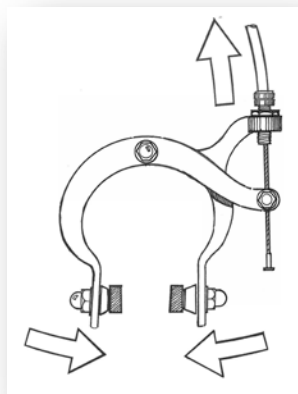


# Bell Crank Systems

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Linkages are very important in mechanical control systems because they allow forces and motion to be transmitted where they are needed. They can change the direction of a movement, the size of a force, or make things move in a particular way. They usually do several of these things at once. Bell cranks are used to change the direction of motion through 90 degrees. This is useful for taking motion round a corner.



The picture shows the calliper brakes on a bicycle. The mechanism is made up of two bell cranks, both pivoting on the same bolt. By changing the position of the fulcrum or lengthening one side of the lever, the amount of movement or the size of the forces produced by the linkage can also be changed. In fact you cannot change one without changing the other.

The brakes used on mountain bikes have much longer levers on the effort side of the fulcrum than those on a standard bike. This allows larger forces to be applied to the wheel when braking.

