thick enough to fill up the recesses in the seat portion of the base, but they are formed with a concaved surface and form a concaved depression between the sides of the saddle and the center of the horn, which is one of the principal features of my saddle, as these concaved sacks are thus formed to receive and register with the contour of the tuber ischii, while the buttocks are supported by the upward and downward roll of the sides and of the cantle. I provide each sack with an air-valve O, which depends through an opening P in the bottom of the recesses, through which air may be pumped into them in the usual manner. I do not, however, fill the sacks with air under a pressure sufficient to destroy their concaved surface, but introduce a sufficient quantity to establish a liquid or gaseous cushion, which yields readily to the contour of the tuber ischii and at the same time presents a firm elastic seat-surface. Owing to the slight pressure of air which I carry in the sacks, they are not likely to burst and can only be punctured intentionally, but should one or both sacks be punctured or burst they would entirely collapse to the bottom of the recesses and would destroy the comfort of the seat as well as bring the perineum in bearing contact with the horn of the saddle. In order to avoid this, it is necessary that I employ some means to prevent the total collapse of the sacks in case they burst or are punctured. I prefer to carry out this feature of my invention in the following manner: On the inside of the lower and upper walls of the sacks I form a number of stout depending ribs Q, those at the top wall of the sack being arranged at right angles to those of the bottom. These ribs when the sacks are inflated are held a space apart and under the rider's weight do not contact with one another, but should the air from any cause escape from the sacks they come together and the upper ones rest on the lower, and thus prevent the total collapse of the sacks and make a seat high enough to prevent the perineum from coming in contact with the horn until the sacks can be repaired and re-inflated.

In order to prevent any possibility of the perineum bearing on the horn or on any portion of the saddle, I arrange the surface of the horn throughout its length lower than the sides of the saddle adjacent to the cantle, as shown in Fig. 2 by the dotted line R. By this arrangement and form of the seat portions the rider is relieved of any spreading

tendency of the tuber ischii. I make an opening S through the center of the horn, which begins a short distance back from its point and extends through the center of the saddle and into the cantle. This opening is formed by depressing or molding the metal base at this point into a V-shaped trough, which terminates at the intersection of the sides into an opening through the base. I preferably use this V-shaped depression, as it enables me to better secure to its inclined sides a covering T, preferably of leather, which I use to cover the whole base and the air-sacks of the saddle, thus completely hiding the top surface of both from view. In order that the covering may fit tightly and smoothly the contour of the base and air-sacks, it is necessary that it be securely and evenly fastened all around the edge thereof, and in order to provide a yielding surface to which to sew it I secure first to the inner edge of the rim of the saddle all around the seat portion, cantle, and horn, and also to the edges of the central opening, a strip of leather U, which is sewed securely to the base, the threads V passing through suitable holes W, punched or drilled through it to receive them. This strip is positioned to allow its lower edge to depend below the edge of the saddle, and to this lower edge X, I sew the outer edge Y of the leather covering all around. The covering is made to conform at all points to the contour of the saddle, which may be done by pressing them in a suitable press between dies of similar contour. Consequently they possess the concaved depressions which receive the tuber ischii, and these fit over the transverse concaved surface of the air-sacks, while under the pressure of the rider they, with the leather, yield and conform to the contacting parts of the rider as the limbs move up and down while riding.

While I have illustrated and described my invention as especially adapted for bicycle-riders, it is obvious that with but slight changes in detail of construction, and without departing from the spirit of the invention, it would be equally as well adapted for the use of horseback-riders.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The combination in a bicycle-saddle of a base or frame comprising in form and contour a horizontal horn having a downward-curved point and sides, a high cantle blending upward from said horn, an opening through the center of said horn, a seat portion on each side of said horn containing concaved depressions adapted to receive the tuber ischii, a concentrically-curved cantle and rolled side edge to said seat portion adapted to receive the buttocks of the rider, having the said side rolled edges of said seat portions raised higher than the horn whereby the perineum is relieved from pressure, a concavo-convex air-sack having a feather

border edge adapted to blend evenly into the
surrounding surface of the saddle secured in
each of said concaved depressions, means
for introducing air into said sacks, depend-
5 ing ribs formed on the inside of the upper
and lower walls of said sack, those of the up-
per walls being arranged transversely to those
of the lower wall, and arranged a space apart
and adapted to prevent the total collapse of
10 said air-sacks in case of puncture, means for

introducing air into said sacks, and a cover-
ing of leather for said frame and sack ar-
ranged and secured substantially as herein
set forth and described.

In testimony whereof I affix my signature 15
in presence of two witnesses.

SEYMOUR DOSS VAN METER.

Witnesses:

WM. A. WOODWORTH,
SHERMAN WILLIAMS.