MUSIC MAKER

A most unusual model designed by ANDREAS KONKOLY and described by 'SPANNER'

Hungarian enthusiast, Andreas Konkoly of Budapest—no stranger to these pages—is perhaps best known for his many and varied Meccano Pattern-Drawing Machines. But Meccanographs by no means represent the limit of his designing abilities. Andreas, in fact, is a prolific inventor whose ingenious models have covered a whole range of different subjects from his well-known walking horse, through clocks, steam engines and road vehicles, to gearboxes and robots. Many of his designs have been highly original in concept with some of the most unusual subjects being successfully tackled. Featured here is just one such example of a most unusual subject—a Music-making machine! It's not a musical box in the generally understood sense; more a unique machine which, as Andreas himself explains, produces a short harmonic melody similar to those which often precede a message over an airport or railway station tannoy system, or even a radio broadcast.

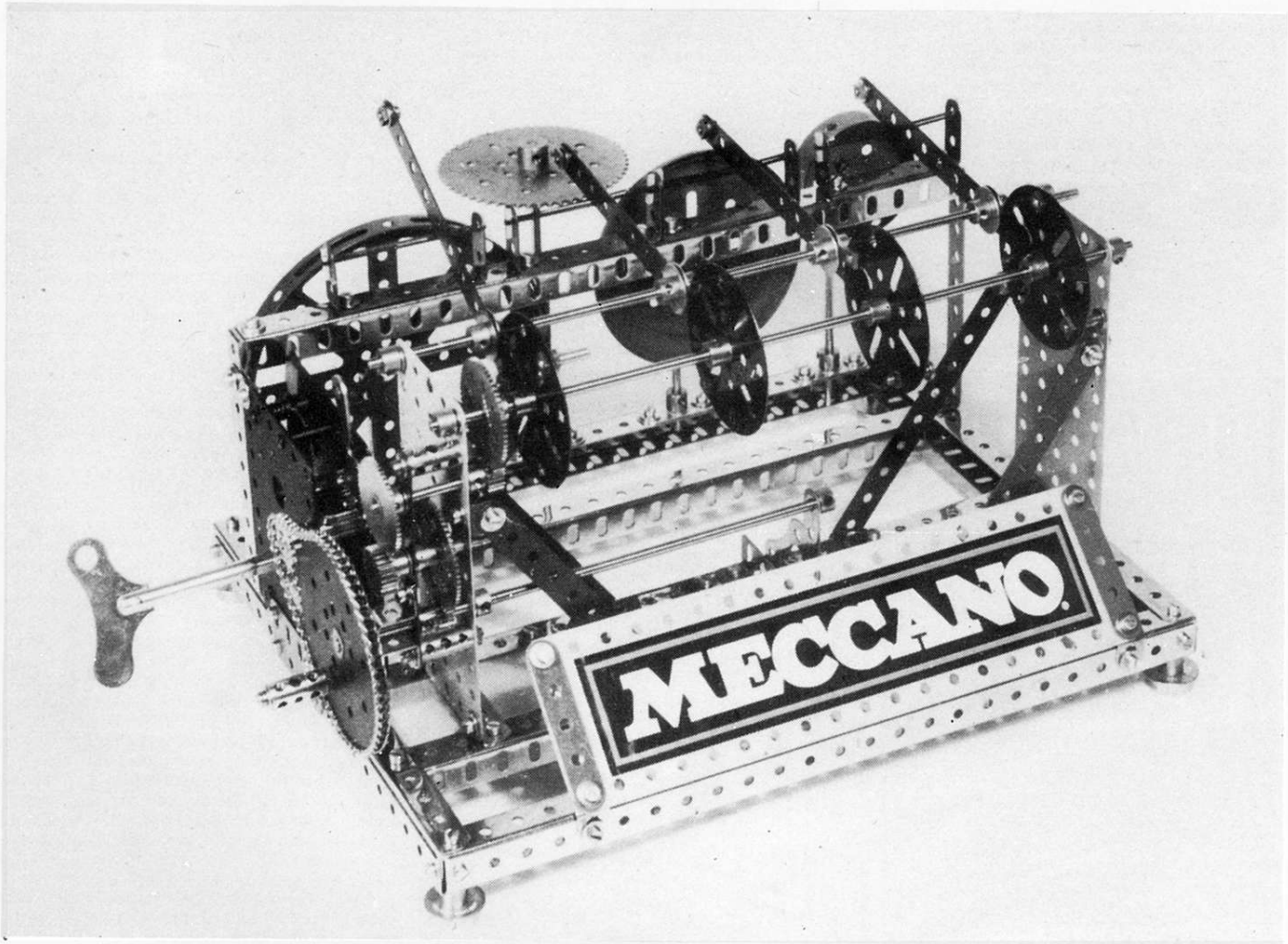
From past experience of being proved wrong, I hesitate to say that such a model has never before been made in Meccano, but I do say that I personally have never before come across such a model. It is certainly the first time we have ever featured anything like it in Meccano Magazine. The accompanying illustrations, incidentally, were supplied by Andreas; the following building instructions are re-written from Andreas's notes.

CONSTRUCTION

Beginning construction with the base, this consists of a 12½" x 9½" rectangular framework of U-section channel girders built up from 12½" and 9½" Angle Girders. Three more 12½" Angle Girders, spaced as shown, are bolted lengthwise inside the frame, at the same time fixing a 12½" x 2½" Strip Plate between the first and second of these girders. Four feet, one at each corner, are each provided by a ¾" Flanged Wheel attached to the frame by a ½" Bolt.

Now bolted to one of the long side members of the frame are four Double Arm Cranks which support the 'chimes' or resonant components. These are, in order, a Boiler End, a Ball Thrust Race Flanged Disc, a 3" Sprocket Wheel and a Hub Disc. The Boiler End is secured to a Coupling by a ½" Bolt, but is spaced from the Coupling by a Washer and two Nuts on the Bolt. The Coupling is fixed on the upper end of a 4½" Rod fixed in the boss of the first Double Arm Crank. Fixed in the second Double Arm Crank is a 3½" Rod, on the upper end of which a Coupling is also fixed. A ¾" Bolt fixed in this Coupling by a Nut carries the Flanged Disc locked away from the Coupling by another Nut. The 3" Sprocket Wheel is fixed on the upper end of a 5½" Rod fixed in the third Double Arm Crank, and, for purely ornamental purposes, a Coupling is fixed part way up this Rod. The Hub Disc is again fixed on a ¾" Bolt locked by a Nut in another Coupling mounted on the upper end of a 2½" Rod fixed in the fourth Double Arm Crank.

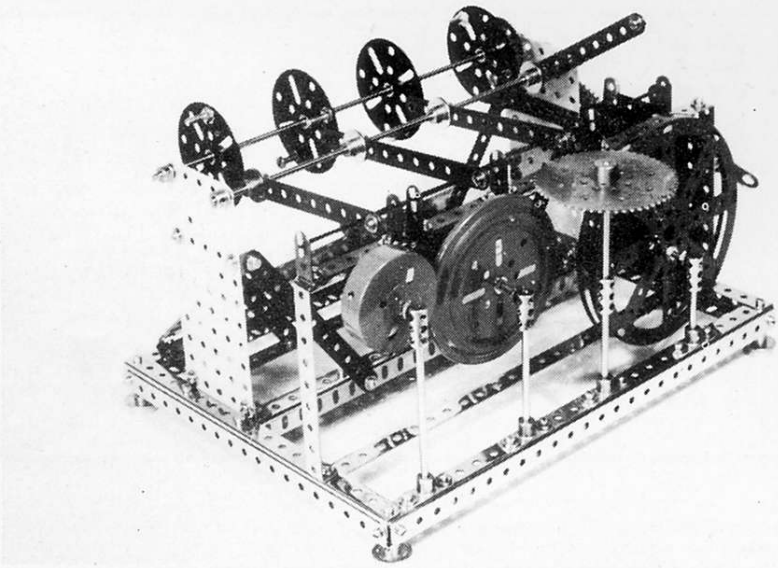
Next attached to the side members of the base frame are two 4½" x ½" Double Angle Strips, the upper flanges of which are connected by a 12½" Strip to which four 2½" x 1½" Double Angle Strips are bolted, each positioned in front of a chime. Stretched bet-

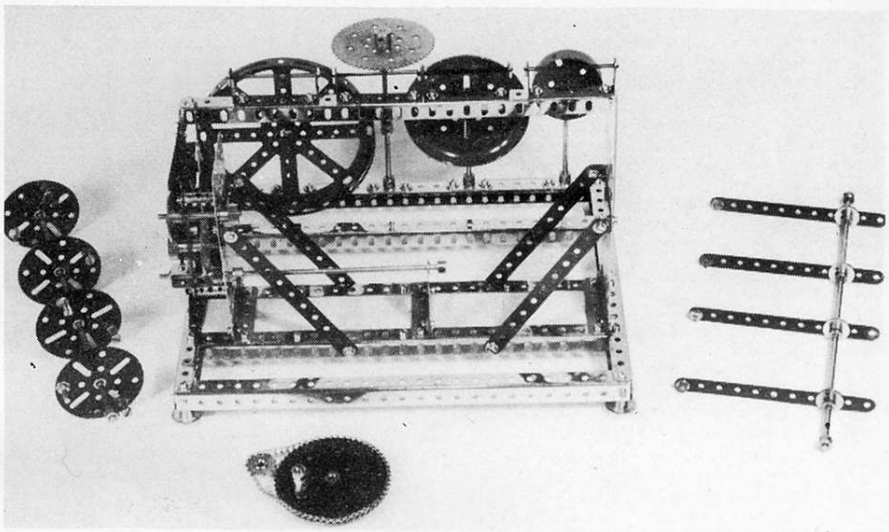


ween the lugs of each of these Double Angle Strips is a soft elastic band which can be held either by Meccano Bolts, or something similar. The builder used short lengths of matchstick, 12mm. long. The elastic bands will hold the striking hammers just clear of the chimes, but they must be sufficiently elastic to allow the hammers to strike the chimes when the hammers are activated. The four hammers themselves are each provided by a 5½" Strip, to one end of which two Washers are fixed by a Nut and Bolt. The hammers pivot freely on an 11½" Rod, each being positioned on the Rod between two ¾" Washers and Collars, the Rod passing through the third hole of the strips.

The Rod itself is held by Collars in the top inner corner holes of two 5½" x 3½" Flat Plates, the lower ends of which are bolted to 2½" Angle Girders one fixed through the fourth holes and one fixed through the second holes of two of the inner 12½" Angle Girders of the base frame. Each Flat Plate is braced by two diagonal 5½" Strips bolted between the Angle Girders and the lugs of a 2½" Double Angle Strip bolted through the fourth row of holes from the top of the Plate.

Held by Collars in the outer top corner holes of the Flat Plates is another 11½" Rod which carries the hammer activating wheels. Each of these is provided by a Face Plate, in one outer hole of which a Short Threaded Pin is fixed. Each Face Plate is positioned so that, as it revolves, the Threaded Pin makes contact with the inner end of the hammer, lifting the striking end clear of the elastic band to let it fall and strike the chime.





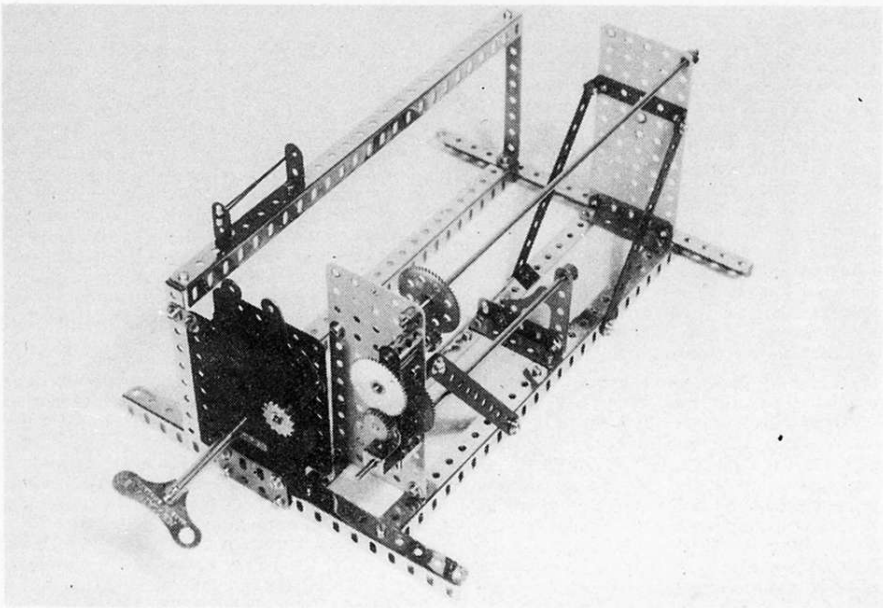
DRIVING MECHANISM

Mr Konkoly's original model is powered by a No. 1 Clockwork Motor, but, for the benefit of those not owning a Motor, Mr Konkoly incorporated provision for hand-operation. If a Clockwork Motor is to be fitted, it is attached to one side member of the base frame by a 2" Flat Girder and to the nearby 4½" x 2½" Double Angle Strip by a Fishplate attached to the upper corner of the outer side plate of the Motor.

Secured to the edge of the inner 5½" x 2½" Flat Plate, but spaced from it by Couplings on the shanks of the fixing 1⅛" Bolts, is a 3½" Strip, the lower securing Bolt also helping to fix a Double Bent Strip to the Strip. Journalled in this Double Bent Strip, as well as in the 3½" Strip, the Flat Plate and in a Corner Gusset bolted to a 2½" Angle Girder, bolted in turn to two of the base 12½" Angle Girders, is an 8" Rod carrying a ½" Pinion between the Flat Plate and the 3½" Strip and also carrying a 3" Sprocket Wheel on the outer end of the Rod. If the Motor is fitted, this Sprocket is connected by Chain to a ¾" Sprocket Wheel on the output shaft, but if the Motor is not fitted, then a winding handle is provided by a Coupling which revolves freely on a 1⅛" Bolt locked by Nuts in the face of the Sprocket Wheel.

In mesh with the 7/16" Pinion on the Rod is a 60-teeth Gear Wheel positioned above it on a 1½" Rod journalled in the Flat Plate and the 3½" Strip. A ¾ Pinion on the outer end of the Rod meshes with a 50-teeth Gear Wheel above it on the outer end of a 2" Rod journalled in the 3½" Strip and Flat Plate. The drive is completed by a ½" Pinion on the inner end of this Rod meshing with a 57-teeth Gear Wheel fixed on the 11½" Rod carrying the hammer activating Face Plates.

This, then, completes the model proper, but Mr. Konkoly always likes to identify his constructional medium to interested viewers. He therefore mounted a 'Meccano' label on a special label holder built from a 9½" x 2½" Strip Plate edged at the ends by 2½" Strips and attached to the front member of the base frame by Obtuse Angle Brackets. It adds a nice finishing touch!



PARTS REQUIRED

8 - 2	1 - 17	4 - 47	5 - 111a
1 - 3	1 - 18a	2 - 48a	3 - 111d
2 - 5	4 - 20b	2 - 48c	3 - 115
8 - 8	1 - 25	14 - 59	1 - 118
4 - 8a	1 - 26	4 - 62b	4 - 147b
3 - 9d	1 - 26c	7 - 63	1 - 162a
1 - 10	1 - 27	2 - 70	1 - 168a
2 - 12c	1 - 27a	2 - 95b	1 - 196
2 - 13	1 - 27d	1 - 96a	1 - 197
1 - 13a	99 - 37a	1 - 103g	4 - elastic bands
1 - 14a	82 - 37b	1 - 108	
1 - 15a	76 - 38	4 - 109	
1 - 16	8 - 38d	2 - 111	
1 - 16a	1 - 45	1 - No. 1 Clockwork Motor	