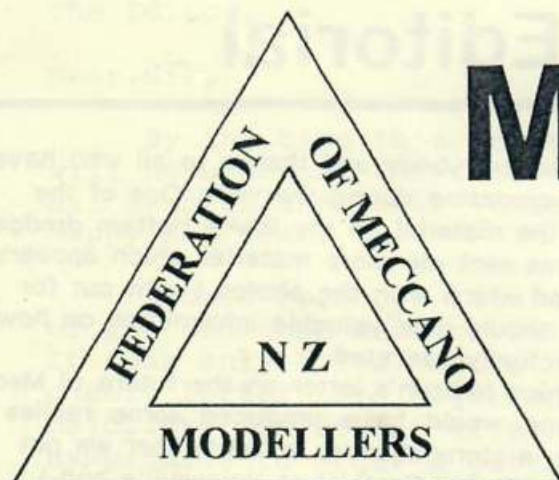
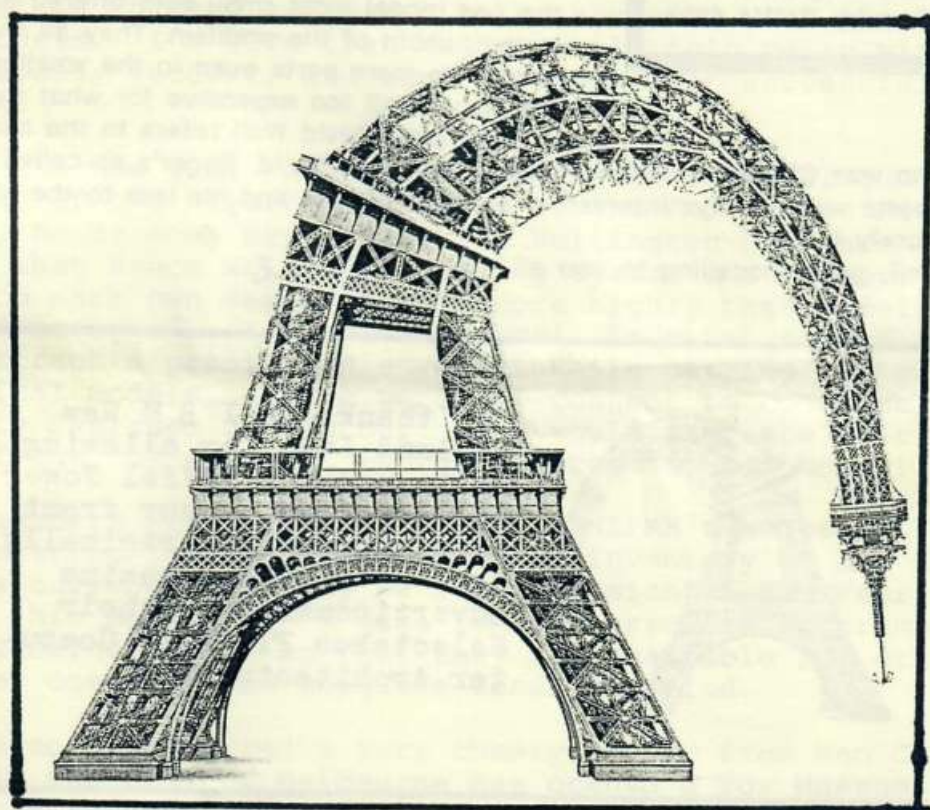




MAGAZINE

Vol 19 No 5 December 1995



THEY SHOULD HAVE BUILT IT IN MECCANO.

*The aims of this magazine are to unite Meccano clubs
and individual Meccano modellers; to generally
promote and encourage the enjoyment of Meccano*

NZ FEDERATION OF MECCANO MODELLERS

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Subscription:

\$18.00 covers six issues per year
posted within New Zealand.
Forward to: Max George,
3A St John's Terrace, TAWA 6203

Editorial

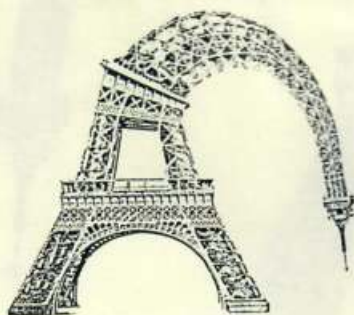
Merry Christmas everybody and thanks to all who have helped with the magazine during the year. One of the spots has been the material on the Blake Huffam dredge model. Blake has sent me more material which appears in this issue and which with the photos I sent out for club circulation should give valuable information on how these dredges actually operated.

I had hoped Bruce Neilson's letter on the future of Meccano in our last issue would have produced some replies by now, but so far, a stony silence. In September we put on a display at a Spring Festival at Helensville and I questioned the youngsters there about Meccano. Some said they had some Meccano but not one was actually using it. Most said they quickly lost interest after building the one model most small sets offered and here I think is the nubbin of the problem. They all thought there should be more parts even in the smallest sets and finally that it was all too expensive for what they got.

Elsewhere, David Wall refers to the sad demise of Roger Wallis who was Chairman of the Midlands Meccano Guild. Roger's so called 'waffles' in the Guild reports were always interesting and informative and his loss to the Meccano world will be sorely felt.

Well, good modelling to you all .

Bill



Our thanks to I B M New Zealand Ltd. for allowing us to use the Eiffel Tower illustration on our front page. This was originally part of an IBM magazine advertisement for their Selectabus Flexible Computer Architecture.

New Zealand Meccano Contact Persons

These are the persons to contact if you need information about the nearest Meccano Club, or Meccano generally.

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HAWKES BAY:	Trevor Adam, 22 Ferguson Street, Bay View. NAPIER	0-6-836 6827
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OTAGO:	Karen Murcott, 56 Aytoun Street, Shiel Hill, DUNEDIN	0-3-454 3457

The Editor,

Dear Sir,

By the time this letter is published the Festive Season will be upon us, therefore I will take the opportunity of wishing all members and their loved ones a joyous Christmas and a very Happy New Year.

I have recently been informed that Roger Wallis, Chairman of the Midlands Meccano Guild lost his life in tragic circumstances. It was only a few months ago that our Club received a very cheery letter from Roger congratulating us on attaining our majority. On behalf of all members I extend the Federation's sympathies to Roger's partner Betteena, other members of his family and his many Meccano friends.

I have also been advised that Brian Rowe has developed a potentially life threatening illness. I met Brian 12 months ago whilst in England and was highly impressed with the quality of his models. I'm sure that members will join me in wishing Brian a speedy recovery and many more years of successful Meccano modelling.

I would now like to express my opinion on model judging. At page 20 of the August 1995 issue of the Federation Magazine (vol. 19, no.3) some members of the Wellington Club seemed to consider that Bruce Neilson's judging system and I quote "Also, it appears to mark own design models more highly than models from published designs". I should hope so! Original models should always attract a premium in any worthwhile marking system over non-original models. If we were all content to construct previously designed models our hobby would stagnate. Originality is one of the key elements in the progress of our hobby.

As members will be aware I am the NZFMM's honorary librarian. Time permitting I intend to prepare an inventory of all the magazines currently held by me for inclusion in the February issue of this magazine. I also remind borrowers to promptly return magazines to me so that they are available for others. I consider one month an adequate lending period.

I recently received a very cheery letter from Ken Gordon. Apparently the City of Melbourne has opened a Toy Museum where Ken and his friends mounted a ten day exhibition of Meccano models which proved very popular. He is also busy fulfilling a large parts order for a chap in PNG. I hope to see Ken towards the end of next year.

On the 11th of November our Club held its first Saturday afternoon meeting, nine members and four wives attended. It was unanimously decided to continue meeting at this time. Judging by the number and quality of the models that were assembled this was the right decision. Accordingly our next meeting will also be held on a Saturday (details elsewhere).

Kindest regards to you all

David

David

AGRICULTURAL TRACTOR

Model and text by Robin Rye.

This is a small model of a large agricultural pivot steer four wheel drive tractor. It is not motorised but alot of detail is packed into a small area. A feature of the detailing is that no Meccano brassware has been used - relying instead on tinware, plastic spacers, washers and bolts to achieve the desired effect. In making the model, tolerance's are often very tight making full use of the "play" found in a hole by a bolt and careful adjustment of components by locknuts on threaded rods or bolts.

The model is based on tractors made by (present and past) manufacturers such as International Harvester, Versatile, Big Bud, Baldwin, Massey Ferguson, Case, White, John Deere, Phillips, Steiger and others.

Scale is in the region of 1:36 - the model being 7 inches long, 4 inches high and 3½ inches wide. Within the basic frame of the model most components are present. The engine, clutch, drive shaft, gearbox and drive shafts to the differentials are there including 2 drive shafts through the central pivot. A full cab is modelled with steps up to it. Seat, dashboard, console, 1 gear lever and 2 pedals are provided. About the front is the diesel tank, exhaust muffler and pipe, air intake, filter and ducting to the engine and cab. To the rear, hydraulic components, drawbar, and power take off shaft are present. Also a moveable three point hitch is modelled.

This latter system allows implements to be mounted on the tractor to be carried and / or pulled wherea's the drawbar is used purely for pulling. The power take off is a system whereby certain implements can be powered from the tractor engine. The hydraulic system provides implement control via oil pressure in cylinders or motors. 12 or 24 volts D.C. would also be provided as a further implement control method.

The wheels on the model represent either duals or very wide singles. Specifically they are the Meccano hard plastic wheels part 331. Zinc is the dominant colour of the 426 parts used with a few yellow pieces and black plastic spacers. No non - Meccano is used.

Thanks to Daryl Anderson the Photographer.

REQUIRED PARTS

5	-2	18a	-1	74	-1	111c	-10
6a	-7	18b	-1	77	-5	111d	-5
9e	-2	23bp	-3	80a	-2	147d	-2
9f	-2	37b	-72	80c	-1	176	-1
9l	-1	37c	-144	102	-1	212	-2
10	-22	38	-45	103g	-2	235c	-5
11	-6	38a	-14	103h	-4	235g	-8
12	-22	38d	-4	103l	-1	321	-1
12b	-6	48	-3	111	-3	331	-4
12c	-1	48e	-4	111a	-6		

BUILDING INSTRUCTIONS

The photographs show how the various sub-assemblies are made but assembly method and critical tolerance's are not so obvious.

Photo's 1, 2, 9 and 13 show the completed model which often show another partial view of the various modules to refer to.

Photo's 3 and 4 deal with the front half. Start with the bonnet and grille. The grille is 2 1/2" double angle strips (48). 3 fishplates (10) are used to join each side of the grill and bonnet together. The front posts of the cab are spaced from the bonnet by 4 washers. The right 1/2" securing bolt firstly takes 1 angle bracket (12) for the air filter, a 1 1/2" strip (6a) for the cab side, the cab post, then another angle bracket for the mud-guard. The left side uses a 3/8" bolt. The roof has 1 1/2" strips under the 1 1/2" flat girders. Angle brackets with slots down bolt the roof to the cab posts. The main chassis members are 2" flat girders. 2" narrow strips extend forward to the base of the grille. Bolt these strips in but later remove the bolts for the front axle. The 1" double angle strip (48e) is spaced from the flat girders by 1 washer each side. 4 more washers space the left rear cab post, a fishplate and part of the steps (1" angle girder 91). The right side bolt takes a fishplate, 1" flat girder (1031) (diesel tank) and 3 washers to the chassis girder. The fishplates add substance to the rear cab posts. A 3/8" bolt passes through the diesel tank to later locknut into the pivot assembly.

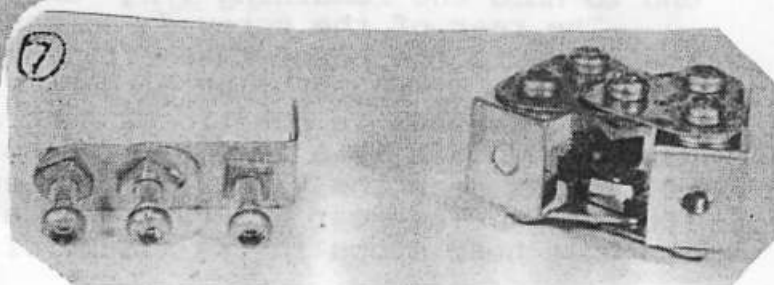
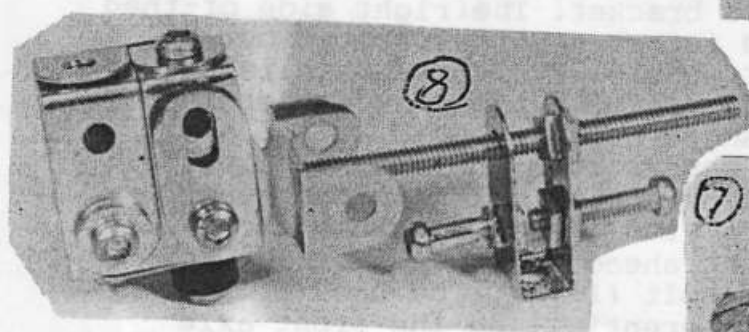
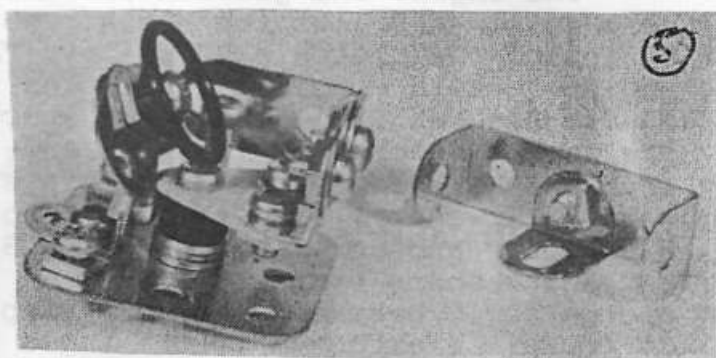
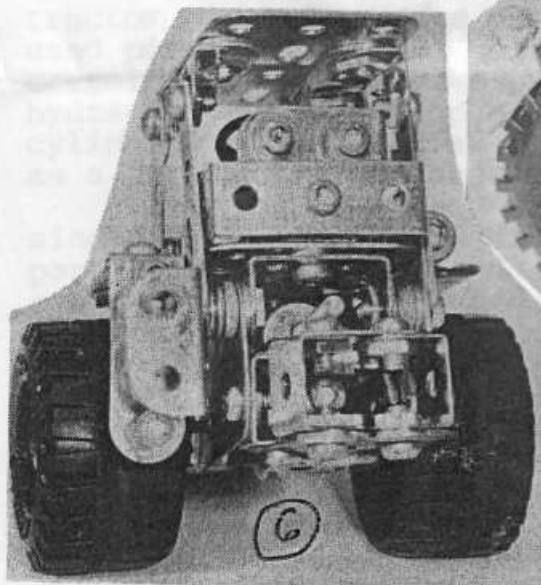
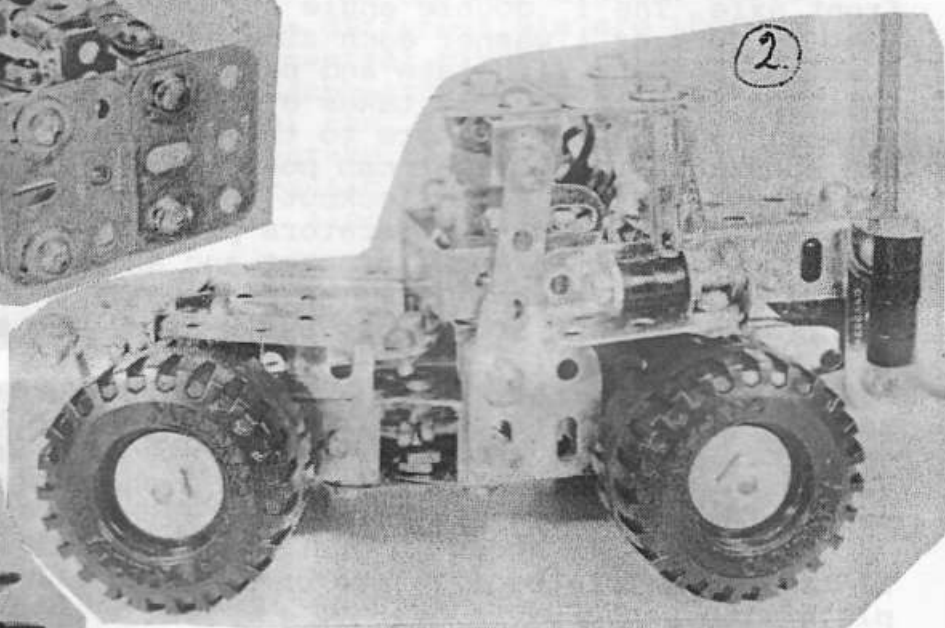
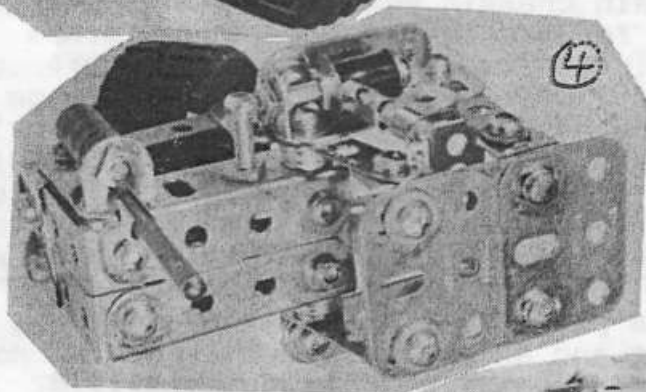
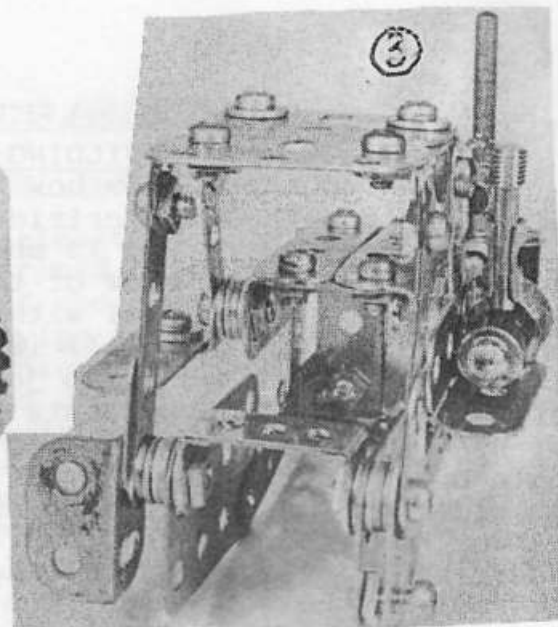
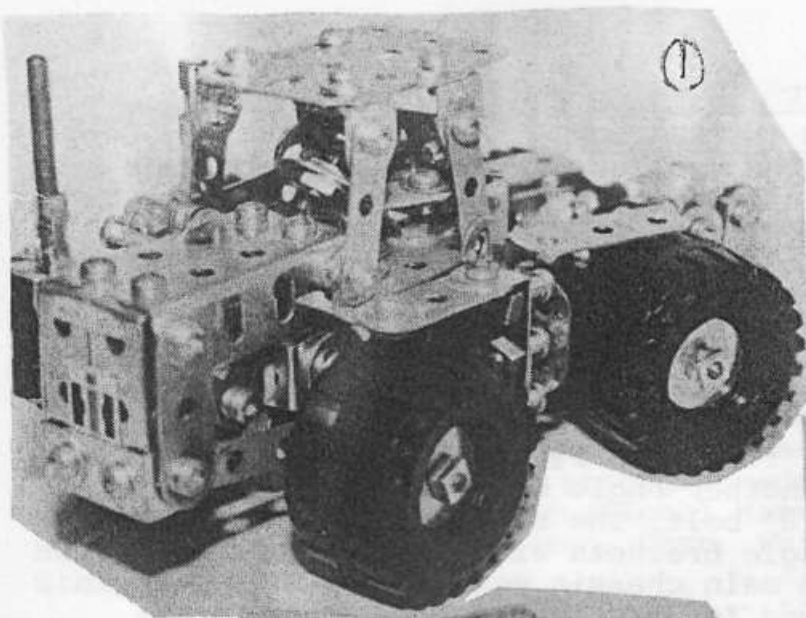
Photo' 5 shows the operators platform. The steering/dashboard support is an angle bracket and an obtuse bracket (12c). Steering wheel is part 321. The dashboard is 2 irridescent 1978 fishplates. Pedals are a bolt and 2 nuts. The seat is held by a 14.7mm pivot bolt (147d) with a plastic spacer (38a) and 3 washers. The rear of the cab is a 1 1/2" double angle strip with an angle bracket in its central hole which rests on top of the operators platform which in turn is spaced 1 washer above the 1" double angle strip as photo's 6 and 2 show. Just the 1 bolt mounts the operators platform.

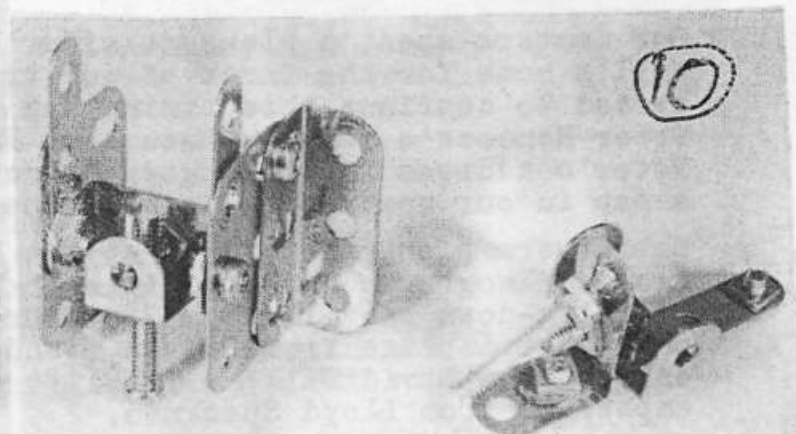
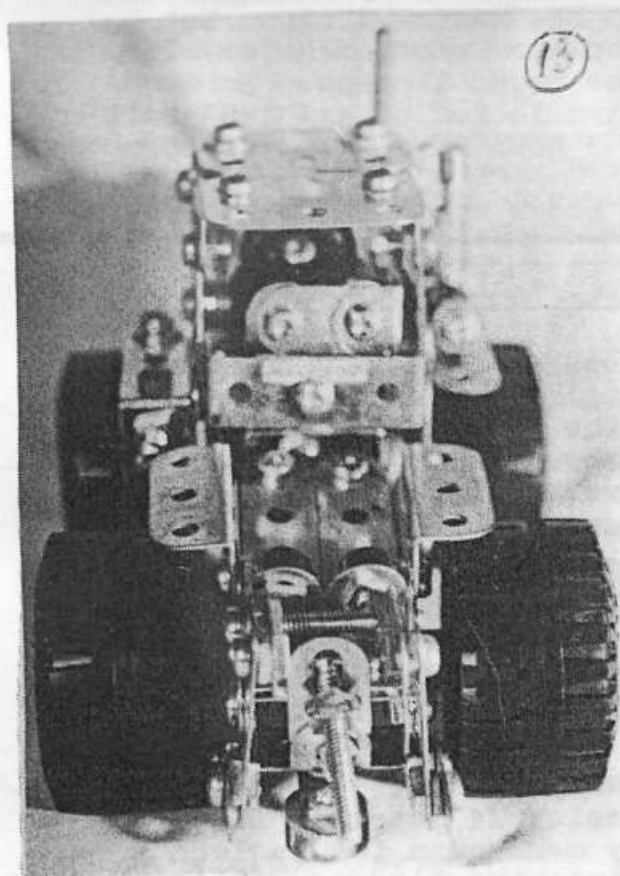
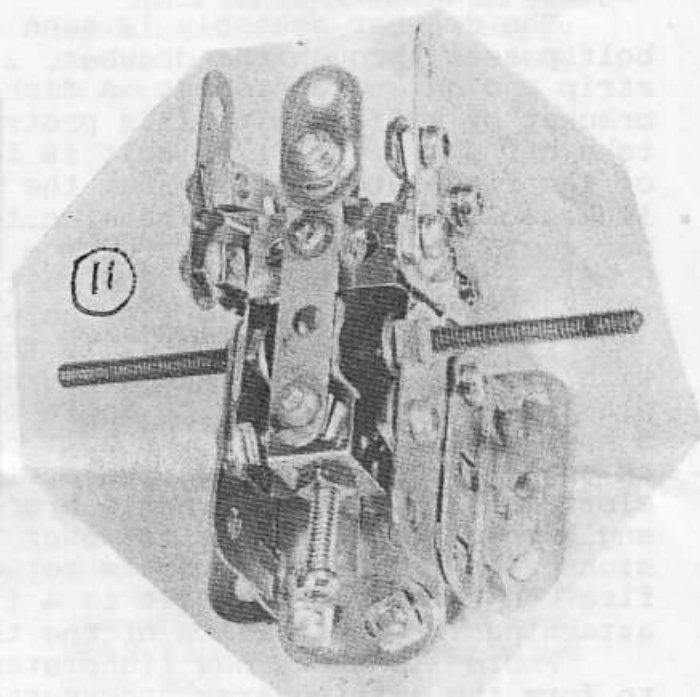
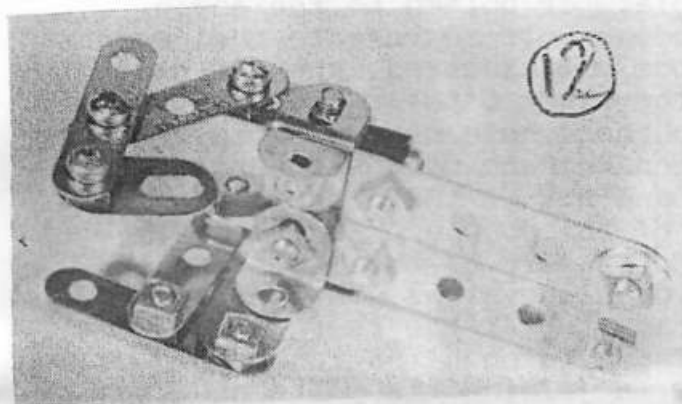
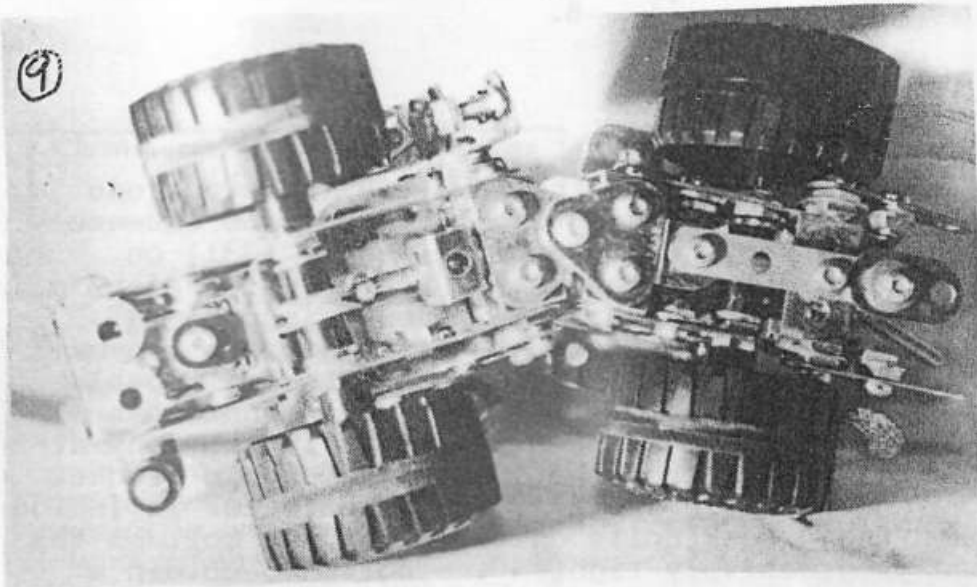
The pivot is shown in photo' 7. 4 double brackets (11) and 4 1" triangular plates (77) are used. Space one only triangular plate with washers.

The engine and gearbox are the subject of photo' 8. A 3" screwed rod (80c) is the basis. The mount is a 1" double angle strip and the clutch a 1/2" pulley. The engine consists of 4 1"x1/2" angle brackets (12b), 5 fishplates, 1 angle bracket (12), 1 double bracket (11), a plastic spacer, 2 3/8" bolts and 7 washers. The double bracket, 1/2" pulley, and 1" double angle strip are secured to the screwed rod. The left side view shows a vertical spaced (1 washer) fishplate as an oil filter. The mounting bolt also holds another fishplate to a 3/8" bolt at front. The bolt takes 2 washers (injector pump), a 1"x1/2" angle bracket, fishplate and an angle bracket. Another fishplate with a plastic spacer on it (sump) is attached to the angle bracket. The right side of the engine has a horizontal fishplate (starter motor) spaced out 2 washers and held with a 3/8" bolt (photo' 2). Above this is a black fishplate (exhaust manifold) spaced out with 1 washer each end to hold the remaining 1"x1/2" angle bracket.

The rear of the screwed rod passes over the central pivot as the drive to the power take off. The engine bolts to the upper front slots of the 2" flat girders with a spacer washer each side. The gearbox is positioned just ahead of the pivot. The forward driveshaft is a 14.7mm pivot bolt (147d). The head of this bolt rests near the 1/2" pulley (differential) on the front axle (photo' 9). The rear driveshaft is a 3/4" bolt adjusted so that the bolt head stops in the middle of the pivot as half a univer-

(continued on page 8)





sal joint (photo' 2).

Both front and rear axles are the same. $3\frac{1}{2}$ " screwed rods (80a) are locknuted in their respective locations and squeeze inwards to leave enough room to locknut the wheels (331) on (photo's 1 and 2). Each axle has a central $\frac{1}{2}$ " pulley, 2 plastic spacers, 2 washers and 2 nuts within the chassis (photo' 9).

Photo' 10 shows the rear chassis. $1\frac{1}{2}$ " flat girders are extended 1 hole by $1\frac{1}{2}$ " narrow strips and joined with a 1" double angle strip. The rear driveshaft is a $1\frac{1}{8}$ " bolt mounted in a double bracket. Position the bolt so its head is in the central pivot to meet the driveshaft from the front. The double bracket is mounted on the double angle strip so that the latter is inside the former. Loosen the 4 rear bolts on the pivot and bolt on the rear chassis then progressively tighten the bolts to obtain a 'square' assembly.

The drawbar assembly is seen in photo's 10 and 11. A $\frac{3}{8}$ " bolt passes through the drawbar, 2 washers, a 1" double angle strip and an angle bracket. A fishplate is bolted to the angle bracket by a $\frac{3}{8}$ " bolt. This protruding bolt represents the power take off shaft. A $1\frac{1}{8}$ " bolt is loosely locknuted into the slot of the fishplate to represent the top link of the three point linkage. The fishplate extension to the 4 hole narrow strip drawbar would look much better with a non-Meccano narrow fishplate. A 5 hole strip is too long. The bolt and nut on the front end of the drawbar rests in the free hole of the double bracket.

The module in photo' 12 is the top part of the rear chassis with the three point linkage and hydraulic valves. The latter are plastic spacers mounted on angle brackets. At the rear of the 2 5 hole strips, each side, a bolt passes through the round hole of an angle bracket, through the strip, a joining fishplate and then slotted hole of another angle bracket. Assemble this module with angle brackets (round holes) over the narrow strip chassis extensions with the drawbar module between the narrow strips. But first on each securing bolt is a fishplate (slotted holes) for attaching the lower links of the three point linkage.

Photo' 13 shows how fishplates are locked on a $1\frac{1}{8}$ " bolt to form the lifting arms. Locknuted 3 hole narrow strips form the drop arms and lower links.

The rear mudguards act as pivot stops against the cab posts.

AUCKLAND MECCANO CLUB

Our members spent a pleasant afternoon at David and Elizabeth Wall's home for the first of our trial Saturday meetings. We agreed to continue this timing and the next meeting will be at Peter Hancock's home on Saturday, February 10, 1996, from 2 pm. Peter's address is 1 Orangewood Grove, Howick. We will print a map in our next issue to show the way to it.

There were plenty of models at the November meeting including two meccanographs and a plotting machine from Bill Watt; a log breaking-down sawmill from Bob McCracken; a fairground carousel and a Set 6 plane from George Ovenden; a very attractive beam engine from David Wall; a forklift truck, a farm tractor and an amphibian from Lloyd Spackman.

The only sound from David's engine was a gentle 'chuff' from the gear train, in contrast to the noisy M4 motor in Lloyd's forklift. Bob's sawmill had a nifty mechanism (-a pawl on a $1\frac{1}{2}$ " gear) to move the log carriage into the blade. Bill's plotting machine was unique. It could be used to plot courses for boats sailing in our harbours. George's carousel used small soft toys as the 'riders'.

**Christchurch Meccano Club Meeting
October 1995
Reported by John Ince**

There were sixteen members present with three juniors. We welcomed a new member, **Lawrence Livingstone** and his son **Alan**. They attended the Easter Exhibition but had not managed to get to a meeting until now. **Ian Torrens** demonstrated a nice version of the 1928 Super Model No 22 Traction Engine. This moved along smoothly under power but he did not have a trailer to ride on - as in the early 30's literature. He also brought his epicyclic reduction gear and was able to compare it with **John Ince's** version which is built *in line* and with two stages gives an overall ratio of 1:3249. A graduated dial with pointer allowed keen people to test whether the ratio was correct. John also brought a 1:10,556,001 reduction box constructed from four sets of worm x 57 tooth gears. A motor provided a drive of about 1150 rpm which meant that no 2

shaft does 20 rpm; no 3 shaft does 21 rp hour; no 4 shaft does 9 rp day and no 5 shaft does 1 rp week (approximately and only if one leaves the motor going!). Needless to say there was hardly any discernible movement of the pointer during the evening. Thank goodness these devices will not run in reverse!

Grant Wells brought his plate and strip roller which has now reached a stage nearer completion. He also had an orbiter planetarium of the earth designed to show the seasons. A spot light acted as the sun. **Graeme O'Neil** had a number of books and told people about the jumbo kits which MW Models are offering currently at reduced prices. **Kingsley Burrell** offered some Meccano Magazines for sale.

Stefan and **Anjuli Burrell** had nice models, an off-road buggy and a racing car respectively, and enjoyed sending these round the floor to entertain Alan.

**Christchurch Meccano Club Meeting
November 1995
Reported by Ian Torrens**

This was a good meeting with 21 present including some visitors who may become members. Especially pleasing these new people were accompanied by three juniors from five to ten years of age. During the meeting there was some discussion about NZ Railways and also mention was made of the December meeting which will be a bit different from usual. Although only five models were displayed they were most interesting.

John Hamlyn once again came with his now almost completed road sweeper. This is an extremely good model and with John's usual high standard has a profusion of gearing. It also has an interesting suction tube arrangement which on the original is used to clean out roadside drains etc.

Grant Wells had two 230v electric motors and a 20v transformer (non-Meccano) to sell and a 1953 No 1 clockwork motor. All were well worth a look at. Grant's friend **Paul**

Bellet showed a light actuated curtain switch. Power from a light sensor went to a control box and winding motor so that the device would adjust the curtain depending on the amount of light. Quite a nice bit of equipment which used some Meccano parts.

Graeme O'Neil brought along a Plastic Meccano set No 1645 from which he had built a good example of the prime mover section of an American truck. The plastic Meccano is very colourful and some interesting models can be constructed from it.

Ian Torrens arrived with a Meccano jet plane, and F14B made from the Meccano France 1993 No 6 manual. This is a pleasing and well designed model.

Robert Loughman, one of the new juniors, had a nice hammerhead crane to display. It stood two feet high with a 30 inch boom and moved on 1" pulleys and tyres. An unusual feature was the tower section made from strip plates and the square section boom braced on all sides and having the trolley inside. It was a good effort from a young lad and evidently had earned a prize at a recent rural show.

FOR SALE

1983 French M 2 Set. Little used.

Includes 3 metal and 3 foam plastic storage trays; 3 perforated lids which can be used for model bases, etc.; 2 motors with reversing switches, etc.; manual and decals.

Zinc parts have been re-plated. Whole set is in new condition. Original cardboard box good except corners a bit worn.

Price \$150 or offer.

Please contact Lloyd Spackman, 0-9- 4866141; or 1/344 Lake Rd., Takapuna.

WANTED

HATCH BLUE PLATES.

Flat plates 5½"x3½" and 5½"x2½"

Flanged plates 5½"x2½"

Strip plates 12½"x2½"

**Trevor Adam,
22 Ferguson St. North,
Bay View,
Napier.**

A BUCKET-WHEEL EXCAVATOR.

These machines are used for various purposes including open-cast mining. I have often thought of building a Meccano model but only recently obtained two brochures of Demag electro-hydraulic BWEs. These gave me enough to work on and I built a model incorporating ideas from both prototypes. I opted for a tilted wheel to assist discharge of material on to the first conveyor belt. In the model, both this belt and the discharge belt and their booms are slewed together, but each can be elevated or lowered separately. The whole superstructure is mounted on a permanently assembled crawler track chassis.

Before starting there were two problems to consider:-

Conveyor belts. I could not devise a system using 'dished' belts but found flat belts two and a quarter inches wide fitted and ran well inside two and a half inches wide boom frames with side walls. Two articles in Newsmags 57 and 59 by Rob Mitchell and Henk Elema were very helpful in this. I made one belt from X-ray film and one from thicker plastic shower curtain material. The joins were made at 45 degree angles to the length and secured with 'Supaglu'. On the thicker belt I butted the ends but on the thinner belt I had a very small overlap. Both belts ran quite well over one inch pulleys with tyres and each had a suitable tensioner. Each was driven by a low-speed Buehler motor at its driving end.

Elevating rams. There had to be a powerful ram to elevate the main boom carrying the bucket wheel. Ordinary Meccano rod was not good for this so I built a ram using Derek Strickland type five sixteenth inch threaded rod driven by a one inch threaded pinion, this driven by another standard one inch pinion on the shaft of a Buehler motor. For the discharge boom elevation I used one of my old double screw operated rams, which was quite adequate..

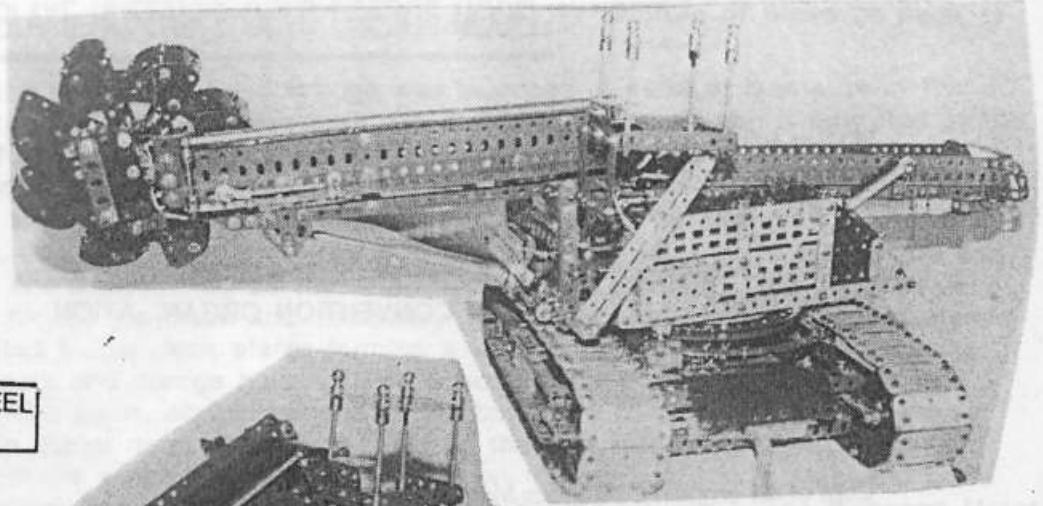
Further constructional detail.

The booms are basically similar, being two and a half inches wide. Each side is a twelve and a half inch strip with a five and a half inch slotted strip attached and overlapping one hole. One slot of this is used for the tensioner. On each side of the main boom a twelve and a half inch flat girder is attached to provide a wall for the belt. On the main boom another long strip is attached one inch below the other long strip. The pulleys are on axles journaled in the middle long strips. For the main boom I used tensioners the same as those on my crawler chassis; i.e., a two and a half inch rod and a RandS connector over the end of the pulley axle. A compression spring on the rod passes through one hole of a half inch angle bracket fixed to the slotted strip. The other boom is similar generally, but I used the tensioner described by Henk Elema and found it fairly satisfactory. The main boom belt is driven by a Buehler motor attached to the starboard side at its rear (driven) end where a small contrate on its shaft drives a half inch pinion on the belt axle. On the delivery boom I mounted a Buehler motor inside the frame, lying between the two layers of the belt.

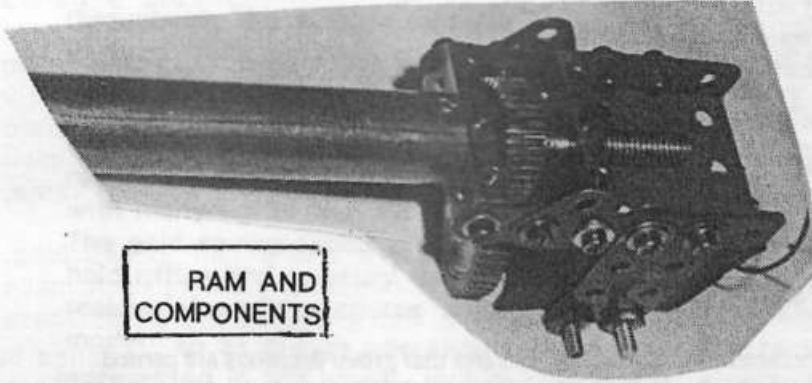
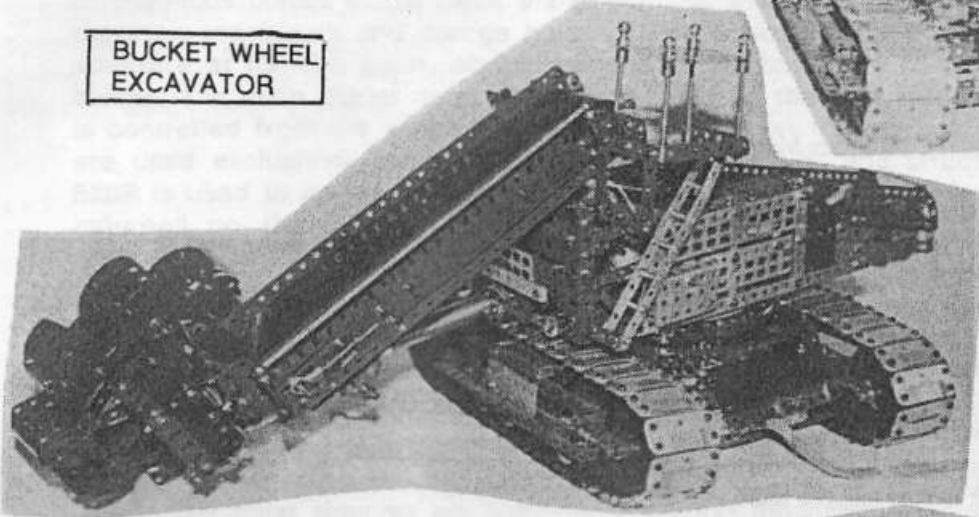
The superstructure is five and a half inches wide and twelve and a half inches long, mounted on the slewing ring by four bolts. At the front end two strong pillars, each made of two five and a half inch angle girders reinforced by a flat girder at the front. These pillars are braced by corner gussets. The main boom is mounted on an axle journaled in the top of each pillar.. The ram for the main boom rotated on a short rod on each side also engaged in a crank fixed to the bottom inside of each pillar.

The Bucket Wheel. Two hub discs, each with a bush wheel at its centre, are held together by one and a half inch wide flexible plates bolted inside the flanges of the discs. Each bucket has a pair of Exacto quarter circle plates bolted on to the periphery of the hub discs. The 'roof' of each bucket is a curved two and a half inch by one and a half inch flexible plate fixed to the side plates by a one and a half inch double angle strip. Mounting the bucket wheel and its motor at an angle was a bit awkward, but eventually managed together with a suitable cover. All this contributed to the weight of the boom and hence its turning moment and the need for a strong ram.

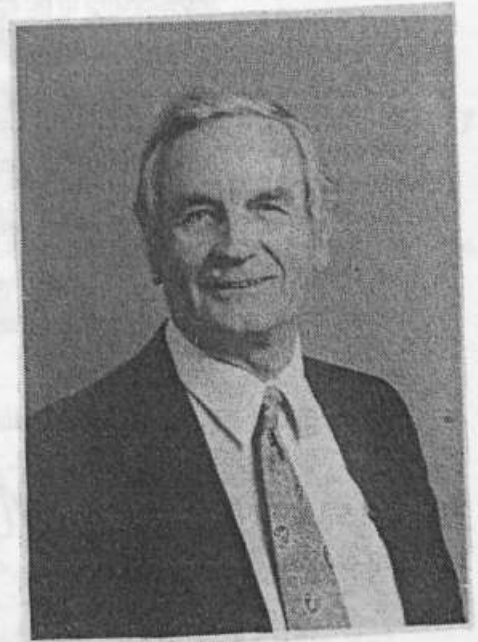
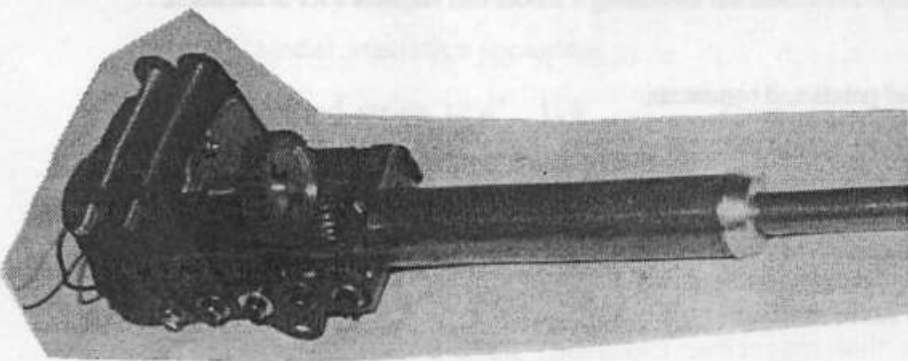
The slewing is by a seven and a half inch ball bearing built on an Argentine toothed ring and previously described in this magazine. Likewise, the crawler tracked chassis. In all, eight motors were used, each individually controlled and it performed at the May meeting of the Auckland club.



BUCKET WHEEL
EXCAVATOR



RAM AND
COMPONENTS



BLAKE HUFFAM

PO Box 1009
Palmerston North
17/09/95

To Daryl Anderson
Lindsay Bond
Colin Croft
Don Blakeborough
Bruce Geange

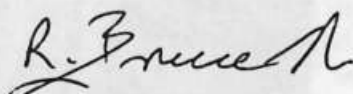
BRUCE NEILSON COMMENTS ON
CONVENTION ORGANISATION.

Copy of my original Convention Manual attached

Additional Checklist Points to be considered

- The convening club accepts total responsibility to hold the convention. This may / must be confirmed in writing.
- The club bears all costs and retains all profits.
- In view of the rising cost of staging a convention, it would be advisable for a couple of members to guarantee or underwrite any eventual cash shortages if club bank account insufficient.
- Public liability insurance of at least NZ\$1,000,000 is compulsory. (Particularly in view of ACC no longer totally covering accidents)
- All 230 volt motors must have a current certificate of compliance.
- All low voltage motors must be radio and TV suppressed.
- All power cables, junction boxes and electrical equipment must meet safety regulations
- Morning and afternoon tea be supplied free to registered exhibitors and workers. Lunch to be supplied at cost.
- A full photographic record be made of all models be organized
- A commission of 25% of all auction proceeds be paid to convening club
- Hall location is extremely important if the general public are needed to make money. Close to road frontage, high pedestrian counts, near bus routes if appropriate, car parking.
- Advertising needs money spent on it if general public wanted. Sign boards on roads to catch passing motorists, signs pointing in to the hall, Place, date and time clearly stated,
- Competitions
 - Rules need to be clearly stated before the show
 - Judge is preferably not exhibiting on the day
 - Prizes need to be clearly stated and allocated
 - Entry into competition optional for the exhibitor
 - Sponsorship to be acknowledged and sponsors involved in process if credibility and return business wanted.
- Retailing
 - space allocated near exit??
 - Agreement on when shop open
 - Agreement on selling by anybody else
- Federation AGM
 - Proper advanced notice and agenda given
- Convention Manager
 - Is the conductor of the orchestra i.e. committee. Ensures that group decisions are carried through and the show runs smoothly. Preferable not exhibiting a model that requires a lot of attention.

Please give me feedback, additional points and comments,


R. Bruce Neilson

BLAKE HUFFAM'S GOLD DREDGE MODEL.

Picture of Blake on page 11

HISTORICAL. The Grey River Gold Dredge was launched in 1939 at Ikamatua in the Grey Valley 32 miles north of Greymouth. On construction completion it operated in the Grey River and Blackwater creek flats until completion of the claim in 1954 when it was laid up and scrapped, thus ending an era of gold dredging in the valley. The model was started in 1952 and built from Meccano parts to a scale of 1:24.

CONSTRUCTION. Construction commenced with the hull, fabricated from steel plate and compartmented in the same way as the actual dredge hull (pontoon). This forms a very strong platform for the structure and machinery. Main structural members were fastened to trunnions bolted to the deck plates forming a very sturdy structure which supports the main machinery and dredge housing. The bucket ladder is pivoted high up in the structure at its high point, and suspended at the bow from the main gantry by sheave blocks. The main ladder hoist winch is located on the port side on the main deck and is controlled from the winch boom or pilot house on the starboard side. Meccano parts are used exclusively for all winch hoist gear sheaves and structure. The Meccano Motor E20R is used to power the system, raising and lowering the ladder. The bucket chain mounted on the ladder is driven through reduction gearing from a motor mounted on the main deck and belt driven. This main drive is very powerful and utilises the high power Meccano motor put out in earlier years. The buckets made up of steel plate dump over the top tumbler made from Meccano trunnions and end plates and powered through the main drive reduction gearing duplicating the actual machine. Controls for the machinery are located in the pilot house. The main structure and gantries utilise angle girders to form I-beams and channel sections very close to actual scale. The bucket ladder is a massive box girder built up from angle girders and standard plate sections. The lower tumbler round which the buckets turn is built up from boiler ends and circular plates. The ladder hoist sheaves are standard 2" pulleys mounted in blocks utilising standard Meccano parts. Centrally located midships on the dredge is the revolving screen which receives alluvial gravel from the buckets as they turn over the top tumbler. Jets of water at high pressure wash the fines from the gravel on to the gold saving tables to port and starboard sides of the dredge. The screen is built up from angle girders, circular girders, flexible plates and strips. Meccano motors drive through reduction gears and friction rollers. From the screen the gravel pours out down a chute and on to the stacker conveyor belt which reaches out from the stern. The stacker, made from Meccano strips, angle girders and flat girders, is supported through a system of sheaves and hoist gear from the stern gantry high above the stern of the dredge. The conveyor belt is driven by a Meccano E020 motor housed at the high end of the elevator. Sand wheels at the stern feed excess sand on to the conveyor belt through a small conveyor system at the stern. The drive is through epicyclic reduction gearing, using standard Meccano gears throughout. The spud, a massive box girder, with weighted pivoting end, is raised and lowered from the stern gantry. Mooring winches located on the starboard side on the main deck are operated from the winch room and moor and swing the dredge through its operating cycles, through bow and stern sheaves which guide the wire mooring ropes which in turn are anchored ashore. Walkways and handrails give the model dredge a realistic look, utilising Meccano parts throughout. At night the dredge lights up realistically with many lights like the real thing which utilised flood lights for night time operation. The gold saving tables are formed from steel sheet and are basically sluice boxes which hold riffles and mercury traps to save the gold. The wash then carries the sand and residue down the chutes and over the stern. Siding and roofing are not used on the model so as dredge operation can be observed. All interior decks and equipment are represented in the model, including walkways, pumps, maintenance hoists, and winches.

Model statistics include:-

Perforated strips 12½" 156	Coupling 53
Angle girders 12½" 157	Sprocket wheel 1" diam. 16
Angle bracket ½"x½" 1208	Flat girder 12½" 88
Axle rods 3½" 79	Flat trunnion 56
Flanged wheel ¾" diam. 44	Corner bracket 1" 127
Pulley 2" diam. 37	Handrail coupling 139
Pinion ¼" face ½" diam. 42	Flexible plate 5½"x2½" 121
Bolts 7/32" 13,743	

Dimensions overall. Length 14'2" Height 3'10" Width 3'5"
Scale 1:24.

WELLINGTON MECCANO CLUB
MEETING NOTES FROM OCTOBER/NOVEMBER 1995
 -reported by Bryan Jones and Mike Highley

12 members gathered in the Youth Room at St Lukes, Wadestown for the October meeting, having been displaced by the preparations for the annual St Lukes Fair the following day. Those present included Don Blakeborough, visiting from Wanganui. These notes also welcome Wes Dalefield from Christchurch, who arrived at the September meeting.

At the last meeting the president had circulated photocopies of the instruction sheets for the Meccano Collection 2103 Biplane, 2104 Survey Plane and 2207 Sand Buggy. The model theme was to build one of these models using the kit or reproducing it with standard parts. **Don Flowers** and **Simon Moody** produced replica Buggies, **Timothy Moody** had a replica Survey Plane, as did **Lou Nichols** who also built the Biplane from the kit. **Wes Dalefield** brought a Biplane made from the kit, and also a clockwork motor powered car from the 1927 Manual and another old clockwork motor. **Don Blakeborough** displayed a mounted selection of 2.5 inch strips and 50 tooth contrates of most periods over Meccano's history, as well as copies of the first four volumes of his Meccano Encyclopaedia. **Max George** had photocopies of the 1929 Standard Mechanisms manual for anyone who wished to have one. **Mike Highley** brought a Rotating Crane from the Super Models Manual. **Simon Moody** also displayed a set of plastic 1.375 inch Bush Wheels which he had made, with various numbers of holes between 6 and 10 for those tricky electrical switching applications.

9 members were present for the November meeting, with only a small turnout of models shown. **Colin Croft** brought his models of the Spotter Plane and the Sand Buggy, both made from regular parts. **Wes Dalefield** had a bound set of the most recent Constructor Quarterlies; very nicely presented in the high quality red binder. **Mike Highley** brought two models: the Milk Delivery Wagon from the No 2 Manual, and the Electric Crane Truck from the No 3 Manual. **Simon Moody** had a model of a cowshed he is planning to build on his property; it was built approximately to scale to assist with the bracing design for Town Planning purposes.

Noted in the Constructor Quarterlies on loan from the Federation was an advertisement for a video on the history of Meccano. Interest has been expressed in acquiring a copy of this for the Club, so enquiries will be made to see if it is still available. Also on the shopping list will be MW Models jumbo packs, (bulk quantity "grab bags" of obsolete finish parts at discounted prices) which have been advertised recently in their fliers.

Colin showed some examples of drawings he had done using the ISOMEK software. The drawings were of the gearbox of his Kenworth W900 truck, and showed various exploded and assembled views of its construction, as well as elevations of the basic gear train in each of its ratios. The drawings were very accurately scaled and very nice to look at, especially when enhanced with colour in selected parts. Colin's main observations of ISOMEK were that the drawings took up lots of computer file space, and took virtually as long to create as the original gearbox did to build!

Joe Bell has offered to host the December meeting at his place. This is to be followed by the Club Christmas Dinner almost three weeks later, on Wednesday 20th, at Valentines Restaurant in Petone.

BITS & PIECES

from Lloyd Spackman

QUOTATION:

"If you are wise.... you'll spend a third of your allowance on your hobbies - your Meccano and stamps -, buy clothes with a third and bank a third."

Later: "What's in the other parcel, Muir?" "Oh, a spare part for your Meccano".

From "New Zealand Inheritance" by Essie Summers, 1957.

(In 1957, we could still buy parts !! (Ed.))

HELICAL SWAP:

One large helical gear (surplus) for one small helical (I need). Please phone me on 0-9-4866141, —Lloyd S.

PLASTIC WASHERS:

Further to the discussion in our last issue, these washers are available from Dick Smith Electronics at \$2.95 a dozen. Ask for 4 BA nylon washers.

PARTS NEVER USED:

In spite of Michael Denny's listing it as the most useless part, I have used two P/N 44, stepped bent strip, in the floats of my twin engine amphibian seaplane, and they look quite OK there.

SURFING THE INTERNET:

Among the first mentions of Meccano was a course in Robotics at the University of Rochester, U.S.A., in 1994. Graduates built 4 robots which worked - two were from Lego, one from Meccano. Also references to Meccano in an exhibition of 'Art Machines'. The latter sounds a bit like the art of our former member, Edward Mackenzie.

MOVED: The New Zealand agents for Meccano S.A., F.W. Cave Toys Ltd., have moved to an industrial estate near Albany, Auckland. Their new address is: 5 Te Kea Place, off William Pickering Drive, Albany; P.O. Box 558 Albany; Telephone 0-9-4157766.

NON-MECCANO:

You won't mind if I
print here a non-
Meccano joke.

This one is from
"Apple of my Eye",
Hélène Hanff's
book about New York
City, N.Y., U.S.A.

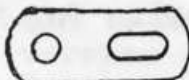
I'll tell you an old joke that will sum up Radio City Music Hall for you.

It seems a man and his wife went to the Music Hall one Sunday afternoon, arriving toward the end of the film. When it ended, the house lights came up for a few minutes before the stage show and the man rose, murmuring to his wife: 'I'm going to the men's room.'

He located an exit on his floor - orchestra, loge, mezzanine, balcony or second balcony -but he couldn't find a men's room on it. He descended a staircase and looked on the next floor and couldn't find a men's room and descended another staircase. He walked along corridors and pushed open doors, he went along dark passages and up and down steps, getting more and more lost and more and more frantic. Just as his need became intolerably urgent, he pushed open a heavy door and found himself on a small street lined with houses, trees and shrubs. There was no one in sight and the man relieved himself in the bushes.

All this had taken time, and it took him additional time to work his way back up to his own floor and locate his own aisle and section. By the time he finally reached his seat, the stage show had ended and the movie had begun. The man slid into his seat, whispering to his wife: 'How was the stage show?'

To which his wife replied: 'You ought to know. You were in it.'



BITS & PIECES

from Lloyd Spackman

QUOTATIONS:

"Holding her bouquet like an offensive weapon at the end of an outstretched arm, the bride swung round -- so fast that she knocked her 15 stone father sideways. It was a stiff arm tackle worthy of an All-Blacks forward."

From "A Curate for all Seasons" by Fred Secombe.

"To find your lost dog, put your ear to a tree and listen to the bark" - Jean Paré.

MELBOURNE MECCANO SCENE:

Although we don't hear much about what our Meccano neighbours in Oz are doing, there are active Clubs in Melbourne and Sydney, at least. The Melbourne Group meets about quarterly with attendances of 15-20. Our mate, Ken Gordon, is a member. They were holding a special exhibition early in October.

BOOK RECOMMENDED:

"Eurotunnel - The Illustrated Journey" by Jeremy Wilson and Jerome Spick. Harper Collins, 1994, Ref. 385.312 Wil. It is well worth a browse through.

TYPICAL of the detailed planning that went into the Channel Tunnel, the overhead contact wires zig-zag so as to wear the pantographs on the locomotives evenly.

LETTER:

Frank Davis, Rotorua, reports that he has renewed his interest in Meccano after a break of 60 years. It is a winter hobby which will have to take second place, in the summer, to his bowls.

HINT:

From International

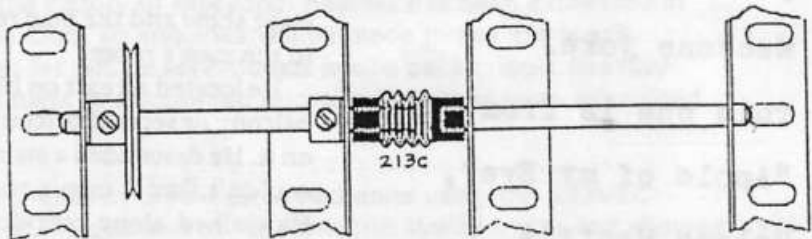
Meccanoman, issue 16,

here is a good tip

from Don Blake-

borough, Wanganui.

T 192: FOR WINDING THE SHUTTLE COP of a Meccano loom: Don Blakeborough (New Zealand) writes: The new rubber Part 213c allows a quick and easy method of winding, on my loom. The Axle with the Pulley is fixed about half way into the 213c. Simply put a few turns of cotton/wool on to the Cop Shaft, insert one end into the end bearing, press the other end into the 213c and it's ready to wind. When wound, the loaded Cop is pulled out of the 213c and then out of the end bearing. Both centre bearings are required for alignment; they also prevent the 213c from being pulled off with the Cop shaft when it is withdrawn.



(Don Blakeborough, N.Z., ISM 0248.)

WHITHER MECCANO ??
WHITHER MECCANO ??

Bruce Neilson's article on page 17 of our October issue

deserves wide circulation and comment. It is a pity the executives and planners at Meccano S.A., Calais and Paris, can't read it.

Their policy of newly designed parts which are of use in only 1 small model in 1 small set is not helpful.

Some of the new parts in, for instance, the 'Collection' series will probably soon qualify for Michael Denny's prize for the most useless Meccano part.

SURFING THE NET - FOR MECCANO

Lloyd Spackman

Are there any N.Z. Meccano modellers with computers who can access the world-wide information network (Internet)? If so, will you please search Meccano and share with us any information you find.

LIKE THIS:

On behalf of N.Z.F.M.M., and through a friend, my son, Glen, "surfing the net" on August 31. He found 11 references to Meccano.

Glen struck 'gold' in an entry from Colin Hinz of Toronto, Canada. Colin had supplied information on Canadian and U.S. suppliers of Meccano/Erector, Exacto, Marklin and Temsi parts, sets and literature. They included people like Lou Boselli, Joel Perlin and Ed. Barclay, all familiar names to many of our modellers.

Finally, Colin had described sets and parts of particular interest to robot builders, as follows:

Maerklin --

This is the German variant of Meccano. It has a smaller variety of parts, for instance only four spur gears instead of the 9 sizes in the Meccano/Exacto series. However, the parts that exist seem to have the renowned German precision and meticulousness of finish. Several sets are offered, from the fairly simple to a few specialty ones that would be of special interest to robotics hobbyists -- the 1008 Solar set, the 1007 Robotic Arm kit, and the 1019 programmable controller. I have seen none of these sets for myself, although the brochure I have is well-illustrated and with abundant amounts of text. The text is all in German and I'd be quite willing to post it, but please *DO NOT* ask me to translate!

I should say a few things more about the 1007 Robotic arm. It's a small 4-axis unit with a reach of about 10" from the centre of rotation of the base. The 4 degrees of motion are base rotation, arm inclination (shoulder), wrist inclination, and gripper. A worm gear is on the output shaft of each motor. This worm gear meshes with a large gear which is attached directly to the arm mechanism. The lifting capacity can't be more than a few ounces. Control is by four centre-off switches. The entire unit looks relatively simple yet elegant, and to me the only problem seems to be the price: over \$400 Canadian. But if you want a small metal robot arm to experiment with, and don't want to do any machining, this is clearly the most straightforward way to get there.

Maerklin parts are compatible with Meccano.

Meccano--

Meccano is unfortunately dragging its heels in preparing for the 21st Century. So far there are no sets or kits with robotics applications though this may change. However, for a design-your-own metal robot Meccano can't be beat. Specialty parts include "Caterpillar" tread kits, various electrical components and insulators with compatible thread and hole sizes, and three different sizes of thrust bearings: a 4" ball bearing and 7 1/2" and 12" diameter roller bearings. The largest size bearing is traditionally used in the Meccano subculture as a swivel base for monster cranes weighing well over a hundred pounds, so naturally it could handle a pretty chunky robot arm. Again, the main problem with all this great stuff is that none of it's cheap.

I have seen a Marklin 1007 Robotic Arm set, and once built a Meccano version of this model.

Colin's Internet address is:

Colin Hinz:: Colin @Psych. Toronto. Edu:: 11 January, 1994.

Lloyd

THE GREAT RAHMS FRENCH ASTRONOMICAL MECCANO CLOCK.

MECCANO SUPER SUPER MODEL NO.4

MECCANO MAGAZINE MARCH 1933..

Called in 1933 , The Worlds Greatest Meccano Model.

This model survived the Second World war and is in the proces of being completely restored to a working condition againafter an idle period of about50 years. Details are supplied from the text of the M.M. article. This must surely be the most complex Meccano Model ever made and proves the versitility of the whole system.

MECCANO has been employed with outstanding success by scientists, inventors and engineers in the construction of complicated and delicate apparatus and mechanisms of all kinds; but the greatest triumph of this wonderful constructional toy is to be found in the marvellous astronomical clock constructed by M. Alexandre Rahm, a French Meccano enthusiast. From every point of view this must be regarded as the world's greatest Meccano model.

M. Rahm tells us that the idea of a Meccano astronomical clock came to him as a result of reading two articles that appeared in the French "M.M." during 1924, one describing a new Meccano model clock, and the other giving details of that famous mechanical marvel, the clock at Strasbourg Cathedral. From that time onward he devoted all his leisure hours to the study of the problems involved, and the clock that is illustrated and described in this article is the result of years of research and experiment. M. Rahm's first schemes were on a comparatively modest scale, but as his plans proceeded he became more and more ambitious, and the clock in its present form embodies a number of remarkably brilliant solutions of the essential problems of a complete astronomical clock.

One of M. Rahm's first steps was to collect the necessary astronomical details, and in this task he received valuable information from the annual publication of the "*Bureau des Longitudes*." He also derived considerable information from articles in this publication dealing with the Strasbourg Cathedral clock.

In the space at our disposal it is impossible to describe this wonderful Meccano clock in detail, but we hope to give some idea of the extraordinary variety of the indications that it gives and of how these are accomplished.

The clock frame stands 9 ft. high, and is 2 ft. wide, increasing to 2 ft. 6 in. at the base. It is in the form of an irregular octagon, six sides of which are 9½ in. long and the other sides 12½ in. The main framework that supports the mechanism, as well as the weight of the heavy motors, is composed principally of Angle Girders and Braced Girders bolted to the main outer members, providing the necessary strength and producing a solid and pleasing appearance. The whole of the mechanism is enclosed in a series of compartments extending from the top of the model to within 3 ft/3 in. above the ground, representing in all a height of 5 ft. 11 in. for the mechanism alone.

The uppermost section of the framework contains the principal dial, on which the standard time is indicated on the Continental 24-hour plan. The hour hand, which makes one complete revolution of the dial in one day, is driven by a clockwork mechanism situated at the top of the model. This mechanism is divided into two distinct parts, the clock-driving portion proper and an automatic arrangement for winding up the weights. The latter movement is accomplished by means of two Meccano

high-voltage electric motors, which operate automatically every 60 hours at 9½ hours and 21½ hours, that is, 9.30 a.m. and 9.30 p.m. Matters are arranged in such a manner that the clock escapement continues to operate while the rewinding is taking place.

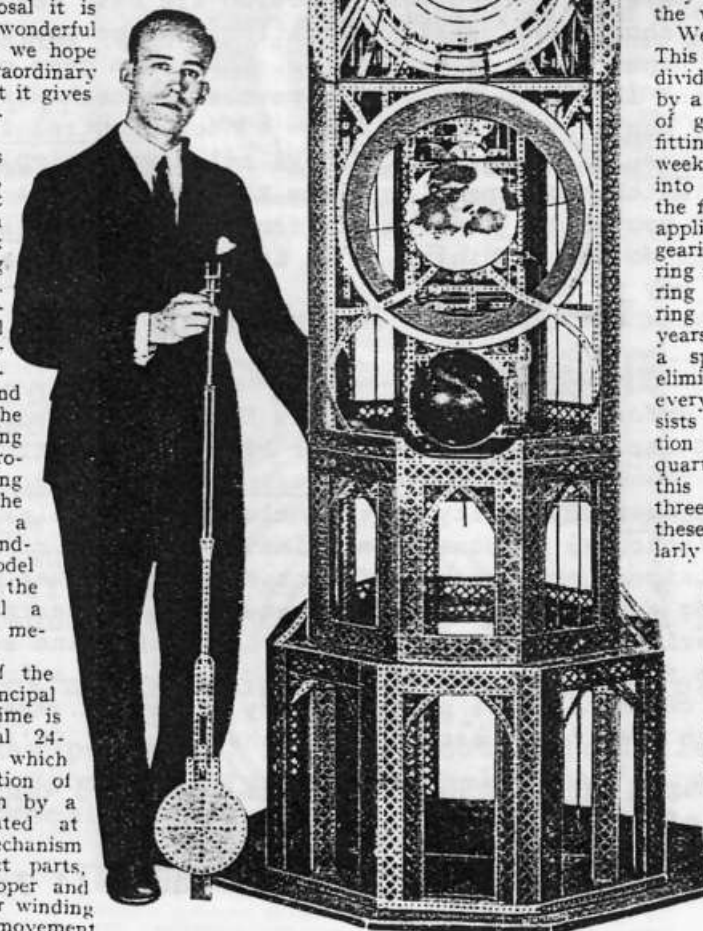
The mechanism that drives the hands comprises two synchronised trains of gears operating the escapement wheel, which consists of a circular band of 40 Threaded Pins that serve as teeth. The pallet has 10 teeth, and is borne on a horizontal shaft carrying a claw operating the pendulum, which beats once every second. The pendulum bob consists of two Circular Plates bolted at their centres to a sliding Threaded Rod attached to the bottom of the pendulum. This pendulum is constructed from Angle Girders and Strips, and is made detachable by the addition of two hooks at its upper end. The bob can be raised or lowered by rotating the Threaded Rod on which it is mounted. The pendulum itself also may be lengthened if required, and in this manner a very accurate beat is obtained.

The necessary movements are transmitted by Rods to the minute hand and the second hand. The minute hand may be said to constitute the heart of the whole clock.

We come now to the perpetual calendar. This consists of a ring 20½ in. in diameter divided into 366 parts and operated by a cross mechanism that is thrown out of gear at midnight. A second ring, fitting inside the first, is graduated into weeks, and a third, inside the second, into months. These two rings, like the first, are operated at midnight. The application of the carefully-calculated gearing arrangements results in the outer ring rotating 1/366 every day, the second ring 1/52 every week, and the inner ring 1/12 every month. As all the years do not have 366 days, however, a special mechanism is provided to eliminate 29th February in three out of every four years. This mechanism consists of a cam fitted with a raised portion at three of its quarters, the fourth quarter being left regular. Thus, as this cam rotates once in four years, these days are jumped in that period, these days being timed to fall regularly on 29th February. Special arrangements are also made to deal with century years that are not Leap Years.

In the centre of the perpetual calendar is a card showing the Earth as viewed from the North Pole. This card turns in an anti-clockwise direction, and it indicates the time in all parts of the world. It is rotated by Sprocket Chain from the hour hand of the clock at the top of the model, and as it turns it operates two smaller reproductions of the Earth that give the world's time in minutes and seconds.

The sections of the clock so far described give all the necessary information as to the



The wonderful Meccano Astronomical Clock with its builder, M. Rahm.

The World's Greatest Meccano Model

French Expert's Astronomical Clock

world's time, and now we reach the most difficult and delicate movements of all, those that indicate ecclesiastical dates and astronomical movements. The mechanism for dealing with the ecclesiastical computations is extremely complicated. It is set in motion once every year at midnight on 31st December, and gives all the important ecclesiastical figures as well as the dates of the Julian and Gregorian Easters. The mechanism is actuated by two weights, which are rewound automatically during the year. When the winding mechanism is disengaged the weights are released, and the main wheel, governed by a flywheel turning at great speed, is rotated. When this main wheel has completed one turn, the mechanism stops until the following 31st December.

The main wheel sets in motion a number of secondary gear trains, which indicate on small dials the Roman Indiction, a period of 15 years introduced for fiscal purposes about A.D. 300; the Solar Cycle, a period of 28 years, after which the days of the week return to the same days of the month; the Golden Number, a number showing the position of any particular year in the Moon's cycle of 19 years, and called "Golden" because the calculations connected with the discovery of the cycle by Meton were printed in gold by the Athenians; the Dominical Letter, one of the first seven letters of the alphabet used to mark the Sundays of the year; the Year of the Christian Era; and the Epact, the excess of a solar year over a lunar year.

The date of the Gregorian Easter is indicated automatically by means of a snail wheel divided into 30 parts. It is made from a Circular Plate and is connected directly to the Epact hand. This snail-wheel drives a hand indicating the date of Easter of the year to come. An exactly similar process is employed for determining the Julian Easter, the only difference being that the snail wheel is divided into 19 parts and connected with the Golden Number.

The astronomical indications afforded by the clock are specially interesting. These are concerned with the apparent movements of the Sun and the Moon around the Earth as effected by their principal irregularities, and the automatic prediction of eclipses. In order to obtain the extremely complicated movements involved it was necessary to work out an elaborate series of gear trains, and in this M. Rahm succeeded so well as to secure a maximum error of only one second per year. His six ratios gave him the Tropical Year, the interval between two returns of the Sun either to the tropic of Cancer or to the tropic of Capricorn; the

Anomalistic Year, the interval between two successive occasions when the Earth is at its least distance from the Sun; the Synodic Month, the time required by the Moon to return to the same position in respect to the Sun; the Anomalistic Month, the

interval between two successive occasions when the Moon is at its least distance from the Earth; and the period of Evection, an inequality in the motion of the Moon under the Sun's influence. Using these as a basis he obtained the true movements of the lunar and solar hands.

The movement of the Moon around the Earth is very complex, and the mechanism that reproduces this consists of a main gear train that makes one turn in one sidereal day. The

sidereal day was obtained, starting from the mean day, by taking the tropical year as differential, and in this manner the error was reduced to less than one second in 2,000 years.

The lunar hand, which consists of a rod that carries a small sphere, partly black and partly silver, turns on its axis by means of a conical gear connected to the solar hand. In this manner the lunar hand makes one complete revolution in one synodic month.

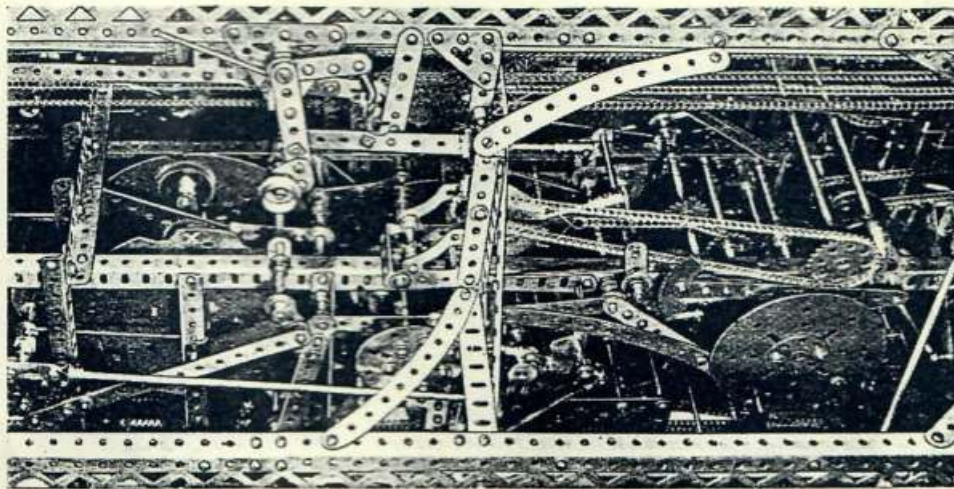
In order to reproduce eclipses it was necessary to give the lunar hand a to-and-fro motion depending on a curve cut in a circular plate, the ramps being specially calculated.

In the lower part of the clock at about 31½ in. from the ground is situated a celestial sphere 7½ in. in diameter, on which are painted the stars of the first, second, third, fourth and fifth magnitudes. They represent the daily movement of the stars, and make one turn in one sidereal day. A mechanism with a reduction gear ratio of 1:9,450,000 reproduces the precession of the equinoxes of a period of about 26,000 years.

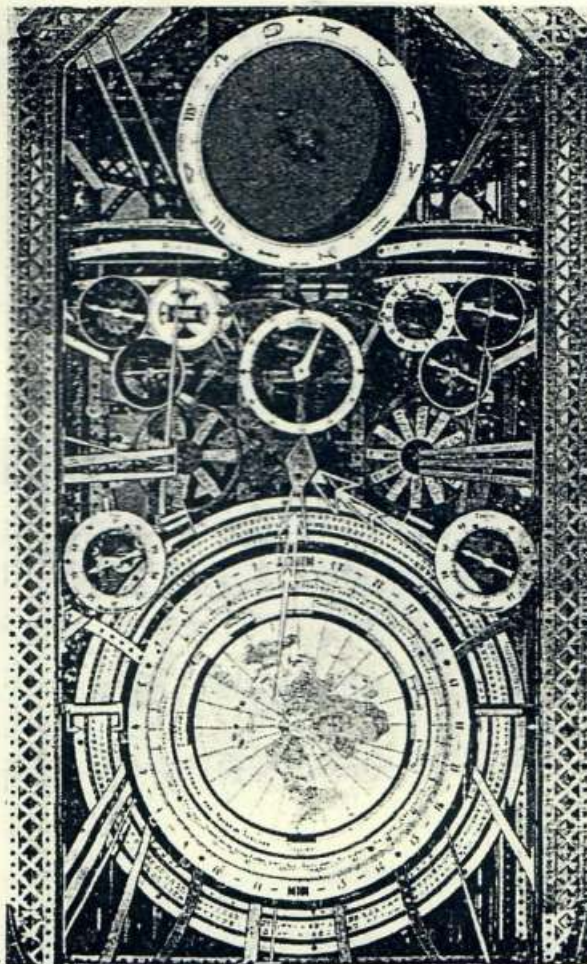
Above is situated the planetarium, reproducing the mean movements of the various planets. Above this planetarium is a lunar globe 2 in. in diameter, half silver and half black, that reproduces the phases of the Moon and makes one complete revolution in one synodic month.

The foregoing brief outline of the main features of this remarkable clock indicates some of the complex problems that had to be solved in its design and construction, and shows the remarkable manner in which the resources of the Meccano System proved capable of meeting all requirements. Never before have these resources been subjected to such an exacting test, and the result demonstrates the unlimited possibilities of Meccano in the hands of an expert model-builder.

We feel sure that all readers will join us in congratulating M. Rahm on his success in building the world's greatest Meccano model.



View of a section of the interior of the clock, giving some idea of the extraordinary complexity of the mechanism, and of the manner in which every inch of available space is utilised. On the left will be noticed a wheel marked with a cross. This wheel makes a complete turn once in 2,500 years!



The upper portion of the clock giving the following indications:—movements of the planets; standard time; ecclesiastical calculations; time in all parts of the Earth; day of the week; the month; the day of the month; and the day of the year.

HOW CAN I OBTAIN INCREASING PLEASURE FROM MY MECCANO HOBBY? .

Make your Hobby interest International.....

ISM membership gives you three issues of *International Meccanoman* each year + Membership List + badge opportunity + competitions + offers



INTERNATIONAL SOCIETY OF MECCANOMEN
L'ASSOCIATION INTERNATIONALE DES AMATEURS DE MECCANO

1996 MEMBERSHIP RENEWAL OR APPLICATION

Last name:		Membership Number (if known):	
First name(s):			
<i>(Current members: use this section only if you want to alter your present membership details.)</i>			
Address:			
Postcode/Zipcode:			
Country:			
Telephone:		Fax:	e-mail:
Date of birth:		Occupation:	
General interests, hobbies and skills:			
Special Meccano interests - for example: education - helping beginners - robots - Meccano history - collecting special parts, sets - mechanisms - clocks - astronomy - bridges and cranes - vehicles - architecture - scale models - fairground models - anything else?			
Languages spoken and/or written:			
Would you be interested in meeting ISM members visiting your country from abroad, and possibly entertaining them?			YES/NO

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