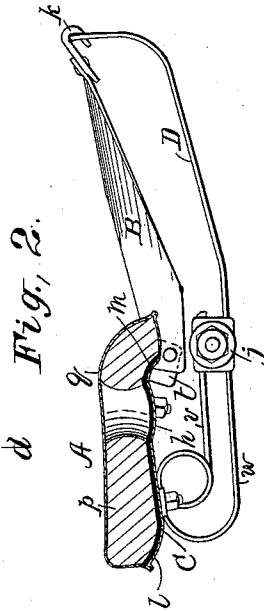
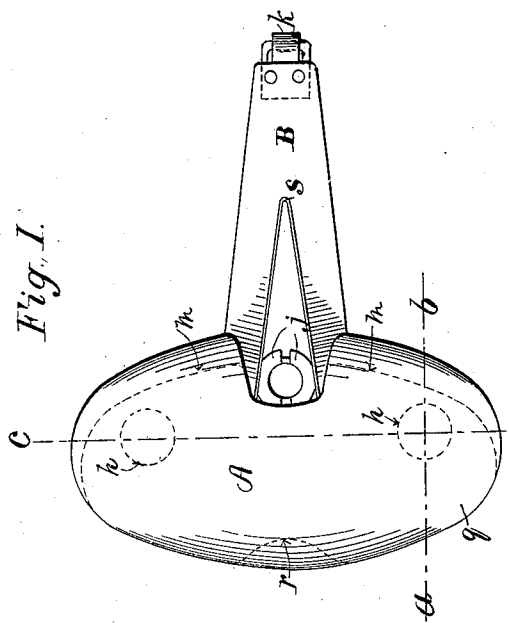
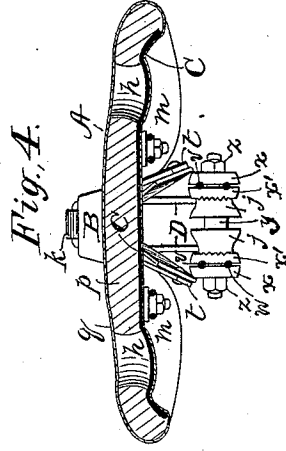
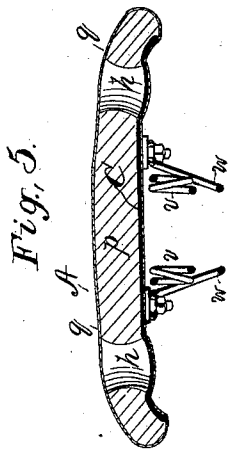
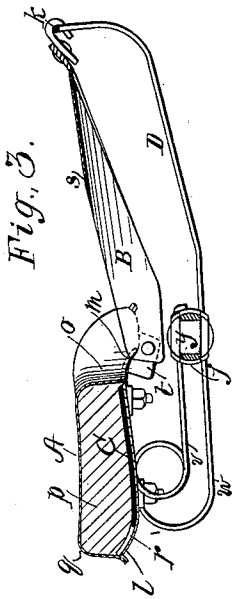


(No Model.)

L. PERISSÉ.
CYCLE SADDLE.

No. 569,977.

Patented Oct. 20, 1896.



Witnesses
Frederick Lewis
W. R. Edelen.

Inventor.
Lucien Perissé
John H. Mauro
his attorney.

UNITED STATES PATENT OFFICE.

LUCIEN PERISSÉ, OF PARIS, FRANCE.

CYCLE-SADDLE.

SPECIFICATION forming part of Letters Patent No. 569,977, dated October 20, 1896.

Application filed March 25, 1896. Serial No. 584,821. (No model.) Patented in France January 13, 1896, No. 250,468.

To all whom it may concern:

Be it known that I, LUCIEN PERISSÉ, a citizen of France, and a resident of Paris, in the Republic of France, have invented a new and useful Improvement in Cycle-Saddles, (for which I have obtained a patent in France, dated January 13, 1896, No. 250,468,) which improvement is fully set forth in the following specification.

This invention relates more particularly to the improvement in the saddle of a bicycle or other velocipede in its hygienic aspects, although the improvement is not wholly restricted to that point of view. According to the opinions of the doctors, who in learned societies have taken part in the discussion of the bicycle from a hygienic point of view, the principal reason for interdicting or restricting the use of the bicycle in certain cases has been the defective character of the saddle generally, which, from the standpoint of health and hygiene, must be classed as very defective.

The saddles which have heretofore been put into actual use are of several kinds. Of the racing-saddles, which are composed of a rigid metallic frame whereon the leather is so clamped that it is impossible to stretch it, it will not be necessary to speak. In road-saddles for use in ordinary riding, often by heavy cyclists, an arrangement has been used whereby a suitable tension can be given to the leather (composing the seat) in order to prevent as much as possible the jolts from bringing the body of the rider (not without violence sometimes) against the metallic base of the saddle. The effect of this tension, which has been produced by one or two screws or nuts in the longitudinal axis of the saddle, is that along the middle line of the saddle there is a ridge which is the most rigid part of the saddle, the leather along the margins of the seat being yielding and unsupported. Attempt has been made to lessen the median rigidity by making holes of small dimensions or slits in the leather in order to increase its elasticity and to ventilate the seat; but these dispositions do not overcome the rigidity spoken of, which manifests itself principally at the horn of the saddle, that is to say at the place where it upholds those parts of the body which ought not to be supported.

Hornless saddles have been tried, that is to say, saddles consisting of a simple transverse seat; but such an apparatus is lacking in security since there is danger of the rider's being projected forward upon the frame of the machine on the occurrence of a sudden and unexpected stop, and from the fear of this projection there arises a contraction of the dorso-lumbar muscles, which produces soreness of the loins, even after a short ride.

Lastly, other and more improved systems have been tried; but only a part of the inconveniences mentioned above have been overcome.

The new and improved saddle of the present invention has been designed to meet the two following conditions: First, a large enough seat to permit the ischiums (that is to say, the lower bones of the pelvis) to rest normally thereon; second, a horn which allows perfect freedom of motion to the lower limbs, without any possible compression of the perineum or of the sexual organs.

In the accompanying drawings, which form part of this specification, Figure 1 is a plan view of a bicycle-saddle embodying my invention. Fig. 2 is a side view of the same, partly in section, on line *a b* of Fig. 1. Fig. 3 is a central longitudinal section; and Figs. 4 and 5 are views in transverse section on line *c d*, looking, respectively, forward and rearward.

The saddle consists of a seat *A* and a horn *B*. These may be secured on the vehicle in any suitable way; but, as shown, there is a special mounting (to be described below) for securing the saddle to the adjustable saddle-post commonly employed in bicycles. The seat *A* is made somewhat wider than the distance between the two ischiums, which distance in an adult (man or woman) is well known to be from one hundred and twenty to one hundred and thirty millimeters, the variation in different individuals being not very great. The seat-frame *C* may be, as shown, a steel plate stamped or pressed into the desired form, (which may, if necessary, be reinforced by ribs or corrugations,) or it may be a structure of steel, aluminium, or other wires of proper stiffness suitably twisted together, or it may be any metallic or non-metallic base having a suitable rigidity.

When a stamped steel plate is used for the seat-frame, or indeed whatever may be the form of the seat-frame employed, it is important to avoid such an interference with the extension of the lower limbs as to involve a painful compression of the upper posterior part of the thighs or an injurious displacement of the pelvis, which might occur with an otherwise erroneously - constructed seat notwithstanding the provision (explained below) of depressions below the ischiums. To avoid it, I have bent down the front edge of the seat-plate C, as shown at *m*, where it underlies the thighs of the rider. Besides this I have provided a yielding or supple and elastic thigh-support beyond the front of the seat-frame. This support may be made in different ways. One mode consists in providing an elastic sheet or strip, which is fastened to the seat-frame and projects beyond its front edge, so as to bend easily under the pressure of the leg as it descends and moves back with the rotation of the pedal. This sheet may be of rubber or of leather of such thickness and of such character as to have the before-mentioned qualities of suppleness and elasticity. It may be fastened below the seat-frame or above it. In the former case it may be secured by a retaining-plate held by bolts or rivets, for which purpose one or more of the bolts may be utilized that fasten to the seat a spring for the horn. In the latter case the elastic sheet or strip may be cemented to the seat-plate and also secured, as before, by bolts or rivets, only the retaining-plate would be unnecessary. The sheet or strip need have only the width necessary for fastening. However, I prefer to use a more extended sheet or strip, (to cover the whole of the seat-plate,) as it is more easily fastened. The arrangement of the elastic sheet or strip above the seat-frame has the advantage of preventing the thigh when extended from feeling the contact with the edge of the plate. Whatever the arrangement may be, it is well, in order to secure the desired suppleness and elasticity, to have the part of the sheet or strip which projects beyond the front of the seat-frame suitably secured by cement or sewing to the other furnishing of the seat, such as the leather *l* under the said frame, the padding *p*, and the top cover *q*, of leather, cloth, or other suitable stuff. By connecting the different parts of the seat-furnishing the elastic sheet or strip is forced to follow the movements which the extension of the leg communicates to the corresponding side of the seat, while when the thigh rises the weight of the body, resting upon the corresponding ischium, has the effect of restoring the furnishing, and consequently the elastic sheet or strip connected with it.

It is not necessary to employ a special elastic sheet or strip, as the natural elasticity of the three elements of the furnishing—to wit, the lower leather *l*, cemented to the seat-plate, the padding *p*, and the top cover *q*—

will suffice, if their thickness and resistance be adjusted, to obtain the result indicated above as to be obtained by the elastic sheet or strip.

In the seat-frame I provide (and this provision may be made whatever construction is adopted for the rest of the seat) a notch or recess *r* at the back, over which the seat-furnishing extends, so that the seat has at the middle of the back and just below the coccyx of the rider a spot in which it is more yielding than in the parts adjacent, so as to avoid any compression, which might become painful.

The seat-frame C is most advantageously secured to the bicycle or other velocipede by means which, while slightly elastic and yielding, are not sufficiently so to form a spring by themselves. It may, in fact, be noted that the elasticity of the seat should be static, that is to say, it should reside almost entirely in the material between the seat-frame and the leather cover *q* in such manner as to permit the seat-frame to be almost rigid, for if it be not so a part of the cyclist's exertions is absorbed by the saddle-spring. This static elasticity has for its object only to impart sufficient softness to prevent the parts in contact being made sore, even with prolonged use.

Whatever mode of manufacture may be employed for the seats, it is important that it should embody the following features:

First. Each of the places on which the ischiums rest should be made elastic and yielding by the interposition of a suitable material. The elasticity may be obtained by the use of solid, hollow, spongy, or pneumatic rubber or of a stuffing of hair or like material, or of one or more pads of felt or of other suitable material. Just below each ischium a hole or depression *h* is made in the padding, (of whatever description,) and across the top of this hole or depression the leather cover *q* is stretched between the elastic ring represented by the surrounding padding, so that the maximum of elasticity corresponds with the maximum of pressure.

Second. Between the two ischium-supporting points is provided (longitudinally of the saddle) a notch or recess *o*, which has a suitable width and whose opening or mouth is turned toward the front. Its presence prevents all rubbing of the organs situated in the axis of the body.

Third. The back edge of the seat should be slightly elevated to form a slight back, intended to increase the security and comfort of the cyclist, particularly in coasting.

The horn B is necessary to give the cyclist a feeling of security, as well as to prevent an accident in case of a forward propulsion through an unexpected stop, but it should not produce any pressure upon the perineum and sexual organs.

To constitute the horn of the improved saddle, one or more straps are extended from a point in front to points under the saddle-seat A, most advantageously one on each side of

the median line. As shown, a strip is slit at *s* for a part of its length, leaving one end in front and two ends at the back. The horn might also be formed of a strap fastened at the ends under the saddle-seat and at the middle to the point in front. The point at which the horn is fastened in front may be on a forked or other prolongation of the seat-frame or on a part of the bicycle-frame or on the handle-bar, or, in fact, on any suitable part of the machine. As shown, it is secured to the outer end of the bracket *D*. The two leather faces of the horn form together a broken line in consequence of the union of the two sides of the strap, and the position of this line varies with the tension of the strap, the distance between the points of attachment, and other details. If the two ends of the strap are fixed flatwise along an oblique line on the seat-frame, the lateral faces would be in a vertical plane at the front, where they unite, oblique surfaces being formed between the point of union and the points of attachment at the rear. Between the point of union and the front point of attachment the lateral faces of the horn would be sensibly vertical. If the two ends of the strap are fastened edgewise under the seat, their lateral faces would be (throughout their length) sensibly vertical in two planes, meeting in an obtuse angle in consequence of the union between them. As shown, the rear ends of the strap are fastened in a nearly vertical position to ears *t* on the seat-plate *A* and the front end in a horizontal position to a hook *k*, by which it is upheld. Between the seat and the part of the horn which is at the level of the top of said seat there is therefore a vacant space corresponding exactly with the perineal organs, so that these do not rest either on the seat or on the horn in normal riding. Moreover, the flexure of the legs is entirely free, while yet the cyclist can feel the horn slightly and from such feeling derive a confidence in the ability of the saddle to support him should he be unexpectedly thrown forward. When the horn is attached in front to a forked prolongation of the seat-plate, (or indeed in any case,) an elastic material may be provided to break the shock.

In referring above to straps it will be understood that any band or bands may be used which are at once strong and flexible. They may be of cloth, girth fabric, rubber, leather, or the like, and in one or more pieces.

The use of a strip slit at the rear end to give it the form of a *Y* has been already referred to. In place of securing it at the front end by a hook *k*, riveted to the strap or strip, this end of the strip could be wrapped around a rubber cylinder. The *Y*-shaped strip could of course be of girth fabric, cloth, leather, or rubber. The ears *t*, to which the rear ends of the horn are secured, could be made separately and riveted to the seat-plate, instead of being formed integral with said plate, as shown. The ears should preferably be so

spaced as to cause the strap to rub slightly against the leg of the cyclist, so as to give him a feeling of confidence without at all interfering with the freedom of motion.

The seat of the saddle is shown as upheld by the slightly-yielding bent rods *v* and *w*. One pair of rods is under each side of the saddle and the rods of each pair are clamped by washers *x* and nuts *z*, the washers fitting over the projections of a ring *y*, which fits over the vertical saddle-post of the machine, and is secured thereto by the jaws *j*, (one on each side,) which are forced toward each other, so as to clamp the saddle-post by the same nuts that clamp the seat-rods *v* and *w*. As these rods have horizontal members to be clamped by the nuts *z* the saddle can be adjusted back and forth by loosening the nuts. To allow the saddle to be tilted, the outer faces of the jaws *j* are scored and provided with elevations and depressions, and a washer *x'*, with its inner face similarly provided, is interposed on each side between the rods *v* and *w* and the corresponding jaw *j*. When the nuts are loosened, the washers *x* and *x'* are free to turn, and the saddle may be adjusted to a horizontal position or to any desired angle; but when the nuts are tightened the jaws *x* and the washers *x'* engage so as to hold the saddle stationary.

The front end of the strap *B*, constituting the horn, is shown as fastened to the outer end of a bracket *D*, projecting forward from the seat *A*, to which it is attached. This bracket is most conveniently made by prolongations of the rods *w*, which are formed integral with the bracket, all being made from one bar of appropriate length and diameter bent as shown.

To recapitulate, by means of the present invention the following advantages may be secured, namely:

The ischiums rest upon yielding surfaces whose central points have the maximum elasticity, and the body is therefore carried normally with the least fatigue.

The sexual and perineal organs rest (in normal riding) neither upon the seat nor upon the horn. There is therefore no danger of these organs being injured or rubbed.

The cyclist is not incommoded in moving his legs, since the upper rear portions of the thighs encounter only yielding and elastic material.

The cyclist feeling slightly the contact of the strap forming the horn has the conviction that in case he is thrown forward the horn will hold him effectively. He will also have more confidence in his machine. Enjoying stability and security to a large degree, he will utilize his power to the best advantage. If thrown forward unexpectedly, the cyclist is upheld and the ill consequences of such an accident reduced to a minimum.

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

1. A seat having two specially elastic parts corresponding with the positions of the ischiums, and a notch or recess in the front edge of the seat in the longitudinal line between 5 said positions, said seat also having at the front edge elastic and yielding supports for the rider's thighs and a horn, distinct from the seat, extending forwardly from a point beneath the notch or recess, substantially as described. 10

2. A horn, distinct from the seat, composed of one or more straps or strips of flexible material with the two rear ends secured under the seat and the front end secured to a point 15 above the plane of the seat, so that the difference in level between the seat and after part of the horn gives to the horn an inclination whereby all dangerous or hurtful rubbing is avoided, substantially as described.

3. In a bicycle-saddle, the combination with 20 a seat recessed in the front and middle thereof substantially as shown and described, of a forked flexible strap, secured to the seat itself or to lugs projecting therefrom underneath at either side of the recess and converging or 25 rising toward a support or bracket located with reference to said seat at a higher and conveniently distant point, so as to operate as a protective horn, substantially as shown and set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses. 30

LUCIEN PERISSÉ.

Witnesses:

CLYDE SHROPSHIRE,
GEORGE R. OSCHMEIER.