

SUPER STEAM CAR

A model for the new Meccano Steam Engine

by Spanner

ONE OF the lesser-known new additions to the Meccano system is the Meccano Steam Engine—a genuine “live steam” unit heated by a methylated spirit burner. *Meccano Magazine* has never featured this unit editorially in the past and, to be quite honest, I have only recently begun to experiment with it myself. Already, however, I can claim it to be highly successful and with sufficient power to operate most models, provided a suitable reduction ratio gear is fitted. It must, of course, be treated with great respect because it is a real steam engine and, as such, gets far too hot to touch, but it is perfectly safe so long as the instructions are carefully followed and you make it a rule never to touch the body or boiler of the engine when in operation.

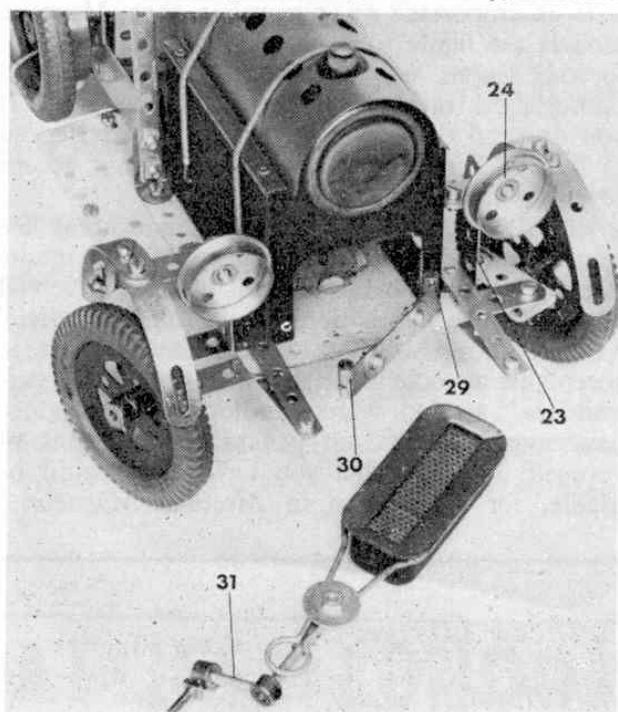
For our first steam-powered project in this new M.M., I have chosen a “freelance” model, roughly based on an old steam car—surely the ideal subject for the Meccano Steam Engine! It is, incidentally, a modified

version of a prototype model designed and built by Mr. Louis Hertz of Scarsdale, New York, U.S.A.

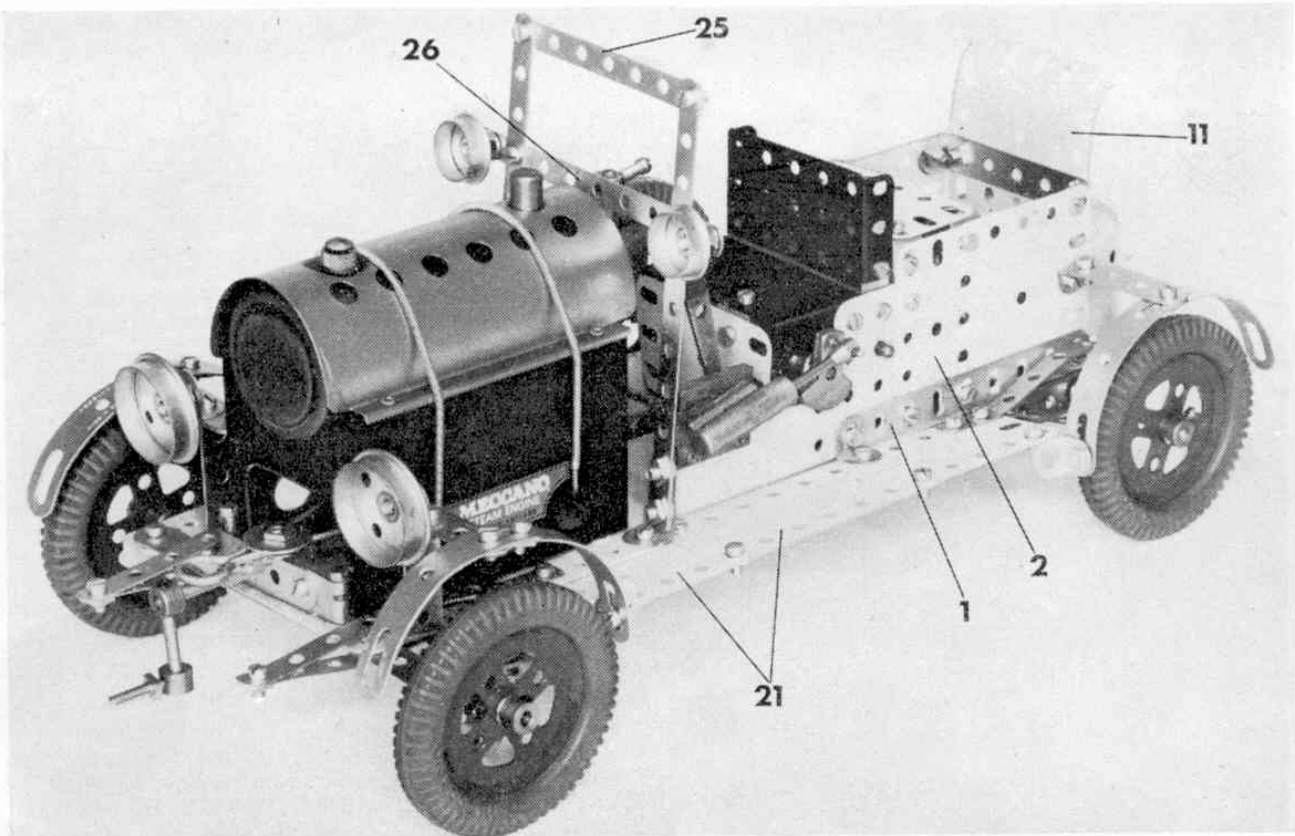
The beauty of the particular model illustrated lies in the fact that the major part of the chassis is provided by the baseplate of the Steam Engine, thus leaving comparatively few other essential sections to be added. In fact, although we included considerable embellishment to improve appearances, all that really needs to be added to give a working model are wheels and a reduction drive system—nothing to it! In our model, however, the Engine base is extended rearwards at each side by a $4\frac{1}{2}$ in. Angle Girder 1, a $2\frac{1}{2} \times 1\frac{1}{2}$ in. Flexible Plate 2 and a $2\frac{1}{2} \times 2\frac{1}{2}$ in. Flexible Plate 3. A 3 in. Angle Girder 4 is then bolted to the lower flange of Angle Girder 1, to provide bearings for a 3 in. Rod that carries a $1\frac{1}{2}$ in. Sprocket Wheel 5 and a $\frac{1}{2}$ in. Pinion 6. Sprocket Wheel 5 is connected by Chain to a $\frac{3}{4}$ in. Sprocket Wheel mounted on another 3 in. Rod 7, held by Collars in the Engine side plates. Also mounted on this Rod is a 57-teeth Gear that meshes with the $\frac{1}{2}$ in. Pinion on the Engine drive shaft.

Fixed between the Engine side plates are two $2\frac{1}{2} \times 1\frac{1}{2}$ in. Flanged Plates 8 and 9, the latter attached by Fishplates and the former with a $2\frac{1}{2} \times 1\frac{1}{2}$ in. Flexible Plate attached to it by Angle Brackets. Another $2\frac{1}{2} \times 1\frac{1}{2}$ in. Flanged Plate 10 is bolted between Flexible Plates 3 as also is a $2\frac{1}{2} \times \frac{1}{2}$ in. Double Angle Strip to which a shaped $2\frac{1}{2} \times 2\frac{1}{2}$ in. Flexible Plate 11 is fixed. A further two $2\frac{1}{2} \times 1\frac{1}{2}$ in. Double Angle Strips, to which a $2\frac{1}{2} \times 1\frac{1}{2}$ in. Flexible Plate is secured, are bolted between Plates 2. Flanged Plate 20 is extended rearwards by a Semi-circular Plate 12, attached by Fishplates, then the back is completed by a $5\frac{1}{2} \times 1\frac{1}{2}$ in. Flexible Plate 13. A rear lamp is provided by a $\frac{3}{4}$ in. Flanged Wheel 14, fixed to Plate 13 by an Obtuse Angle Bracket. A $\frac{1}{2}$ in. loose Pulley is carried inside the Wheel.

At this stage, the wheels and axles can be fitted. Held by Collars in Angle Girders 4, at the rear, is a $6\frac{1}{2}$ in. Rod carrying a 57-teeth Gear in mesh with Pinion 6. Two 2 in. Pulleys with Motor Tyres act as the rear road wheels. At the front, a $5\frac{1}{2}$ in. Strip 15 is bolted to the Engine baseplate. Lock-nutted to the ends of



A close up view of the front of the model with the methylated spirit burner removed.



this Strip are two Trunnions, between which another $5\frac{1}{2}$ in. Strip 16 is lock-nutted. Yet another $5\frac{1}{2}$ in. Strip 17 is lock-nutted to this Strip and to a Crank 18 fixed on the end of the steering column—a 4 in. Rod 19, held by a Collar in the boss of another Crank, bolted to the Engine baseplate. A $\frac{3}{4}$ in. Bolt in a Collar 20 acts as the "steering handle." Two 2 in. Pulleys with Motor Tyres again provide the front wheels, being held by Collars on Threaded Pins, fixed in the Trunnions.

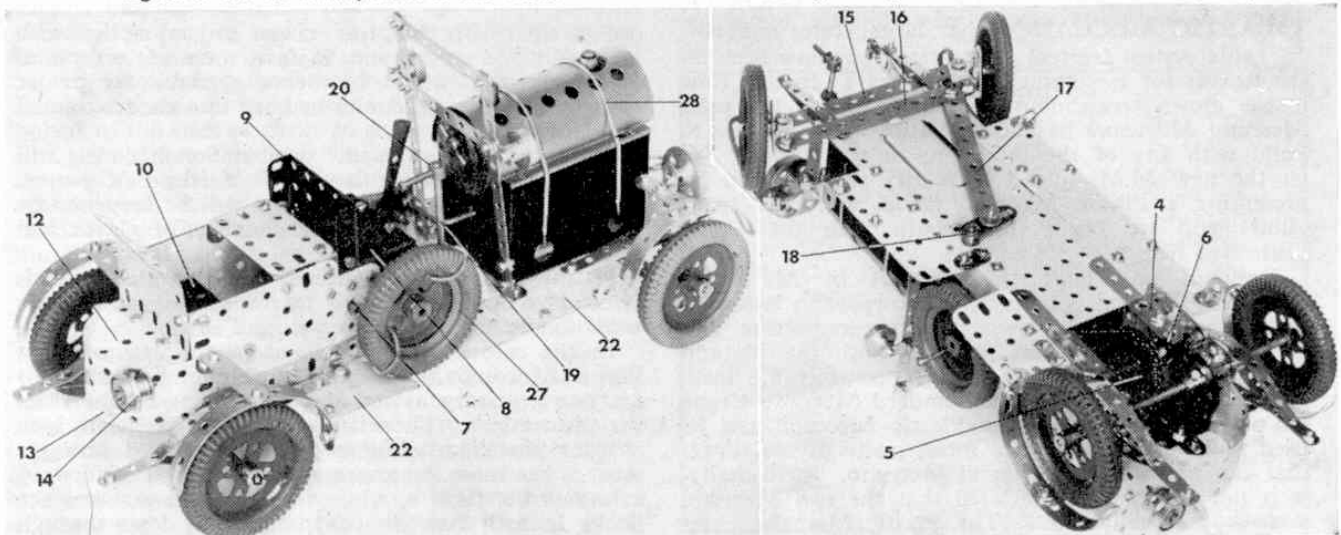
Running boards are built-up, on the nearside from two $5\frac{1}{2} \times 1\frac{1}{2}$ in. Flexible Plates 21, and on the off-side from three $2\frac{1}{2} \times 1\frac{1}{2}$ in. Flexible Plates 22. Note that,

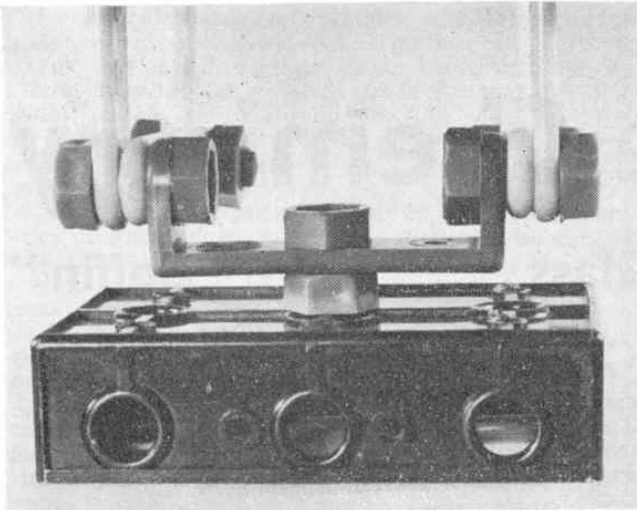
The flywheel, disguised as a spare wheel, and the engine reversing lever can be clearly seen in this view.

in the latter case, a gap is left beneath the flywheel of the Engine. Four mudguards are now each obtained from two Formed Slotted Strips and each is attached to the appropriate running board by a left-hand or a right-hand Corner Angle Bracket as the case may be. In addition, the rear mudguards are fixed to the body sides by 2 in. Strips and Angle Brackets, while the front mudguards are fixed to the Engine baseplate by 2 in. Strips and $1\frac{1}{2} \times \frac{1}{2}$ in. Double Angle Strips 23. Secured to each of the latter 2 in. Strips by an Angle Bracket is a $1\frac{1}{2}$ in. Flanged Wheel 24 representing a headlamp.

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An underneath view of the Steam Car showing the drive and steering arrangements. Note the basic simplicity.





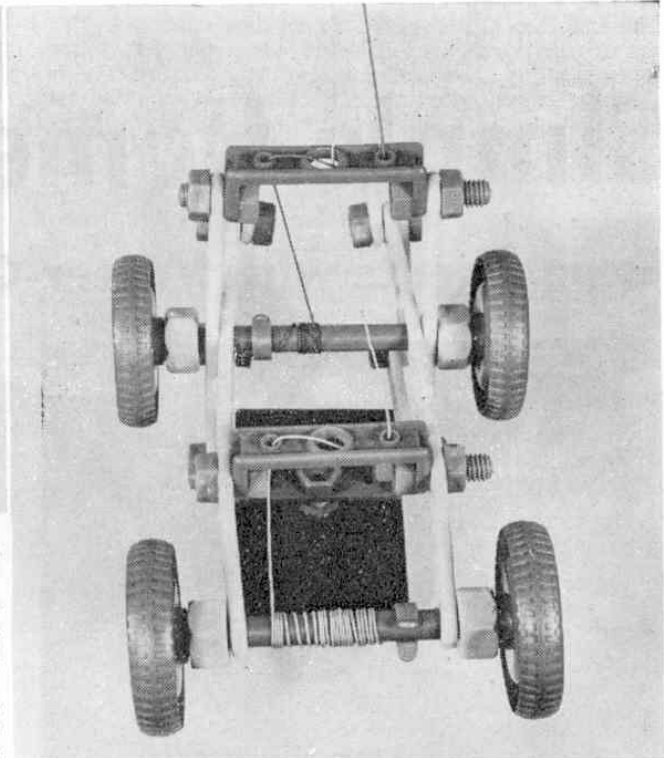
The completed Crane in heading photo opposite illustrates the simplicity of this Plastic Meccano, Set A, model.

Above: The connection between the Crane body and the base.

Right: A rear view of the Crane body showing the method of threading the operating cords through the Double Angle Strips.

the right-hand small hole in the face of the appropriate Double Angle Strip, is brought up through the centre large hole and down through the left-hand small hole to be finally attached to the axle.

This method provides sufficient friction to prevent the jib and load from slipping. Remember, incidentally, that the Bolts anchoring the arms of the jib to the superstructure must not prevent the jib from moving freely. On the subject of the superstructure, this is attached to the base by holding it loosely on a Bolt with a Nut, the Bolt then being screwed tightly into the centre hole of a Base.



PARTS REQUIRED

4—2-hole Strips	12—Nuts
2—3-hole Strips	3—Double Angle Strips
2—4-hole Strips	4—Road Wheels
2—5-hole Strips	1—Pulley Wheel
1—Base	2—Axle Clips
10—Bolts	1—Hook
2—1 in Bolts	2— $\frac{1}{2}$ in Axles

Super Steam Car

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Four sets of imitation springs are now constructed, those at the front from $4\frac{1}{2}$ in. Narrow Strips, and those at the rear from $5\frac{1}{2}$ in. Narrow Strips, all curved to shape as shown. The front springs are bolted to the Engine baseplate and the rear springs to the running boards. A further two $5\frac{1}{2}$ in. Narrow Strips, joined by a $3\frac{1}{2}$ in. Narrow Strip 25 and a $4\frac{1}{2}$ in. Narrow Strip 26, are attached to the baseplate by $1 \times \frac{1}{2}$ in. Angle Brackets to act as a windscreen. Small Flanged Wheels bolted to the ends of Strip 26 serve as sidelamps.

A 2 in. Motor Tyre 27 is fixed on the Engine flywheel by two short lengths of Spring Cord to represent a spare wheel, at the same time adding extra weight. A Hook for Spring Cord (Part No. 58b) is screwed into each end of each length of Spring Cord to enable the ends to be joined. Further Hooks are added to the ends of longer lengths of Spring Cord 28 which are then fixed over the Engine boiler, as shown, to represent bonnet straps.

Finally, a $\frac{3}{4}$ in. Bolt 29, carrying a right-angled Rod and Strip Connector, is held by Nuts in the front end of the baseplate. Bolted to this Strip Connector is a $1\frac{1}{2}$ in. Strip to the opposite end of which another right-angled Rod and Strip Connector 30 is fixed. This arrangement provides a trap to hold the meths. burner in place and is held closed by another $\frac{3}{4}$ in. Bolt which

can be loosely inserted through Strip Connector 30 and into the baseplate. Incidentally, the handle of the burner, itself, is extended by a $1\frac{1}{2}$ in. Rod, held in an Ordinary Rod and Strip Connector. A Collar with a 1 in. Screwed Rod 31 fixed in one tapped bore is mounted on the end of the Rod, then another Collar, with a Threaded Pin attached, is mounted on the end of Screwed Rod 31. The arrangement, besides increasing safety, also provides a good imitation of a crank handle.

Parts Required

3—2	2—27a	3—115
4—6	113—37a	2—126
2—9a	99—37b	5—142a
2—9c	2—38	2—154a
5—10	1—38d	2—154b
10—12	2—48	6—188
2—12b	3—48a	3—189
1—12c	3—51	3—190
1—14	1—58	1—212
1—15b	8—58b	1—214
2—16b	10—59	8—215
1—18a	2—62	2—235a
2—20	1—94	1—235b
4—20a	1—95a	3—135d
3—20b	1—96a	6—235f
2—23	4—111	1 Meccano
1—26	6—111c	Steam Engine