

Witnesses:

*Attest*

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R. PLATZ & A. SPERLING.

SADDLE OR SEAT.

(Application filed Aug. 7, 1899.)

2 Sheets—Sheet 2.

(No Model.)

Fig. 7.

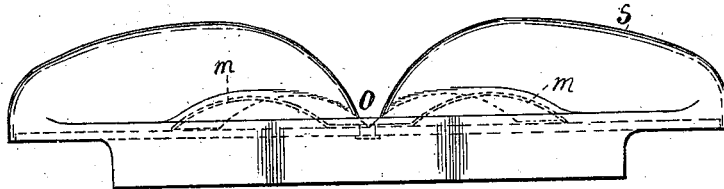


Fig. 9.

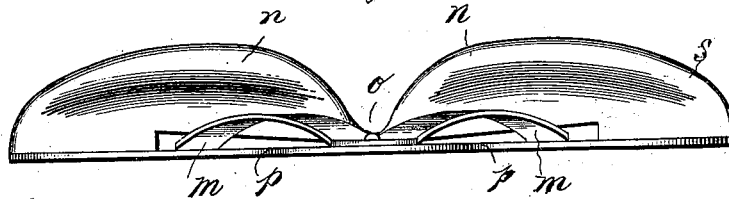
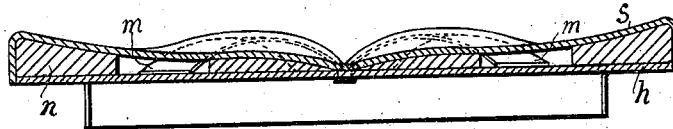


Fig. 8.



Witnesses.

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# UNITED STATES PATENT OFFICE.

ROBERT PLATZ, OF FRIEDENAU, AND ARTHUR SPERLING, OF BERLIN,  
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## SADDLE OR SEAT.

SPECIFICATION forming part of Letters Patent No. 645,604, dated March 20, 1900.

Application filed August 7, 1899. Serial No. 726,459. (No model.)

*To all whom it may concern:*

Be it known that we, ROBERT PLATZ, engineer, of Wielandstrasse 13, Friedenau, near Berlin, and ARTHUR SPERLING, doctor of medicine, of Keithstrasse 5, Berlin, Germany, subjects of the German Emperor, have invented certain new and useful Improvements in Saddles or Seats; and we do hereby 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.

The saddle or seat forming the subject of this invention and which is especially designed for use with cycles, although it can also be used for office-seats, boat-seats, riding-saddles, and the like, is distinguished by the fact that it renders impossible any injurious pressure upon the perineum and the sensitive genitals and coccyx and upon the leg-muscles which rub against the edge of the saddle. The protuberances of the seat of the rider are relieved of weight by reducing to a minimum the pressure put upon them from the weight of the rider. The construction of the saddle satisfactorily solves the problem which has been advanced for a considerable time past—that is to say, of providing a saddle which answers to all the requirements of hygiene and offers the rider a durable, satisfactory, and comfortable seat. Known cycle-saddles possess very markedly the disadvantage that the perineum and the genitals are subjected to a considerable pressure, which becomes unbearable when the saddle is used for some time. This is especially noticeable in the case of the ordinary saddles having a free-bearing leather seat, (so-called "English" saddles.)

The anatomical construction of the seat is such that the delicate parts of the so-called "perineum" (urinary organs, genitals, and anus) lie under a bony arch—the pubic arch—which connects the seat protuberances in an arch-like manner. When a person is seated upon a flat unyielding surface, this bony arch forms a natural protection for the delicate organs lying under it. This natural protection is, however, partially or completely lost when a person sits upon a yielding padded surface or upon anything which is smaller than the

space between the protuberances—for example, a round rod of a diameter less than nine centimeters. Even in the case of the ordinary saddles with free-bearing leather seats the natural protection of the pubic arch is of no value, as the lateral motion of the rider's legs raises the central portion *a*, Figure 1, of the leather seat and forces it into the space *b*, designed for the perineum, whereby pressure must in every case be exerted upon the perineum. In riding upon such a saddle the unpleasant or painful feeling is particularly experienced, arising in the manner above described, when the rider sits upon the narrow peak of the saddle. Similar inconveniences result when riding padded saddles of the kind shown in Fig. 2. In this case the seat protuberances *c* sink gradually deeper and deeper into the pads, so that the part *f* of the saddle lying between the pad bulges upward, enters the space designed for the perineum, and exercises pressure upon the delicate organs of the rider. Even the well-known divided saddle shown in Fig. 3 is in no way free from this disadvantage. The deeper the seat protuberances sink into the pads the more the portions of the saddle which bound the groove enter the space *d*, bridged over by the pubic arch, and as the groove is bridged over by the tightly-stretched garment *g* of the rider its object is lost and the saddle which is divided by the groove acts in reality exactly like an undivided saddle—that is to say, it possesses the disadvantages described with reference to Fig. 2. The groove would only fulfil its object with an uncovered seat, and even then it would have to be widened to prevent the nipping of the genitals.

The protective construction of the pubic arch provided by nature is only fully utilized when the basal points of the arch—the seat protuberances—rest upon a support which does not at any point between these protuberances extend up beyond the horizontal plane connecting them, Fig. 4. This object could be most simply fulfilled by employing a flat hard seat, as in the case of an ordinary flat-seated wooden stool. This arrangement, however, possesses the disadvantage that the seat protuberances are too heavily weighted,

so that a person cannot remain seated for any length of time without considerable inconvenience.

Now in the saddle or seat forming the subject of this invention the above-described disadvantages are obviated by supporting the seat protuberances upon spring-supports fitted to the saddle-plate, which is made of rigid material, in such a manner that when un-  
 10 weighted they project over the latter in the form of a flattened arc and are pressed downward when loaded with the weight of the rider's body. When fully loaded, they reach their lowest position in the plane of the saddle-plate, so that even in this case the portion  
 15 of the saddle between the springs *l* does not extend beyond the connecting-line of the fully-loaded springs in their lowermost position at any point. The seat of the rider therefore  
 20 rests, as in the case of the ideal saddle shown in Fig. 4, as though the protuberances were on a horizontal surface. No diminution of the space under the natural pubic arch can therefore take place and any pressure upon  
 25 the delicate organs lying within the arch is rendered impossible. At the same time the seat protuberances rest upon spring-supports. For further relieving the seat protuberances the part of the saddle behind the spring-sur-  
 30 faces designed to receive the broad seat-muscles is made so as to curve or bulge upward in the backward direction in such a manner that the seat-muscles exactly fit therein, are held there, and thus insure the seat protu-  
 35 berances being properly supported upon the saddle-springs. This curved hard portion of the saddle is furthermore provided with a suitable deep notch or the like at the part where the coccyx comes to lie, whereby the  
 40 said coccyx is left perfectly free and is never subjected to pressure. Fig. 5 shows such a saddle in plan, part of the saddle-cover being broken away; and Fig. 6 is a sectional view thereof, taken about on line *xx* of said Fig.  
 45 5. Fig. 7 is a front view of the saddle, and Fig. 8 a cross-section taken about on line *yy* of Fig. 5. Fig. 9 is a front view of the saddle with the cover removed.

The saddle or seat consists of a plate *h*,  
 50 (saddle-plate,) of metal or other rigid material, which is advantageously provided at the rear part with two wing-like parts and a deep notch *o* for receiving the coccyx and at the sides with notches *p* for the leg-muscles. It  
 55 is formed at the front part with a rounded peak. Flat springs *m* are placed over the notches *p*, the said springs being curved at the top over the saddle-plate into an arc. They advantageously project slightly beyond  
 60 the inner edge of the notches *p*, are pivoted to the front part of the saddle-plate, and at the rear slide freely upon the said plate, so that they yield to every pressure from above. The tension of these springs is calculated so  
 65 that when most heavily loaded they lose their

curvature and lie in the same plane as the part of the saddle-plate situated between them. The rear part of the saddle-plate consists of two hard supporting-pieces, which are fixed upon the saddle-plate *h* and the surface  
 70 of which rises in a backward direction and is hollowed out to correspond to the rear parts of the rider's seat.

The whole of the surface of the saddle, including the raised springs, is provided with  
 75 a suitable covers, of leather or the like, which hangs freely at the sides over the semicircular notches *p*, whereby a soft and smooth surface is obtained for the leg-muscles which rub against the saddle. The notch *o* between  
 80 the two rear parts *n* of the saddle serves to receive the coccyx.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. A seat comprising a seat-plate and flat  
 85 arched springs mounted thereon to form bearings for the seat protuberances of a person, and so that said springs cannot be depressed below the upper face of the plate by the load imposed thereon and a suitable seat-cover,  
 90 for the purpose set forth.

2. A seat comprising a seat-plate recessed centrally and longitudinally from its rear  
 toward its forward end, and arched leaf-springs mounted on and diverging from the  
 95 forward end of said plate so as to form bearings for the seat protuberances of a person and a suitable seat-cover, for the purpose set forth.

3. A seat comprising a seat-plate divided  
 100 by a longitudinal recess and of reduced diameter toward its forward end, and provided with recesses *p*, in combination with flat arched springs connected to the forward end  
 105 of the plate and extending over said recesses, and seat-blocks at the rear end of the plate one on either side of the aforesaid longitudinal recess, said blocks sloping toward the forward end of the plate, substantially as and  
 110 for the purpose set forth.

4. A seat comprising a seat-plate wider at  
 115 its rear end than at its forward end, and provided with a recess *p* in its opposite edges, the rear wider portion of the plate constructed to form diverging wings with a depression or  
 120 recess between them, forwardly-sloping non-elastic seat-blocks secured to said wings, and arched flat springs extending rearwardly from the forward end of the plate on opposite sides and partly bridging the aforesaid recesses  
 and a suitable seat-cover, for the purpose set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

ROBERT PLATZ.  
 ARTHUR SPERLING.

Witnesses:

HENRY HASPER,  
 WOLDEMAR HAUPT.