The

Meccano Bagatelle Table

A New Mechanical Game

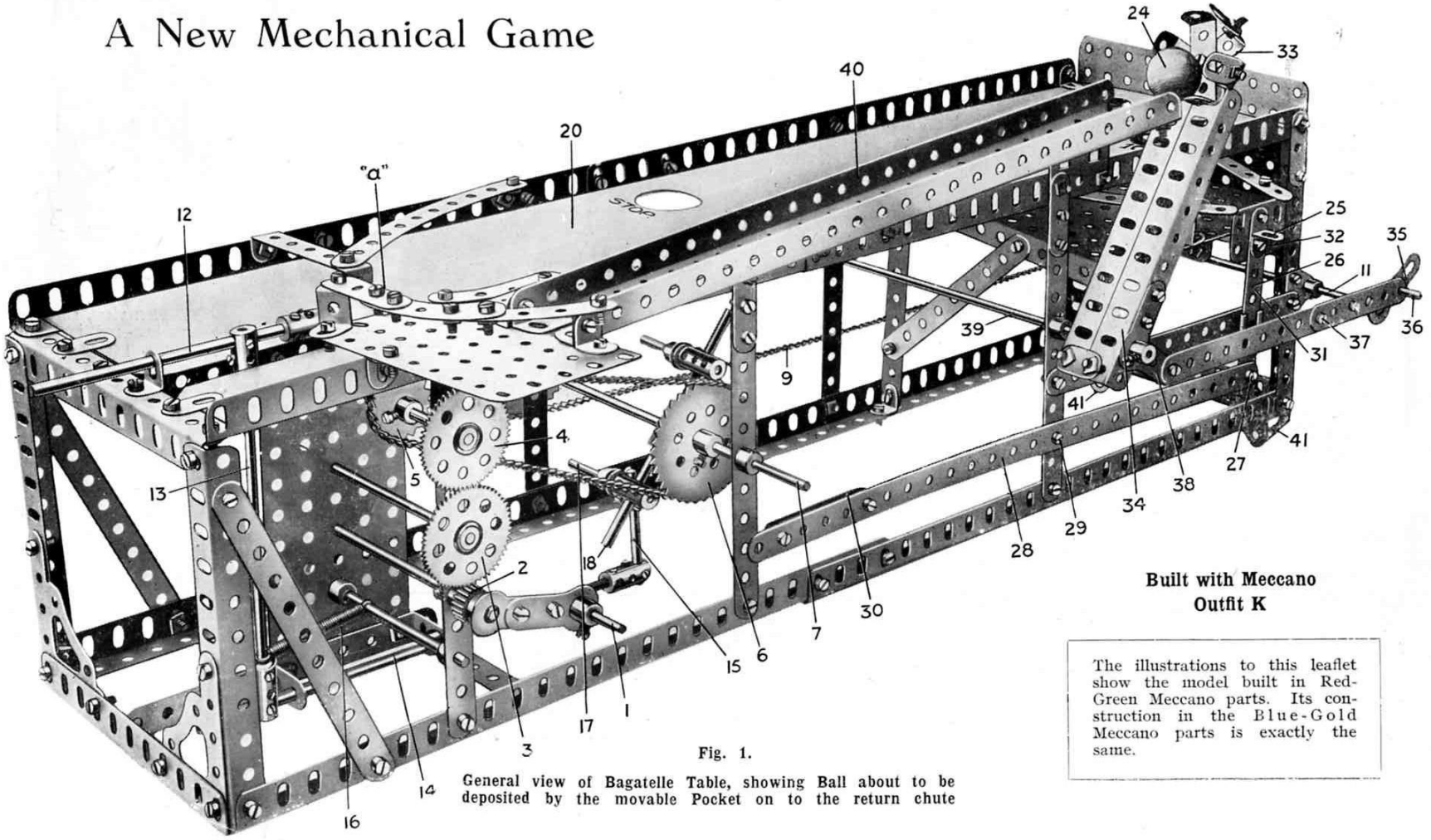

Fig. 1.

General view of Bagatelle Table, showing Ball about to be deposited by the movable Pocket on to the return chute

Built with Meccano Outfit K

The illustrations to this leaflet show the model built in Red-Green Meccano parts. Its construction in the Blue-Gold Meccano parts is exactly the same.

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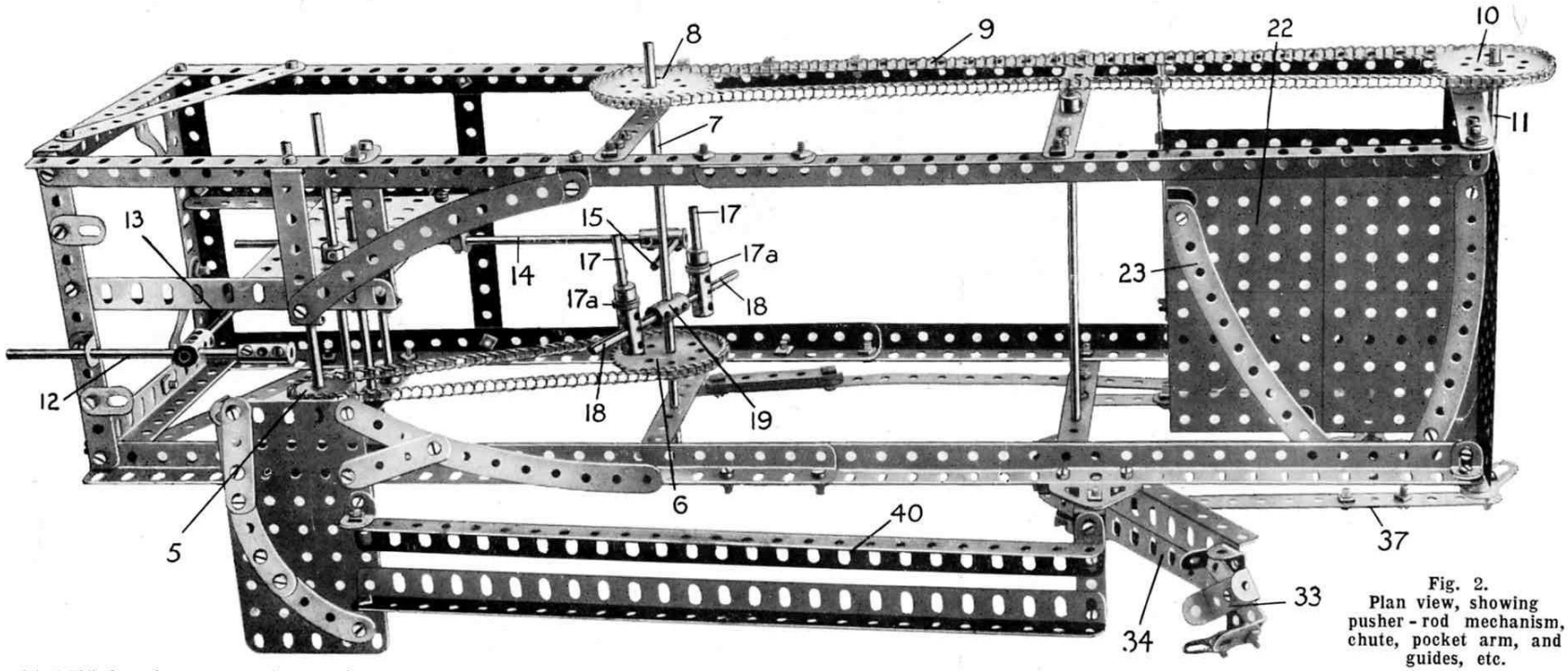

Fig. 2.
Plan view, showing pusher-rod mechanism, chute, pocket arm, and guides, etc.

BESIDES forming a very interesting model to build, the Bagatelle Table will afford much good fun when used as a game with which to amuse one's friends.

The operation of the model is entirely mechanical. A marble or ball of suitable size is placed on the table at the point marked " a " in Fig. 1. On rotating the operating handle the ball is struck sharply by means of a " pusher rod," and is sent down the table towards a set of holes cut in the table-top, which consists of a sheet of cardboard. The holes are slightly larger in size than the marble, or ball, and they are marked by various numbers. Should the ball drop into a hole bearing, say, the number 10, that number is the score of the player who operated the " shot."

When the ball falls through any of the holes, it drops on to an inclined plate and rolls towards a trap-door on the one side of the plate. By the operation of the handle, which is turned continuously, this trap-door opens and allows the ball to enter a carrier arm. The latter then rises about its pivot and sends the ball down the inclined chute 40, Fig. 1, and thus the ball is returned to the point " a," where it comes to rest in position for a second " shot " to be taken.

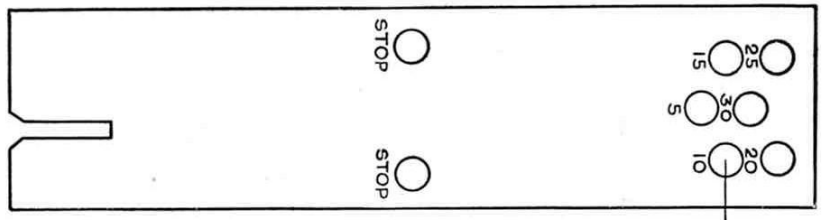

Fig. 3. Plan of Cardboard Table

Construction of the Frame.

The frame of the model is shown in Fig. 4. Its construction should be commenced by building the base, which is formed from Angle Girders, each long side of the frame being composed of two 12½" Angle Girders 45 overlapped four holes and bolted together. These are joined at the ends by the 5½" Angle Girders 50 and thus form an oblong base frame.

At the pusher-rod end two 5½" Angle Girders 48 are bolted at vertical right angles to the base frame and spanned at the top by the Angle Girder 56, while to the lower corners of the end so formed two Architraves are bolted in order to give stability. The rear end of the frame is formed from two more Angle Girders corresponding to the Girders 48 secured to the base, but in this case they are spanned by the Flat Plate 44. To complete the

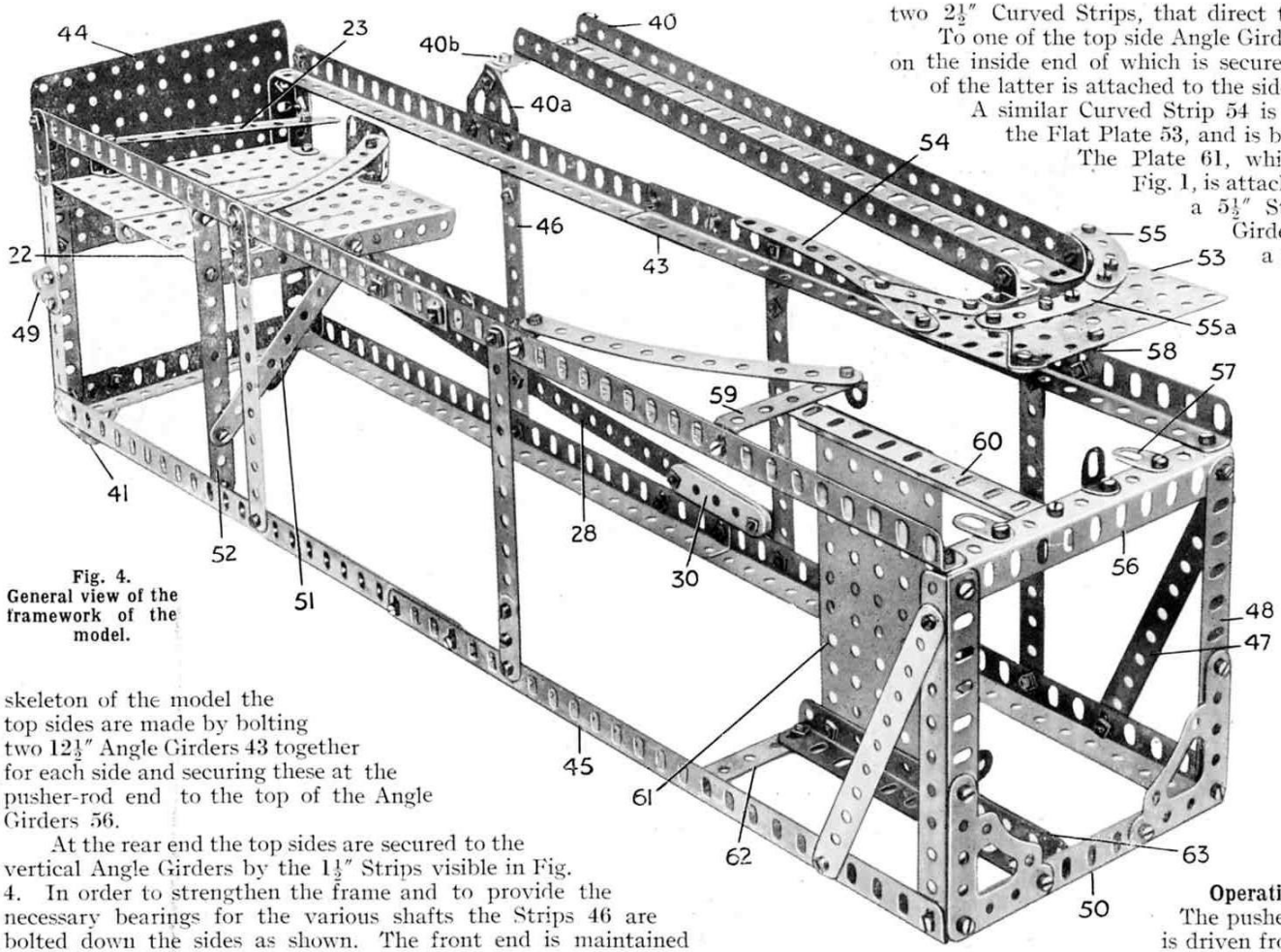

Fig. 4. General view of the framework of the model.

skeleton of the model the top sides are made by bolting two 12½" Angle Girders 43 together for each side and securing these at the pusher-rod end to the top of the Angle Girders 56.

At the rear end the top sides are secured to the vertical Angle Girders by the 1½" Strips visible in Fig. 4. In order to strengthen the frame and to provide the necessary bearings for the various shafts the Strips 46 are bolted down the sides as shown. The front end is maintained firmly at right-angles to the base by the 5½" Strips 47.

The Flat Brackets 57 secured to the Angle Girder 56 at the pusher-rod end are for the purpose of holding the cardboard "table" in position, the cardboard being placed beneath the Brackets and the Angle Girder. A glance at Fig. 1 will give a clear idea of this arrangement.

The chute 40 consists of two 12½" Angle Girders secured at one end to a 2" Strip 40b that, in turn, is attached to a Flat Trunnion 40a bolted to the side Girders 43. The other end of the chute is secured to a Flat Plate 53 bolted to the frame by means of Angle Brackets 58. To this Plate are bolted also two ½" Reversed Angle Brackets carrying the guide Strips, two 2½" Curved Strips, that direct the marble to the operating point "a."

To one of the top side Angle Girders 43 is bolted a Double Angle Strip 59, on the inside end of which is secured a 5½" Curved Strip. The other end of the latter is attached to the side Girder by means of an Angle Bracket. A similar Curved Strip 54 is bolted on the other side of the frame to the Flat Plate 53, and is braced in position by a 2" Strip.

The Plate 61, which supports the Axle Rods shown in Fig. 1, is attached to the frame in the following manner: a 5½" Strip 62 is placed across the two Angle Girders forming the sides of the base, and a 5½" Angle Girder 63 is secured between this Strip and the Girder 50 of the frame. Directly above the Girder 63 is placed a similar Girder 60, one of its ends being bolted to the end Girder 56 of the frame.

The inclined plate and guide for the marble at the rear end of the model should next be built. Two 5½" × 2½" Flanged Plates 22 are bolted together by means of their flanges and secured to the 5½" × 3½" Flat Plate 44. It is important to note that the Plates 22 are set on an incline, one end being secured one hole lower than the other, so that the marble will be given the necessary impetus to send it along the plate and into the pocket on the opening of the "trap."

Two 5½" Curved Strips 23 are bolted to the inclined Plates to act as guides, each Strip being supported on two Double Brackets. The position of these guide Strips should be quite clear from Fig. 2.

Operating Mechanism.

The pusher-rod 12, by means of which the marble is driven from the point "a," is carried from a 6½" vertical Rod 13, which is connected to an 8" Rod 14. At the front end of the latter is a 2" Rod 15 arranged vertically, and a Spring 16 tends to pull the pusher-rod forward to strike the marble. The pusher-rod is depressed against the Spring by the action of two 1" Rods 17 upon which are mounted ½" loose Pulleys 17a carried from two Couplings secured on two 2" Rods 18 which enter the central Coupling 19. The Axle Rod 7 passes completely through the Coupling 19.

As the Rods 17 rotate, the Pulleys 17a bear against the Rod 15 and depress the pusher-rod to the rear until released, when the Spring pulls the pusher-rod sharply forward to drive the marble from the point "a" along the table 20

towards the holes 21, Figs. 1 and 2. If the marble falls into any one of the holes 21 it drops on to the Plates 22, and the guides 23, Fig. 4, lead it to the end of the Plate, where it is retained by the stop plate 25, Figs. 1 and 6.

The stop plate consists of a 1½" Flat Girder bolted to a 3½" Strip 26. The latter is connected pivotally at 27 by means of a bolt and lock nuts (see Standard Mechanism No. 1A), to a 12½" Strip 28 that is pivoted at 29 and weighted at 30 with five or six 2½" Strips. The Strip 26 is free to move vertically and slides in an Eye Pierce bolted to the frame. The same bolt that secures the trap 25 also secures an Angle Bracket 32.

The Pocket and Arm.

The movable pocket, with its operating arm, is shown in Fig. 5. The pocket consists of three 1½" by ½" Double Angle Strips secured to an arm 34 consisting of two 5½" Angle Girders. The pocket is attached to the arm 34 by a 1" Triangular Plate, the two base holes of which are bolted to the end holes of the Girders 34, the pocket being secured to the apex hole. Three Washers should be placed on the ½" Bolt beneath the pocket to raise the latter clear of the bolts securing the Triangular Plates. At the lower ends the Girders 34 are secured together by a Flat Bracket 34a.

The arm 34 is rocked from the Rod 11, Fig. 1, by a Crank 35, a Threaded Pin 36 on which engages the end holes of a 5½" and a 3" Strip 37 overlapped three holes. The other end of the Strip is connected to a Boss Bell Crank 38 bolted to the arm 34 and secured to the Rod 39.

As the Axle Rod 11 rotates, the arm 34 is permitted to fall, and in so doing makes contact with the Angle Bracket 32 and depresses the stop plate 25, thereby permitting the marble to drop from the Plates 22 into the pocket 33. Further rotary movement of the Rod 11 again raises the arm 34 with the marble in the pocket, until the marble is deposited into the chute 40 and thus returned to the point "a."

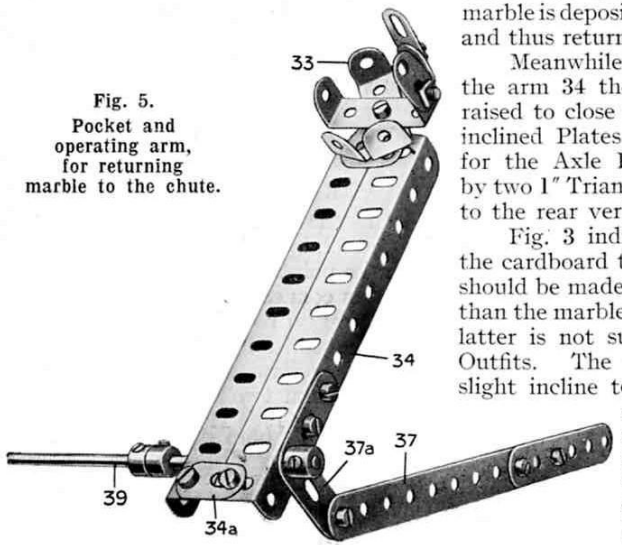

Fig. 5.
Pocket and operating arm, for returning marble to the chute.

Meanwhile, on the rising of the arm 34 the Plate 25 is again raised to close the outlet from the inclined Plates 22. The bearings for the Axle Rod 11 are formed by two 1" Triangular Plates secured to the rear vertical Angle Girders.

Fig. 3 indicates the shape of the cardboard table. The holes 21 should be made only slightly larger than the marble or ball used. The latter is not supplied in Meccano Outfits. The table is given a slight incline towards the pusher-rod end by forming feet with two Flat Trunnions 41 bolted to the lower 5½" Angle Girder.

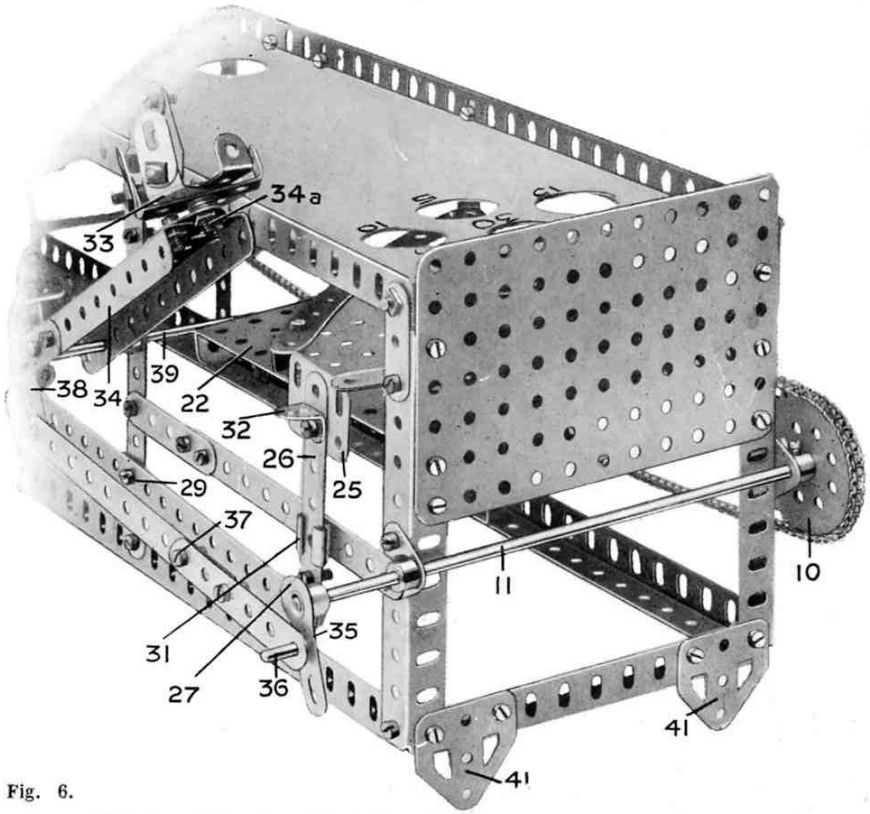

Fig. 6.
End view of the Bagatelle Table, showing stop plate mechanism, etc.

List of Parts required

1 of No.	1	1 of No.	12b	1 of No.	43	4 of No.	89
10	,,	2	4	,,	13a	1	,,	46	2	,,	90
2	,,	2a	2	,,	14	3	,,	48	3	,,	95
1	,,	3	1	,,	15	2	,,	48a	1	,,	96
1	,,	4	2	,,	15a	1	,,	50	1	,,	103h
6	,,	5	1	,,	16	2	,,	52	2	,,	108
21	,,	6	3	,,	17	1	,,	52a	1	,,	111a
6	,,	6a	2	,,	18a	1	,,	53a	1	,,	115
10	,,	8	1	,,	18b	9	,,	59	1	,,	125
11	,,	9	1	,,	26	3	,,	62	3	,,	126a
6	,,	10	2	,,	27a	7	,,	63	1	,,	128
5	,,	11	134	,,	37	1	,,	70	1 marble or small ball		
9	,,	12	6	,,	38	3	,,	77			