

# SUPERMODEL!

## An outstanding 0-8-0 Tank Locomotive by Dr. Jorge Catella

IT IS some considerable time since we had the opportunity of publishing a really first-class Supermodel locomotive, so we are very pleased to be able to present here this superb model designed and built by Dr. Catella of Buenos Aires, Argentina. In fact, it is because the model is so good that we are not able to describe it in full – it would require half the Magazine! – but a general description has been prepared for us by Bert Love who has also arranged the illustrations from Dr. Catella's original photographs.

Like many advanced Meccano modellers, Dr. Catella had very little detail available on which to base his model and, in fact, it was a tiny 00-gauge plastic locomotive which, in the end, served as the prototype. All the dimensions were scaled up from this! Based on an 0-8-0 tank locomotive of the German Railways, Dr. Catella has reproduced what he calls a "small wheel job". By this he simply means that the eight coupled driving wheels are smaller than the boiler diameter and, since he chose Circular Girders for the wheel rims, the boiler had to be scaled up accordingly. A glance at Fig. 1 shows the general excellent outline and detail of the model which measures some 40" long, 5½" across the buffer beams and is about 15" high. Further striking details are evident in Fig. 2 which shows a perspective view of the model with its rugged cylinder casings, framework and boiler fittings.

Several thousand Nuts and Bolts are used in the model's construction, a large number of them being used

for the boiler which is made from overlapping 12½" Strip Plates, two to a circle, bolted at intervals internally to 7½" Circular Strips which give the boiler its scale diameter. Careful overlap and use of Bolts gives the 'non-perforated' boiler which Dr. Catella was aiming at. As can be seen from Fig. 2, the desired effect was very nicely achieved.

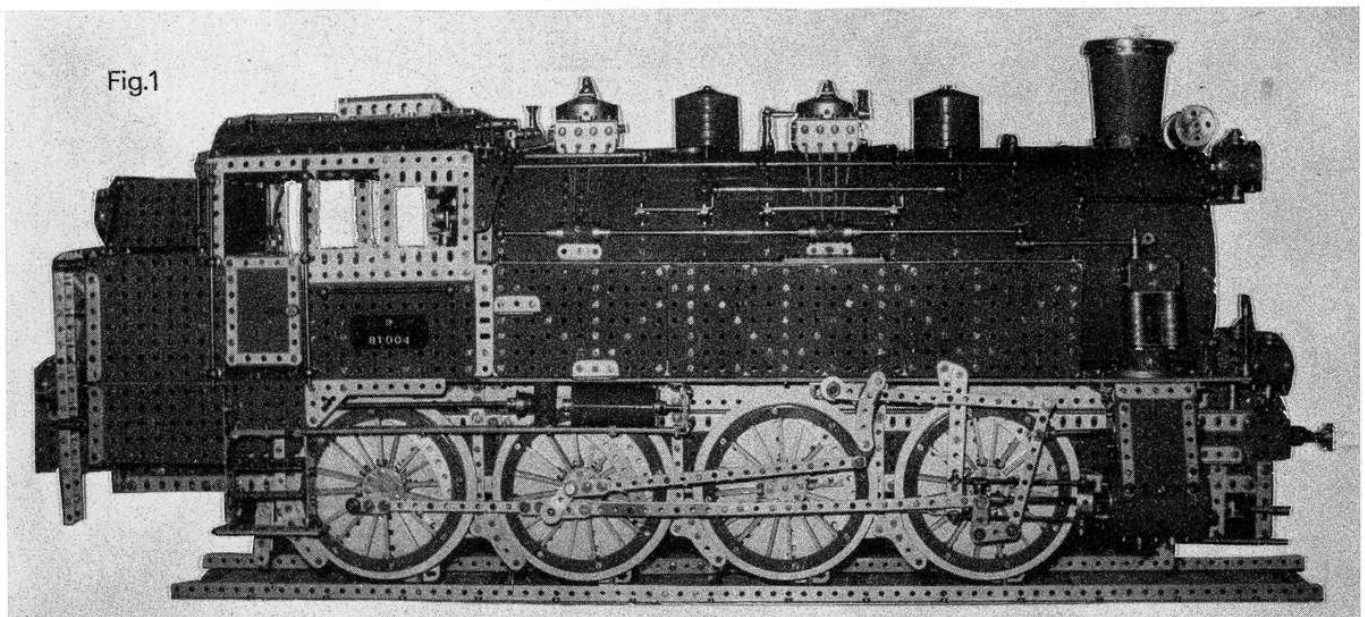
As mentioned above, we cannot give a full description here, but some sections will be treated in detail:

### WHEEL CONSTRUCTION

All eight wheels are built up from the same components to produce a striking 'spoked' effect and this is achieved by using 2" and 2½" Strips in alternate bunches of three as individual spokes. Each wheel has an 8-hole Wheel Disc attached to the centre of a 6" Circular Plate by ¾" Bolts and this Wheel Disc traps eight of the longer (2½") spokes under its edges. Before tightening any Bolts, the eight shorter spokes are set on edge in their final positions and then the Circular Girder is placed over the outer ends of the spokes before fixing to the 6" Circular Plates with ¾" Bolts. The shorter spokes are secured at each end with standard Bolts to hold the three 'leaves' of each spoke together, but the 2½" spokes are only bolted at the outer ends.

All of the spokes are held in place by the combined trapping and wedging effect created by pressure of the Wheel Disc at the centre, the Circular Girder at the rim

Side view of the Tank Locomotive showing the general wealth of detail. Note the pleasing 'rivet' effect on the saddle tank.



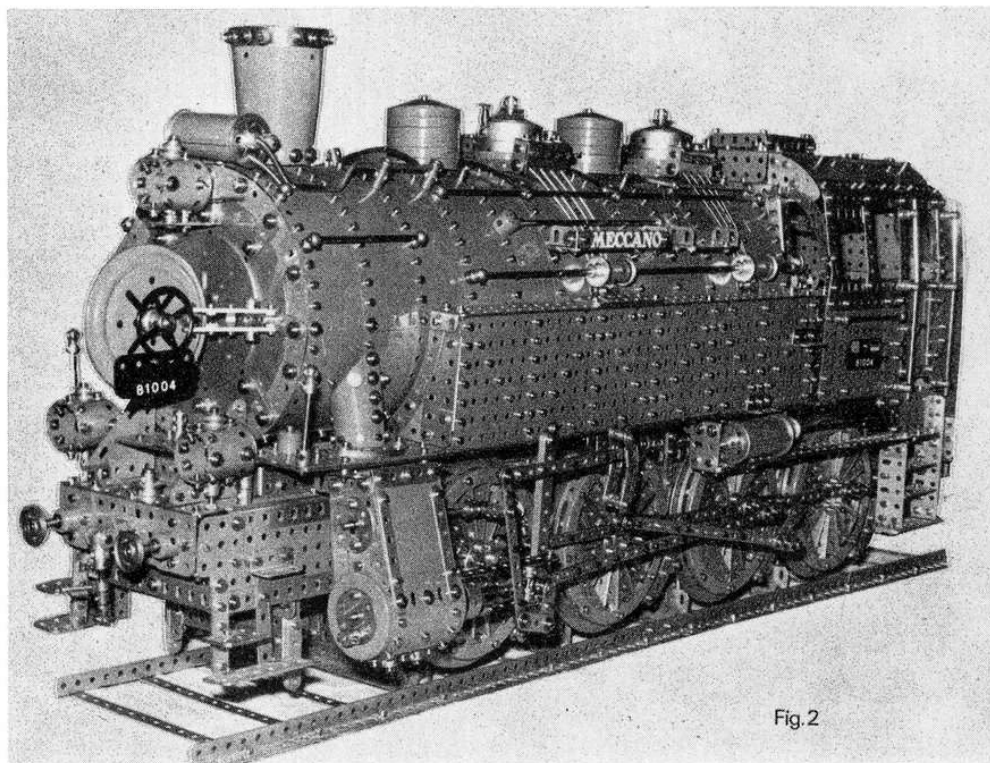


Fig. 2

and the lodging of the spokes against each other at the centre. Quite an ingenious and very realistic effect.

Connecting rods are double or triple layers of Narrow Strips reinforced at the wheel crank positions by short standard Strips. Cranks attached at these points provide crank pin bearings, and counter-weights are added to the appropriate wheels by using one, or two 4" Curved Strips which are simply trapped under the Circular Girders, as can be seen in Figs. 1 and 2.

#### BOILER FITTINGS

The boiler fittings are largely self-evident from the photographs. Steam domes are formed from Wheel Flanges, six at a time, held by short Screwed Rods to the top of the boiler and capped by a Conical Disc bolted to a Threaded Boss inside. Safety valve housings are pairs of Boiler Ends, similarly capped, but fitted with now-obsolete Buffers (Pivot Bolts make suitable substitutes for these obsolete parts). Rods and Handrail Couplings serve as steam whistles, etc.

Sand boxes are mounted on either side of the pressure domes at the top of the boiler and these are made from Girder Brackets enclosed with 1" Angle Brackets and strapped across the top of the boiler with 3" Narrow Strips. Spring Cord 'sand pipes' run down the boiler sides from the sand boxes and are trapped by 1½" Strips bolted to the boiler in line with the top edge of the saddle tanks. In the prototype plastic model, these saddle tanks showed a diagonal rivet pattern and this has been reproduced in the model by bolt heads set in Flat Plates, see Fig. 1. For those modellers who prefer a non-perforated saddle tank, however, Strip Plates or Flexible Plates, suitably lapped to give the 18½" x 3½" cover required, should be used, or a series of 3½" x 2½" Flexible Plates. The diagonal pattern could then be simulated by overlaying some Narrow Strips.

Flat Girders form the tops of the saddle tanks on either side and these are reinforced with short lengths of Flat Girders at the appropriate filling points. Just forward of the saddle tanks and very clearly shown in Fig. 2 is the

A tremendously impressive view of the superb 0-8-0 Tank Locomotive built by Dr. Jorge Catella of Buenos Aires, Argentina. Based on a German Railways original, Dr. Catella scaled the model up from a small, plastic-moulded, 00-gauge model railway locomotive – which is an achievement in itself! Unfortunately, we do not have the space to include full constructional details of the model in these pages (indeed, we do not have full constructional details, but Bert Love has prepared the accompanying general description, specially for the MMQ, from notes and illustrations supplied to him by Dr. Catella. If this model is any indication, Dr. Catella must be regarded as one of the leading members of the international Meccano modelling fraternity.

very neat steam pipe casing running from the side of the boiler down into the cylinder chest. A pair of 2½" x 3" Triangular Flexible Plates are rolled into the required shape with great effect. A sandwich of 5½" x 2½" Flat Plates make the platform above the cylinder chest and three 2½" Stepped Curved Strips form 'packing' for the steam pipe.

Extensive use of Handrail Supports, Axle Rods, Rod Connectors, Threaded Couplings, Crank Handles and Flexible Coupling Units provide excellent detail work on the boiler fittings. A conical chimney is modelled from 3½" x 2½" Flexible Plates, topped by some Electrical Brass Strips and tapered at the base connection to the

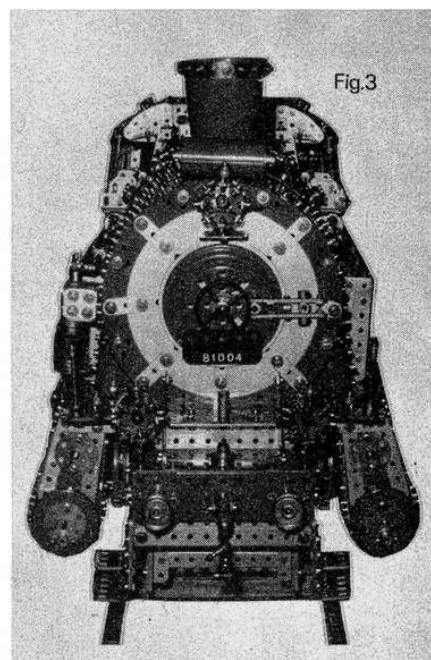


Fig. 3

A front view of the Locomotive showing details of the smokebox door and buffer beam. The Engine Number, incidentally, is produced in 'Dymo-tape' and stuck to a black electrical Insulating Flat Girder. The same Number also appears on the cab sides and bunker back.



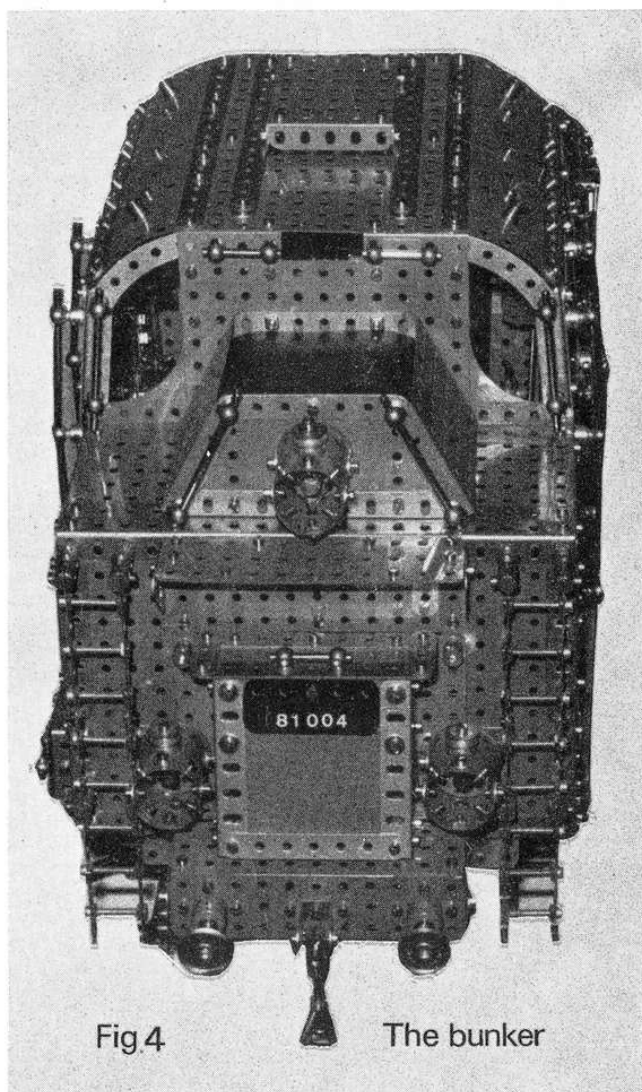


Fig 4

The bunker

boiler by pinching in the overlap of slotted holes in the Flexible Plates.

#### SMOKE BOX

Details of the Smoke Box are shown clearly in Fig. 3, where the  $7\frac{1}{2}$ " Circular Strip defines the boiler diameter. Main filling is by a 6" Circular Plate, but this is backed up from behind by eight  $2\frac{1}{2}$ " Semi-circular Plates overlayed at the front by  $1\frac{1}{2}$ " Strips. Additional centre thickness is provided by a 4" Circular Plate which can be clearly seen in Fig. 2 where the arrangements for hinging the Smoke Box door are also shown. A Threaded Pin is inserted from the rear of the Ball Thrust Race Flanged Disc forming the Smoke Box door, and this Pin is packed by a  $\frac{1}{2}$ " Pulley before securing a Steering Wheel to it. Pairs of  $2\frac{1}{2}$ " Narrow Strips, bolted together, form the upper and lower hinge straps and these are attached to the Flanged Disc via a Threaded Boss. A Threaded Coupling is mounted on the boiler front to form the hinged post and a short Rod, held in place by Collars, allows the hinge to swing on the end transverse bore of the Threaded Coupling. An extra Collar is inserted between the Narrow Strips as a spacer.

#### LAMPS

For the six lamps carried on the locomotive,  $2\frac{1}{2}$ " x  $1\frac{1}{2}$ " Flexible Plates are used, a pair at a time, to form the cylindrical lamp housing, the rear end of the housing being secured by two internal  $\frac{1}{2}$ " Angle Brackets to 8-hole

Wheel Discs. The upper front lamp is carried on a boiler (made from  $1\frac{1}{2}$ " Flat and Angle Girders) to which the lamp is fixed by a  $\frac{1}{2}$ " Bolt packed with Washers. Carried below each of the two lower lamps is a Rod Socket which is attached to a Threaded Pin above the buffer beam. Rear lamps are mounted on simple stand-off brackets.

In Dr. Catella's model each lamp housing carries a miniature Edison screw lamp holder and appropriate wiring. All lamp housings are finished off with two  $\frac{1}{2}$ " Pulleys bolted to the top centre hole.

#### BUFFERS & COAL BUNKER

Buffer beams front and rear are formed on  $5\frac{1}{2}$ " Angle Girders and, for U.K. builders, a  $5\frac{1}{2}$ " Strip may be used between the shorter flanges of the Angle Girders to give the three-hole depth. Buffer plates -  $1\frac{1}{2}$ " x  $1\frac{1}{2}$ " Flat Plates - reinforce each end of the buffer beam and carry Double Arm Cranks behind. Each buffer is made from a 1" fixed Pulley on a 2" Rod fitted with a Compression Spring and Washer and passing through a loose chimney Adapter and held in place by a Collar behind the boss of the Double Arm Crank. Fig. 4 shows the same construction at the rear.

Main frames, as in the prototype, run from front to rear and are made from  $24\frac{1}{2}$ " Angle Girders and rows of  $5\frac{1}{2}$ " x  $2\frac{1}{2}$ " Flat Plates on each side, extended where necessary by  $1\frac{1}{2}$ " x  $1\frac{1}{2}$ " Flat Plates at each side of the buffer beams. Footsteps are provided at the front and cab positions by short Flat Girders and Strips fitted with Angle Brackets. Each buffer beam has additional reinforcement in the centre, provided by Wheel Discs bolted in place, these carrying a  $1\frac{1}{2}$ " x  $\frac{1}{2}$ " Double Bracket to carry the train coupling.

The coal bunker, shown in Fig. 4, has a width of  $9\frac{1}{2}$ ", a pair of  $4\frac{1}{2}$ " Angle Girders spaced apart by one hole providing the top rear edge. Above this, a tapered coal chute is made from tilted  $3\frac{1}{2}$ " x  $2\frac{1}{2}$ " Flanged Plates bolted to  $5\frac{1}{2}$ " Girders at the base and to  $3\frac{1}{2}$ " Strips at the top, filling being achieved by two  $2\frac{1}{2}$ " x  $1\frac{1}{2}$ " Triangular Plates on a  $3\frac{1}{2}$ " x  $2\frac{1}{2}$ " Flexible Plate. The rear end of the model is fabricated from various Flat Plates, as shown, and twin ladders are fixed to Slotted Couplings on Threaded Pins that are attached to the platework. Narrow Strips,  $5\frac{1}{2}$ " long, are locked to form  $8\frac{1}{2}$ " ladders, rungs being provided by  $1\frac{1}{8}$ " Bolts, lock-nutted in place.

#### VALVE GEAR & GENERAL DETAIL

Looking generally at the model for those features not already mentioned, valve gear is provided as shown in Fig. 1 and 2, the quadrant reversing arm being connected by levers to the cab controls, small Flanged Wheels and general brassware provided a detailed array of cab fittings. The main piston guides are slung from a four-Strip hangar bolted to the saddle tanks and Slide Pieces, plus a Collar and a Pivot Bolt, provide the cross head. Operating brake shoes are hung below each wheel and are coupled by levers to a hand wheel screw mechanism in the cab. It should be noted, incidentally, that crank points on the wheels are not in the holes of the Wheel Discs, but are slightly off-set by Collars or Threaded Bosses set in between spokes.

Hinged doors are provided for the cab, and handrails are placed at strategic points all over the model. A water pump on the right-hand side of the boiler front is made from stacked loose  $1\frac{1}{2}$ " Pulleys, while suitable Axle Rod links, with Sleeve Pieces, provide boiler feed lines.

For demonstration purposes, the entire model is raised from the track and driven by a mains Motor. Running or stationary, however, the locomotive makes an extremely impressive display item.