

NEWS 174



PROTO TOOLS
Professional Quality

**PROTO means
PROfessional
TOols!**

CATALOG NO. 5124

Issued by
PLOMB TOOL COMPANY
Los Angeles, Calif.

The advertisement is a vertical rectangular poster. The top half has a blue background with a woman in a white ribbon, arms outstretched. The bottom half has a red background with various tools. The text 'PROTO TOOLS' is in large, bold, white letters with a black outline. Below it, 'Professional Quality' is in a smaller, white, cursive font. The slogan 'PROTO means PROfessional TOols!' is in bold black letters. The catalog number 'CATALOG NO. 5124' and the publisher information 'Issued by PLOMB TOOL COMPANY Los Angeles, Calif.' are at the bottom right.

December 2022

www.ttg.org.au

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Cover illustration: cover of Proto / Plomb Tools catalogue No.5124 of 1951

3	River Lett Hands Saws
6	Articles from the Archives: Sash Scribing Planes
10	Handles for Stanley Planes
11	When Advertising Was Inspiring
20	More Sidchrome 'Gold'
21	The Wonderful World of Patents
22	TTTG Member Access to Bunnings PowerPass Trade Card
23	The Wreck of the 'Rex'
29	Single-phase vs three-phase AC: What's the difference
33	The Next TTTG Workshop: Handsaw and backsaws
34	TTTG Sydney Tool Sale: 26 February 2023
35	Hare & Forbes Machinery Warehouse
36	What is TTTG & TTTG Membership Rules
37	TTTG Fees, Contacts, Publications and Member Meetings

TTTG Meetings and Events:

Want details of TTTG Meetings, Workshops and Sales?

Please see our website:

www.tttg.org.au

River Lett Hand Saws

by Andrew Morony

In many ways I stumbled across River Lett hand saws by chance. For some time, I favoured collecting old saws as they were often quite cheap to purchase. The challenge with them however is that they are larger than most tools and do take some space and work to clean up well.

My first River Lett saw came to me via an online sale of 10 saws for \$30. I collected them from the inner west of Sydney and all of them were in varying shapes and condition. The River Lett decal/logo was not evident in the photos, which may have helped me with the sale process. The woman I bought them off stated her husband had collected them with the intention to clean them up, but as we all know, sometimes things just don't move from where they are put when they first arrive in the shed/garage etc.



Image above: River Lett – 28 Inch Thumbhole Rip Saw 4.5PPI

River Lett hand saws were made in Lithgow NSW, within the Lithgow Small Arms Factory. Below is an excerpt from the Lithgow Small Arms Factory Museum www.lithgowsafmuseum.org.au

Commercial production of Lithgow SAF

What does an arms factory do when there is no demand for weapons?

The story of the Factory is one of boom and bust. Frantically busy in times of war but trying desperately to stay afloat at other times as demand for arms dwindled. Work for the commercial market helped to keep a 'nucleus' factory (one that was barely ticking over) ready for full-scale arms production for when it would be needed again - more often than not at a loss due to high wages and devotion to military quality, but this was the price the Government had to pay to keep valuable skills and manufacturing capacity.

Between the first and second World Wars the Government was reluctant to allow the Factory to compete against or take work away from private firms, realising that this would be only shifting unemployment and angering another section of workers and unions. Government relaxed this attitude somewhat after World War II being more willing to allow the Factory to prop itself up with outside work.

Over the years an incredible variety of smaller 'outside work' was produced along with the more complex items, including adze tools, toasting forms, architectural castings, coal picks, door closers, dental picks, drill chucks, nail (and other) punches, springs, streamlined wires for bracing wings of bi-planes, stub axles, tie-rod ends, tow-balls, trowels, wheel braces, bottle openers and nuts, bolts and screws.

The Factory also assisted other industries by producing forgings and investment casted components for them.

Notable commercial production of Lithgow SAF

Admiral Record Changer parts	Motor vehicle components
Aircraft parts	Outboard marine shafts
Arc lamps for Projectors	PA Multitool Belt and Disc Linisher
Bottle openers and sealers for H E P Bracey	Pencil sharpeners
Crank shafts	Pruning shears
Diesel engine components	Refrigerator components and motor parts
Drill chucks for Qualos	Sewing machines (Pinnock and others)
Faces for Sydney parking meters (\$1 & \$2 coins)	Sheep shearing handsets
Centrex film projector components	Slazenger golf club heads
Components for F W Hughes Woollen Mills	Spanners (Zircalloy and various others)
Gear Blanks	Sunbeam Mixmaster
Hand cuffs	Tractor components
Locomotive components	Victa Mower components
Medical implants	Westrex universal base for adapting silent projectors for sound
River Lett hand saw	

I liked that the saws were Australian made, and so close to my home of Sydney. The rarity of these saws is in part due to the small production, but also in part due to the decal on the handle, rather than a brass medallion for identification purposes. I'm sure the decal degraded relatively easily depending on use and how it was stored. I imagine many have been considered just old 'no brand' saws if the decal has eroded, and the saw has no etch on the blade (from what I understand). I carefully restored the saw, taking particular care to preserve the decal on the handle.



I am pleased to say that this Thumbhole Rip Saw has returned to its origins and now resides back at the Lithgow Small Arms Factory Museum. At the time (back in 2020), the museum did not own an example of the thumbhole rip saw.

The second River Lett saw was found in Sydney also. This one was proudly hung in a couple's garage in the inner west of Sydney again. I acquired two saws in that purchase, but it was the River Lett saw that made the trip worth it. I was fortunate to find a saw with a very good quality decal/logo intact.



The saw pictured above was ultimately purchased by a collector in Queensland. The hunt for another River Lett saw continues. If you are keen to see what tools I have dug up or restored, follow along via

Instagram – [@whiskeyandvintagetools](#) or [@vintagetoolssydney](#)

Facebook - [@vintagetoolssydney](#)

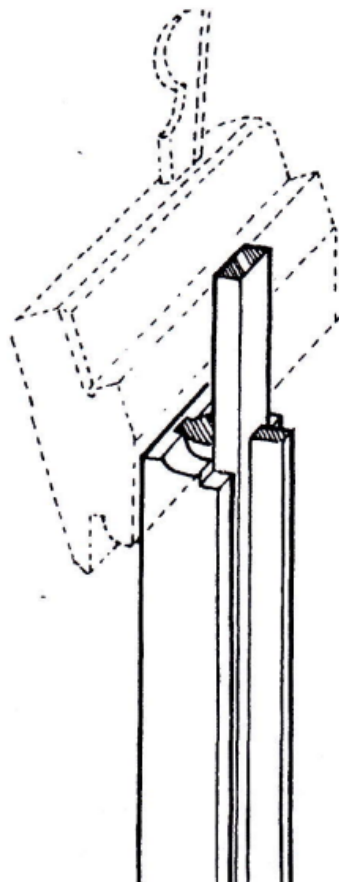
Sash Scribing Planes

Bob Crosbie

According to Salaman's Dictionary of Tools used in the woodworking and allied trades c.1700-1970 the sash scribing plane was obsolete by 1890. Prior to this date it was used to work the scribe on the tenon shoulders of sash bars. The sash scribing plane was superseded by the use of the scribing gouge and sash templates.

The shoulders of sash rails were scribed with the gouge as the scribe was stopped. Sash templates for scribing bars are known from the early 19th century. The sash scribing plane was an alternative to the gouge for scribing bars. How was this plane used and why did it become obsolete?

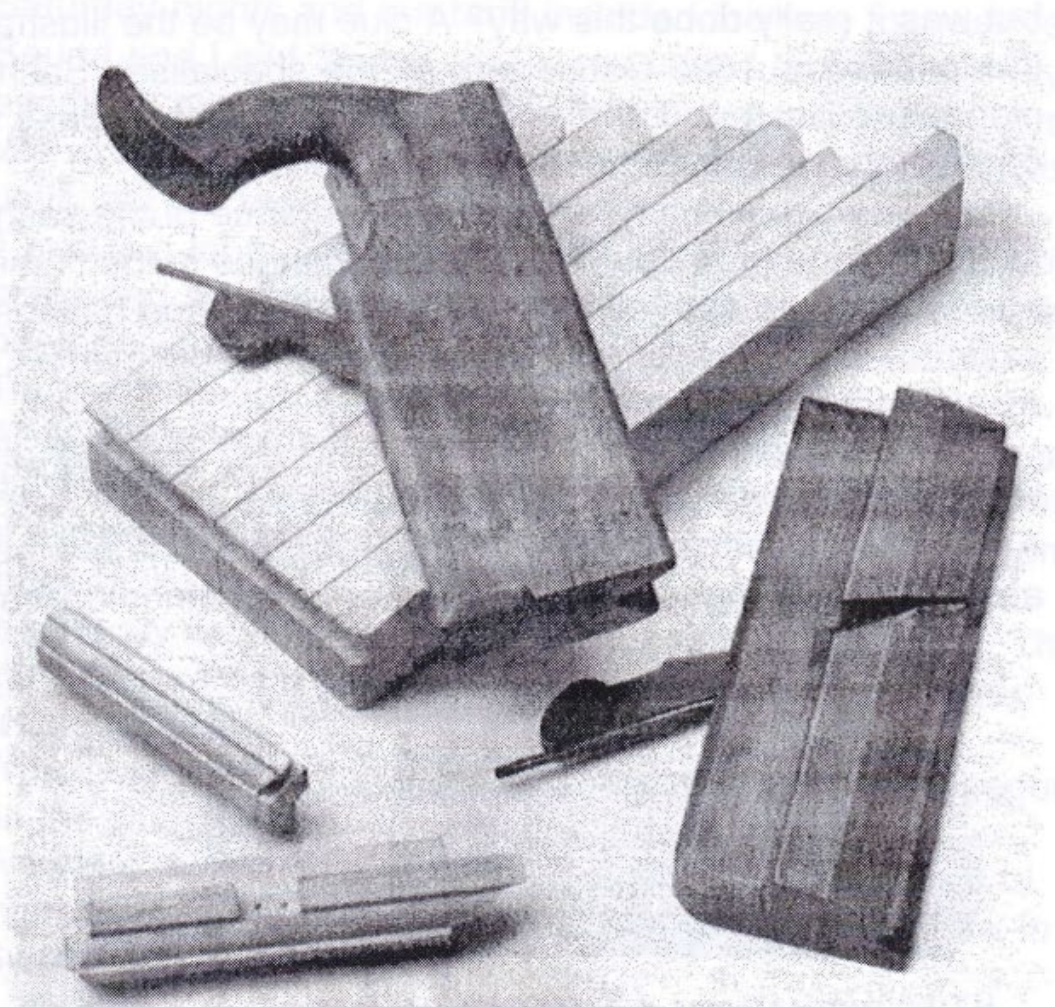
Salaman proposes a probable method. The completed sash bar is placed in the sash saddle template and the scribing plane is used to form the scribe. The illustration makes this technique clear.



The first practical objection to this method is the problem of the plane iron cutting into the template. If the scribe line was mitred first, with a template, the method might work. However there is no evidence for this theory and sash scribing planes and templates cannot be used in this manner.

Let me explain why this is so. The sash scribing plane's sole is the exact reverse of the sash plane it matches. The planes' fence must run along the face edge of the sash bar. A sash saddle template has a fence on the sash bars' face edge and it cannot function without this fence. It would be possible to make a sash scribing plane to work against a template but this is not the way these planes were made.

What then is the likely practical method of using a sash scribing plane? I believe two methods are probable. The key is to appreciate that sashes were made in quantity and to a rigid standard. Joinery was made to "list price" and efficient production was essential for any profit margin.



Marking out the tenons on sash bars, sawing the tenon cheeks, "sticking" the profile, sawing the shoulders and then scribing is time consuming. If the tenons and scribes are made before "sticking" the profile considerable time can be saved. As the bar is supported on the "sticking board" there is no difficulty in using the sash fillister and sash plane to plane the rebates and sash mould.

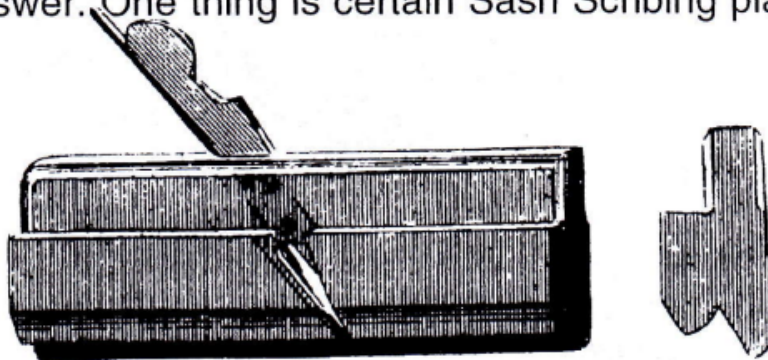
The sash bars could have been planed to size and then clamped together before tenon cutting and planing the scribe. Alternatively a wide board may have been tenoned, scribed and then ripped and planed to width. The latter method seems the most likely.

To form the tenons planes were probably used. The shoulders could be cut with a trenching plane followed by a bench plane or the shouldering plane followed by the badger. If the bars were planed to profile with a stick and rebate plane then a considerable saving in time would be achieved.

This method works well and produces very clean work but was it really done this way? A clue may be the illustrations in Mathiesons' 1899 Catalogue. All the specialised Sash planes are illustrated. If they were not used as I propose what other probable method can be advanced?

The explanation for the disappearance of the sash scribing plane may be related to the changes in the timber trade in the late 19th century. Imported deals and battens sawn to sizes suitable for joiners' work probably made resawing wide boards uneconomical.

Or maybe the sash scribing plane was too much of a bother to sharpen when a gouge did the job equally well. All this is conjecture and we will probably never know the answer. One thing is certain Sash Scribing planes are rare.



817 Scribing Plane. Gothic

The above article on Sash Scribing Planes was written by Bob Crosbie and published in TTTG Newsletter 51, February 2000, pp.8-10.

More Articles from the Archives in the next issue of TTTG NEWS magazine.

Got an interesting advertisement or article from the past that you would like to see published in NEWS? Then send it to the NEWS Editor editor@tttg.org.au as a pdf or jpeg file or send an original via post to 5 Morvan Street, Denistone West NSW 2114.

Handles for Stanley Planes

Exclusive to TTTG

Handles to fit Stanley planes, and copies of Stanley planes, are sold at all TTTG meetings, tool sales, events and workshops. Price is \$10 per handle.

What Planes?

TTTG handles are close copies of old broken handles from old planes. The TTTG handles are not based on "Type drawings" from the internet.

What sizes?

TTTG handles are available to fit No.2 to No.7 Stanley and Bedrock planes. The handles will also fit Record, Sargent, Pope/Falcon, Carter and similar.

What timber?

TTTG handles are for planes made in the years 1900 to 1960s. The handles are made from recycled or off cut well-seasoned hardwoods. Species include NSW Rosewood, American Beech, Kwila, and Camphor Laurel.

How are the handles made?

TTTG handles are produced with a sequence of machining jigs in batches. After profile shaping the handles are drilled for the metal fittings. Batch production means consistent quality and reasonable price.

The timber is prepared in minimum lengths of 600mm, 140mm x 24mm. After machining and drilling the handles are "ready to sand and fit.

Want a handle made from your own piece of timber? Then you will have to make it!

Some Handles have long toes!

The length of the toes on the No.3 and No.4 planes varies with the age of the plane. Some TTTG handles for these planes are sold with long toes. The buyer can then "custom fit" the handle. A simple job for a plane user.

Sanding

The machining leaves the handles needing only a light hand sanding. The golden rule is "don't sand across the grain."

Finish

The original finish on the old plane handles was "industry normal" for the time and includes Shellac, Varnish, Nitrocellulose, and Polyurethane. TTTG's supplier recommends Liquid Shoe Polish. This matches any colour and lasts.

Some buyers may pick up a finished 'sample' handle and ask is it "Rosewood." The answer is: "Camphor Laurel finished with Liquid Shoe Polish."

When Advertising was Inspiring

If the cover photo of NEWS 174 didn't inspire you then maybe one of these will.



ABOVE: Richardson Brothers, Newark NJ, USA – trade or business card c.1870



ABOVE: Trenton Anvils by the Columbus Forge & Iron Co., Columbus, OH, USA c.1910



ABOVE: Woodrough & McParlin, Cincinnati, OH, USA c.1880

Hand Tools with a Pedigree!



BUY BRITISH!

... and a name for quality, precision engineering and superlative finish may be seen on our Stand at this year's Show.

A very wide Range of Equipment may be inspected from heavy Caterpillar Tractor Kits to the smallest B.A. Socket Sets.



SEE STAND No. 491 SECTION F AT THE SHOW!



A B I N G D O N

KING DICK

ABINGDON WORKS . KINGS ROAD . BIRMINGHAM II . ENGLAND


ABOVE: 'King Dick' by Abingdon King Dick, Birmingham, England – October 1956

Trade Mark. **THOS. R. ELLIN (FOOTPRINT WORKS) Ltd.** Trade Mark.

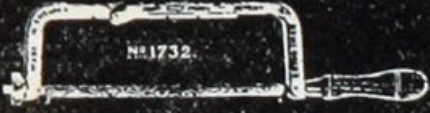
(Write for List.) **SHEFFIELD, ENGLAND.**


FOOTPRINT ENGINEERS' TOOLS. DOMINO


INSTANT ADJUSTMENT

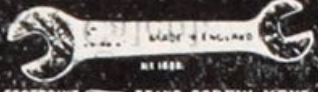
 No. 2142.
DOMINO BRAND Patent PRESS PIN WRENCH.


 No. 341 & 342.
FOOTPRINT BRAND TEMPERED STEEL SHIFTING SPANNER.


 No. 1732.
FOOTPRINT BRAND U SECTION HACK SAW FRAME.


 No. 950 & No. 951.
FOOTPRINT BRAND WROUGHT STEEL TUBE CUTTER.


 No. 443.
FOOTPRINT BRAND TURNSCRAWs.


 No. 1888.
FOOTPRINT BRAND SCREW KEYS.


 No. 538.
FOOTPRINT BRAND HAMMERS.


 No. 865.
FOOTPRINT BRAND CALLIPERS.

 No. 54). FOOTPRINT BRAND STOCKS AND DIES.


 No. 585T. FOOTPRINT BRAND TAPS.

 No. 309 FIG. 1.
FOOTPRINT BRAND PORTABLE TUBE VICE.


 No. 915 3".
FOOTPRINT BRAND ALL STEEL CYCLE SPANNER.


 No. 1866.
FOOTPRINT BRAND PIPE CLAMP.


 No. 1300.
DOMINO BRAND CENTRE PUNCH.


 No. 752.
FOOTPRINT BRAND HAND VICE.


 No. 708.
FOOTPRINT BRAND ALL-STEEL ADJUSTABLE PIPE-TONGS or WRENCH.

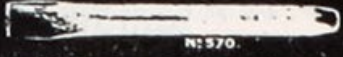
 No. 533.
FOOTPRINT BRAND TOGGLE JOINTED CUTTING NIPPERS.

 No. 916.
FOOTPRINT BRAND ADJUSTABLE SOLDERING IRON.

 No. 1188.
DOMINO BRAND CLYBURN SPANNER.

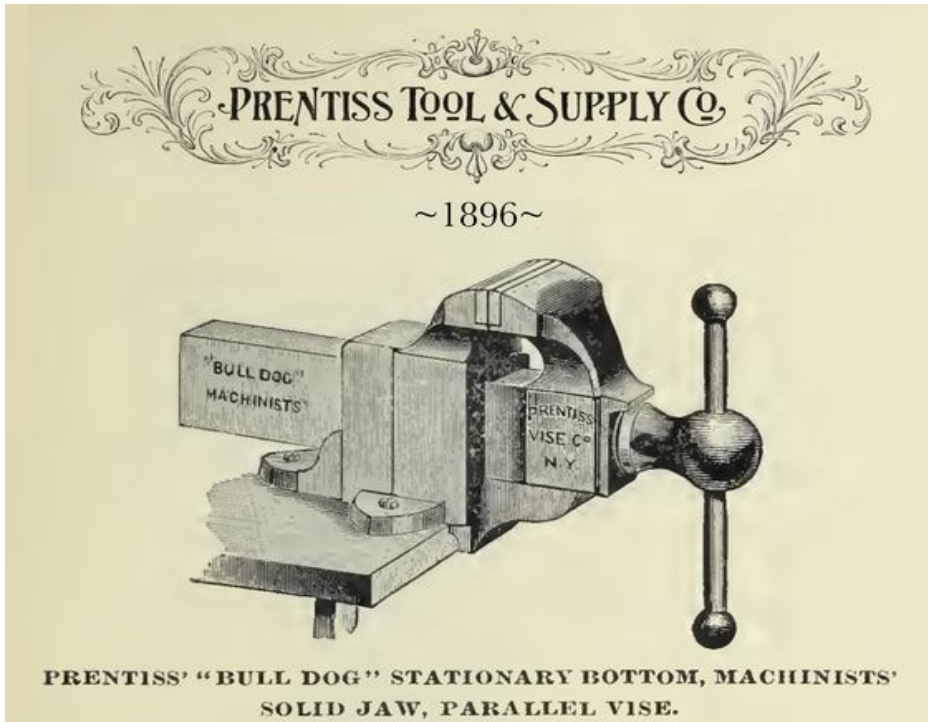
 No. 1874.
DOMINO BRAND COMBINATION PLIERS.

 No. 199.
FOOTPRINT BRAND TINSNIPS.

 No. 570.
DOMINO BRAND COLD CHISELS.

 No. 869.
FOOTPRINT BRAND DIVIDERS.

ABOVE: Thomas R Ellin (Footprint Works) Ltd, Sheffield, England c.1926



ABOVE: "Bull Dog" machinists' vise by Prentiss Vise Co., NY, USA c.1896



LEFT & ABOVE: Henry Disston & Sons Inc., Philadelphia, USA



ABOVE: 'Sidchrome' by Siddons Drop Forgings, Australia

5¹/₄ A New Size
in the
Genuine
Stanley Bailey
Plane

The Standard Plane
of the World



POPULAR with the carpenter, the manual training instructor and the amateur tool user because of its adaptability to general planing work. Catalog No. 34d, showing the full line of Stanley Tools, will be sent you free upon request. The Stanley Rule & Level Plant, New Britain, Conn.

Other Stanley Tools maintaining the same standard of quality as Stanley Bailey Planes

RULES
 HAMMERS

SCREW DRIVERS
 BIT BRACES

LEVELS
 CHISELS


STANLEY TOOLS

The Choice of Most Carpenters

ABOVE: Stanley Rule & Level Co., New Britain, CONN, USA

Stanley Tools

BED ROCK PLANES



Stanley Rule & Level Co.
NEW BRITAIN, CONN. U.S.A.

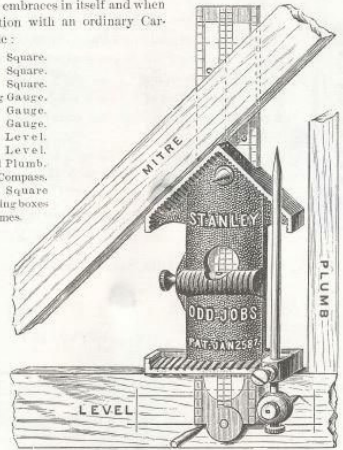
STANLEY'S "ODD-JOBS," 49

STANLEY'S "ODD-JOBS."

20,000 Already Sold.

This Tool embraces in itself and when in combination with an ordinary Carpenters' Rule:

- Try Square.
- Mitre Square.
- T-Square.
- Marking Gauge.
- Mortise Gauge.
- Depth Gauge.
- Mitre Level.
- Spirit Level.
- and Plumb.
- Beam Compass.
- Inside Square for making boxes and frames.



A Mechanic who has this Tool to use on his rule, can do all ordinary Jobs with only a Saw, a Hammer and a Plane, in addition.

Attach the Tool to a Rule, making a try-square, or a T-square, with long or short tongue; also, a right or left-hand-mitre-square. The pointed steel rod is a scratch-awl.

A marking-gauge is made by setting the point, or pencil, at any required distance from the square end of the stock. A mortise-gauge, also, by inserting an additional point, or pencil, in the angle at head of the Rule. A graduated depth-gauge is furnished by extending the Rule down from the square end of the stock.

The steel point at mitred end of the tool forms a center, from which a circle can be swung (as with a beam compass) $1\frac{1}{2}$ to 13 inches in diameter. A circle of 25 inches diameter can be made, if the Rule alone is used, with a pencil in the angle at its head.

No. 1. Odd Jobs, Nickel Plated, with Level \$0 75

ABOVE and BELOW: Stanley Rule & Level Co., New Britain, CONN, USA

PRICE LIST: 1898

STANLEY

RULE AND LEVEL COMPANY.
NEW BRITAIN, CONN. U.S.A.

WAREHOUSES
107 CHAMBERS ST.
NEW YORK.

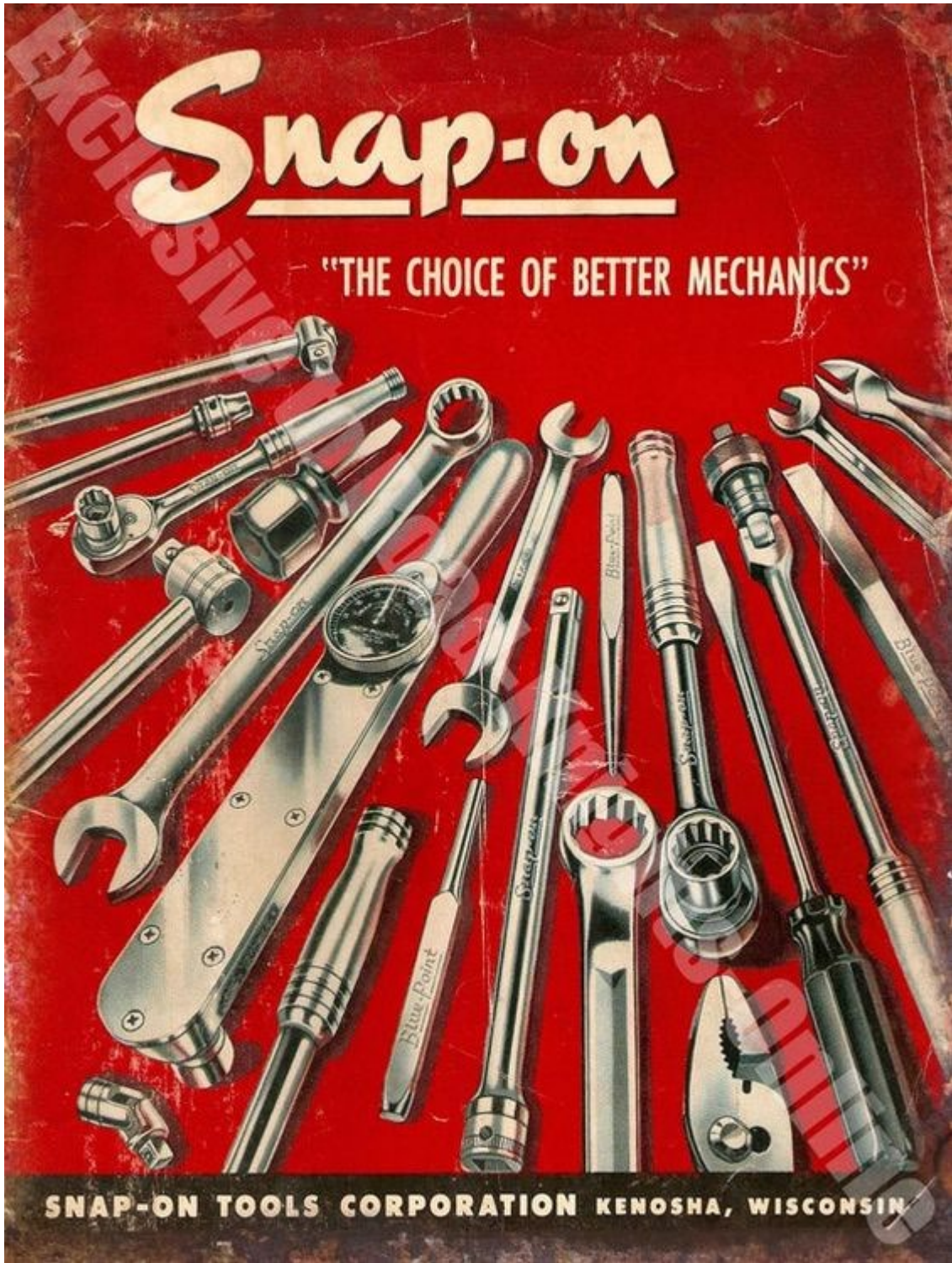
\$5.00

Stanley

45



SEVEN PLANES IN ONE



ABOVE: 'Snap-On' and 'Blue Point' by Snap-On Tools Corp., Kenosha, WI, USA

announcing the new
PLUMB F-55 HAMMER
 WITH GUARANTEED

**non-breakable
 fiber-glass
 handle**

**STRONGER THAN STEEL
 —WITH THE HICKORY FEEL**

Now, America's favorite hammer has a handle made of fiber-glass reinforced plastic. Tougher than steel—yet with hickory-like resilience that keeps shock transmission to a minimum.

NON-BREAKABLE In All Normal Hammer Use. The fiber-glass reinforced handle of the Plumb F-55 is made of the strongest structural material known. Yes, pound-for-pound it's stronger than structural steel. And over three years of constant testing under abnormally severe conditions . . . stress tests . . . continuous pounding tests . . . have proved this handle stronger than any hammer handle ever made.

HI-IMPACT STRENGTH The impact strength of this fiber-glass reinforced handle is so great that it absorbs the hardest shocks without fracture. It won't bend or split.

NON-DEFORMABLE It keeps its shape permanently, never takes a permanent "set." While it will flex in use, it won't deform.

PERFECTLY BALANCED Less than one-fourth the weight of steel, fiber-glass reinforced plastic permits a handle of normal size and shape with proper overall balance. It lets you do the job faster, with less effort. The comfort grip fits snugly in your hand. Yes, it has the same time-tested shape you've been used to.

WEATHER-RESISTANT The fiber-glass reinforced handle won't rust, shrink or swell.

HANDLE GUARANTEED TO STAY TIGHT IN THE HEAD The Plumb F-55 hammer head and handle are assembled with **PERMABOND**, a chemical weld — an exclusive Plumb development. **PERMABOND** is your assurance that the tool will never loosen — nor lose its head.

\$4.49 Slightly higher west of Rockies.
FAYETTE R. PLUMB, INC., Philadelphia 37, Pa.

Will flex - but will never bend out of original shape.

"I beam" construction - stronger than steel itself.

Hi-impact strength - will absorb shock without fracture.

Time-tested grip shape minimizes fatigue.

Long-life and resistance to wear, weather and corrosion.

PLUMB
 HAMMERS • HATCHETS • AXES • FILES

109

ABOVE: Fayette R Plumb Inc., Philadelphia, PA, USA c.1955

More Sidchrome 'Gold'

by John Bates

The tools below sold on eBay on 22 October 2022 – lot of 3 Sidchrome tools; 200 side cutter, 170 long nose pliers, 180 combination pliers. In 1970 the Repco trade price for these tools was \$2.97, \$2.83 and \$3.33, respectively.

Sale price? An astonishing \$226.50 plus shipping!



But I still cannot get over the \$101 paid for the Sidchrome tie-clip featured in the NEWS 173 magazine.

Got something special or interesting you would like to share?

Then please send me a picture and description and I will put it into NEWS.

Email your text and images to reproturn@bigpond.com

The Wonderful World of Patents

(No Model.)

2 Sheets—Sheet 1.

G. D. MOSHER.
PLANE.

No. 413,300.

Patented Oct. 22, 1889.

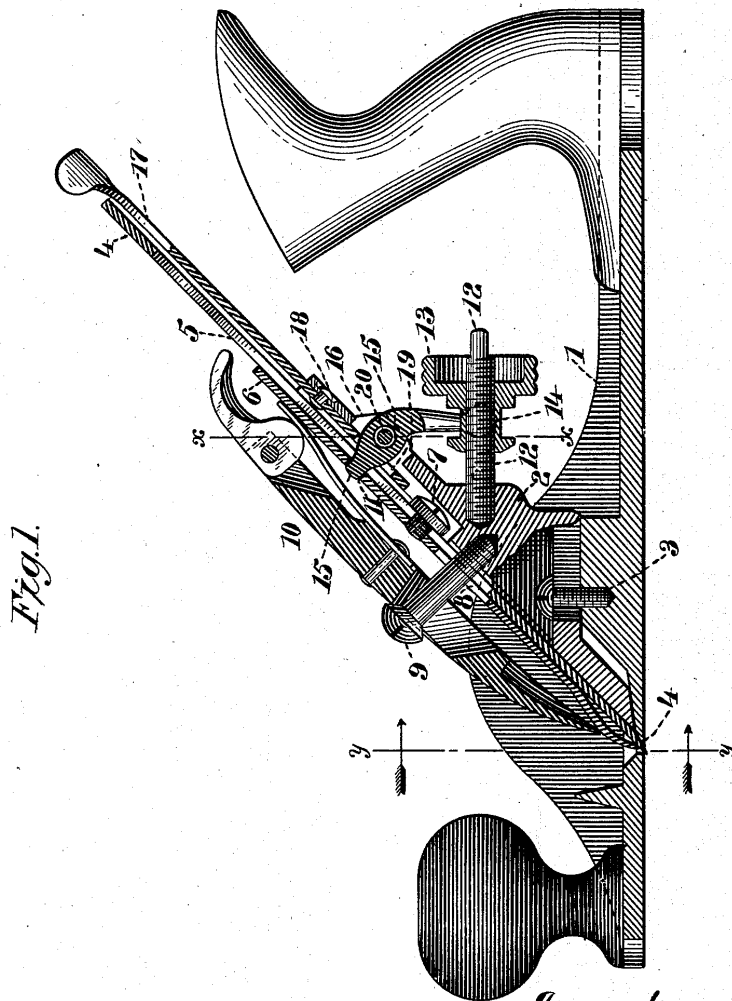


Fig. 1.

Witnesses
Wm. J. Panner
H. J. Panner.

Inventor
George D. Mosher
by his attorney D. H. Hubbard

"Wreck of the Rex": An Australian push mower

by Mike Williams

Despite the rising bank rate, the real estate market seems to be alive and well (at least around our area) which results in the odd pile of "junk" for the council clean-up, as years of accumulated stuff makes its way into the light of day from where it has languished for decades beneath the house-for-sale.

Recently, on one of our walks, amongst a pile of broken furniture, disintegrating pieces of chipboard and handle-less garden tools was an old barrel (or reel) push mower which caught our attention. My wife was taken by the rather well-turned shape of the wooden handle and the word "Marrickville" cast into the wheels, excited my attention! A Sydney-manufactured garden mower! And here it was destined for landfill!

It had to be saved. We returned home and collected the car to pick it up.



Decades of sitting in slightly damp soil under a house had taken its toll on one of the cast iron wheels and the steel striker plate on which the 5 curved blades cut was badly pitted and had rusted right through in places. However, some vestiges of the original paintwork remained here and there and better still, the transfer, indicating that this was "The Rex" model was still intact on the wooden handle. Further down the wooden shaft was another transfer which read that the mower

was guaranteed for 3 years! A rather conservative offer I thought for a piece of equipment made mostly of cast iron. Anyway, the guarantee had well and truly expired!

After lightly cleaning the wooden handle, the words "The Crowe Engineering Works Ltd Sydney NSW" could be just deciphered, stencilled in black down one side and down the other side "Self adjusting ball bearings." I turned to the trusty internet to discover who Crowe Engineering were and whether they still existed.



History of Crowe Engineering.

The firm was established in 1910 by Ernest Charles (E.C.) Crowe, first promoting his firm as general and motor engineers manufacturing crank shafts, buffing and grinding machines, automotive spare parts, and cylinders. However in 1922, Crowe Engineering began the manufacture of what was to become their lasting contribution to product design and development, the lawn mower. For the next 44 years, Ernest and his son Victor Charles (V.C.) Crowe, ran a very successful business, which produced some of Australia's most well-known brands of non-motorised lawn mowers.

The firm had a factory at 31-39 Holmsdale Street, Marrickville, Sydney, and remained there until operations ceased on Monday 28 March 1966, when the remaining plant was auctioned by F.R. Strange Pty Ltd., Sydney, owing to an earlier sale of the factory, the death of Ernest, and the retirement of Victor Crowe.

The most popular brand of Crowe hand mower was 'The Rex' and later the all metal 'Super Rex', the former being made from the early 1930s, economically supported by an Australia-wide regime of high tariff protection for general engineering production.

This example was probably made in the 1930s or 1940s. Much later than this, push mowers tended to be of lighter construction to combat the emergence of powered mowers which required much less effort to operate.

Restoring the “Wreck of the Rex”



Although I did not intend to use “The Rex” to regularly mow my lawns (time and the fatigue of age put paid to any ideas that I might have held in that direction), I intended to at least restore it to working condition if at all possible.

Years of rust had effectively welded many mild steel nuts and bolts together and they had to be carefully cut apart in order to dismantle the mower but in most cases, there was sufficient metal and thread left so that the bolt could be

identified. As expected, they were all standard Whitworth fastenings which were still available at Bunnings (but becoming increasingly hard to find on the shelves).

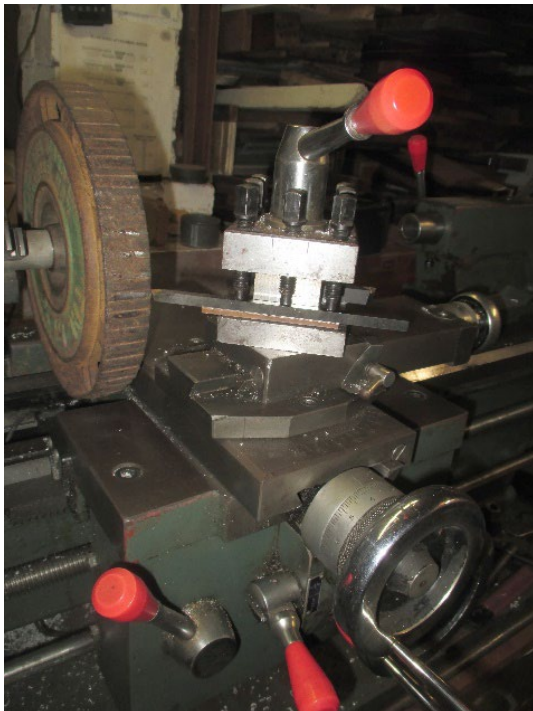
Lots of wire brushing and subsequent soaking in citric acid prepared most of the metalwork for painting and I tried to match the original colours that were left, allowing for the inevitable fading over the years. I decided to use single-pot epoxy paint designed specifically for metal as I have had good results in the past with this product.

There were two difficult areas in the restoration, and these were the severe corrosion on one of the wheels and the steel striker plate.

a) The wheel

The wheel periphery had been corroded so badly over about 1/4 of its circumference that it had completely lost the tread in that area and was significantly reduced to about half its thickness. I pondered as to what I could do to remedy this situation and initially thought that I might have been able to build up the damaged area with braze and then file it back to the original form. I soon disregarded this thought as I have had very little luck brazing cast iron, and this was probably due to the fact that I have been unable to reach the temperatures required. This would have been especially difficult due to the mass of the cast iron wheel.

I decided instead to use a product called "JB cold weld" which if the advertising blurb was to be believed was just the job! The product is a steel-loaded two-part, epoxy which when set is much harder than ordinary epoxy, works to higher temperatures and has a measurable tensile strength approaching 3000psi. This is of course a fraction of the tensile strength of solid steel but impressive non-the-less and should be adequate for the purpose.



After wire brushing and chipping all loose rust from the affected part, I mixed up the JB cold weld and layered it onto the wheel with a wooden spatula, building up the tread to a generous thickness and put it aside for a couple of days to fully harden.

My idea was to mount the wheel in my lathe and skim it so that the area of the JB cold weld was the same thickness as the rest of the wheel periphery and then file the tread pattern back onto that area. In order to mount the wheel, I turned up a mandrel which could then be held in the 3-jaw chuck, the wheel being held on the mandrel with a large nut.

The size of the wheel presented some difficulties, but I was able to mount it with a few millimetres to spare. The tool had to have quite a long projection to reach across the width of the wheel but since I was intending to just lightly skim the wheel to bring it back into roundness this did not matter. The JB cold weld turned particularly well and created quite a bit of mess as you can see from the picture. After removing the wheel from the lathe, I marked out the tread pattern (thankfully a very simple one) and filed the pattern into the JB cold weld. Colour was the main problem with the JB cold weld section a steel-



grey against the rest of the cast iron periphery. I decided then to paint the wheels satin black, once again with some epoxy paint which I had left over from another job, and the colour problem disappeared.

b) The striker plate

The striker plate was so corroded that it was unusable but fortunately it was a piece of spring steel rivetted onto a heavy cast iron base so that with some effort it was replaceable. It was a rather ingenious design in that the spring steel striker plate projected about 19mm out from the cast iron base so that it had enough “give” in order that the curved blades could press against it in their travel without incurring too much drag. It meant that adjusting the blades against the striker plate was less critical and would remain adjusted for longer.

I measured the corroded striker plate at many points and averaged the result, deciding that the thickness was about 50thou or 1.27mm. I decided to sacrifice one of my old saw blades that I hadn't got around to sharpening but realised that the saw blade steel was too thin. I ended up buying a small piece of 1.2mm thick spring steel on-line from Miniature Bearings Australia (MBA) whose business, besides bearings, is selling small quantities of material to hobby enthusiasts. I cut it exactly to size with my Dremel using a small cut-off disk and then drilled the rivet holes. I fortunately had some steel rivets left over from another project so in almost no time at all, I had a new striker plate installed.

c) The wooden roller

The wooden roller had completely disappeared, probably rotted away, so I had nothing to copy but I guessed that it was about 2 inches in diameter. At the back of the workshop, I had a small straight branch of boxwood that I had intended to use to make chisel handles but after I turned the first handle, I had discovered that it was badly spalted and whereas sometimes spalting is deemed decorative, it didn't seem to suit chisel handles so there it remained unused. It was thick enough and long enough to make the roller and the spalting would just give it an aged look, so I cut off a length and mounted it in the lathe. As it turned out, 2 inches was just a little too big. I discovered this when I trial-assembled the mower. It fouled part of the casting when fully adjusted for cutting height so back in the lathe to take off another 1/8th inch in diameter. Perfect!

d) Sharpening and adjusting

Some years ago I purchased a reel mower sharpening device at a garage sale and here was the ideal time to try it out. It also is Australian made, albeit rather crudely but it does the job. The picture shows the main elements of the device. The V-bracket rides on the main mower spacing bar and the cutter is a short broken-off piece of coarse file clamped at the other end. After adjusting it for appropriate length, the sharpening file is run back and forth along each one of the curved blades in turn.

The blade reel turns as you move the sharpener and if you keep the sharpener horizontal (or at a consistent angle), the reel blade is ground to a constant diameter



so that it will contact the striker plate along its full length. By careful use of the sharpener, you can then bring all 5 blades to the same diameter so that they all just touch the striker plate evenly. By adjusting the angle of the striker base casting with the adjusting screws, you can then set the blade interference with the striker plate so that the mower cuts the grass efficiently. And it works!

I would recommend that if you decided to cut your lawn with one of these reel-type cast iron mowers, you make sure that your lawn is flat and that you don't have to push it up hill. So saying, rather unexpectedly, "The Rex" handles leaves and the odd small twigs with no problem, probably due to the design of the spring steel striker plate, something that later light-weight reel mowers have difficulty dealing with.



TTTG Member Access To Bunnings PowerPass Trade Card

All TTTG Members can obtain a Bunnings PowerPass Card. To do this please contact the Secretary, John Bates, at secretary@tttg.org.au and provide the following information:

- Your title (Mr, Mrs, Ms etc);
- Your first name and surname (this must match your driver's licence or other form of ID which you use); and
- Your email address.

The TTTG Secretary will then use that information to Request an Additional Card from Bunnings in your name.

Request Additional Card

Title*

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A special thank you to TTTG Member, Greg Pryor, for negotiating and organising the TTTG Member access to the Bunnings PowerPass Card.

Single-phase vs three-phase AC: What's the difference?

by Temitayo Okeltola

Alternating current (AC) sources contribute immensely to powering many domestic and industrial devices today. These power sources are categorized based on several factors, but the most commonly used criterion is the number of phases. Based on the number of phases, AC sources come as single- and three-phase systems. Each phase system has its unique characteristics, advantages, drawbacks and suitability for different applications.

This article presents basic information about single-phase and three-phase power sources. But before delving right into these phase types, it helps to understand what AC entails.

What is AC?

AC is a type of electric power in which the electric current periodically reverses direction and changes its magnitude with time.

To understand how the technology works, consider Figure 1, which shows the waveform of a typical AC source. The current (or voltage) typically starts from zero, grows to a maximum, decreases to zero and reverses to a maximum (in the opposite direction), returns again to the original value, and so on.

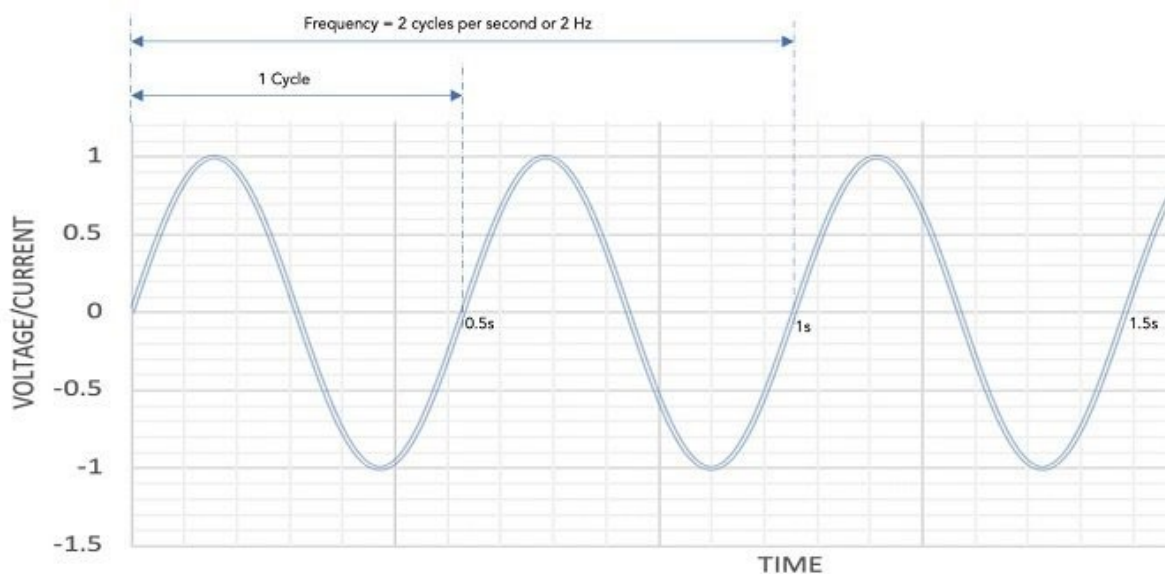


Figure 1: Typical AC waveform

The following terms are used to describe AC waveforms:

- Cycle: describes one complete wave of the AC (or voltage).
- Period: is the interval of time between two successive maximum values (or two successive points) on the AC sine wave. It describes the time it takes for one complete cycle of the AC sine wave and is measured in seconds.
- Frequency: is the number of cycles completed per second by the AC sine wave. It describes the rate at which current changes direction per second, and it is measured in Hertz (Hz). So if an AC power source is said to have a frequency of 60 Hz (which is usually the case in the U.S.), it means the waveform repeats itself 60 times in one second.

Single-phase AC power system

A single-phase power supply is a type of AC power system that distributes power using only two wires: the phase wire and neutral wire. The phase wire carries the current to the electric load, while the neutral wire acts as a returning path for the current.

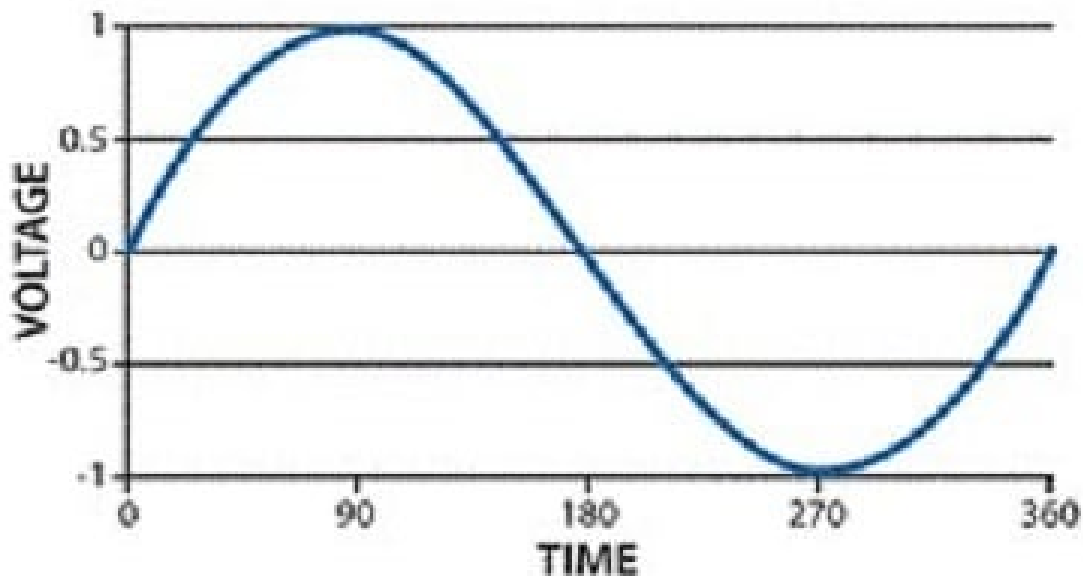


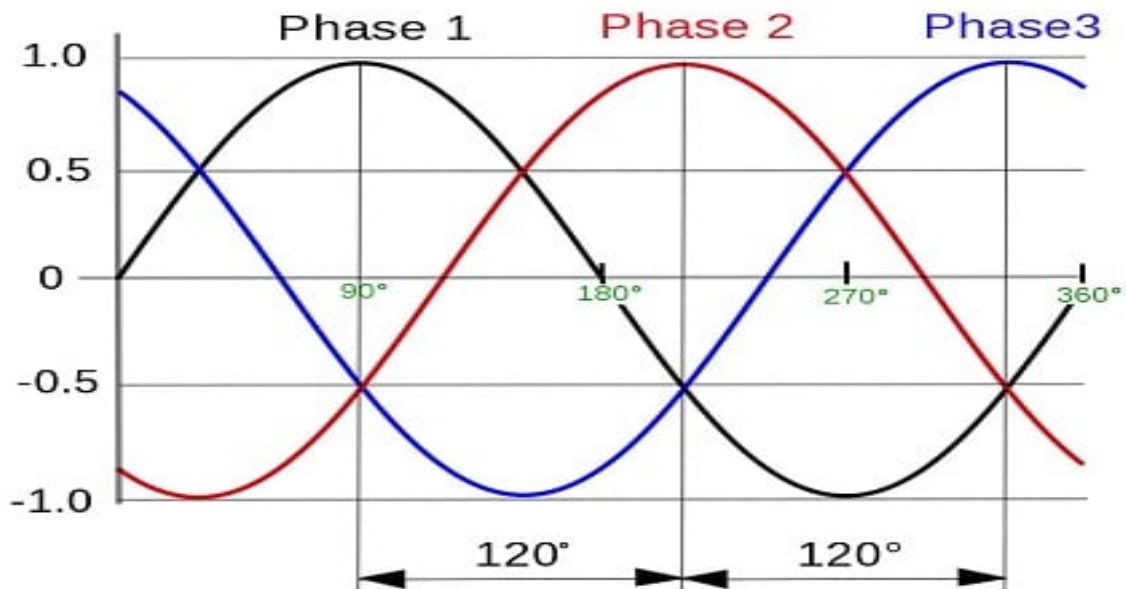
Figure 2: Single-phase AC power waveform

Figure 2 shows the AC sine wave of a typical single-phase system. As the image suggests, the voltage in this type of supply is minimum at 0° , peaks at 90° during the positive cycle, and peaks at 270° during the negative cycle. Single-phase frequency is usually 50 Hz (in Australia and Europe) and 60 Hz (in the U.S.).

Single-phase AC power supplies are ideal for applications with small power requirements, such as domestic appliances, air conditioners, grinders, televisions and fans. They typically can withstand loads of up to 2,400 W.

Three-phase AC power system

Unlike the single-phase AC power system, a three-phase power supply comprises three-phase wires and sometimes a neutral wire. Figure 3 shows the sinusoidal waveform of a typical three-phase AC supply. In this system, each phase wire is out



of phase with each other by 120°.

Figure 3. Three-phase AC power waveform

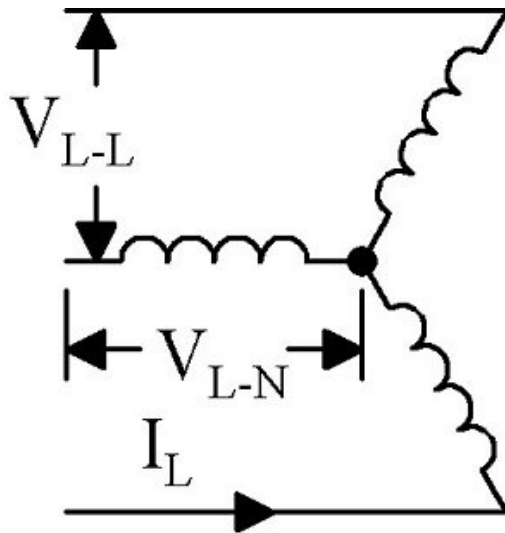
This means that during one cycle (or 360°), the peak voltage will be attained at least six times. As a result, three-phase systems can transmit three times as much power as a single-phase power supply in one cycle. In addition, the power load in three-phase AC systems is constant and never drops to zero, making them ideal for large industrial applications like motors. For example, they eliminate the need for starting capacitors to operate large industrial motors.

Configurations of three-phase systems

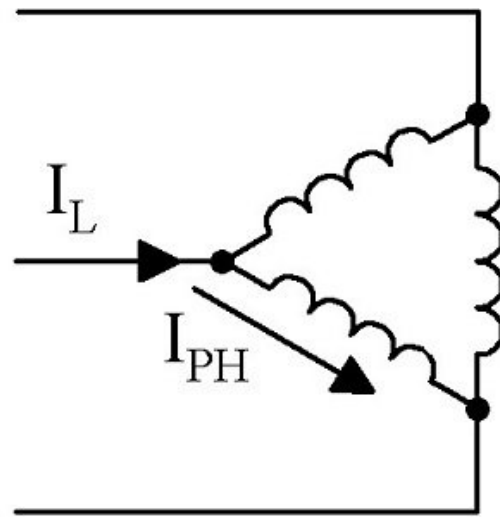
There are two common circuit configurations of the three-phase AC system:

1. Star (Wye or Y) configuration
2. Delta configuration

In the star configuration, there are three-phase wires, a neutral wire (usually at the terminal point of the circuit), and sometimes a ground wire to total five wires. In contrast, the delta configuration features three-phase wires (connected like a triangle) and a ground wire for a total of four wires.



Wye Connection



Delta Connection

Figure 4. Star and delta configurations

The star and delta configurations typically measure 208 V AC between any of the two-phase wires. However, in addition to this, the star configurations also measure 120 V AC between any phase wire and the neutral wire, allowing the possibility of achieving two different voltages and powering both three-phase and single-phase devices.

Simply put, delta configurations are ideal in applications that do not require a neutral wire. On the other hand, while star configurations offer application flexibility, it is usually expensive (especially when used in power transmission). This is because engineers would have to run a fourth neutral wire with the same distance as the phase wires.

SOURCE: Engineering360 <https://insights.globalspec.com/article/19377/single-phase-vs-three-phase-ac-what-s-the-difference>

The Next TTTG Workshop

THE 2023 ‘REAL SKILLS’ WORKSHOPS PROGRAM IS UNDER DEVELOPMENT

Our 2023 program will be announced in the Trad Tools monthly bulletin and on the TTTG website www.tttg.org.au

**Workshops will still run from 9.00am to 1.30pm
Old Eastwood Town Hall, 74 Agincourt Road, Marsfield
Still great value - Cost: \$60.00**

We teach real skills.

Check in by 9am - Refreshments provided but bring your lunch!

Cost \$60

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Enrol online: www.tttg.org.au

Available at TTTG Meetings, Workshops & Events

TTTG Leather Chisel Rolls	\$25 each
TTTG Sharp Oil	\$6 a bottle
TTTG Chisel and Plane Handles	\$10 each

TTTG Sydney Tool Sale 2023

Remember the date and time:

Sunday 26 February 2023 – 9.00 am to 1.00 pm

Remember the location:

**Brickpit Sports Stadium
1A Dartford Road, Thornleigh, NSW**

Remember the entry fee:

- \$10 per person – pay at the door and please have a \$10 note or \$10 in coins for entry.
- All purchases are made in cash at the sale and so having notes smaller than \$50 is a good idea.

Want to sell some tools – hire a table:

- \$50 per table – ask for a booking form via secretary@tttg.org.au
- For insurance reasons only TTTG Members can book tables – membership is \$50 per year



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Specifications & Prices are subject to change without notification. All prices include GST and valid until 31-10-20

06/15/CA 01-10-20

Hare & Forbes supports TTTG

What is TTTG

TTTG is the Traditional Tools Group; a not-for-profit group of like-minded enthusiasts interested in the history and preservation of traditional trade skills, techniques, and tools, including hand tools, vintage power tools, machinery, and other old technologies. TTTG was established in 1992.

Our bi-monthly Members' meetings typically feature a guest speaker or a panel talking on diverse topics related to tools, trades, and technology.

Keeping traditional tool skills alive is a key objective of TTTG.

"Real Skills" workshops have been held every year since 2005. These popular fee-based workshops, open to all, are designed to guide participants in developing their tool skills and learning and practising new techniques.

The Group sells old tools and machinery at affordable prices. Two or three "members and friends" Tool Sales are held each year at the Old Eastwood Town Hall, Marsfield. And every February TTTG runs Sydney's largest second-hand tools sale at Thornleigh.

Membership of the Traditional Tools Group is open to anyone with an interest in traditional tools history, techniques, and skills.

The TTTG digital magazine, creatively titled "NEWS", is published in digital form, and normally emailed to Members by Mailchimp four times a year in February, May, August, and November.

"Trad Tools" a monthly TTTG bulletin sent to registered recipients by Mailchimp every month.

TTTG Membership Rules

MEMBERSHIP YEAR

- **starts 1 July and ends on the following 30 June.**

MEMBERSHIP FEE

- **currently \$50 per year and becomes due on 1 July each year. Must be paid on or before 1 August or the Member becomes unfinancial.**

UNFINANCIAL MEMBERS

- a Member who has NOT paid their Membership Fee by 1 August each year. That Member will cease to receive NEWS magazine or access to the Members' area of the website.

NEW MEMBERS

- join between 1 July and 31 March the following year and receive full Membership for the remainder of that MEMBERSHIP YEAR.
- join between 1 April and 30 June and receive full membership until the end of the following MEMBERSHIP YEAR.

Send MEMBERSHIP inquiries and questions to secretary@tttg.org.au.

TTTG Fees and Contacts 2022/23

TTTG Fees

Annual Membership	\$50
'Real Skills' Workshops	\$60
Member Meetings entry	\$5
Members & Friends Tool Sales entry	\$5

TTTG Contacts

NEWS Magazine Editorial/Advertising:

John Bates secretary@tttg.org.au

Trad Tools Bulletin Editorial/Advertising:

Bob Crosbie president@tttg.org.au

TTTG Memberships:

John Bates secretary@tttg.org.au

TTTG 'Real Skills' Workshops:

Bob Crosbie president@tttg.org.au

NEWS Magazine & Trad Tools Bulletin

NEWS Magazine (quarterly)

NEWS Magazine is emailed to financial TTTG Members in:

FEBRUARY, MAY, AUGUST and NOVEMBER

Trad Tools Bulletin (monthly)

TRAD TOOLS Bulletin is emailed **each month** to "anyone interested" – just send us your name and email address

Next TTTG Members Meeting

Old Eastwood Town Hall
74 Agincourt Road, Marsfield, NSW

Tuesday 14 February 2023 – starts at 7.00 pm

TOPIC: Rare Tools

Bring along a rare tool and join in the discussion.

For more details see the website for details www.tttg.org.au