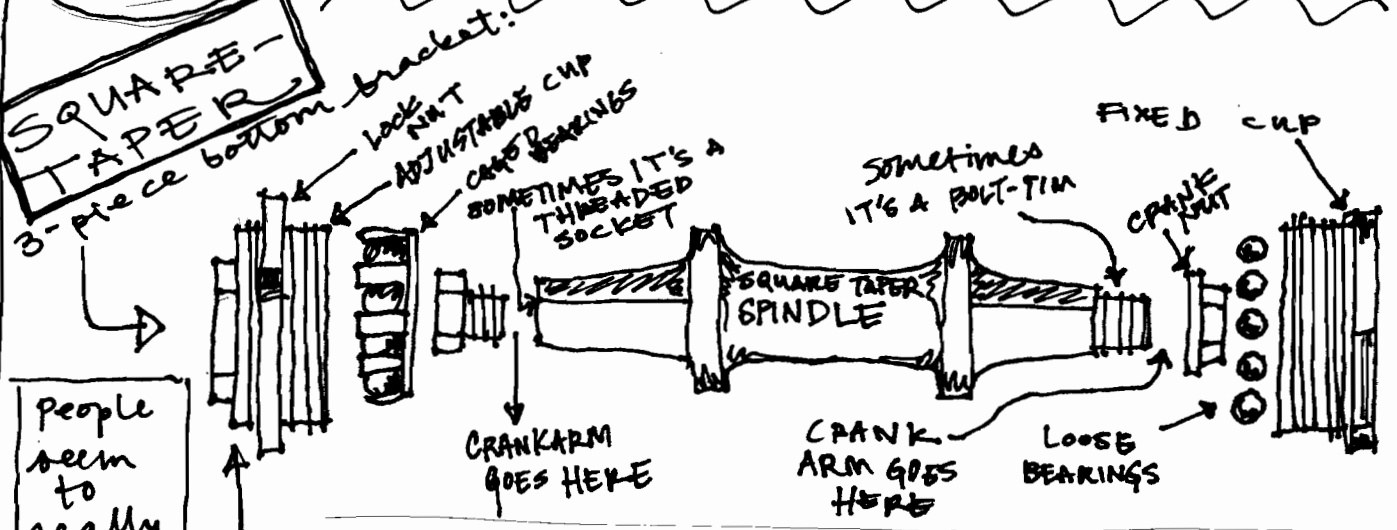


WTF  
Workshop

# BOTTOM BRACKETS, CRANKS & PEDALS

SQUARE-TAPER



People seem to really like these.

THIS CAN BE A LOT OF DIFFERENT SHAPES.

\* SQUARE TAPER CRANK ARMS CAN HAVE 2 KINDS OF SPINDLE HOLES:



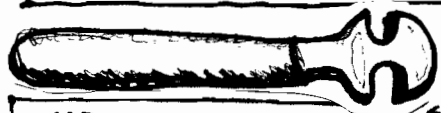
make sure your arms MATCH or else pedaling will feel so WEIRD!!

## ANOTHER NOTE ON SPINDLE HOLES:

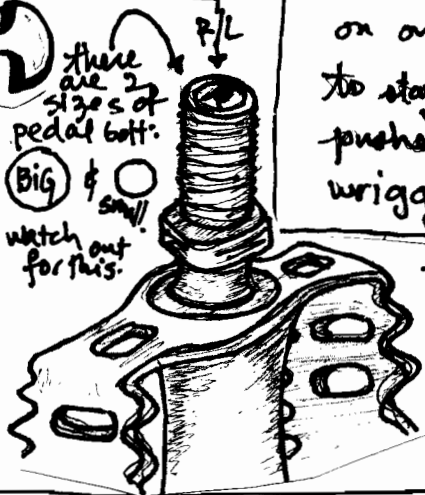
if your crankarm gets loose & falls off, your spindle hole is probably all jacked up.



This it will wriggle on the spindle no matter how much you tighten the crank nut—because the arm relies on outward force of the spindle to stay on—the nut just pushes it on. If the crank wiggles, it will loosen the nut.



**THE PEDAL WRENCH**  
is slim so it fits between your pedal and the crankarm, and super sturdy. It also has a long handle so you can apply a lot of torque.\*



\*NOTE! Right pedals thread ON clockwise & left pedals thread OFF clockwise. It's so if it freezes up you'll thread it off by pedaling.

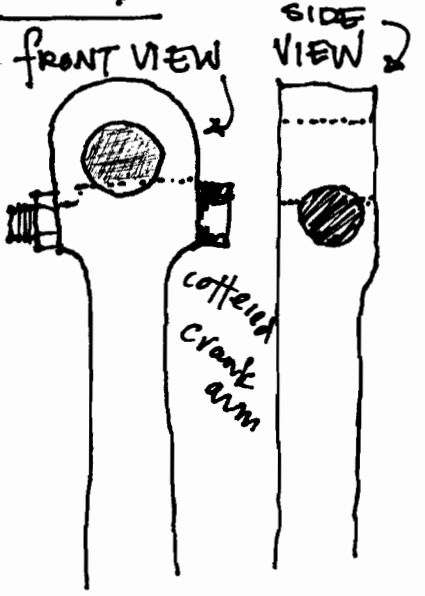
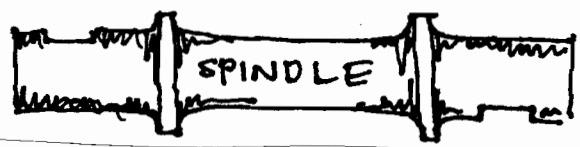
WTF  
workshop

# OTHER KINDS OF CRANKS & BBS...

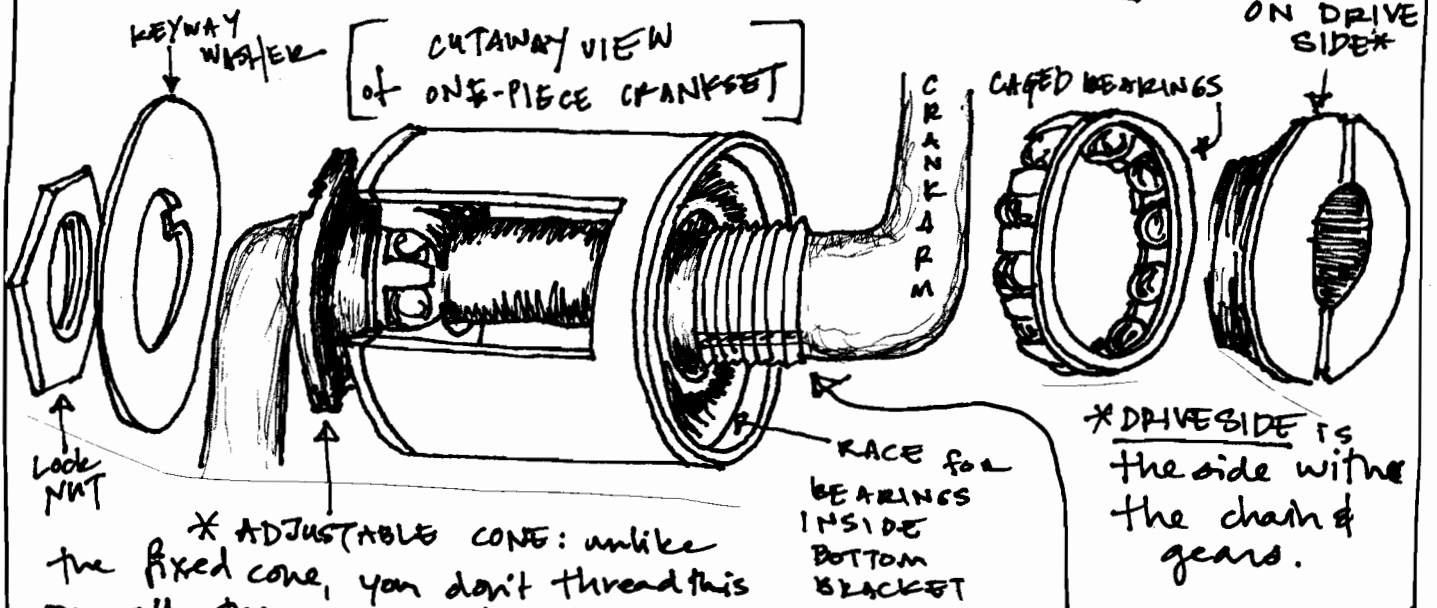
## COTTERED CRANKSET

(3-piece bottom bracket)

\*Cottered cranksets take the same BB setup (cups, bearings...) as the square taper. The only difference is how the cranks attach to the spindle.



## ONE-PIECE CRANKS



\*ADJUSTABLE CONE: unlike the fixed cone, you don't thread this on all the way; just tighten it enough so the crankset doesn't wiggle, but not so tight that there's resistance, then lock it in place with the lock nut.

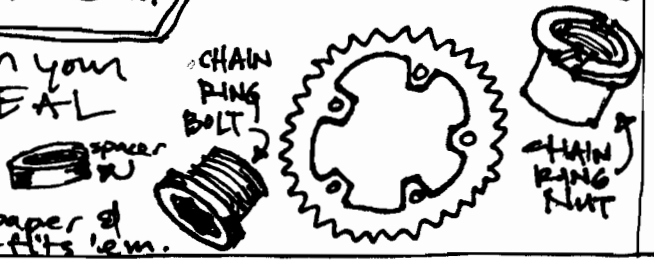
CHAINRING THREADS ON HERE AFTER CONE.

### THE CHAINRING RUNDOWN:

NOTE the spacing of your crankarm tabs:

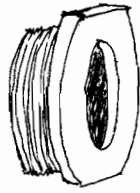
Tighten your bolts on REAL TIGHT!!

trace onto a piece of paper & find a chainring that fits them.





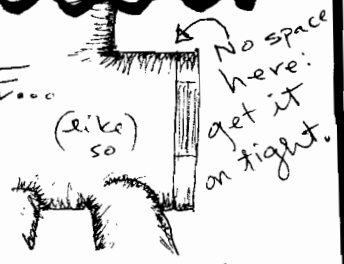
# 3-PIECE BOTTOM BRACKET ASSEMBLY / DISSEMBLY.



**FIXED CUP**

SITS FLUSH ON FRAME...

\* ON JAPANESE/AMERICAN BIKES. IT THREADS ON COUNTERCLOCKWISE & OFF CLOCKWISE (LEFT-HAND OR WRONG-WAY THREADING). **BUT!** ON FRENCH & ITALIAN BIKES IT'S NORMAL (LEFTY LOOSEY, RIGHTY TIGHTY). GO FIGURE. \*

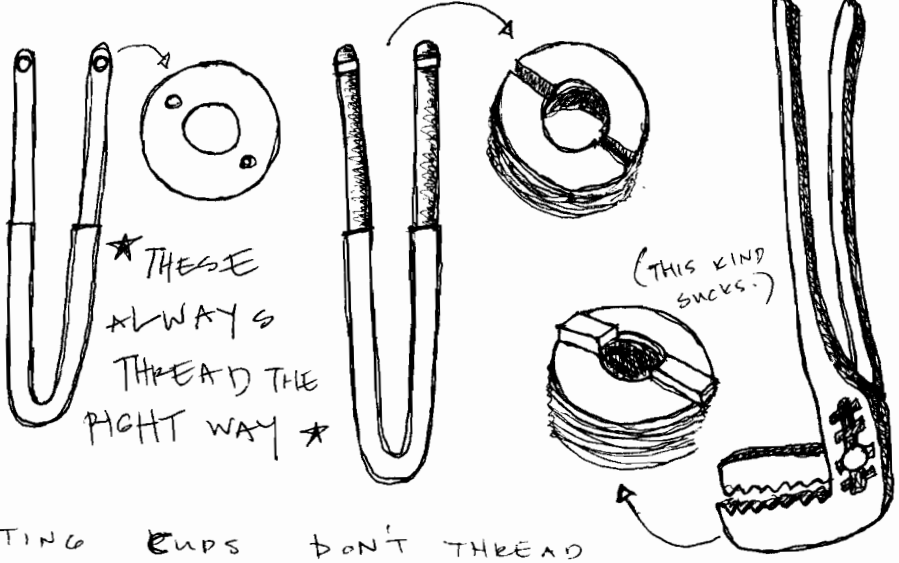


## ON BOTTOM BRACKET THREADS:

IT'S TRICKY TO ENGAGE BB THREADS BECAUSE THEY'RE CLOSELY SPACED & LONG. IF YOU START SPINNING THE WRONG WAY YOU'LL FEEL THE THREADS ENGAGE. IT'S HARD TO SCREW ON EVEN WHEN IT'S CORRECTLY THREADED SO IT WILL SERVE YOU WELL TO CLEAN OUT THE THREADS REALLY WELL.

## Floating / ADJUSTABLE CUP

DESIGNS & RECOMMENDED TOOLS:

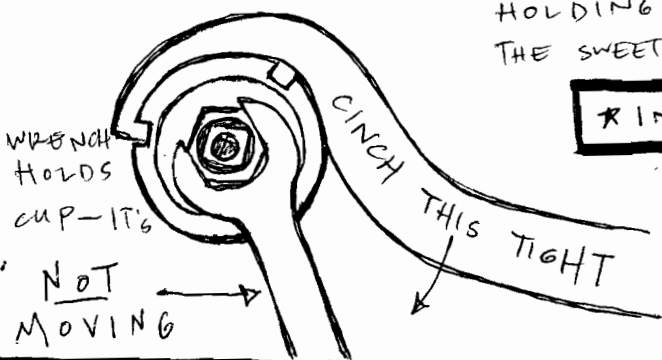


\* THESE ALWAYS THREAD THE RIGHT WAY \*

(THIS KIND SUCKS.)

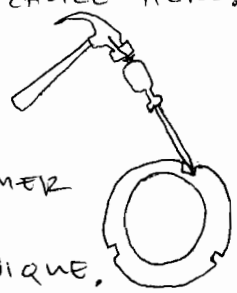
## LOCKNUTS!

OKAY, SO FLOATING CUPS DON'T THREAD ALL THE WAY ON. THIS IS VERY IMPORTANT, & HERE'S WHY: REMEMBER HOW WITH HUBS YOU HAVE TO FIX ONE CONE NUT PAIR & USE THE OTHER TO FIND THE "SWEET SPOT" BETWEEN WHERE IT'S TOO TIGHT & TOO LOOSE? YEAH, IT'S LIKE THAT AGAIN. TIGHTEN FLOATING CUP TO WHERE THE SPINDLE SPINS FREELY WITHOUT WIGGLING OR GRINDING. THEN USE THE HOOK WRENCH TO TIGHTEN DOWN THE LOCKNUT WHILE HOLDING THE FLOATING CUP STILL (IN THE SWEET SPOT) WITH [INSERT TOOL OF CHOICE HERE.]



## \* IN A PINCH \*

YOU CAN ALSO RESORT TO THE OLD HAMMER & SCREWDRIVER TECHNIQUE.

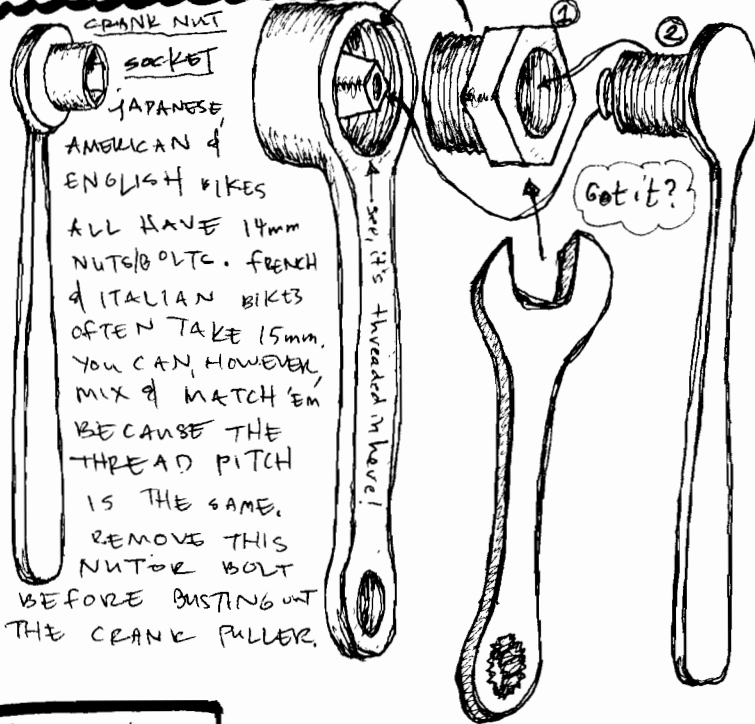


# TOOLS for BOTTOM BRACKETS



\* THEY INVOLVE THE USE OF A SUITE OF ODD CHARACTERS. WHAT FOLLOWS IS THE GALLERY...

## PART ONE: CRANK-ARMS...

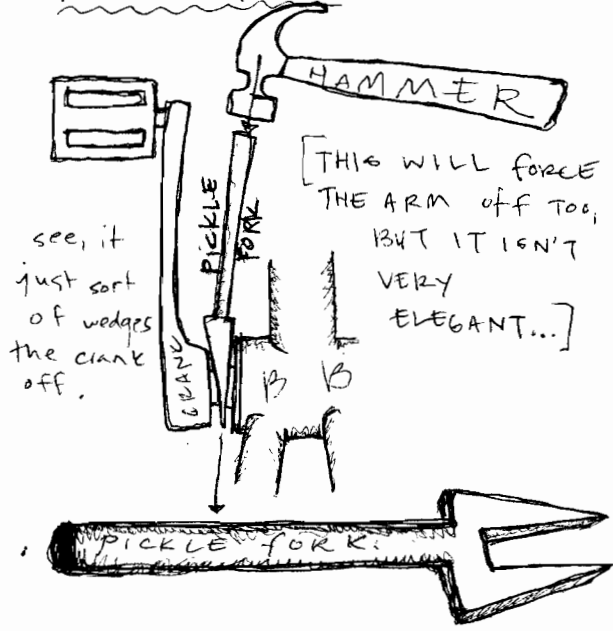


CRANK NUT SOCKET  
JAPANESE AMERICAN & ENGLISH BIKES  
ALL HAVE 14mm NUTS/BOLTS. FRENCH & ITALIAN BIKES OFTEN TAKE 15mm. YOU CAN, HOWEVER, MIX & MATCH 'EM BECAUSE THE THREAD PITCH IS THE SAME. REMOVE THIS NUT OR BOLT BEFORE BUSTING OUT THE CRANK PULLER.

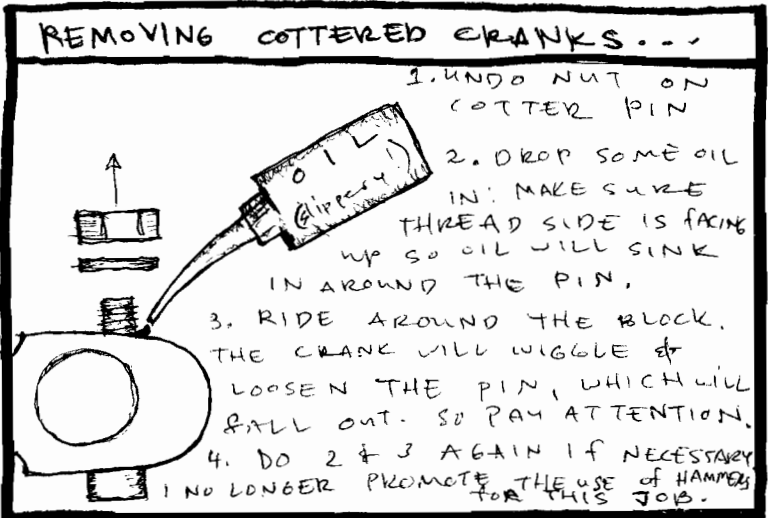
THE CRANK-PULLER IS PRETTY ELEGANT. "PIECE ONE" THREADS INTO YOUR CRANK ARM. USE A WRENCH TO DO THIS SO YOU GET AS MANY THREADS AS POSSIBLE ON THERE - PEOPLE SOME-TIMES STRIP THEIR CRANK THREADS IF THEY DON'T - YOU'RE ABOUT TO APPLY A LOT OF FORCE PERPENDICULAR TO THE THREADS. SCREW "PIECE TWO" INTO "PIECE ONE" (YOU'LL NEED QUITE A BIT OF TORQUE) & IT WILL PUSH AGAINST YOUR BB SPINDLE WHILE GRIPPING YOUR CRANK & FORCE IT OFF

**PLAN B:** if your CRANK ARM THREADS ARE SHOT, IT'S HAMMER TIME: GRAB THE PICKLE FORK:

\* ALL YOU HAVE TO DO TO GET THE CRANKS BACK ON IS TIGHTEN THE CRANK NUT/BOLT WITH THE SOCKET \* no... that's so easy!



[THIS WILL FORCE THE ARM OFF TOO, BUT IT ISN'T VERY ELEGANT...]



- REMOVING COTTERED CRANKS...
1. UNDO NUT ON COTTER PIN
  2. DROP SOME OIL IN: MAKE SURE THREAD SIDE IS FACING UP SO OIL WILL SINK IN AROUND THE PIN.
  3. RIDE AROUND THE BLOCK. THE CRANK WILL WIGGLE & LOOSEN THE PIN, WHICH WILL FALL OUT. SO PAY ATTENTION.
  4. DO 2 & 3 AGAIN IF NECESSARY
- NO LONGER PROMOTE THE USE OF HAMMERS FOR THIS JOB.