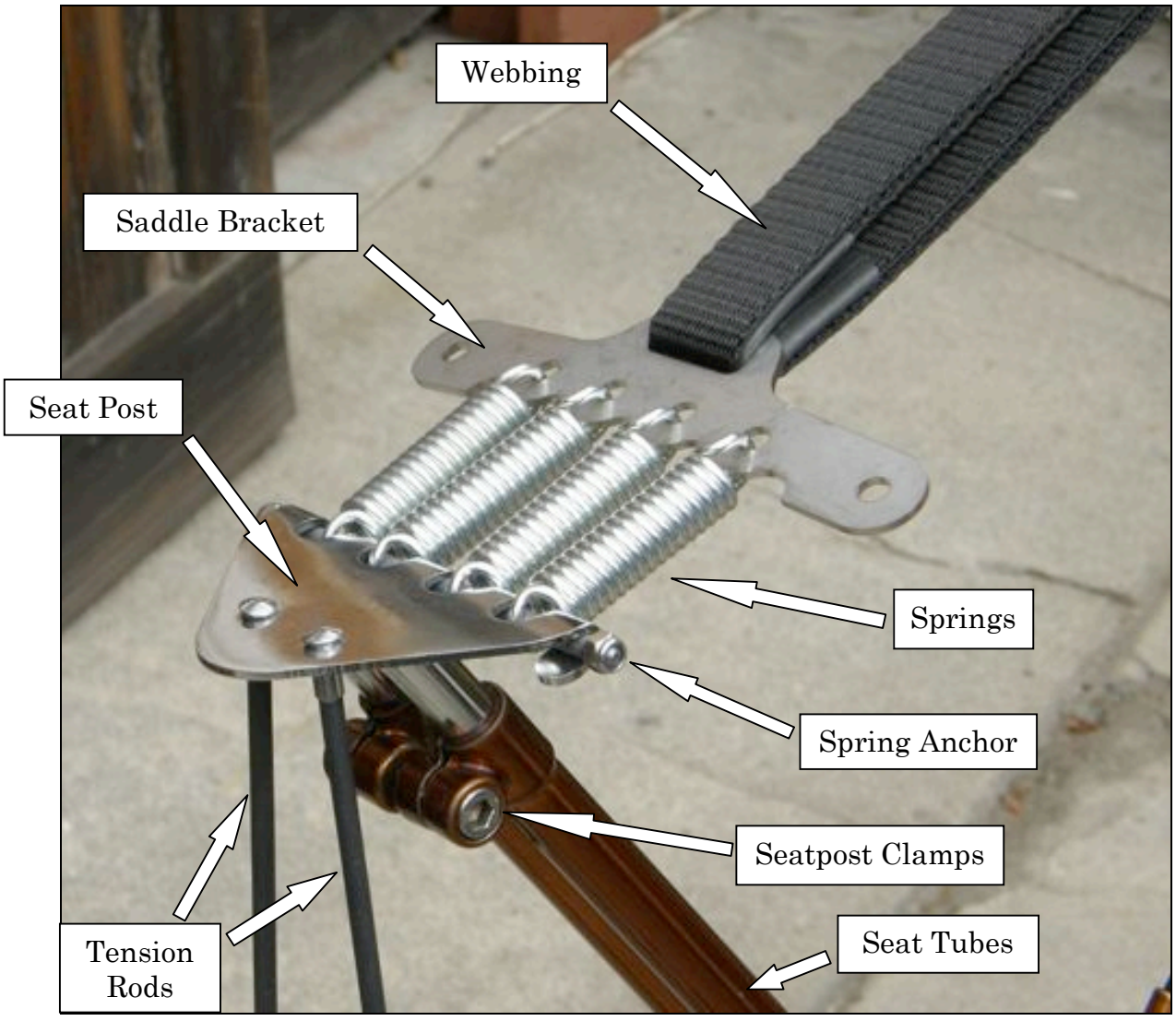
Saddle

The Pedersen saddle is a hammock, supported at the front and rear by the truss frame, and the truss distributes the forces generated by the weight of a rider over the various frame members. Correct adjustment of the saddle hardware will insure that the weight of a rider is distributed correctly and that each component is performing as intended.

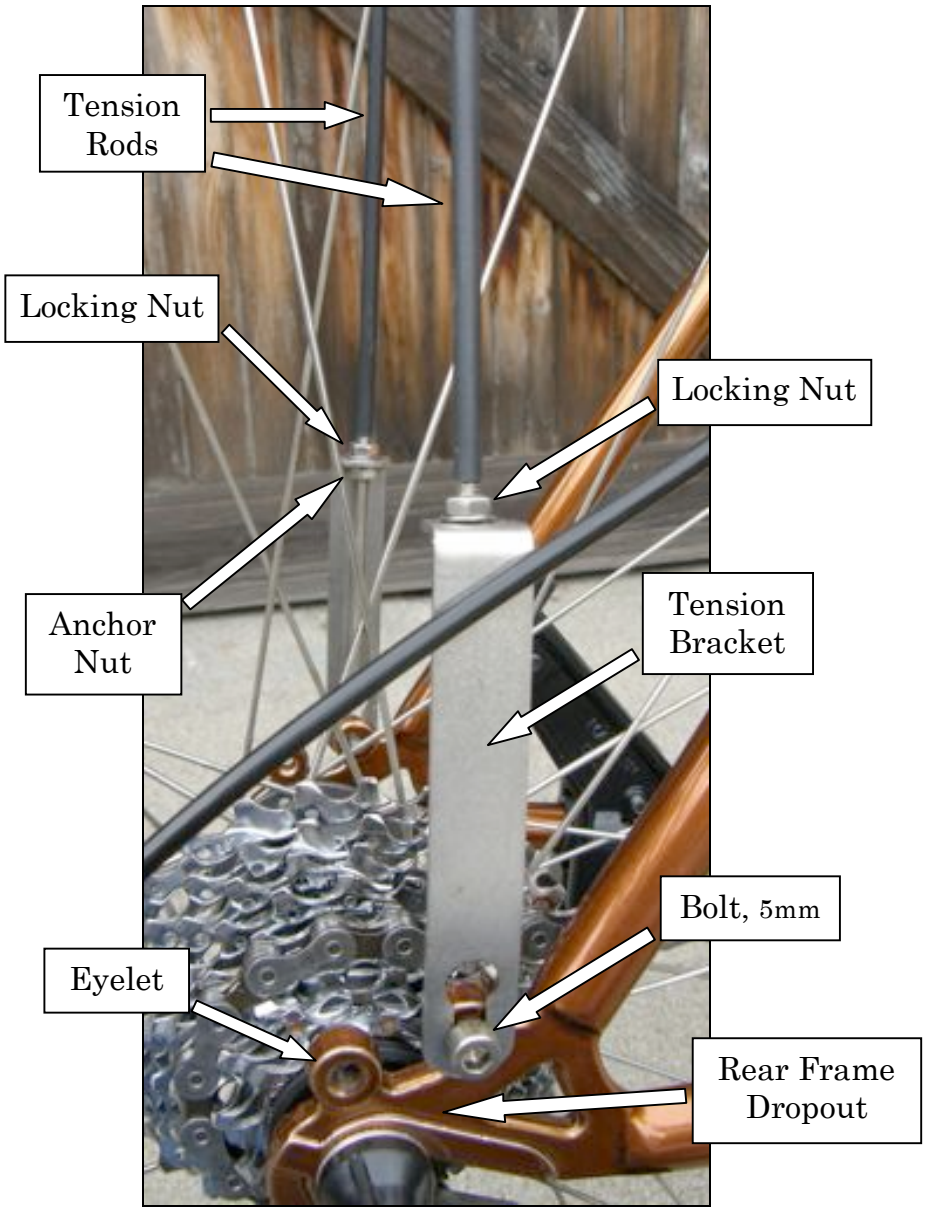
Hardware

The Pedersen saddle hardware includes various bits and pieces that together comprise the hammock. The photo below shows the general layout.



Saddle

The lower ends of the tension rods are also part of the saddle hardware and the details are show below.



The anchor nuts are an important component and provide the means to adjust the length of the tension rods. And because the rods are normally under tension when there is a load on the saddle, these anchor nuts resist the load and transfer the load through the tension brackets to the frame.

Saddle

The locking nuts, when tightened against brackets and anchor nuts, serve to keep the tension rods in position. The locking nuts are not neccesary if the saddle is correctly adjusted and the tension rods and anchor nuts are carying their portion of the load, but it is generally a good idea to use them to hold the tension rods in place. Other Pedersens, such as the Kemper Pedersen, and the much older Cheltenham Pedersen use a cable instead of tension rods to accomplish the same thing. All require the correct set-up to accommodate the weight of a rider.

Saddle

Set-up

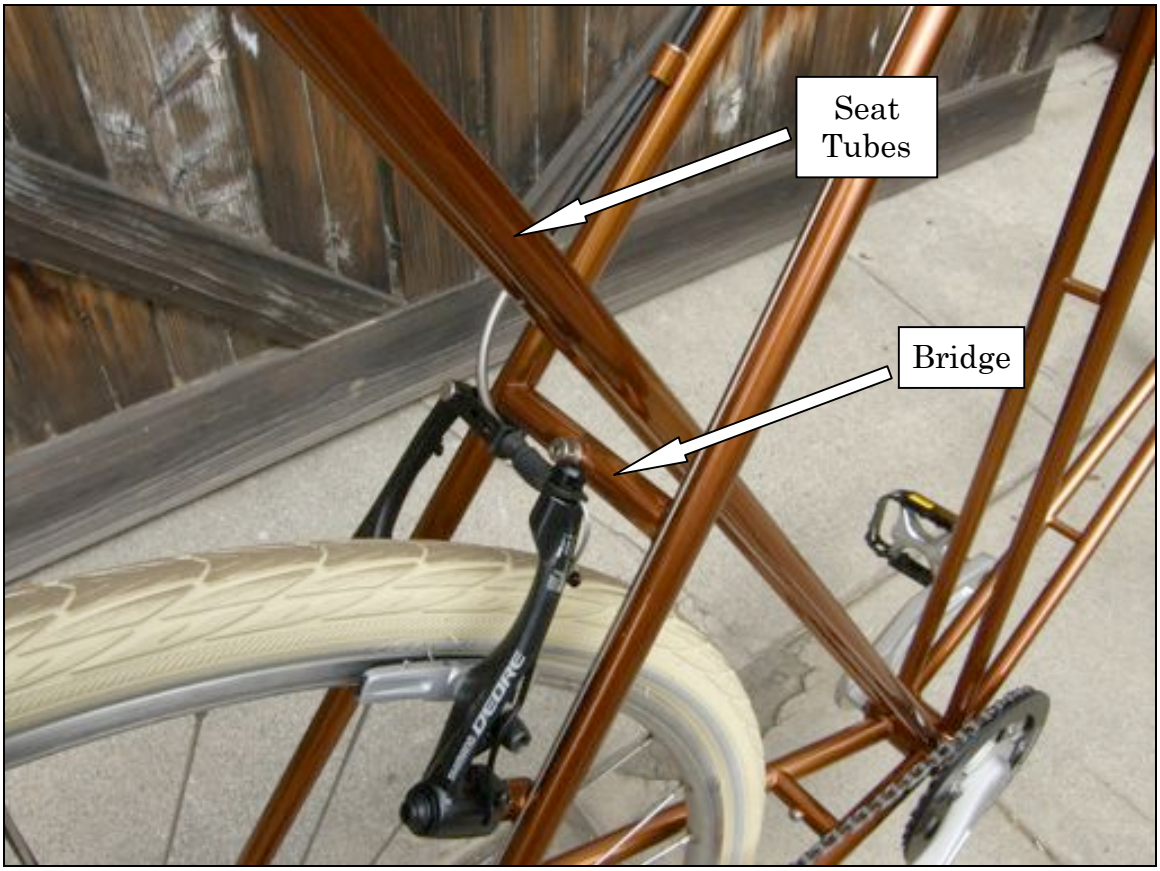
Many saddle adjustments are possible. The seatpost can be raised or lowered and the webbing can be tighter or looser. It is also possible to bend the saddle bracket to provide a contoured shape to the saddle. The only caveat is that the seat tubes remain straight and clear of the bridge when under load. In practice, this means that the act of raising or lowering the saddle may require adjustment of both the tension rod anchor nuts and the webbing. The tension rods are the key to the Pedersen frame and will need to be adjusted to the correct length and checked regularly while the saddle is being adjusted to the desired fit.

The picture below shows the bike without the saddle. The webbing is snug and the tension rods are just snug enough to not be rattling against the seat post. The seat tubes are straight, and do not appear to be pulled forward or aft by either the webbing or the tension rods. This is the unloaded situation and is a nice triangular arrangement, and the key to the Pedersen hammock.

Saddle

It is hard to get the webbing very tight, and it will be sagging a little bit under its own weight and the weight of the springs and saddle bracket. But it should be tight enough to hold the springs against their anchors and look something like the previous picture.

The picture below shows the seat tubes. They appear to be straight, and there is a gap between the bridge and the seat tubes.



The seat tubes should remain clear of the bridge. If the seat tubes contact the bridge while riding it is an indication that the saddle hardware needs to be adjusted.

Saddle

When a rider sits on the saddle, there are two possibilities. The first possibility is that most of the rider's weight will be forward of the seatpost. While it may not be obvious in the picture below, the seat tubes and tension rods have not changed positions with the small load being applied. What has changed is that both the tension rods and the webbing have become very tight and the springs have stretched a little to accommodate the downward force.

This is the desired situation. The rider is positioned on the saddle so that most of the weight is forward of the seatpost, and every component is performing as intended.

Saddle

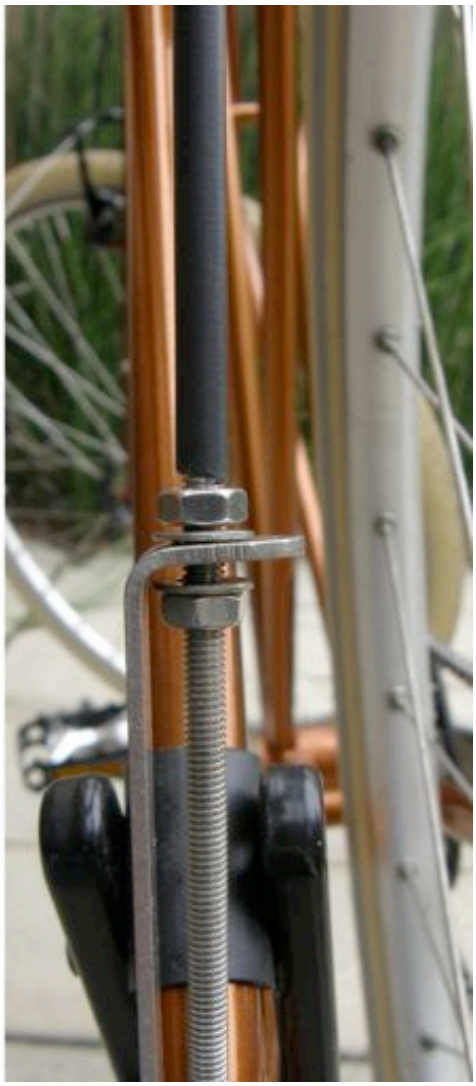
The second possibility is that most of the rider's weight will be supported by the seatpost. In this case the seatpost and seat tubes are being pushed rearward and in the photo below the seat tubes are being moved aft.

Again, the springs are stretching to accommodate the load and the webbing is much tighter, but the tension rods have become loose. You can see that the tops of the rods are perhaps 4 or 5 mm higher than the seatpost.

In this situation the tension rods are no longer carrying a load and are instead beginning to dig into the bottom of the saddle. If there were no locking nuts acting to hold the tension rods in position then the rods would slide down and the underside of the saddle would remain undamaged. Unfortunately, the tension rods would still not be doing their job as the load has now become compression instead of tension.

Saddle

If the locking nut is somewhat loose as shown in the left picture below, and the rider places most of their weight to the rear of the saddle and on the seatpost, the tension rods can become loose as previously described. The picture on the right shows the tension rod having slid down as if the locking nut was not present.



In this situation, vibrations due to riding will cause the anchor nut to unscrew itself, sometimes very quickly. The tension rod has ceased to be a part of the structure, and the rider may not notice anything amiss until a persistent rattling leads to a close inspection.

Saddle

If you find that the anchor nuts are always coming loose, then you may be placing more of your weight on the seatpost than on the webbing. This can be an indication that the saddle height is either a little too low, that the webbing is a little loose, or that the tension rods should be adjusted. A low saddle makes the rider try to sit a little more to the rear, placing more weight on the seatpost, while loose webbing can also causes the rider to try move rearward to keep from sliding forward.

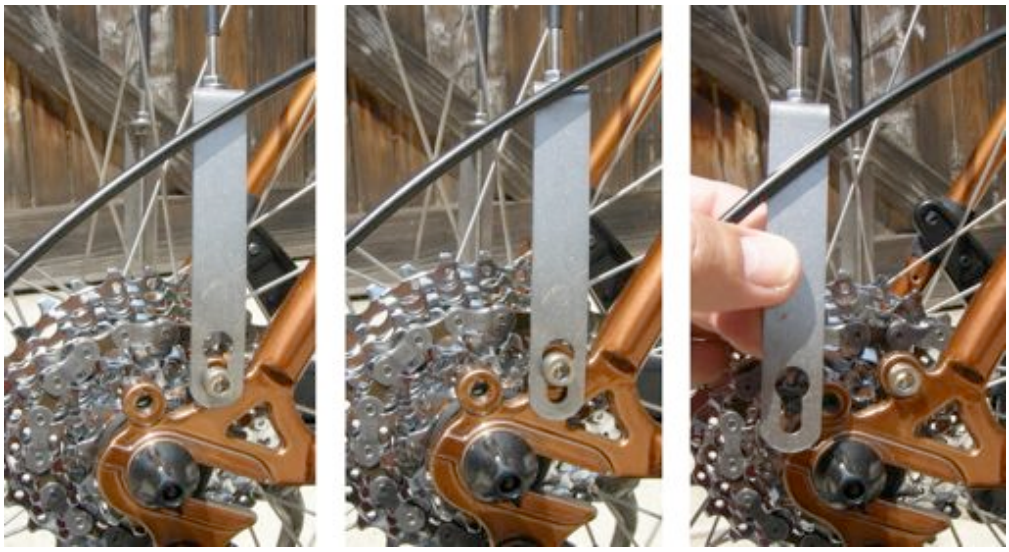
If the anchor nuts are always coming loose, it can also indicates that the locking nut and the anchor nut may not be tight against the tension bracket. Use two 7mm or small adjustable wrenches to tighten both against the tension bracket simultaneously to lock the nuts in place.

If the saddle is already at the correct height and is comfortable, but the tension rods are digging deeply into the underside of the saddle then the tension rods should be adjusted.

Saddle

It is also possible that weight on the seat post can cause the tension brackets to slip against the frame because there may be significant weight pushing down on the tops of the tension rods. This compressive force on the tension rods is in the opposite direction of the intended load and can cause the brackets to slip along the keyhole slot. The slot is a convenience for installing and removing the tension bracket, but if the bracket is pushed far enough it can clear the bolt head and come completely loose from the frame.

The pictures below may make this clearer. This first picture shows a typical set up while the second picture shows the bracket having slipped against the bolt. The third picture shows the bracket after having cleared the bolt head.

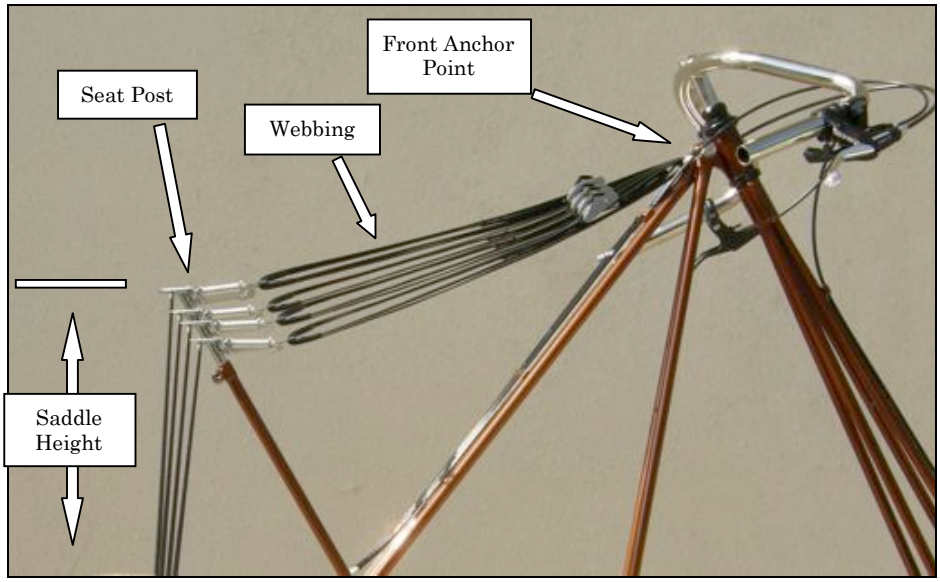


In practice, it is hard to get everything to line up exactly for the bracket to get free, but if the bolt is somewhat loose and the bracket is allowed to rattle, then it is possible. If the tension bracket is slipping it is another indication that the saddle may be too low, or the tension rods need adjusting.

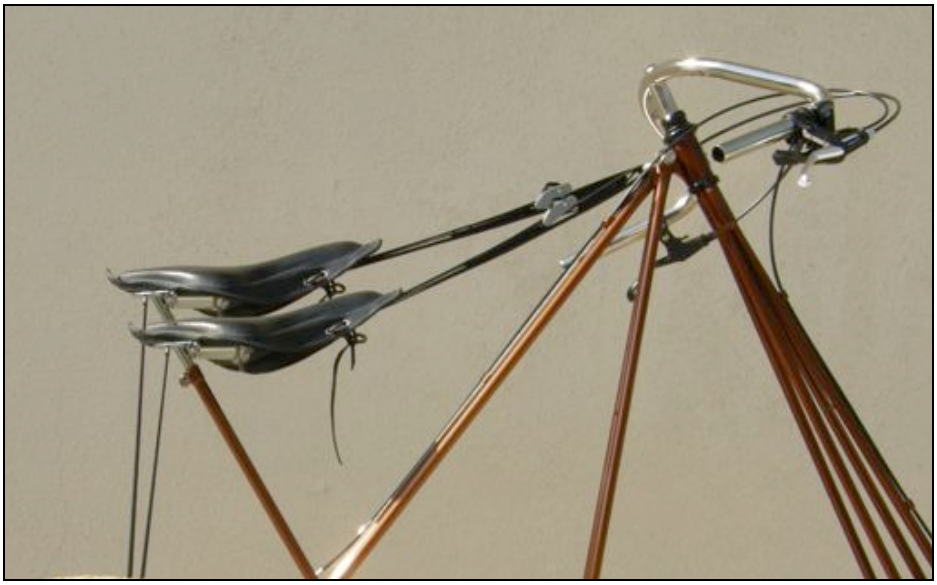
Saddle

Height

The saddle height is adjustable and a range of typical height adjustments can be seen in the composite pictures below. The first picture highlights some of the saddle hardware and shows the relationship between the front anchor point and seat post as the seat post is raised. The saddle has been removed to make it easier to see this relationship.



The next picture includes the saddle. Other than the saddle height, the subtle differences in the saddle's orientation are not very visible.



Saddle

The next set of pictures highlights the foot positions at various saddle heights, and the first picture shows the feet almost flat on the ground. This indicates that the saddle height is much too low.

If the saddle is too low the rider may push rearward on the saddle while pedalling, placing most of their weight on the seat post. With the rider's weight on the seat post, the hammock is not really being used as intended and this can also cause problems with the tension rods. But having both feet flat on the ground can inspire confidence in novice riders, and may be appropriate in some situations.

Saddle

The picture below shows the feet reaching for the ground when the saddle is too high. The toes are touching, but the balls of the feet are not. This position is too high to be very comfortable when riding any distance.

If the saddle is too high almost every saddle position can become uncomfortable. A saddle that is too high can cause the rider to rock from side to side while pedalling and this can quickly cause discomfort. A saddle that is too high can also cause the rider to try to slide forward, because more of the rider's weight will cause the hammock to sag. If the saddle is oriented nose up, sliding forward can also generate some additional discomfort. Loosening the webbing to lower the nose of the saddle typically doesn't fix this problem and only causes the rider to slip down and forward much easier.

Saddle

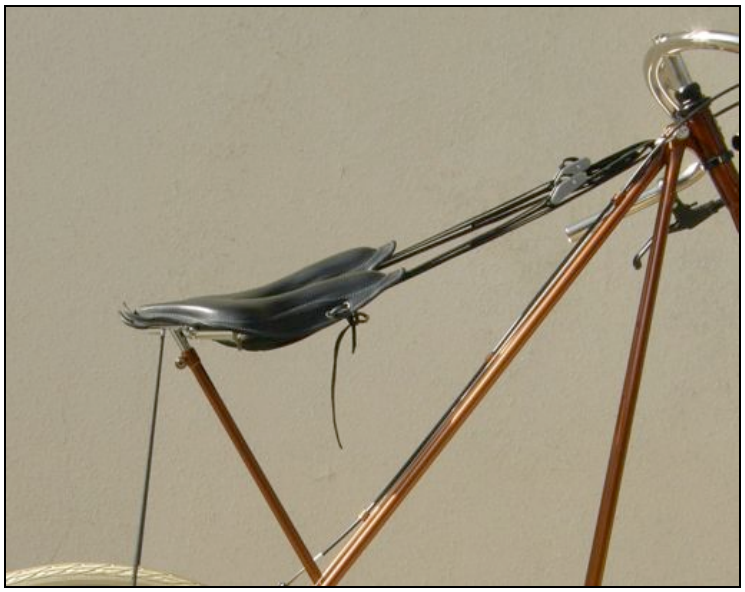
This final picture shows that the saddle is very close to the correct height, with a portion of the ball of each foot touching the ground. The saddle height could be a good fit, and it is in the range that will be comfortable.

Both the correct saddle height and orientation are important for rider comfort and finding the correct position involves some riding and experimenting. If the saddle is at the correct height, a slightly nose up saddle will allow the rider the flexibility to move around on the saddle while taking full advantage of the hammock.

Saddle

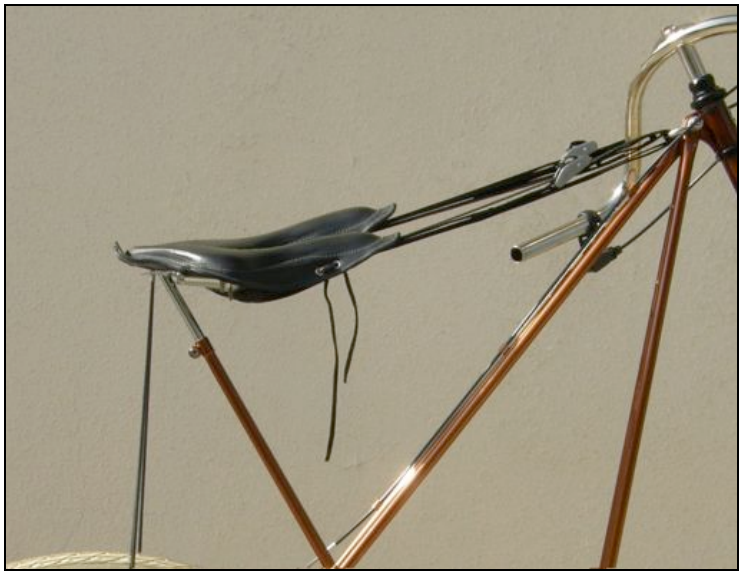
Orientation

The next picture shows two different saddle orientations. These overlapping images show the saddle at the same height, with the seat post close to the lower end of the adjustable range. The only difference is the tightness of the webbing. The tighter webbing has raised the nose of the saddle a significant amount and the saddle has a pronounced tilt. The looser webbing allows the saddle to sag slightly and the nose to be obviously lower.



Saddle

In the next picture the saddle height has been increased by raising the seat post to the higher end of the adjustable range it shows two different webbing tensions.



While it can be hard to see the differences, when the seat post has been raised to the extreme high position there is less nose up tilt possible even with the webbing pulled tight. With the slightly looser webbing the saddle is almost horizontal. It can be seen in both pictures that small changes in the webbing tension can result in large changes in the saddle's orientation.

Saddle

Contour

The saddle bracket can also be bent to provide a contour to the saddle and two possibilities are shown below. The first picture shows the bracket in an almost flat orientation, with very little bend, while the second picture shows a more typical contour. Most riders find that a slight downward curve is the most comfortable.

Bending the bracket is easily done by hand if the saddle has been removed. Pliers can provide additional leverage, if needed, and the bracket can also be removed completely from the bike. Be carefull with the bending, as too much bend will make the saddle very hard, if not impossible, to re-install.

When re-installing the saddle, the nuts that hold the saddle to the bracket should be tightened together. Tightening one all the way first will make it next to impossible to get the other bolt through the hole in the bracket. Hold the saddle and the bracket together when tightening the nuts so as to keep the bracket from damaging the threads as the bolt is pulled through. No need to use extreme torque on these nuts, snug is fine. Presta valve covers are the right size to cover the exposed threads to protect any sharp ends from catching pant legs.