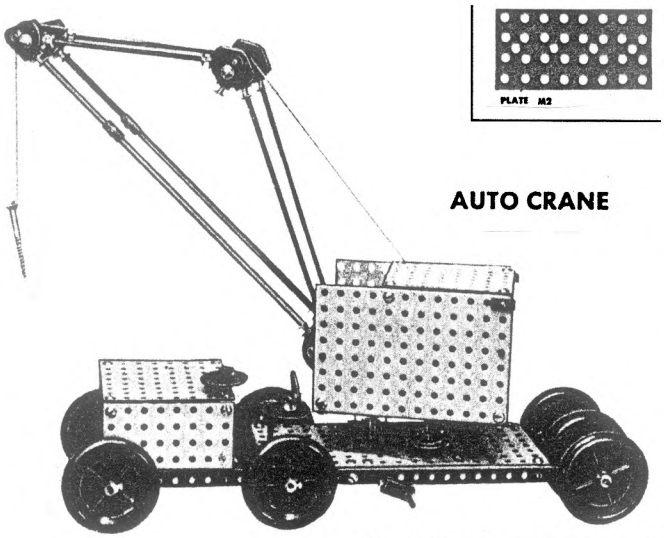
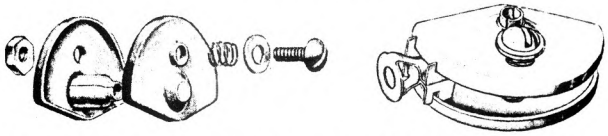
NOMA BOOMTOWN

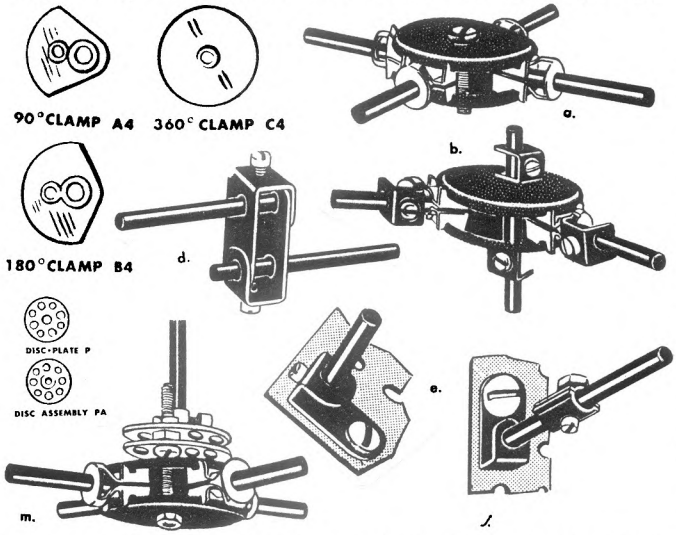
This early post-WW2 U.S. system is unusual in concept, with models made up of Plates held together by Brackets and 8 & 16h A/Gs, plus frameworks of Rods held in special Clamps. All the parts are steel and the holes are the standard ½" apart, but they are larger than usual at about 5mm. The N&B are 10-32 (4.8mm) but bosses, and some small parts like the ERECTOR-style Collar, are tapped 5-40.



The PARTS All the above has come from MCS, which has illustrations of all the 40+ parts and also shows a page of Construction Details from a manual. These give the general idea but all was much clearer after I'd looked through a complete manual which Richard Symonds kindly lent me recently. It's probably the one from which the MCS pages were taken and opposite the Construction Details is an explanation of each of them, and the illustrations below which show how the Clamps are assembled. The spacer is two so-called Half Balls and when the Clamp is tightened they lock onto a Rod passing through them. If only one Half Ball is used the Rod is free. Radial Rods are gripped in the



Wedges, and there must be at least two in each Clamp. There are 3 different Clamps (below) and for the 360° version at 'a' the Half Balls aren't used. 'b' shows a Rod passing through the centre with Collars to hold the two



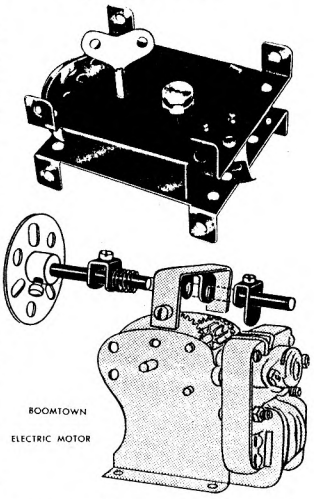
halves of the Clamp together. In that case the Rod doesn't seem to be necessarily firmly held, but it isn't entirely free either if the Collars exert enough pressure to hold the Wedges securely. 'b' also shows how a Collar on a radial Rod, with one of its arms in the Wedge, can be used 'when a very rigid assembly is required'. 'm' shows how a Rod can be positively attached (albeit a touch tortuously) to the 'a' construction - an 8-h Wheel Disc (called a Disc Plate) is bolted to the Clamp and an 8-h Bush Wheel (called a Disc Assembly) is in turn bolted to the Wheel Disc, and holds the Rod.

The bracket at 'e' is called a Straight Clamp and its top hole is tapped. It is used in several different ways, to form a crank handle ('d') for instance, or as a stand-off bearing at 'j'. The Rods in 'j' are joined by two of the (half) Couplings held together by a 5-40 N&B.

The Plates are all 8h wide and 4,8,12 & 18h long. They are fully perforated and in the page of Illustrated Parts, a lengthways centre row of staggered holes is also shown, as in the Plate above. The centre holes aren't shown in any of the models or other pictures in the Manual, so perhaps weren't in the original parts. The holes in the Bush Wheel also show variations in different illustrations. Four of the usual 8 holes are replaced by radial slots in one, and the one in the motor below certainly has slots though apparently only 3.

The Pulleys scale at about 1" dia; the (road) Wheels at 3" and they should be easy to recognise with their 4 ribbed 'spokes'. In the Manual they are said to be red. On colours MCS mentions red, blue and black - the Rods, Clamps and brackets in the Manual look as if they might be black.

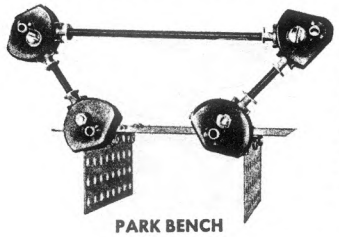
The MOTORS The spring motor opposite is listed as Part AU at $1.65. It has a stop lever but no reverse, and a rubber band drive was suggested. An electric motor, AS, is listed at $6, and another, Electric Motor and Gear Train, AJ, at $7.80. The only one illustrated is shown opposite - no doubt #AJ. It is described as an AC, 110 volt, shaded pole motor with gearing to reduce the speed. The gear shift lever, for forward, reverse and neutral, (shown above the motor) was packed separately and the yoke was to be bolted on, on one side only, through the centre top hole of the sideplate. Drive was to be by cord or rubber band. A photo of the gearbox in the Manual shows a worm on the motor shaft driving worm wheels above and below it; a pinion on each of the worm wheel shafts engages a gear wheel which is moved across by the Straight Clamp on the gear change Rod, as it is turned by the Bush Wheel.



The SETS The manual has photos of the open boxes of Sets Nos.3,6,9 & 12. No others outfits are mentioned anywhere. The No.3 is said to have 95 major parts (rods, plates, wheels, angle beams, clamp plates, wedges, etc) and 78 others including screws, nuts, springs, washers, etc. - 4 Wheels, 10 Clamps and 8h A/Gs can be seen. No.6 has 147 major and 141 minor parts with the same examples of each quoted. The photo shows 4 Wheels, 4 Pulleys, 14 Clamps, 2 each of 8h and 16h A/Gs, and at least 2 Bush Wheels or Wheel Discs. The No.9 has a spring motor and is called the Mechanical Motor Set. It is said to have 206

major parts including 62 Rods, 10 Plates, and 6 Wheels, and 236 minor parts. The No.12 with the electric motor is the Electric Motorized Set and has 212 major parts with the same numbers of Rods and Plates as the No.9, but 2 extra Wheels, and the same number of minor parts. The parts are packed in 2 layers and at least 6x8h and 4x16h A/Gs can be seen, together with 5 Pulleys and the same two groups of Bush Wheels/Wheel Discs as in the No.6.

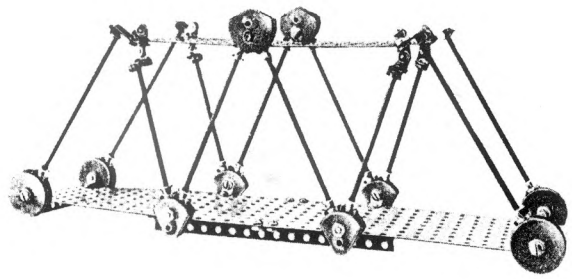
The MODELS The Manual contains models for each of the 4 sets. Most are straightforward mechanically although a few use various cranks to achieve reciprocating motions. The spring Motor is shown fitted to only two, and the Electric to only one. Many of the models look reasonable, although a little angular perhaps when vehicles are made up from Plates in the main. When the Rods are used for open frameworks the Clamps look rather clumsy, particularly in the case of the smaller models. The Auto Crane on the opposite page is a No.12 model; the Park Bench and the Tricycle below are for Set No.3; the Hoist is a No.6, and the Bridge is a No.9.

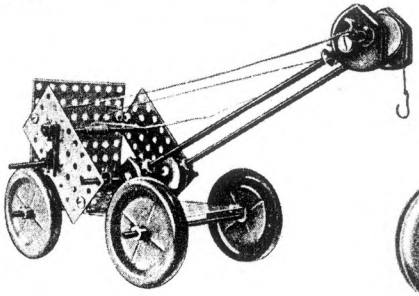


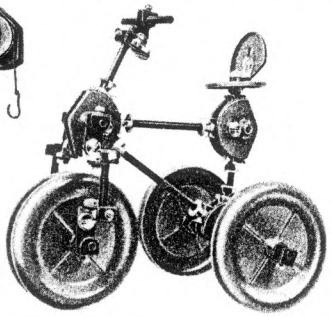
PARK BENCH

The only date known is Copyright 1947 on the back of the Manual. Also mentioned there are Patent Nos. 2410874 and 2410875.

SUMMARY OF MANUAL •Name: NOMA BOOMTOWN METAL CONSTRUCTION MODEL SET •Details of maker: Noma Electrical Corporation, Noma Building, 55 West 13th St., New York 11, New York. •Dates &/or Ref Nos: © 1947 on BC. •Page size: 218*141mm deep. •No. of pages: 32 inc covers. •Language: English. •Printing: models are halftones; cover is red with B&W halftone. •Page Nos. of Parts List/Illustrations & highest PN: 30-31,Z. [No Set Contents] •Sets covered: Nos.3,6,9,12. •No. of models for each set: 33,26,26,14. •Name, Page No. of first & last model of each set: 3: FRUIT WAGON,6; PUMP,10. 6: DELIVERY TRUCK,11; SEE-SAW,15. 9: TRACTOR,16; SCHOONER,22. 12: ROTATING PIER CRANE,24; CENTRIF-GO-ROUND, 29. •Other notes: 7 of the models are also shown on p3.







The TAN-SAD Constructional Toy In going through *Games & Toys*, David Hobson came across this previously unrecorded little system, and kindly passed me the details, together with a copy of the relevant Patent. It was No.183390, in the names of Frederick Hagger Headley and Percy Herbert Brant, both of Birmingham, and the Application Date was October 1921. The drawings in the Patent (below) show that Rods were to be united with spigots on cast 'connection elements', which I'll call Joints, by springy, split Sleeves. They were to have a single slit along their whole length, and one or more additional slits at the end that received the Rod.

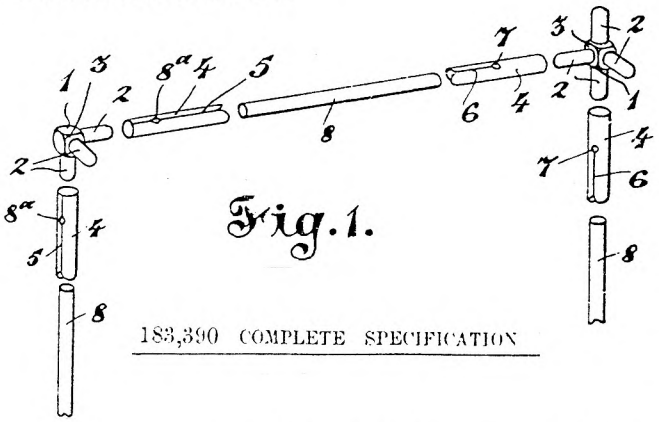
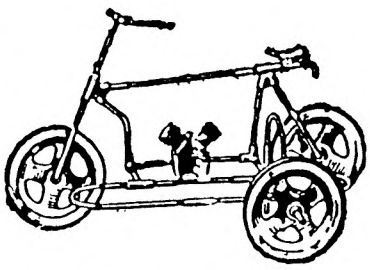


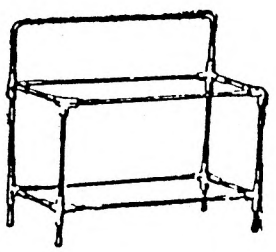
Fig. 1.

183,390 COMPLETE SPECIFICATION

Tan-Sad Ltd. was well known for many years as a maker of good quality prams, and according to *British Tin Toys* was founded by F.H.Headley, who took over an existing business in 1920. The name 'Tan-Sad' was registered as a trademark in Jan. 1922. The first reference in G&T to the TAN-SAD Constructional Toy was in March 1922, when, in a report on the British Industries Fair, it was said to be put up in two boxes, a motor and aeroplane set for boys, and a furniture set for girls, at 5/- each. It consisted of soft metal castings, steel clips, and 1/8" steel rods of various lengths. No N&B were required.

The Sets were included, among toy prams and scooters, in Tan-Sad's May 1922 ad, with the boys' set being described as 'Aeroplane & Cycle Outfit', and the girls' as a 'Furniture Building Outfit'. The address was Freeman St., Birmingham. The 2 models below were shown, together with a Bed and Monoplane in similar style. As can be seen 4-spoked Wheels were provided, also a Saddle and a small V-twin Engine. In the Monoplane the latter can be seen to have the proper thickness and so may have been a casting.





A write-up of the BIF in the June issue mentioned the Constructional Toys, at 5/- retail with substantial trade discount, but there were no later references to them, and nor were they included in any other Tan-Sad ads. So were sets ever actually produced for sale? And if not, why not? Perhaps the price was too high, or perhaps there were problems in producing parts sufficiently accurately to ensure a tight enough fit between the different parts. Please go hunt in your box of odds and ends to see if there are any possible TAN-SAD parts there.

More on NOMA BOOMTOWN An account, largely from the contents of a manual, was given in 15/422, and now more material is to hand. The main items are a seemingly unused No.9 set kindly lent by David Hobson, and details of a No.3 outfit thanks to Kendrick Bisset. Also some parts from another set, probably a No.9; and Ebay photos of two No.3's.

The PARTS The notes below will help in identifying the parts though many are unique to NOMA B. Most can be seen in the photos of the sets shown later or among the smaller parts below. The only part not in the No.9 is the Wheel Disc – in the

Manual it looks like the disc used for the Bush Wheel. All the parts are steel except the brass Bush Wheel, and all the bosses, again brass. Most parts are accurately made and generally quite well finished. The parts that have 5-40 tapped hole in them are made of 1mm thick metal. The black parts are chemically blackened. The corners of the A/Gs & Plates are square. The only slotted holes are in the Bush Wheel. The contents of the No.9 are given in curly brackets and include the N&B used in holding the parts to the tray.

• **Holes** are at 12.7mm pitch and are mostly 5.1mm Ø.

• The **90, 180, & 360° Clamps** are cut from a 38mm Ø disc, and flanged all round to a depth of 2.7mm. {8,8,8}

• **Rods** are 4.70 to 4.75mm Ø with sheared ends. Lengths are 1½-6" in ½" steps, plus 8 & 9". {8,8,8,6,4,4,4,4,4,4,4,4}

• **Plates** are 8*4,8,12,18h with extra holes at 1" pitch along the longest centre line, except that on the 4*8h they are along the 4h length (so only 2 holes), and not as shown in the Manual & OSN 15. {2,2,3,3}

• **A/Gs** are 8 & 14h long, 13*14 to 13½*13½mm in section, with 2mm of metal outside the holes. {4,2}

• **Wheels** The **Road Wheel** is 76mm Ø & 10mm wide at the 'tyre'. The **Bush Wheel** is 30.5mm Ø and has 4 holes on a $^{13}/_{16}$" pcd, with 4 similar in between but slotted towards the centre by 1mm. The **Pulley** is 26mm Ø & 5.4mm wide. {6,2,4}

Bosses are 9.5 o.d., 5.0mm bore, 6.7mm long, single-tapped 5-40, and with a thin ring of peening.

• The **NBW** are all brass plated, with nicely pressed Nuts.

The 10-32 parts: The **short Bolt** has a 7.6mm fillister head and is $^{3}/_{16}$" u/h, but with an extra $^{1}/_{16}$" for the pointed shank; the **longer Bolts** are $^{5}/_{8}$ & $^{7}/_{8}$" u/h and have a RH, 8.5-8.7mm Ø. The **Nut** is 9.5mm A/F & 3.2mm thick. The **Washer** is 11mm o.d. & .8mm thick. {26,10,34,52,30}

The 5-40 parts: The **short Bolt**, $^{3}/_{16}$" u/h, has a 7.6mm slightly rounded, tapered CH; the **long Bolt**, $^{3}/_{8}$" u/h, has a 5.2mm RH. The **Nut** is 7.9mm A/F & 2.9mm thick. {4,37,4}

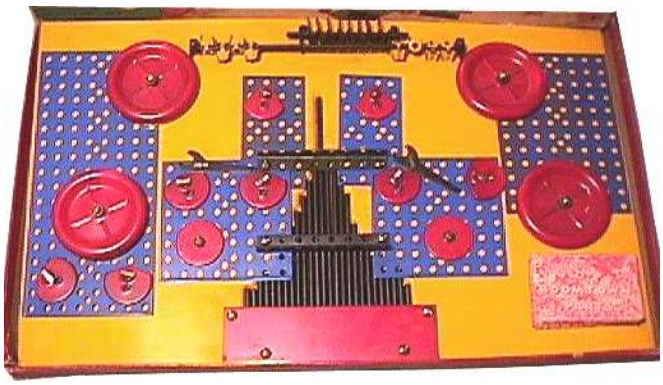
• **Brackets** The **A/B** is about 13*13mm, 10½mm wide, and is made of thin, .5mm, metal. {20} The **Beam Clip** is identical except the metal is 1mm thick and it is black instead of yellow. {12}

• **Other Parts used in clamping** The **Wedge** is 16mm long o/a. {20} The **Half Ball** is 21mm long & 10mm wide. {14} The **Spring** is about 8mm Ø, 7mm long, and is wound from .6mm bright wire. {12}

• **Other Parts** The **Straight Clamp** is 11mm wide, 22mm long o/a, and is tapped 5-40 through the top of the 'U'. {18} The U-shaped **Collar** has 9.5mm wide sides, is tapped 5-40, and the side holes are 4.8-4.9mm holes. {12} The **Rod Coupling** is 19mm long & 8.7mm wide. The centre hole is 3.2mm and takes the 5-40 N&B to clamp a pair together. {4 pairs} The **Hook** is a feeble thing, 15mm long o/a, and made of .5mm bright wire. {1} The **Span'driver** is 62mm long o/a & the hole in it is 3.9mm Ø. {2}

• The sideplates of the **C/W Motor** measure 2¾*3½" and are spaced ¾" apart. The winding spindle is $^{1}/_{8}$" square and the nickel Key is 41mm across its wings with a 4.7mm hole in the centre.

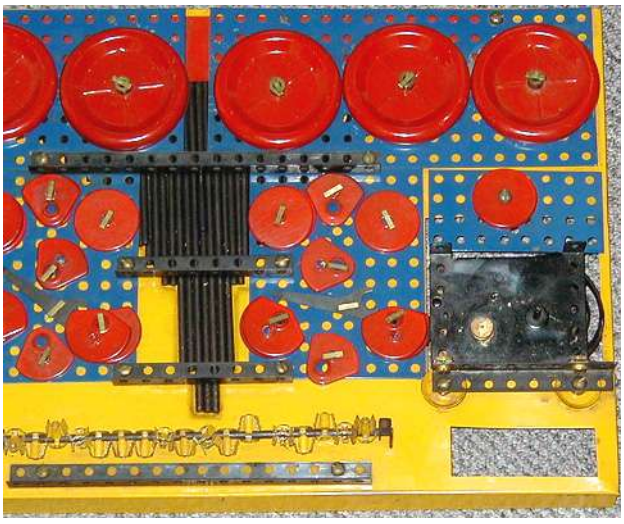
The No.3 SET The lid & the parts layout of an Ebay set, apparently in original condition, are shown below. The box is 19½*12¼*1". The main parts are attached to a pressed metal 'tray' which sits on the ¼" flange around its edges – some



parts are bolted to it, & some clipped to the bolted parts. The Rods fit into a shaped recess in the tray with their ends held under the A/Gs and a red metal packing plate. The N&B, etc are in the card box bottom right, which pushes into a cutout in the tray. The manual is the one described in OSN 15. The layout of the parts is different to that shown on the back page of the manual, and the holes in the tray for the Bolts holding the parts would not be suitable for the manual scheme.

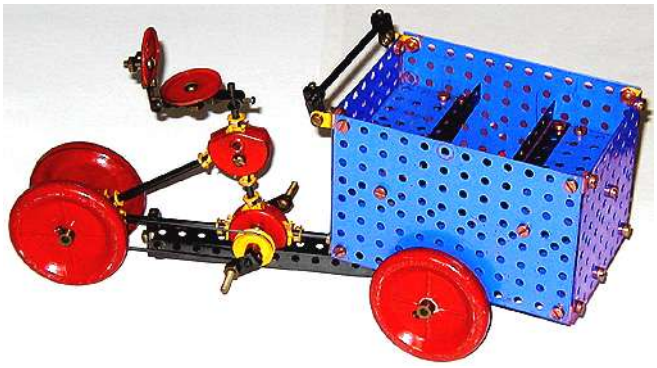
The No.9 SET The box measures 19½*12¼*2", the same size in plan as the No.3, and the set weighs some 8lb. The sides of the bottom are trimmed in red like the No.3, and the lid is the same too except that the background colour along the top and down the left side is yellow instead of green. The set number is on the ends of the lid, together with the maker's address, copyright 1947, & the patent numbers that were given in OSN 15.

The parts are again attached to a yellow metal tray, but in this case it is flanged to a depth of 1" all round, The right half is shown at the head of the next column; the left side is almost the same except that an 8*8h Plate and 2 Bush Wheels replace the C/W Motor & 4*8h Plate. The bottom left corner is shown to the right of the main view. As with the No.3 the main parts are held by N&B or clips, and again the Rods fit into a recess – in this case the red steel packing plate (its centre is just visible between the blue Plates at the top) measures $1^{5}/_{8}$*13". Apart from the yellow Wedges on the Rod along the bottom, the small parts are in one card box, with the N&B in another. They are identical and push edgeways into openings in the bottom corners - one is shown laid flat in the view of the



left corner.

The manual is again as in OSN 15, and as with the No.3, the layout of the parts is not as shown in it. Equally, the holes in the tray would preclude the manual arrangement.



USING the PARTS The parts are quite substantial and the (rather small) structures I have made are rigid, with the Rods held exceptionally well – but only if the Bolts through the Clamps are very tight, tighter than could be achieved with the driver end of the Span'driver in the Set. So, better in that respect than most comparable systems, but the size of the Clamps often make them look obtrusive. The main problems for the modeller are that the Clamps are very fiddly to assemble, particularly if more than 2 Wedges are to be used, and more small parts, Plates, A/Gs, etc are needed to make reasonably realistic models. Also if a Half Ball is to be used between the Clamps to allow a cross shaft to run freely, great care is needed to have the Clamps exactly in line as the through Bolt is tightened. I made the No.9 Bicycle Ice Cream Vendor (above right) with my parts. It is about 14″ long and is arguably the most realistic model in the Manual.

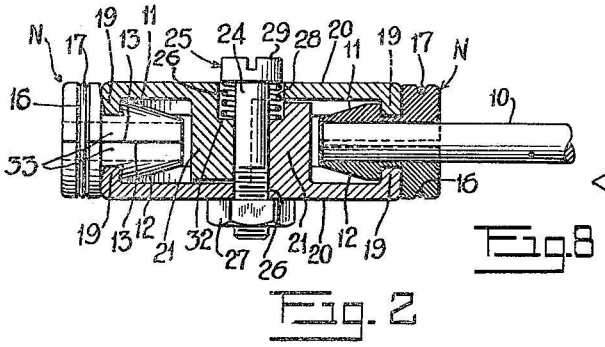


Fig. 2

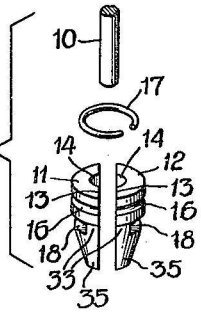


Fig. 8

The PATENTS The application for **#2410874** was made in January, 1946 by Henry Greenberg, New York, & John J. O'Connell, Jamaica, N.Y., assignors to the Norwalk Lock Company, South Norwalk, Conn. It shows a version of the 360° Clamp that is rather more complex than the production item. The main parts can be seen top left opposite in Fig.2, with details of the 2-part Wedge, held by the springy circular clip 17, in Fig.8 alongside.

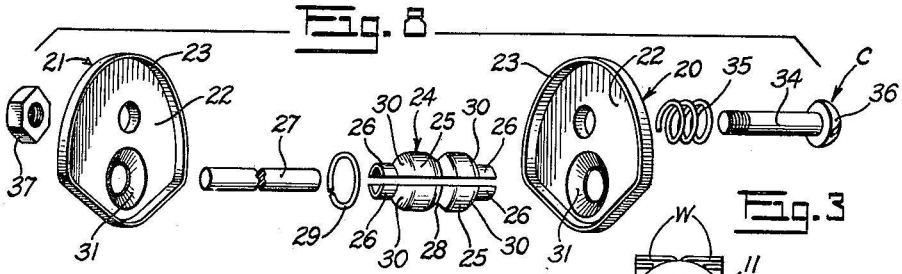


Fig. 8

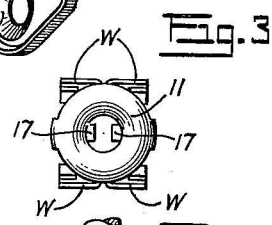


Fig. 3

The application for the second patent, **#2410875**, followed in June, 1946 and was in the name of Louis Segal, New York, N.Y. The illustrations show the 180° Clamp and as can be seen from Figs.8 & 9 right, it is quite similar to the parts actually produced. The Wedge has been simplified and is bent up from one pressing (Figs.3 & 4). The Half Ball idea is included although a groove is provided to allow a suggested clip 29 to hold the 2 halves together. Nothing is said of using only one Half Ball to allow a through shaft to turn freely.

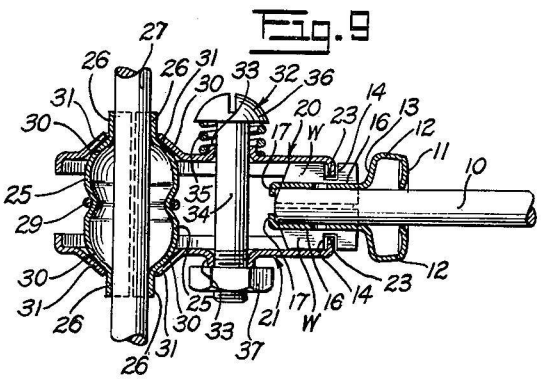


Fig. 9

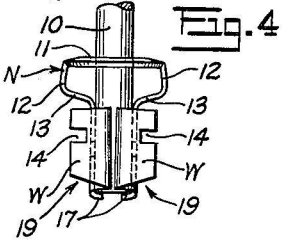


Fig. 4