



# STRIP-ROLLING MACHINE

A practical unit designed by "MECCANOMAN"

In Meccano modelling, it is at times required to curve Strips to an even radius. When this is attempted by hand, uneven results stem from the tendency for the Strip to bend in a series of kinks at each hole. It is also very difficult to maintain the curve smoothly to the extreme ends of the Strip.

The Strip Rolling Machine described here has been designed to have its rollers mounted as close as practicable so as to ensure smooth curving of the Strip between its holes. The choice of  $\frac{1}{2}$ " centres allows all three rollers to be driven together through a chain of  $\frac{1}{2}$ " Pinions which ensure smooth passage of a Strip through the rollers with the minimum of slip; it will even be found that painted Strips can be curved to quite an extent with minimal damage to the paint. However, in all cases where sharp radii are required, the Strip concerned should be curved in a succession of operations of gradually increasing severity.

The machine is also equally efficient in straightening the Strips after they have fulfilled their function. In addition, mutilated Strips can very often be restored by curving them gently first one way and then the other, thus gradually reducing the damage until straightness is achieved once more.

## CONSTRUCTION

### THE ROLLERS

Construction is commenced with the top roller assembly which consists of a  $3\frac{1}{2}$ " Rod with a centrally-mounted Short Coupling, on either side of which are placed, in order: a  $\frac{3}{4}$ " Washer, a  $\frac{3}{8}$ " Washer, two Couplings by their end transverse holes; then a further  $\frac{3}{8}$ " Washer, and finally a  $\frac{1}{2}$ " Pinion, boss inwards.

The lead-in roller assembly is formed of a further  $3\frac{1}{2}$ " Rod which passes through the other end transverse bores of the inner pair of Couplings mentioned above. This also carries a centrally-mounted Short Coupling, and  $\frac{1}{2}$ " Pinions, boss inwards on both ends.

The feed-out roller assembly is a 4" Rod, this time through the end transverse holes of the outer pair of Couplings, with a central Short Coupling as before. On one end is a  $\frac{1}{2}$ " Pinion, boss inwards, with one spacing Washer. On the other end, the additional  $\frac{1}{2}$ " length allows the

relevant end  $\frac{1}{2}$ " Pinion to be mounted boss outwards. The boss of this  $\frac{1}{2}$ " Pinion is then inserted into one recess of a Socket Coupling, whose other recess carries the boss of a Spoked Wheel, which acts as actuating handwheel. All tapped holes in both Pinions and Short Couplings are fitted with Grub Screws, those in the Short Couplings must be 3mm [69c] to ensure an unobstructed rolling surface.

### THE OPERATING LEVERS

The four operating levers are formed of  $3\frac{1}{2}$ " Crank Handles, which must be carefully selected to be identical in length, and in the profile of their bends. The use of these Crank Handles ensures that a full range of roller positions can be achieved without fouling the  $3\frac{1}{2}$ " Rods.

The lower ends of the outer Crank Handles are mounted in the bases of Handrail Couplings whose transverse bores rotate freely on  $1\frac{1}{2}$ " Rods which form part of the base frame assembly. These Rods are connected by Couplings at their inner ends, and carry vertical Couplings at their outer ends to act as leg supports. Collars are fitted against the inner faces of the Handrail Couplings for location purposes.

### THE BASE

The other end of the base frame assembly is similar, but carries no Handrail Couplings or Collars. The sides of the frame are 8" Rods located in the central transverse bores of the vertical Couplings. The legs themselves are  $1\frac{1}{2}$ " Axle Rods, which carry 1" Pulleys and Tyres as feet.

### ADJUSTMENT

The setting of the roller angle is determined by a special assembly mounted on an 8" Screwed Rod, which consists of a Coupling mounted by its central transverse threaded bore. This has 1" Rods protruding from its ends which carry the eyes of two Handrail Couplings, which in turn are retained by Collars. These Handrail Couplings are of course mounted on the lower ends of the inner pair of Crank Handles. Turning of the 8" Screwed Rod thus allows a fine adjustment of the roller angles. This Threaded Rod carries a lock-nutted Adaptor for Screwed Rod whose pin turns freely in the central transverse bore of the horizontal Coupling at one end of the base.

At the other end of the base, the Screwed Rod itself turns in the equivalent

bore of the Coupling at that end. The operating handle is a Threaded Crank fitted with a long Threaded Pin as shown, and is lock-nutted to the end of the Screwed Rod. Endplay is controlled to close limits with a Threaded Boss, which is also lock-nutted.

A few examples of work done by the machine are shown. It will be seen that various lengths of Strips can readily be rolled into complete circles. The laminated spring, produced with the aid of the machine, is interesting, as it seems to have acquired additional resilience in the process; it will return to the camber shown even after being deflected until 'flat'. In passing, I should mention that its buckle is a Short Circuit Piece [Electrical Part 554]; the various leaves are kept in alignment by a long Grub Screw through the centre holes of the leaves, which is retained in place by the buckle.

### PARTS REQUIRED

2	13a	6	26	1	64
1	15b	3	37c	1	69c
2	16	5	38	1	79
8	18a	2	38d	1	115a
2	18b	4	59	4	136a
1	19a	1	62a	4	142c
4	19s	11	63	1	171
4	22	3	63d	1	173a

### AN 'ECONOMY VERSION' by ALAN PARTRIDGE

This device is closely based on the foregoing machine which I have found so useful. My version contains the minimum of expensive brass parts, but is not so robust as 'Meccanoman's'.

The construction should be clear from the diagram after reading the description of the 'Rolls-Royce' version.

