

## A Simple Partridge Plate Roller

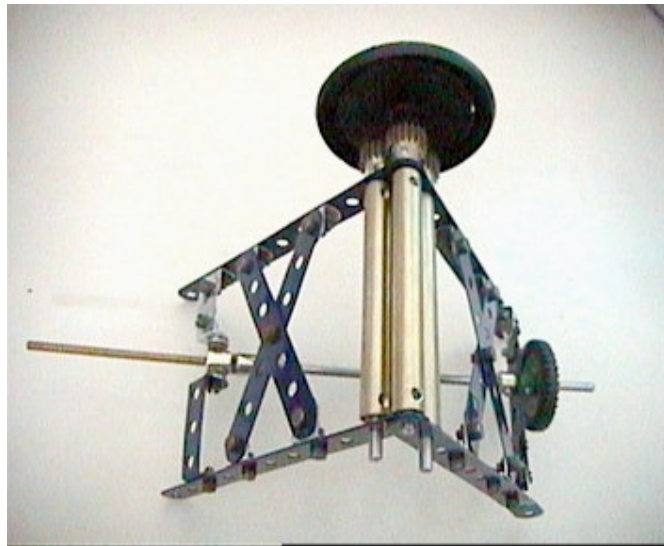
by Arup Dasgupta

### Parts required

(Qty x Part No.): 4 x 2, 4 x 3, 1 x 4, 1 x 10, 12 x 12, 1 x 15, 3 x 15a, 1 x 22, 3 x 26, 31 x 37a, 28 x 37b, 4 x 38, 1 x 48, 1 x 59, 3 x 59kD (by Ashok Banerjee - see [http://members.tripod.com/Ashok\\_Banerjee/Meccanoville/Welcome.htm](http://members.tripod.com/Ashok_Banerjee/Meccanoville/Welcome.htm)), 1 x 63c, 1 x 64, 3 x 69c, 1 x 80a, 1 x 142c, 1 x 187

### Construction

Begin by assembling the two arms that consist of two 11-hole strips braced by two 7-hole strips as shown. To one arm attach a 1x3x1 double angle strip and a built up 1x2x1 double angle strip consisting of two angle brackets and a fishplate. Between the inner lug of the 1x3x1 double angle strip and the inner angle bracket of the built up double angle strip attach a threaded boss with a bolt and nut and two washers on each side such that the boss is free to swivel about



the bolts and its threaded hole is clear. A built up double angle strip consisting of a 6-hole strip and two angle brackets is lock-nutted to the other arm so as to be free to swivel. Now, at the second hole from the 'top' of each arm fix a spacer between the two 11 hole strips on a 4.5" rod using a 3mm grub screw and attach a pinion on the outer end of the rod.

Bring the two arms together and attach the third spacer on a 4.5" rod through the top holes of the two arms. Attach the third pinion and the road wheel on the same side. The three pinions should come into mesh and can be rotated using the road wheel. Insert the 3.5" threaded rod through the threaded boss and lock it to the threaded coupling using a nut. A 5" rod is

attached to the other end of the coupling. Slide a collar on to the rod and pass the rod through the 6-hole swivelling strip. Fix the 1" pulley to the outer end of the rod. Rotate the screwed rod until the threaded coupling is as close to the threaded boss as possible (See picture). Now, bring the two arms together until the three pinions come into mesh and lock up. From this position move the arms apart till the two lower pinions just come out of mesh and are free to rotate. Slide the collar along the rod until it is against the inner side of the 6-hole strip and lock it to the rod. Slide the pulley to the outer end of the 6-hole strip and fix it to the rod. If you have done it correctly you will be able to insert a strip between the upper and two lower rollers. If not, repeat the set up.

## Operation

Insert the piece to be rolled between the upper and two lower rollers. Rotate the pulley so that the arms move out slightly. Now roll the piece using the road wheel. Keep repeating the process, each time spreading the arms apart a bit more using the pulley, until the desired radius is obtained.

## Additional Notes

This is based on the original strip roller designed by Alan Partridge using road wheel bushes as rollers. This model rolls strips and flexible plates. Keep the road wheel on the same side as the pinions or you will catch your thumb between two pinions! You can use a 3" pulley or artillery wheel if you have one. A larger diameter wheel gives better torque. The 5" rod and 1" pulley can be replaced with a crank handle. One more use for a useless part! A radius gauge can be added between the two arms. Motor operation may be possible. More suggestions welcome.

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