

ASIT Case Study: The Bicycle I-Lock

By Pascal Jarry, Pascal@Jarry.Biz

Editor's note: Dr. Roni Horowitz, author of the ASIT newsletter, and a frequent contributor to the TRIZ Journal, asked his newsletter readers to contribute their case studies. Then, more than a thousand readers voted on the best cases. The TRIZ Journal has asked the winners to let us reprint their case studies. For more information on ASIT, see the August, September, and November 2001 issues of the TRIZ Journal, or the on-line ASIT class, in the Products and Services section of this issue.

I-Lock is a soon to be sold solution for bicycle users:

Problem :

Bicycle saddles are easily adjusted in height, thanks to the clever system used to fix them to the frame. Unfortunately, when one parks his bike, a thief can use this system to take the saddle away in no time.

The problem is double then for the user of a bicycle when he parks: Secure the bike AND the saddle.

Some lock their saddle with a second lock; some take the saddle away with them. This second category carries a lock half of the time, a saddle the other half. (Not the best use of a back bag!)

The challenge was to reduce both risks an easy and elegant way.

Solution :

Taking away the locking system from the lock and fixing it on the saddle tube is the solution (discarding the rest of the lock, usually some kind of chain, cable or U shaped bar).

Equipped with such a small locking device, the saddle tube becomes the bicycle lock. To install use it, you have to:

- 1) Remove the saddle tube from the frame.
- 2) Insert it across the rear wheel, blocking its rotation.
- 3) Lock it to a tube from the back of the frame, with the locking device, so it cannot move.
- 4)

The saddle (and its tube) is no more a thief target; it became the lock for the whole bike!



A locking device re-arranged on a saddle tube



The saddle tube blocks the rotation of the wheel, and is maintained on the frame by the locking device.

ASIT analysis:

PROBLEM WORLD OBJECTS:

- Bicycle
- Saddle and its tube
- Bicycle lock

UNWANTED ACTION:

- Move the bicycle and/or take the saddle (and its tube) away.

WANTED ACTION:

- Immobilise the bicycle and avoid the saddle (and its tube) to be taken away

UNIFICATION:

- The tube of the saddle will immobilise the bicycle and avoid the saddle (and its tube) to be taken away

APPLICATION (USING DIVISION):

- Separation of the locking device from the lock.
- The tube and locking device are re-arranged together.

Simple, isn't it?

U shaped lockers being called U-Lock, I called this one I-Lock. See www.I-Lock.net for a video showing how quickly the rider can park and lock the bicycle, then unlock it and ride away.

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Pascal@Jarry.Biz

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