

DAWN TOGGLE CLAMPS

FAST — SIMPLE — SURE

THIS CATALOGUE HAS BEEN PRODUCED TO SERVE
AS A GUIDE TO SWIFTER AND MORE ACCURATE
PRODUCTION.

WE PRESENT THIS DAWN RANGE OF TOGGLE CLAMPS
KNOWING THAT IT WILL ENABLE THE TOOL ENGINEER
TO DESIGN INFINITELY BETTER AND FOOLPROOF JIGS
AND FIXTURES.

Manufactured In Australia by
DAWN TOOLS & VICES
A Division of Siddons Pty. Ltd.

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Catalogue No. 23

DAWN TOOLS & VICES

A Division of Siddons Pty. Ltd.

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HERE'S PROOF THAT IT PAYS YOU TO USE DAWN-P.T. TOGGLE CLAMPS . . .

**'We invested \$19.18 and
saved over \$1170 per year
in one operation alone'**

The case history presented here is taken from a report received from an Australian Factory which produces assemblies and component parts on a sub-contract basis. It is a typical example of how and why P.T. Toggle Clamps save you time and money.

THE PROBLEM:

To reduce the time of drilling four $\frac{1}{4}$ in. diameter holes in $\frac{1}{2}$ in. square mild steel.

ORIGINAL METHOD:

Loading the jig and holding parts in location with two hinged screws and wing nuts. Production time and cost of drilling a batch of 10,000 units by this method were as follows:-

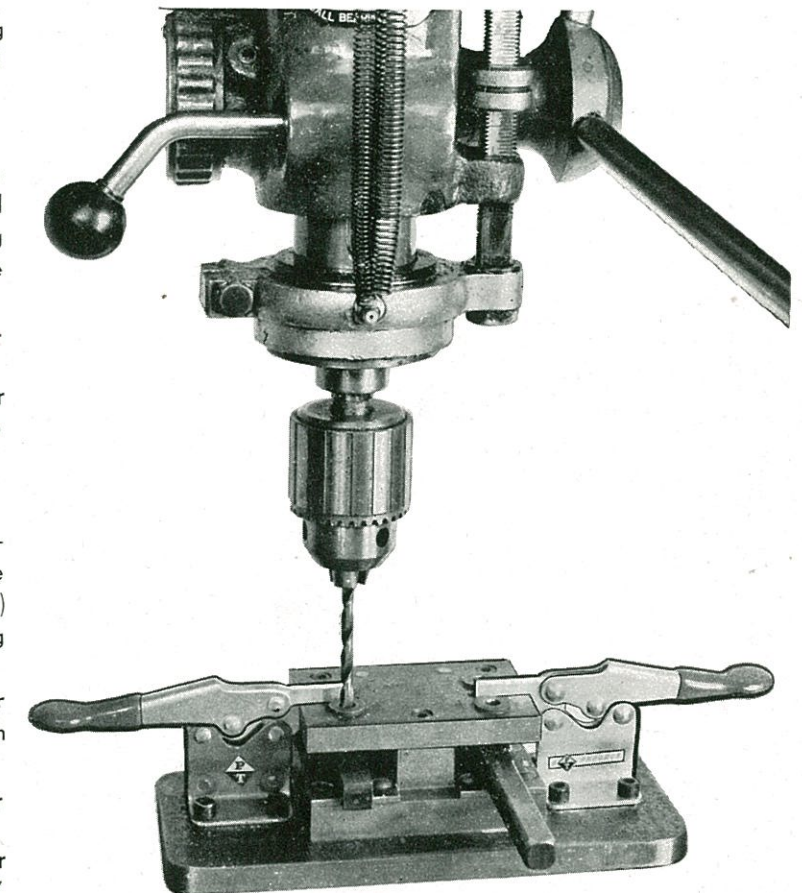
Production Rate -- 76 units per hour
Total Batch Time 132 hours at \$3.00
per hour
Labour and Overhead -- \$396

NEW METHOD

Two T-106-20 P.T. Toggle Clamps were obtained and special jaws fitted. (Note: The complete assembly is illustrated at right.) Cost - clamps \$4.68, plus cost of fitting \$14.50, - total \$19.18

The complete success of the change-over was revealed in the costing of the first batch of 10,000 units:-

Production Rate -- 92 units per hour
Total Batch Time 109 hours at \$3.00
per hour
Labour and Overhead -- \$327



"We paid for the clamps and their fittings within the first 30 hours of operating the new jig. We saved 23 hours of drilling time on each 10,000 units, thus saving \$69 on each batch. The annual saving on this operation alone will exceed \$1170."

What Toggle Clamps will do for you . . .

INCREASE PRODUCTION RATE



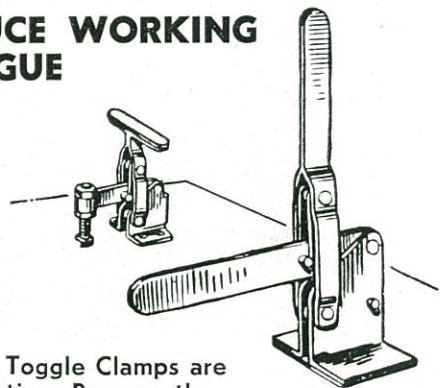
P.T. Toggle Clamps offer secure clamping and release. Removal and insertion of parts is done quickly and easily. Their quick, positive clamping and accuracy combine for greater ease of operation and consequent higher production.

SAVE TIME AND MONEY



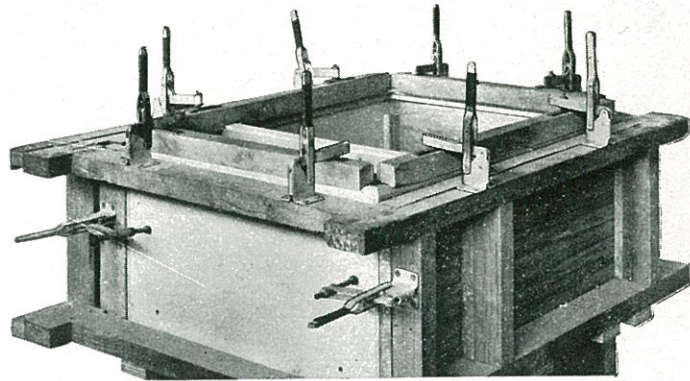
By using P.T. Toggle Clamps, the tool engineer is able to design much more simplified, fool proof jigs and fixtures . . . fixtures which are accurate and assure rigid holding of parts with one swift movement. A single pull on the handle releases the part instantaneously when the manufacturing operation is complete.

REDUCE WORKING FATIGUE

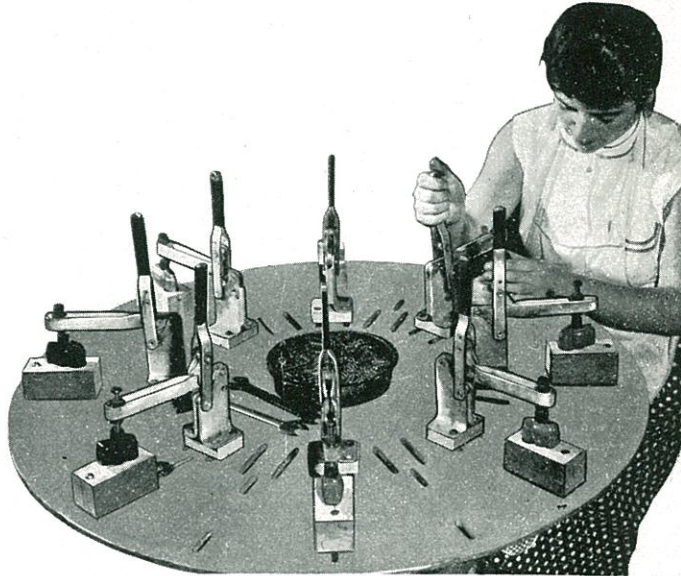


All P.T. Toggle Clamps are quick-acting. Because they lock automatically and hold firmly, operator fatigue is reduced to a minimum. The removal and insertion of parts is thus accomplished with the least possible labour, with all unnecessary hand movement and manipulation eliminated. This greater ease of operation must result in higher production.

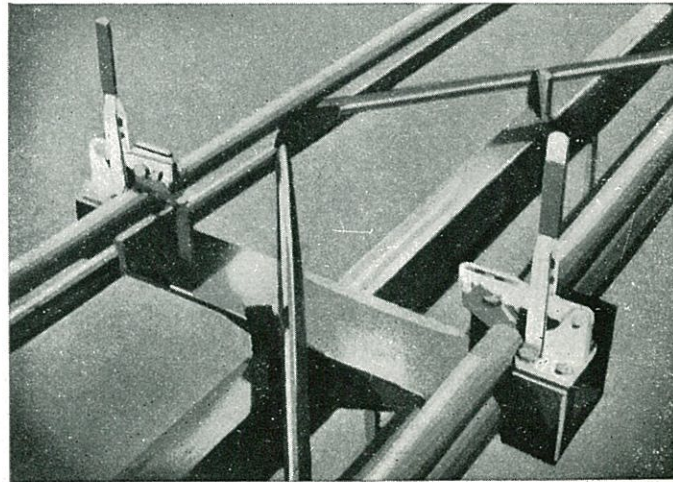
The illustrations below depict some of the many applications for DAWN-P.T. Toggle Clamps



GLUING in the TIMBER Industry



ASSEMBLY in the PLASTICS Industry



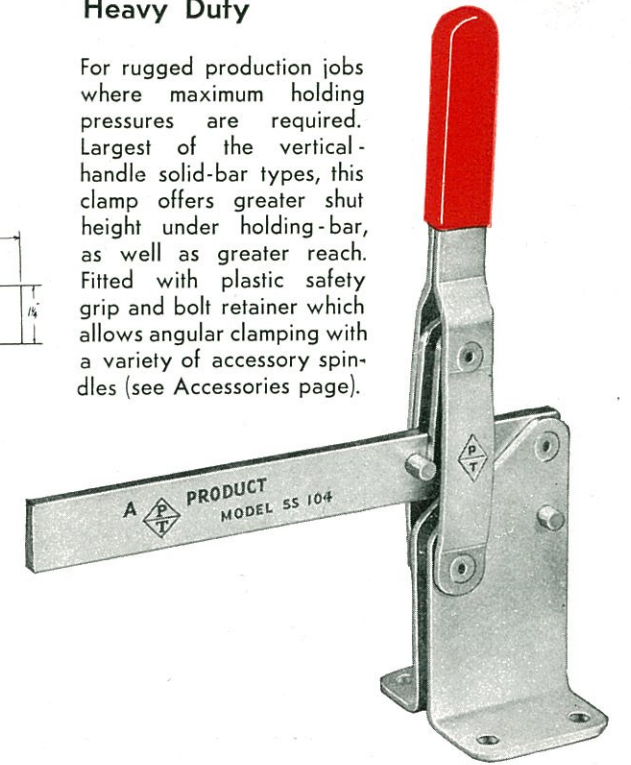
WELDING in the ENGINEERING Industries

VERTICAL-HANDLE, HORIZONTAL SOLID-BAR TYPE

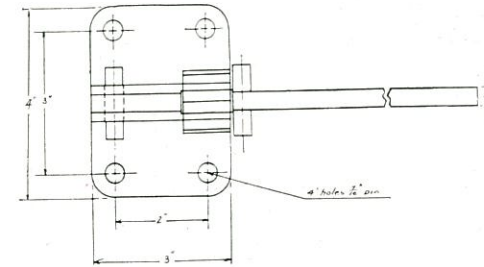
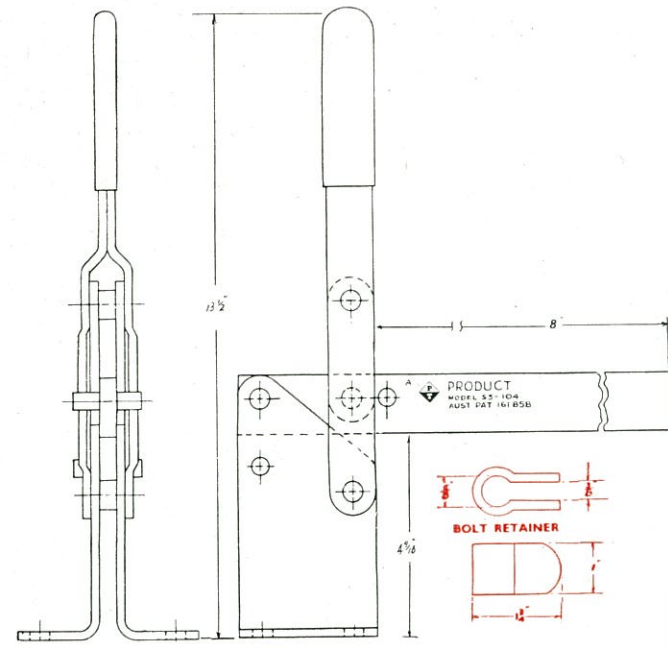
Model SS-104

Heavy Duty

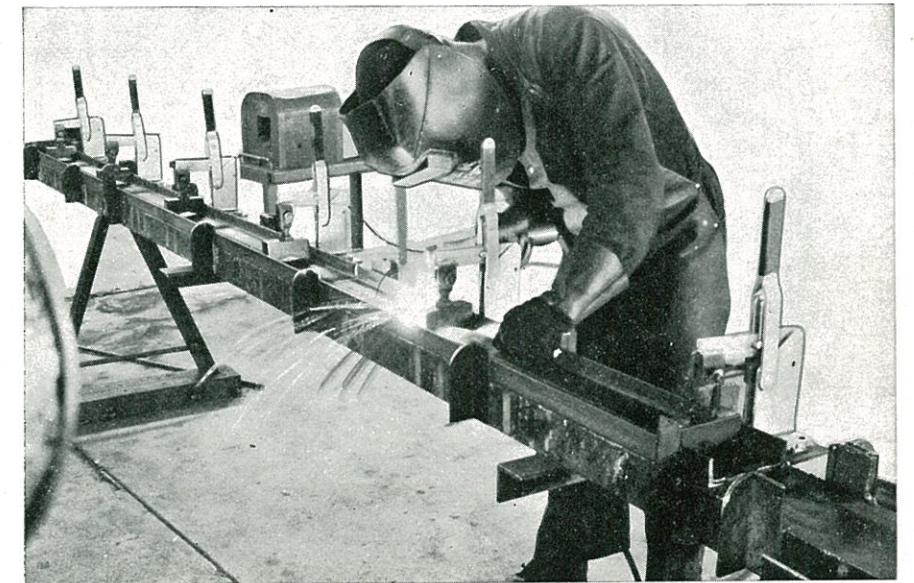
For rugged production jobs where maximum holding pressures are required. Largest of the vertical-handle solid-bar types, this clamp offers greater shut height under holding-bar, as well as greater reach. Fitted with plastic safety grip and bolt retainer which allows angular clamping with a variety of accessory spindles (see Accessories page).



HOLDING PRESSURE 1300 lb.
WEIGHT 5 lb. 4 oz



Two lengths of heavy angle iron are located and prevented from twisting during a WELDING operation by the rapid and very firm application of a number of SS-104 P.T. Toggle Clamps.

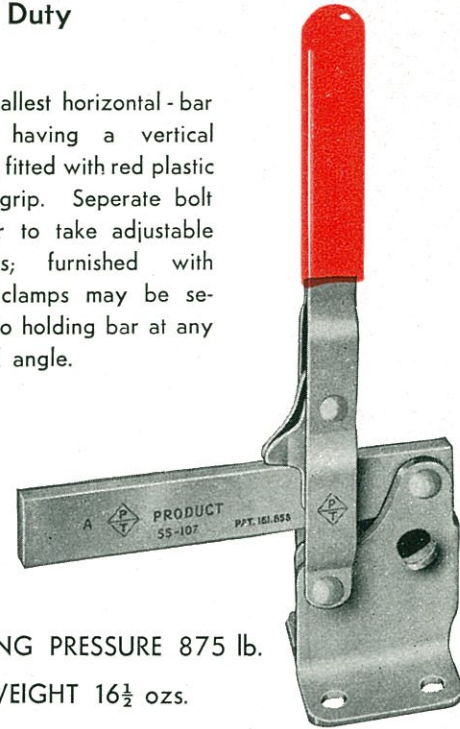
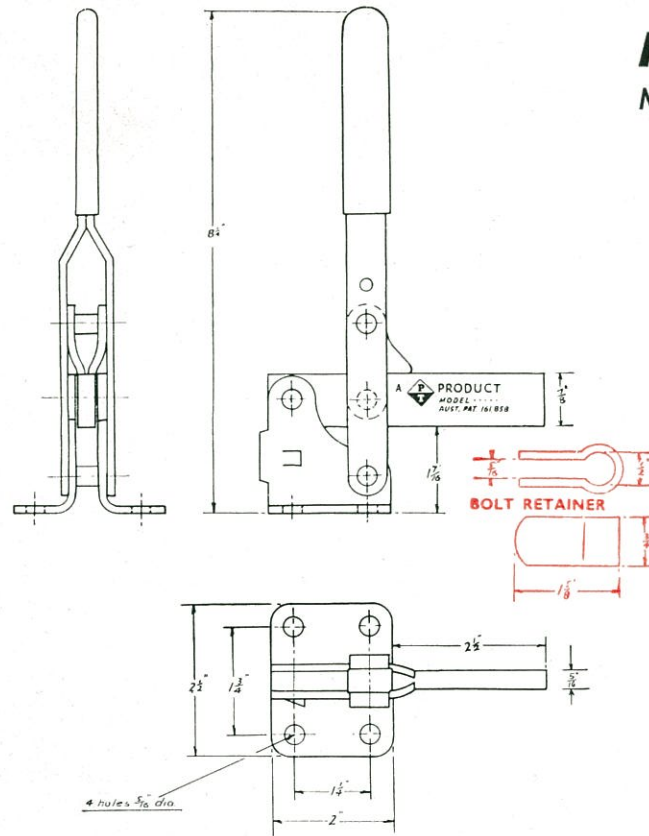


VERTICAL-HANDLE, HORIZONTAL SOLID-BAR TYPE

Model SS-107-25

Medium Duty

The smallest horizontal-bar clamp having a vertical handle, fitted with red plastic safety grip. Separate bolt retainer to take adjustable spindles; furnished with these, clamps may be secured to holding bar at any desired angle.



HOLDING PRESSURE 875 lb.
WEIGHT 16 1/2 ozs.

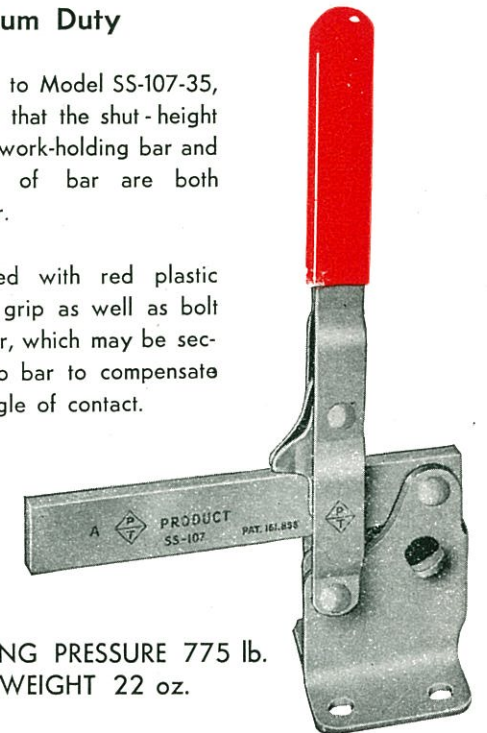
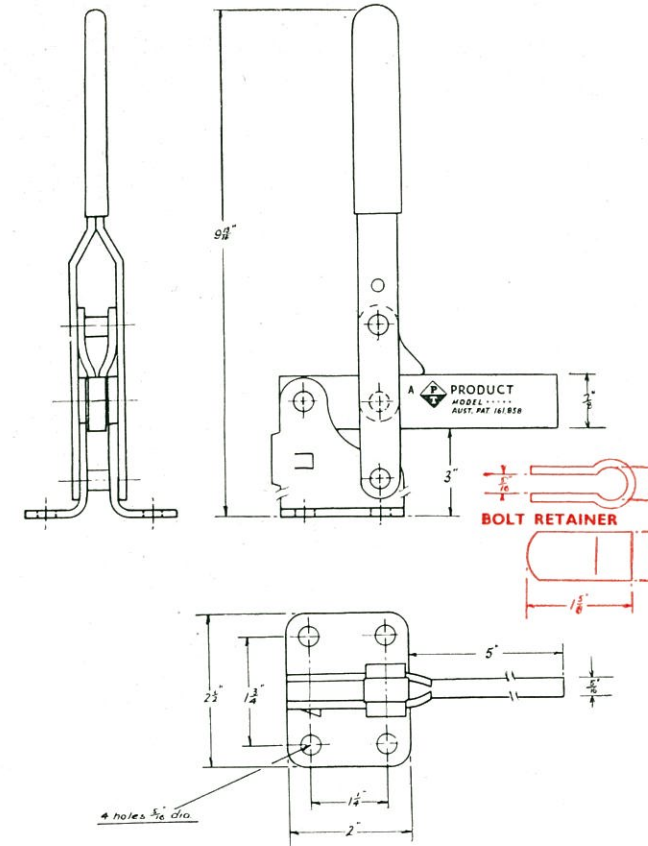
VERTICAL-HANDLE, HORIZONTAL SOLID-BAR TYPE

Model SS-107-50

Medium Duty

Similar to Model SS-107-35, except that the shut-height under work-holding bar and length of bar are both greater.

Supplied with red plastic safety grip as well as bolt retainer, which may be secured to bar to compensate for angle of contact.

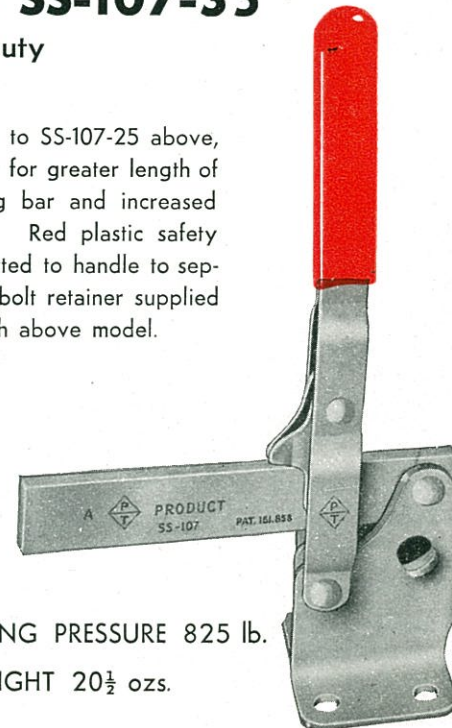
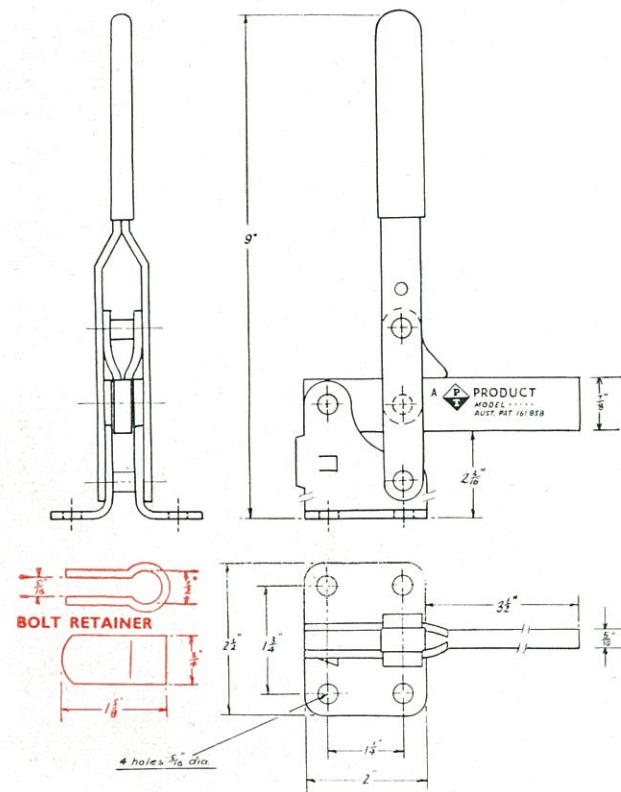


HOLDING PRESSURE 775 lb.
WEIGHT 22 oz.

Model SS-107-35

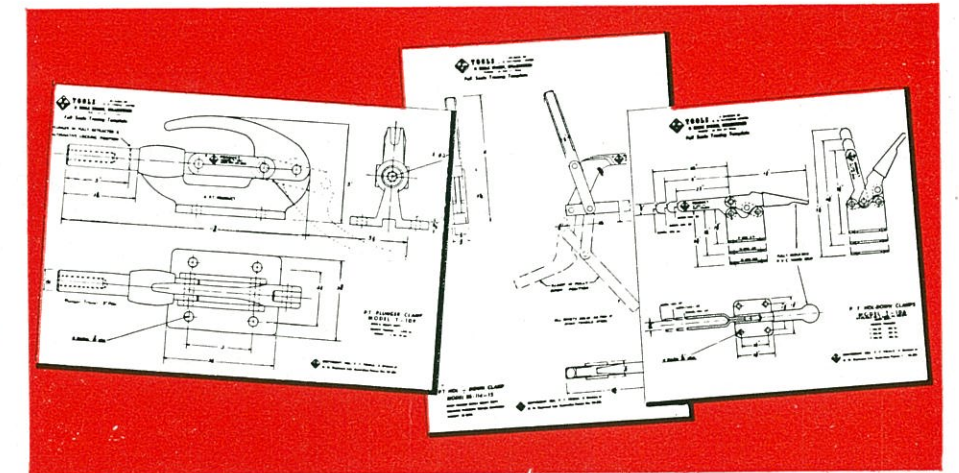
Medium Duty

Similar to SS-107-25 above, except for greater length of holding bar and increased height. Red plastic safety grip fitted to handle to separate bolt retainer supplied as with above model.



HOLDING PRESSURE 825 lb.
WEIGHT 20 1/2 ozs.

Complete Sets of Tracing Templates for all DAWN P.T. TOGGLE CLAMPS



DAWN-P.T. Toggle Clamp Templates are available to engineers and draughtsmen without charge. They are printed in full scale, showing both right and left hand views.

For immediate use or for future reference, you will find these Templates great time-savers at the draughting board.

We shall be pleased to supply you with free Templates of all clamp types.

Write

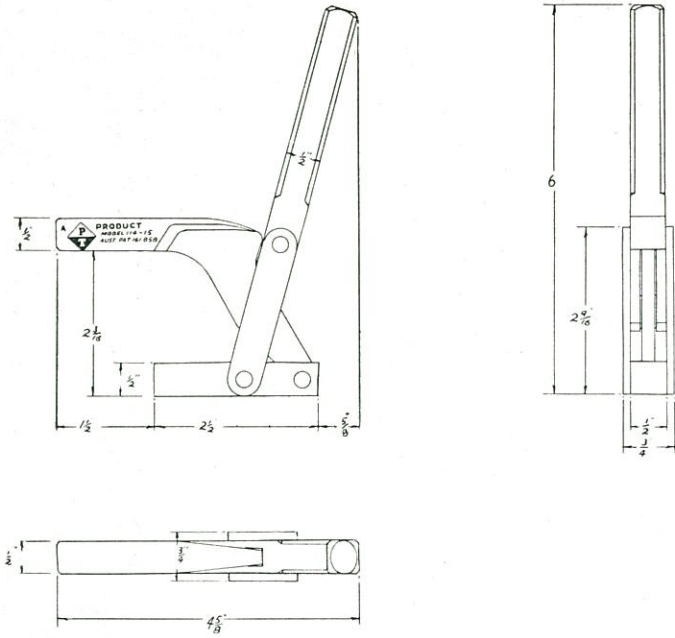
G. N. RAYMOND LIMITED Engineering Division

DAWN TOOLS & VICES

1 NORRIS STREET, NORTH COBURG, VICTORIA, 3058

TELEPHONE: 350 3811

ANGULAR-HANDLE, HORIZONTAL SOLID BAR TYPE

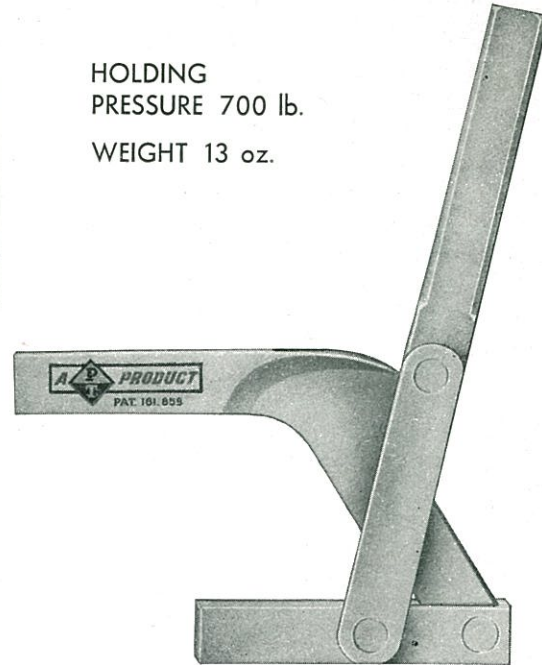


For the most rugged production jobs.
Drop-forged alloy steel work-holding bar

Model SS-114-15

Heavy Duty

HOLDING PRESSURE 700 lb.
WEIGHT 13 oz.

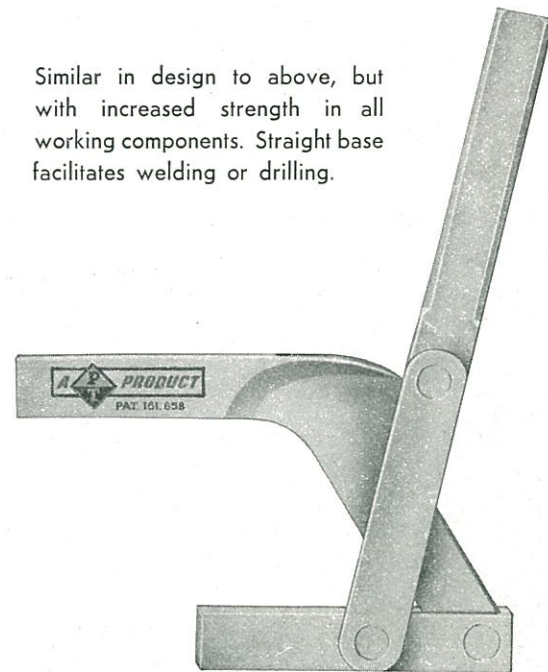
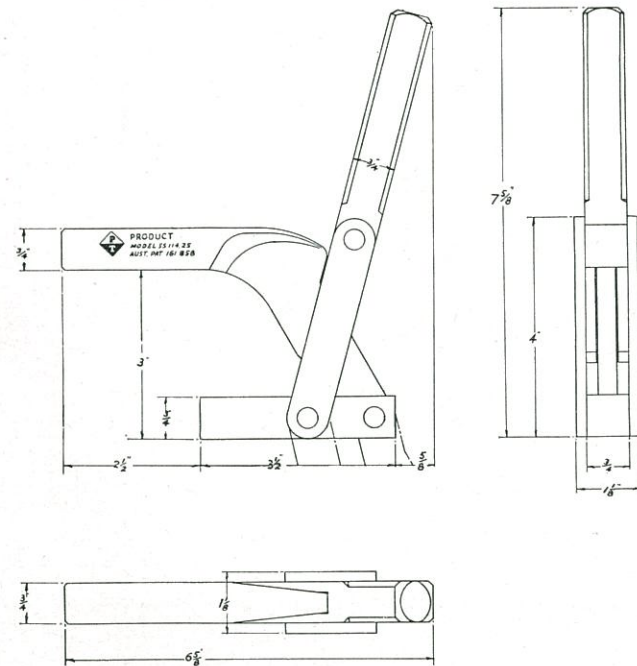


Model SS-114-25

Heavy Duty

HOLDING PRESSURE 1500 lb.
WEIGHT 2 1/4 lb.

Similar in design to above, but with increased strength in all working components. Straight base facilitates welding or drilling.



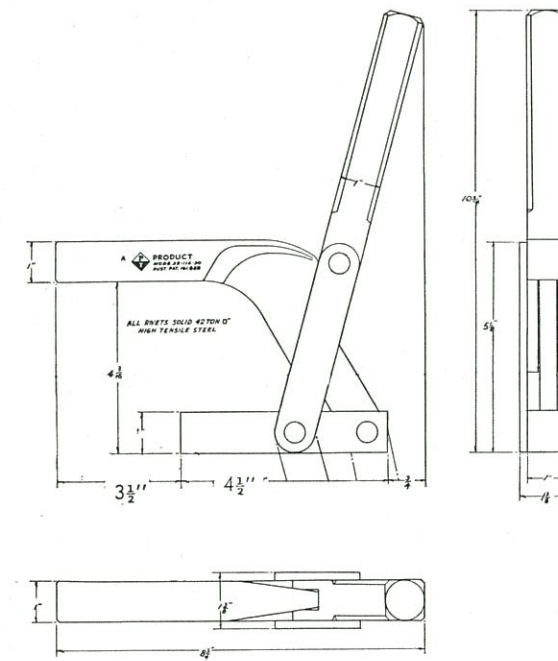
6

ANGULAR-HANDLE, HORIZONTAL SOLID BAR TYPE

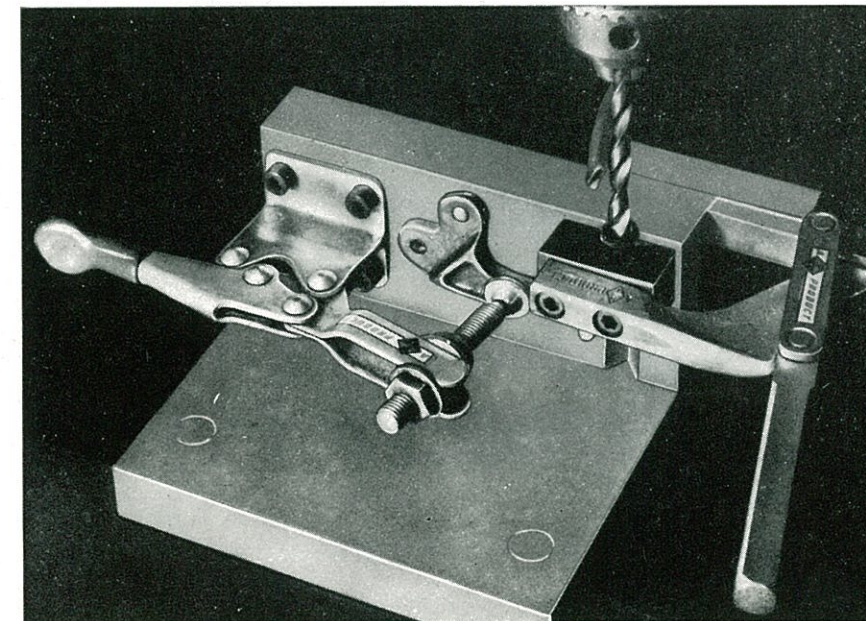
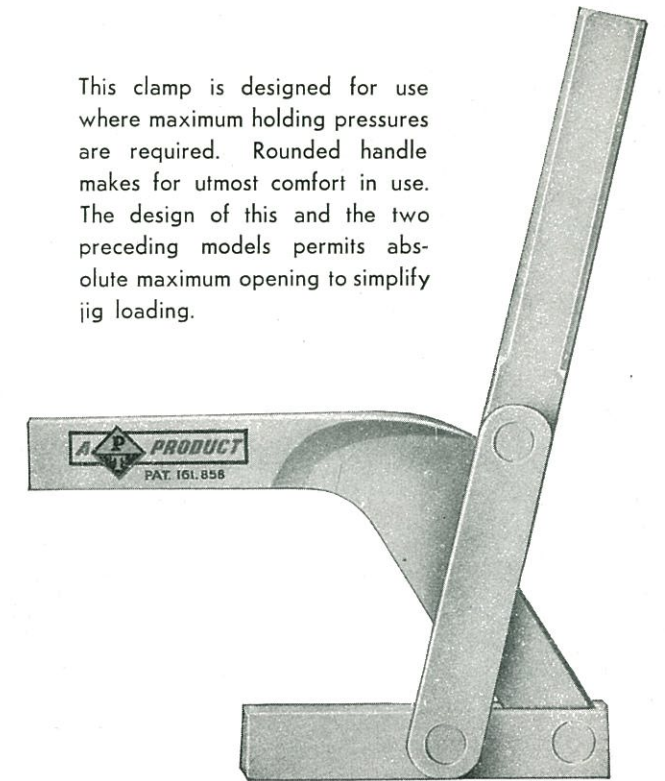
Model SS-114-35

Extra Heavy Duty

This clamp is designed for use where maximum holding pressures are required. Rounded handle makes for utmost comfort in use. The design of this and the two preceding models permits absolute maximum opening to simplify jig loading.



HOLDING PRESSURE 2100 lb.
WEIGHT 6 lb.



In an efficient DRILLING AND TAPPING jig, an SS-114-15 P.T. Toggle Clamp, with built-in drill bush, is used for accurate, firm location.

After drilling, the work-holding bar complete with drill bush is swung clear so that the component can be tapped without being removed from the fixture.

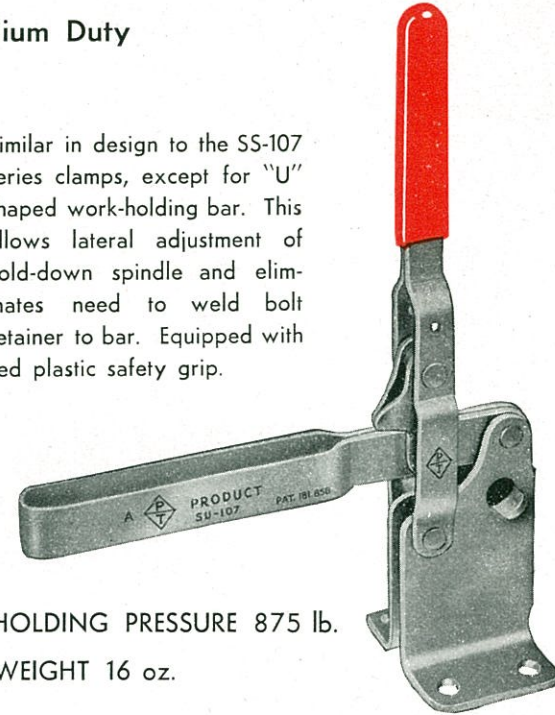
7

VERTICAL-HANDLE, HORIZONTAL "U" BAR TYPE

Model SU-107-25

Medium Duty

Similar in design to the SS-107 series clamps, except for "U" shaped work-holding bar. This allows lateral adjustment of hold-down spindle and eliminates need to weld bolt retainer to bar. Equipped with red plastic safety grip.



HOLDING PRESSURE 875 lb.
WEIGHT 16 oz.

Model SU-107-35

Medium Duty

Similar to Model SU-107-25 above, except that shut-height under work-holding bar and reach are greater. Fitted with red plastic safety grip. Adaptable adjustment spindle assemblies are listed on Accessories page.



HOLDING PRESSURE 825 lb.
WEIGHT 17 1/2 oz.

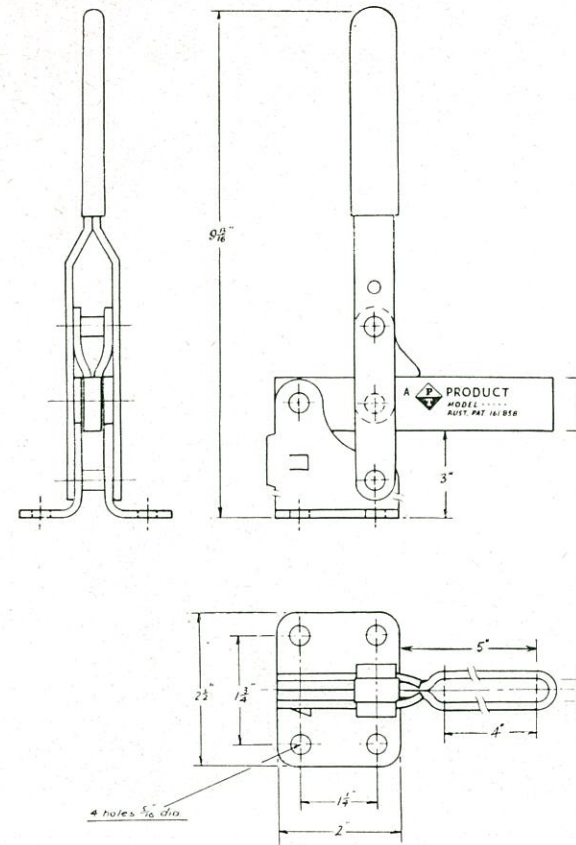
8

VERTICAL-HANDLE, HORIZONTAL "U" BAR TYPE

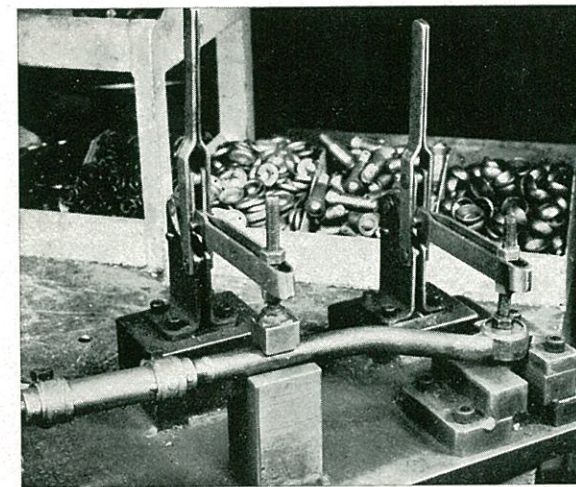
Model SU-107-50

Medium Duty

Similar to, but larger than, the two preceding models, giving greater reach and greater shut-height under work-holding bar. Allows considerable lateral adjustment of hold-down spindle (for details see Accessories page).

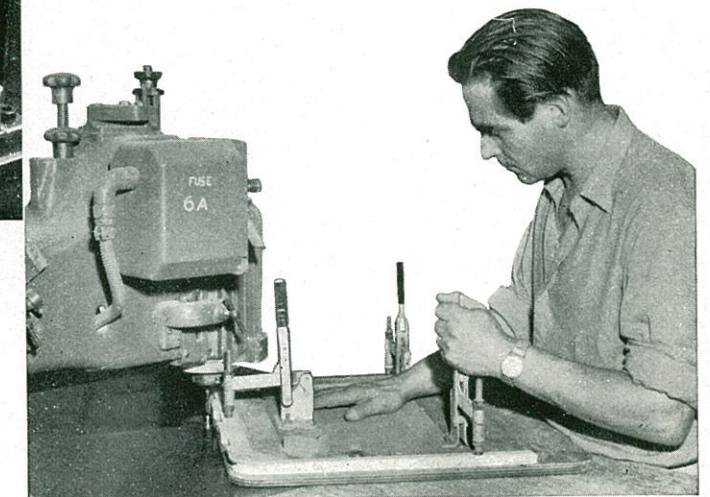


HOLDING PRESSURE 775 lb.
WEIGHT 22 oz.



LEFT: Motor car tie rods are ASSEMBLED more swiftly and efficiently when the various components are located and held by two SU-107-35 P.T. Toggle Clamps.

RIGHT: A ROUTING operation carried out with high efficiency in a large T.V. cabinet factory. Three SU-107-50 P.T. Toggle Clamps are used to locate and hold routing template and timber.

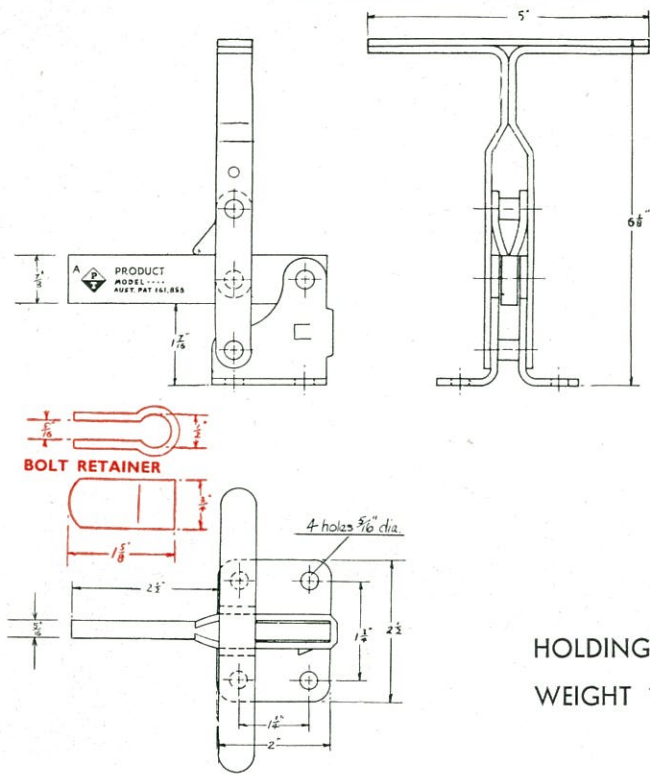


9

"T"-HANDLE, HORIZONTAL SOLID-BAR TYPE

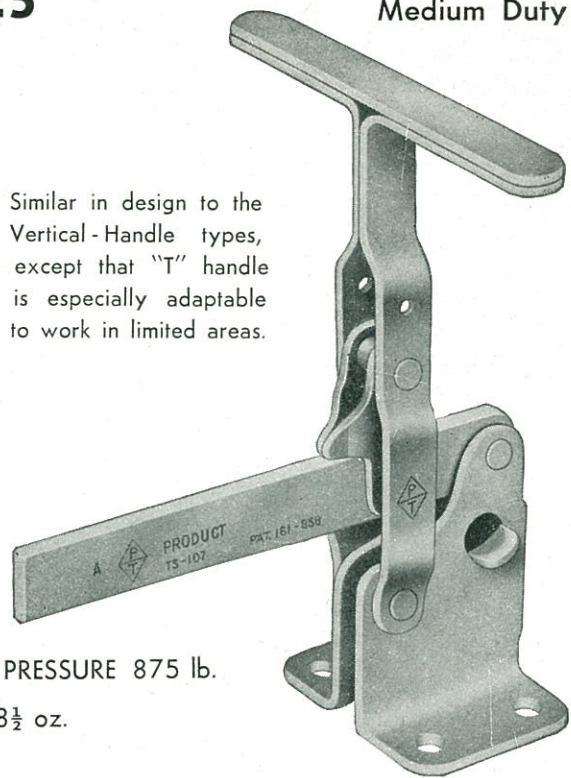
Model TS-107-25

Medium Duty



Similar in design to the Vertical-Handle types, except that "T" handle is especially adaptable to work in limited areas.

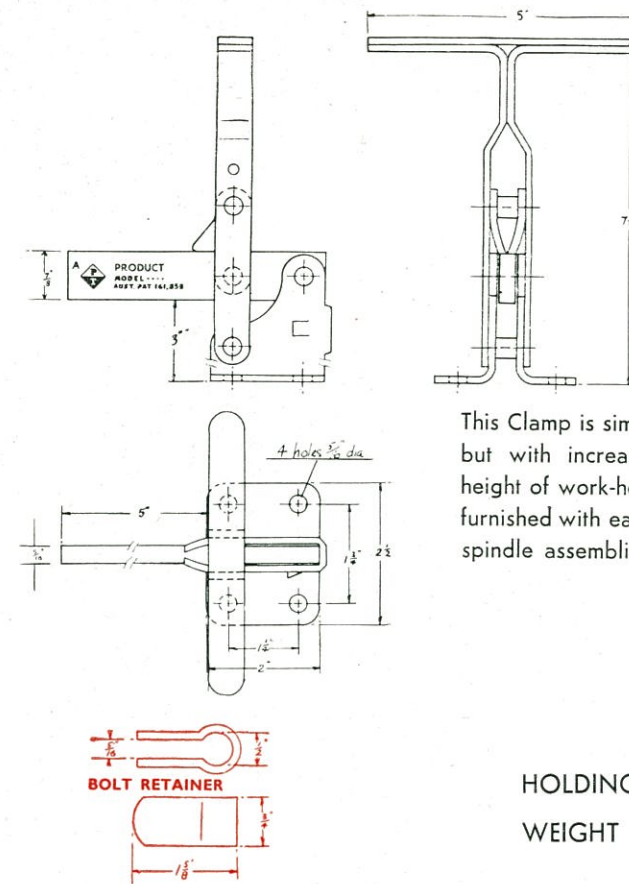
HOLDING PRESSURE 875 lb.
WEIGHT 18½ oz.



"T"-HANDLE, HORIZONTAL SOLID BAR TYPE

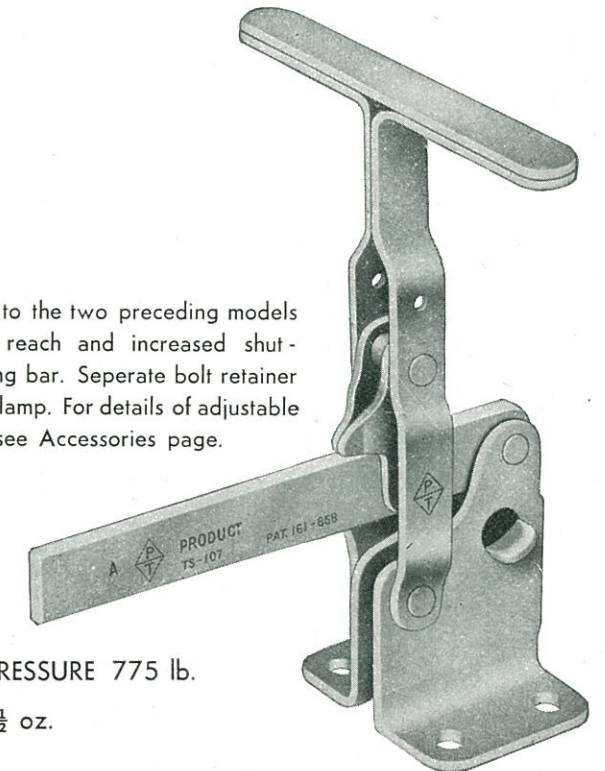
Model TS-107-50

Medium Duty



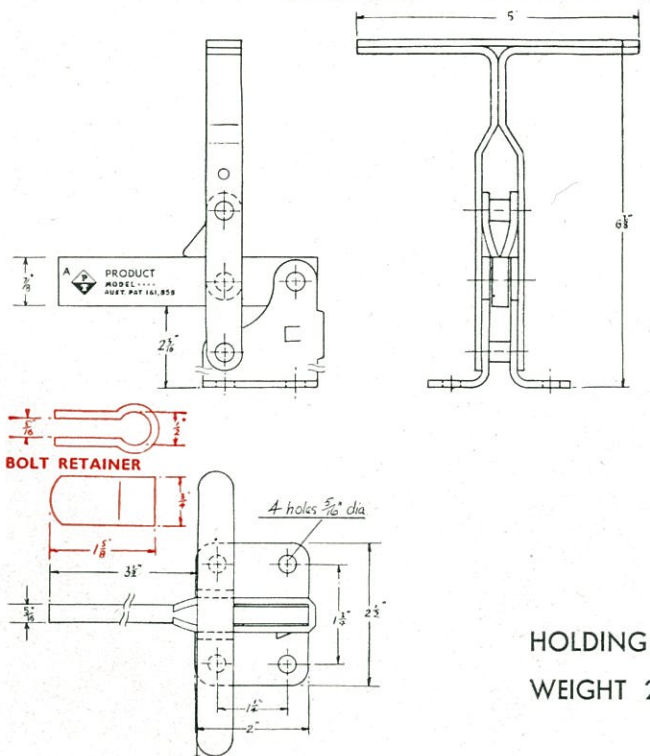
This Clamp is similar to the two preceding models but with increased reach and increased shut-height of work-holding bar. Separate bolt retainer furnished with each clamp. For details of adjustable spindle assemblies, see Accessories page.

HOLDING PRESSURE 775 lb.
WEIGHT 26½ oz.



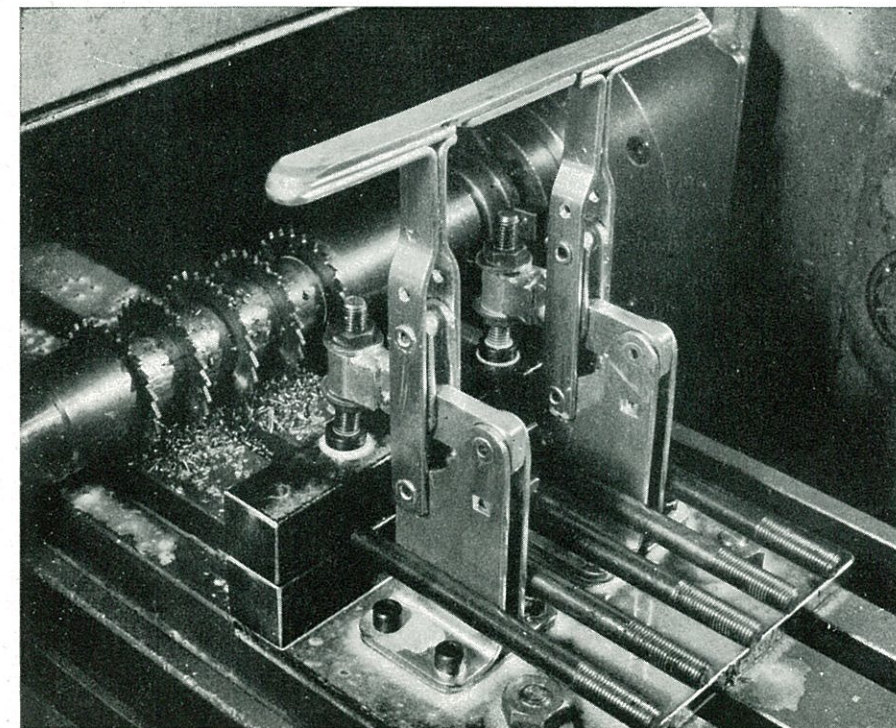
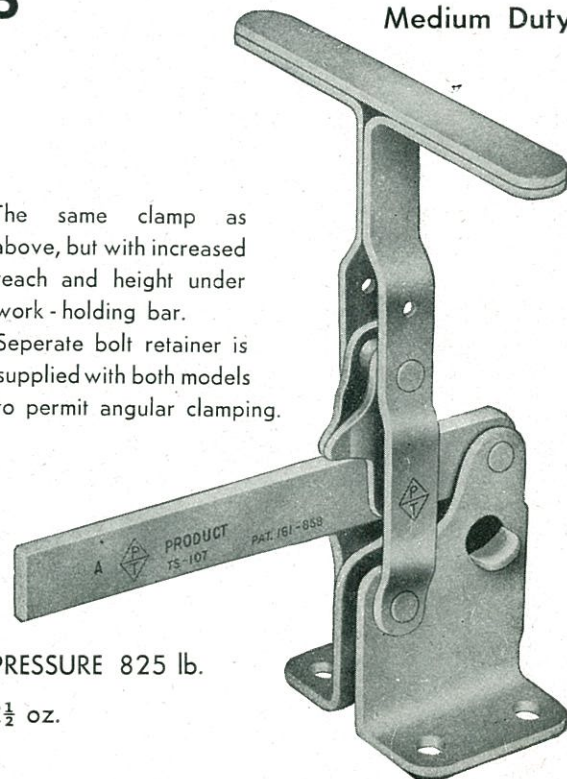
Model TS-107-35

Medium Duty



The same clamp as above, but with increased reach and height under work-holding bar. Separate bolt retainer is supplied with both models to permit angular clamping.

HOLDING PRESSURE 825 lb.
WEIGHT 22½ oz.

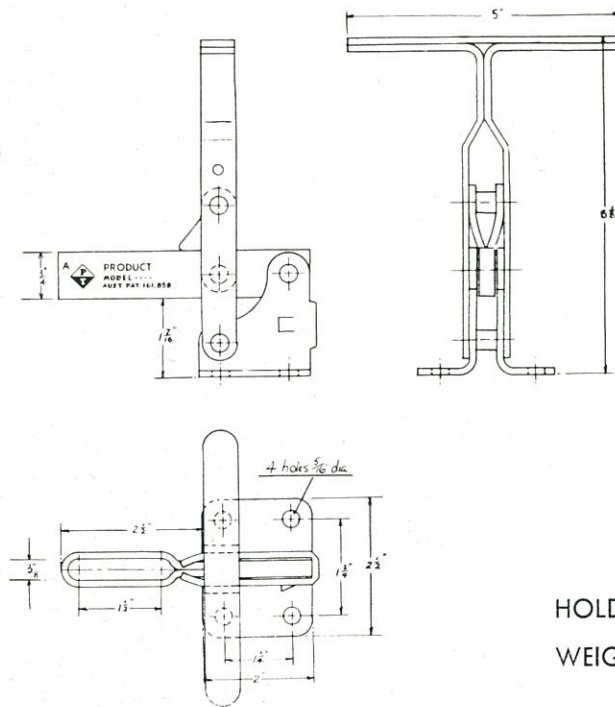


Instant and secure clamping of five separate components in a gang MILLING jig is obtained by using two TU-107-50 P.T. Toggle Clamps linked together by their "T" handles.

"T"-HANDLE, HORIZONTAL "U" BAR TYPE

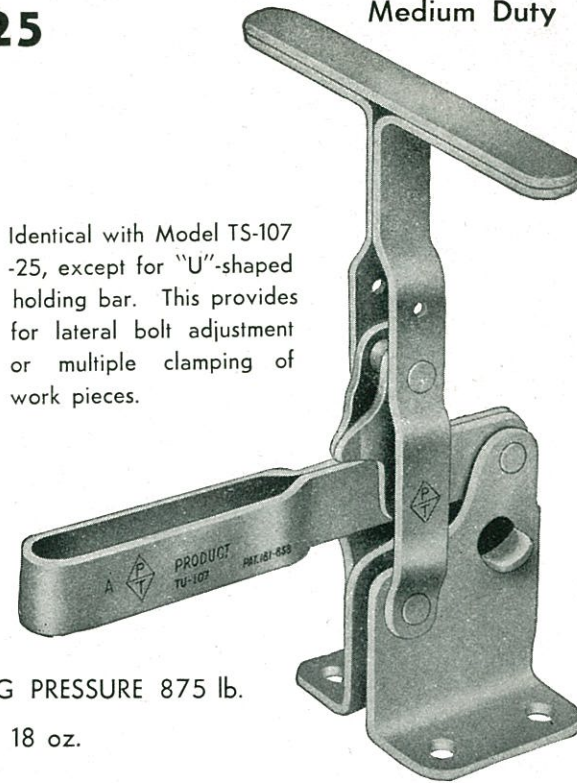
Model TU-107-25

Medium Duty



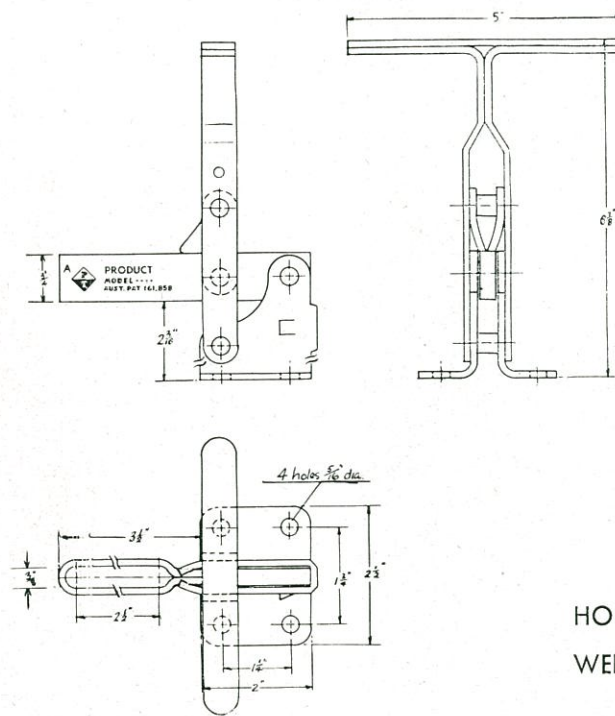
Identical with Model TS-107-25, except for "U"-shaped holding bar. This provides for lateral bolt adjustment or multiple clamping of work pieces.

HOLDING PRESSURE 875 lb.
WEIGHT 18 oz.



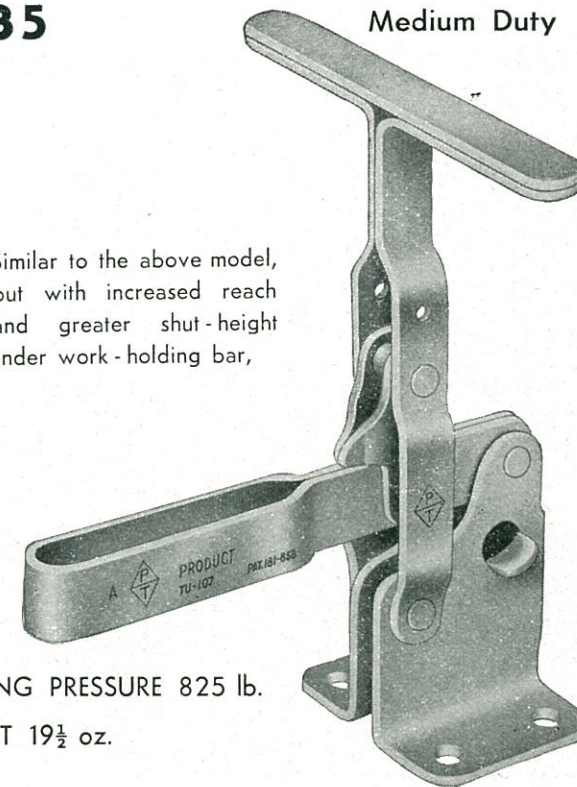
Model TU-107-35

Medium Duty



Similar to the above model, but with increased reach and greater shut-height under work-holding bar,

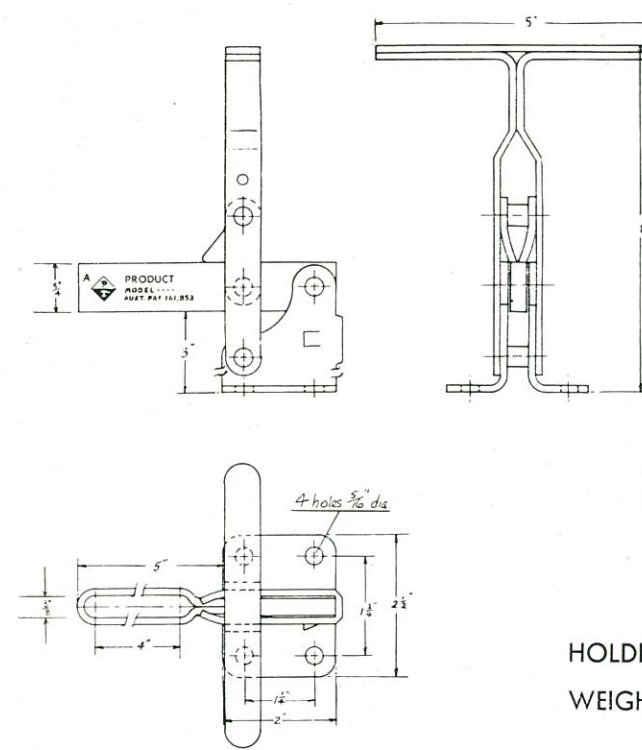
HOLDING PRESSURE 825 lb.
WEIGHT 19 1/2 oz.



"T"-HANDLE, HORIZONTAL "U" BAR TYPE

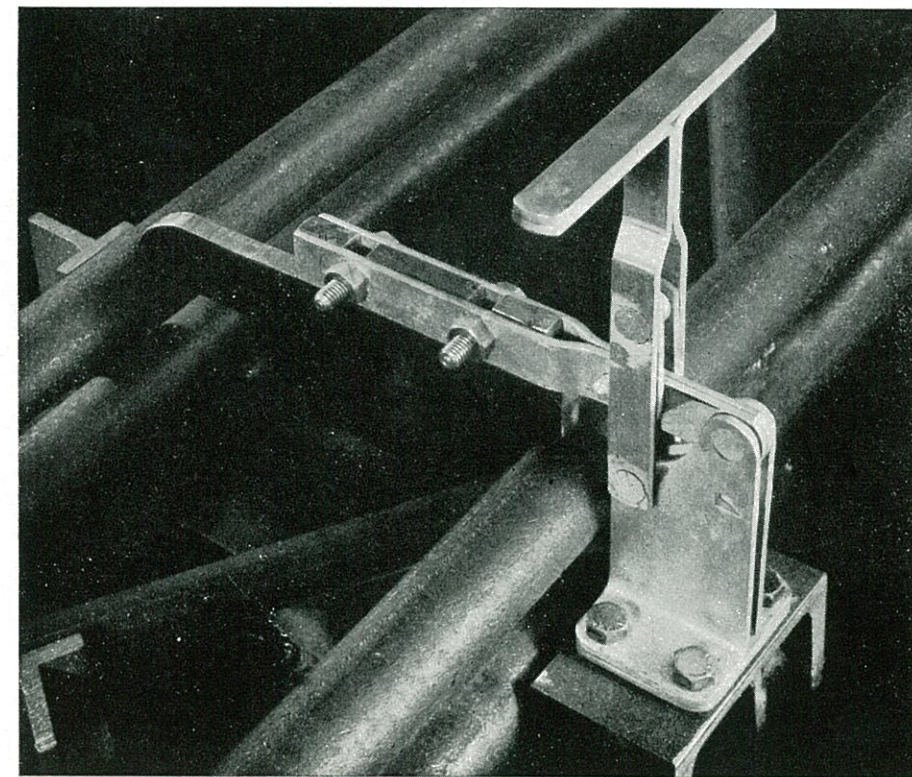
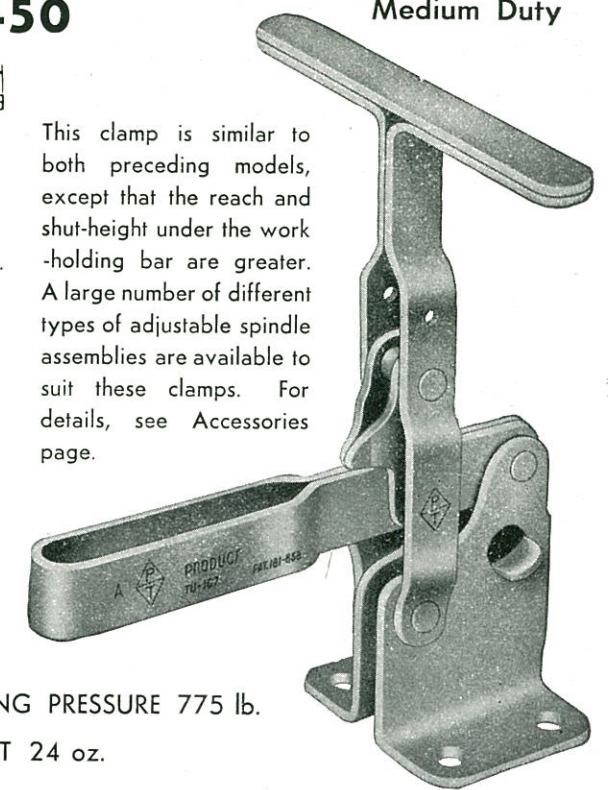
Model TU-107-50

Medium Duty



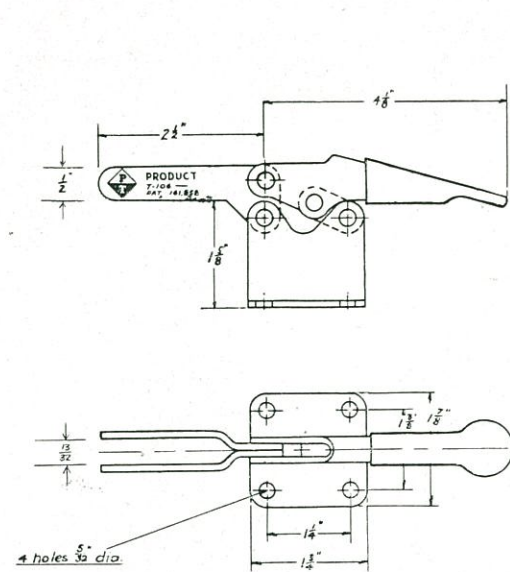
This clamp is similar to both preceding models, except that the reach and shut-height under the work-holding bar are greater. A large number of different types of adjustable spindle assemblies are available to suit these clamps. For details, see Accessories page.

HOLDING PRESSURE 775 lb.
WEIGHT 24 oz.

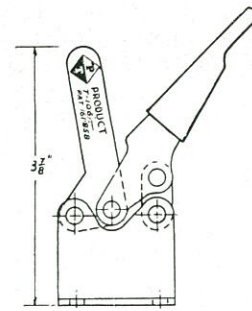


LEFT: A model TU-107-50 P.T. Toggle Clamp fitted with special jaw clamps and firmly locates tubular steel members in a welding jig.

HORIZONTAL HANDLE-AND-BAR TYPE



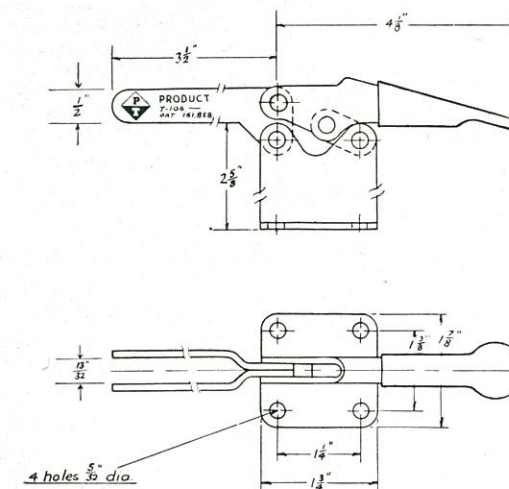
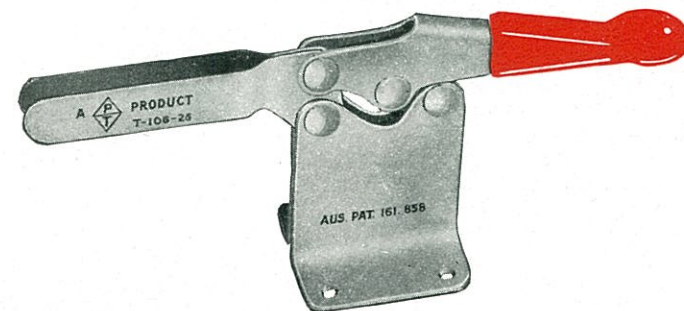
HOLDING PRESSURE 350 lb.
WEIGHT 8 oz.



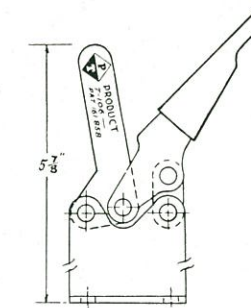
Model T-106-20

Light Duty

For its size, this clamp has an extremely smooth and powerful toggle action. Bar and handle are both horizontal when locked. Bar retracts to vertical position when open. Equipped with red plastic safety grip.



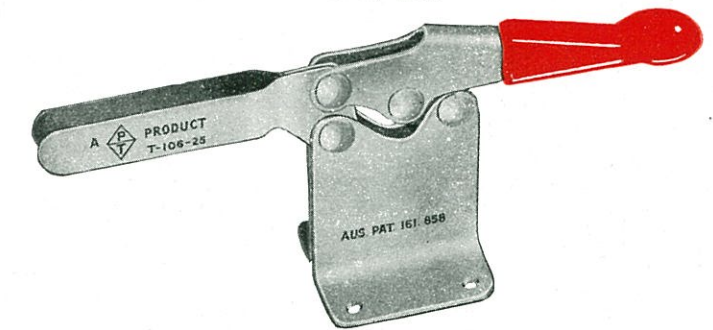
HOLDING PRESSURE 300 lb.
WEIGHT 10 oz.



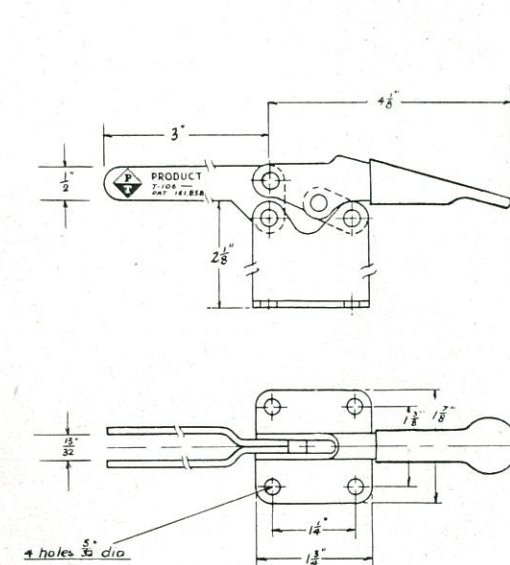
Model T-106-30

Light Duty

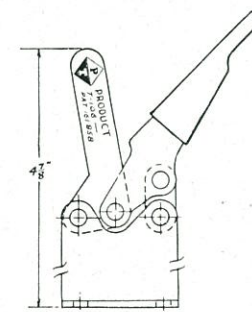
Similar to the two preceding models and with the same powerful toggle action, but with increased shut-height and reach. Equipped with red plastic safety grip.



A major Australian manufacturer of light-weight bus bodies used more than one thousand Series T-106 Toggle Clamps to locate and hold all structural alloy components in position for WELDING. The four seen here are T-106-25 P.T. Toggle Clamps and were among the many of this type used on the roof frame jig.



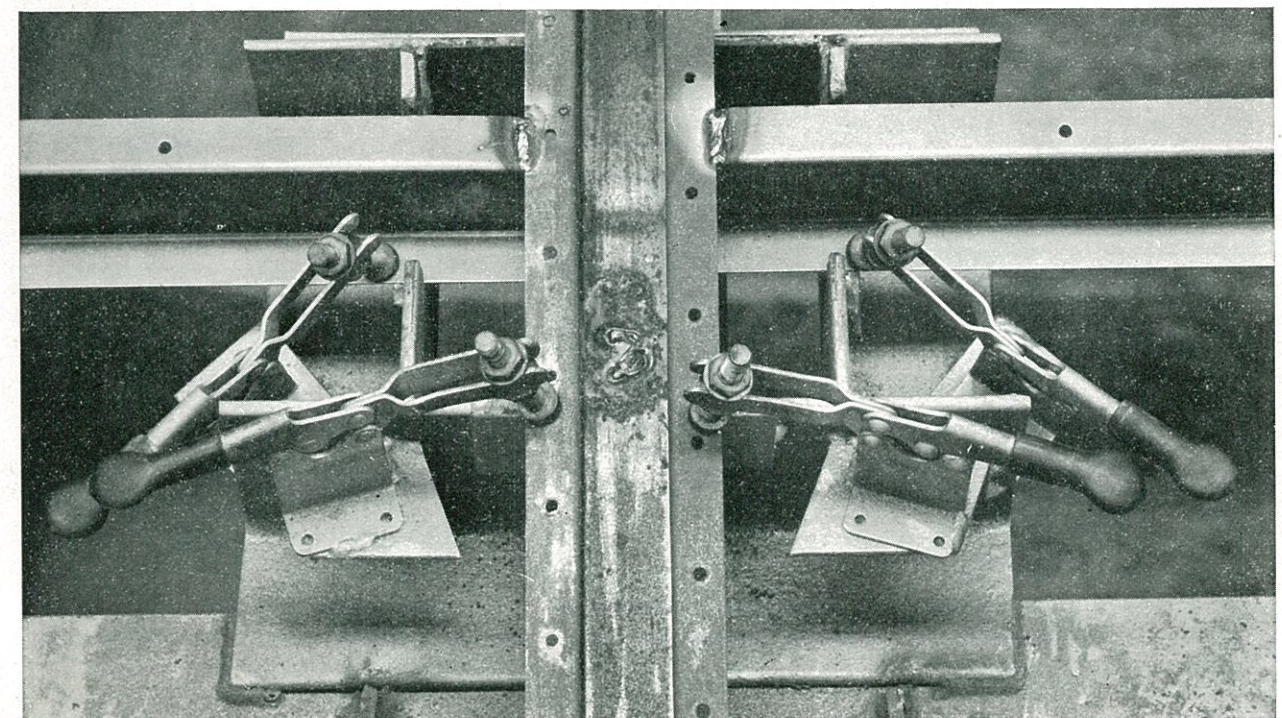
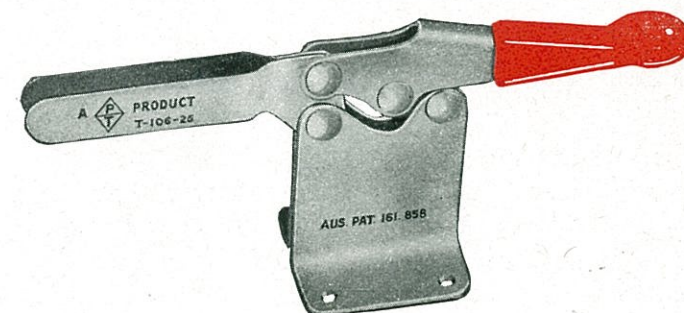
HOLDING PRESSURE 325 lb.
WEIGHT 9 oz.



Model T-106-25

Light Duty

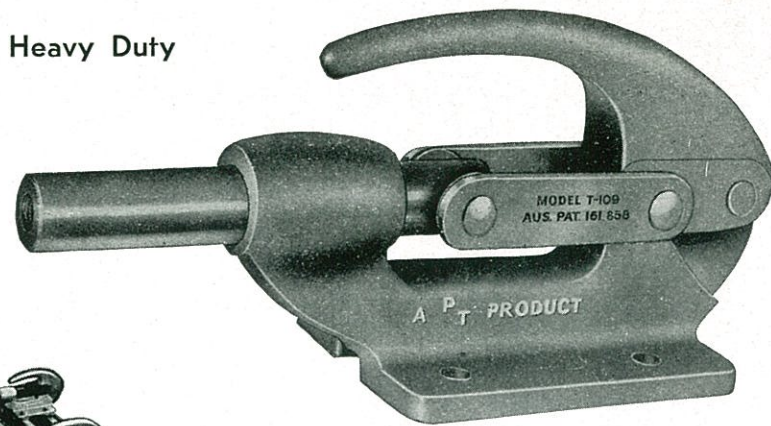
Identical with above, except for increased reach and locked height of work-holding bar. Full range of adjustable spindle assemblies are available (see Accessories page).



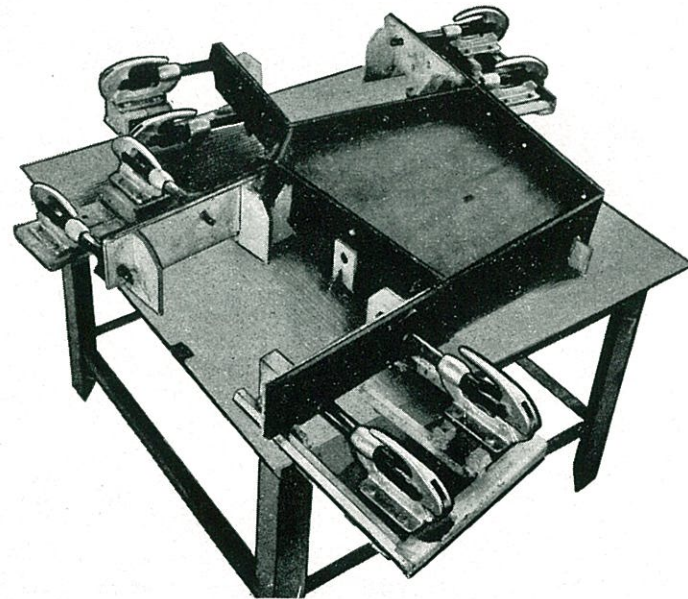
HORIZONTAL TRAVEL PLUNGER TYPE

Model T-109 Extra Heavy Duty

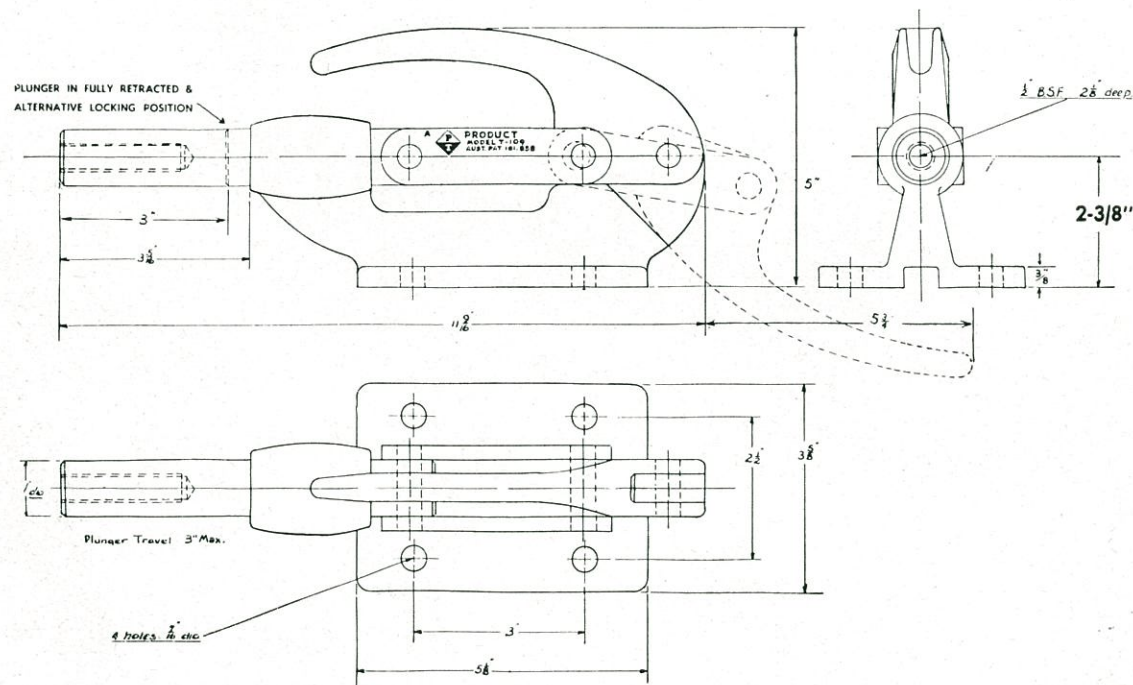
Of extremely rugged construction, both base and handle are S.G. Iron castings. Designed for either "Push" or "Pull" operation the clamp locks in both positions. Detailed information on adjustable spindle assemblies is contained on Accessories page.



HOLDING PRESSURE 4000 lb.
WEIGHT 5 lb. 10 oz.



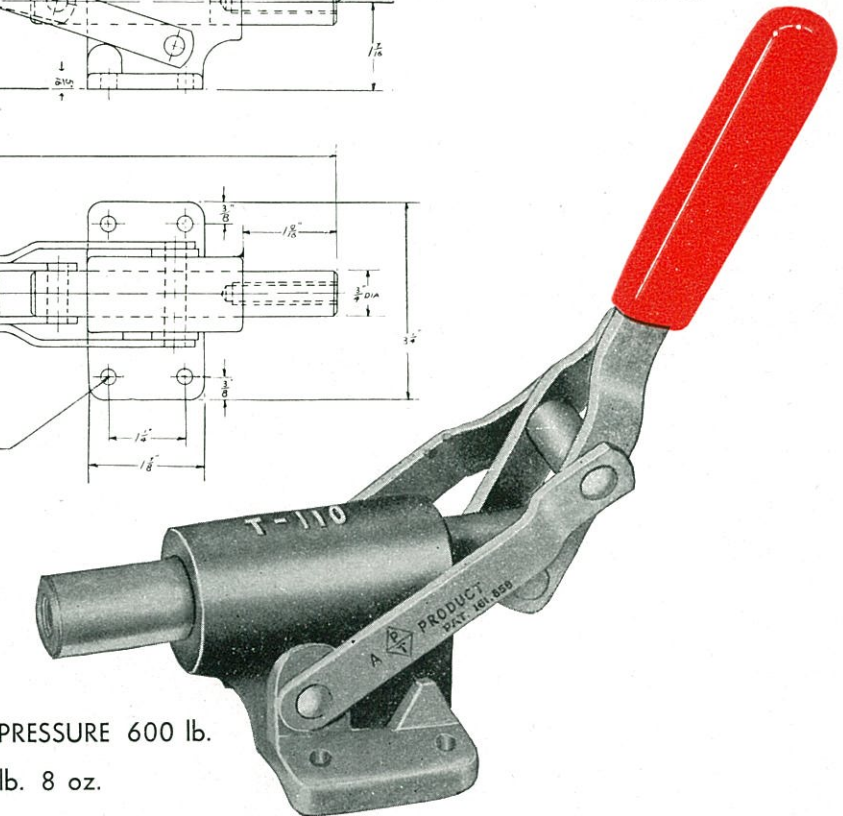
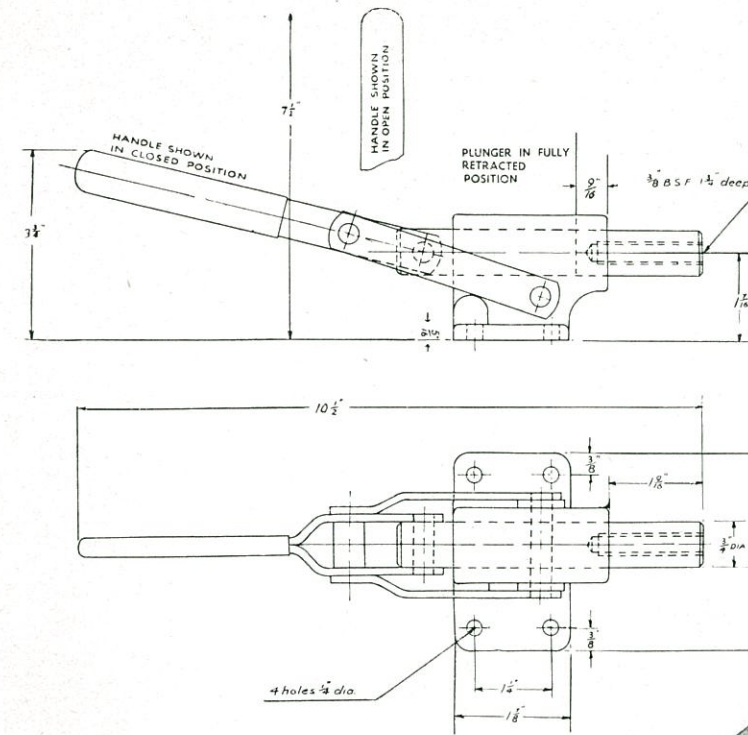
LEFT: Eight T-109 P.T. Plunger Clamps serve a double purpose on this heavy duty welding jig. For accurate location, the plunger end fits through the parts to be held, while the pads provide the heavy clamping force required to hold the components against welding stresses.



HORIZONTAL TRAVEL PLUNGER TYPE

Model T-110 Medium Duty

Designed for direct "Push" locking and low overall height when closed. Fitted with special red plastic safety grip. Extremely rugged Meehanite cast construction.



HOLDING PRESSURE 600 lb.
WEIGHT 1 lb. 8 oz.

An efficient little drill jig uses this T-110 plunger clamp to lock two components securely in position for DRILLING.



PORTABLE TOGGLE-PLIER TYPE

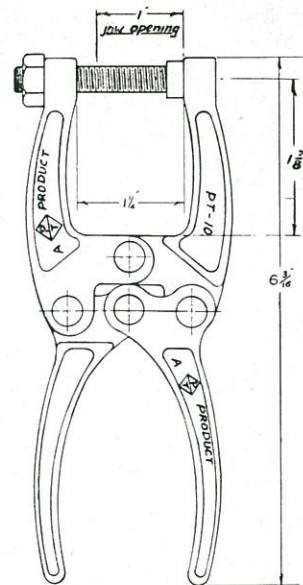
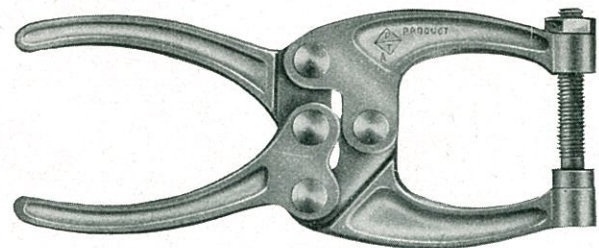
Model P.T. 10

Medium Duty

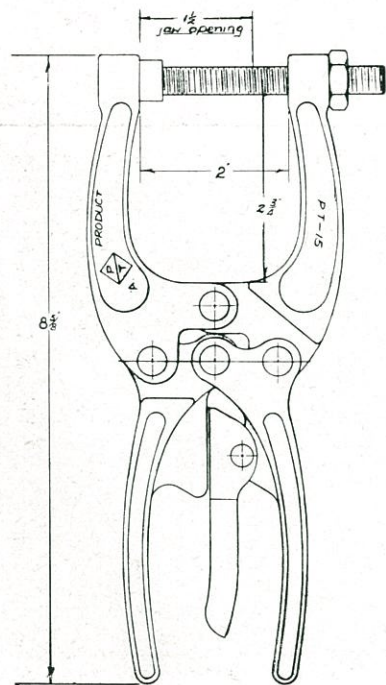
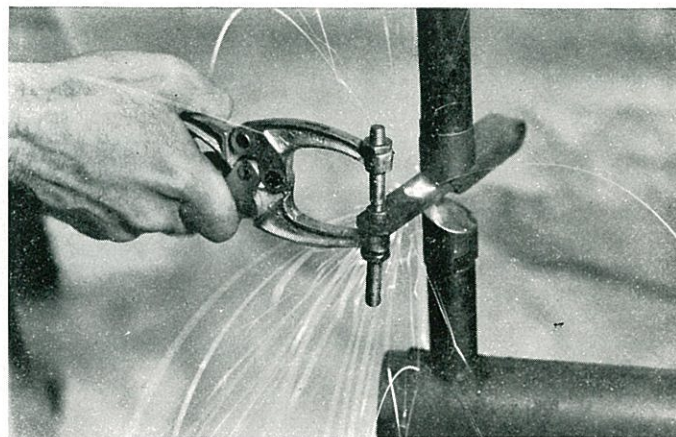
A compact clamp with small, powerful jaws; fits snugly in one hand. Provides instant, positive holding pressure at all times. All drop-forged alloy steel components. Copper-plated spindle throws off welding spatter.

HOLDING PRESSURE 300 lb.

WEIGHT 8 oz.



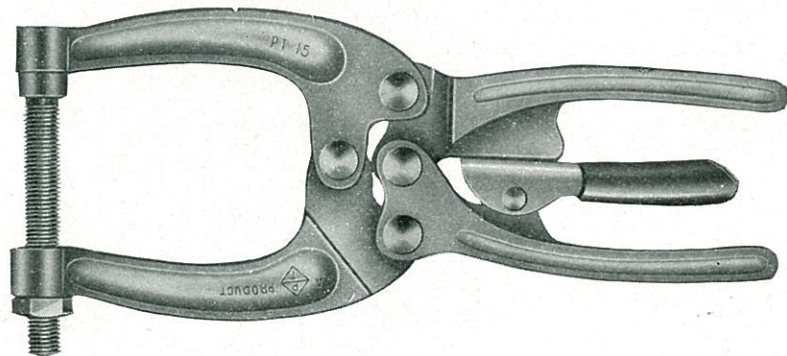
A P.T. 10 Toggle Clamp locates and holds two components in one swift movement during a spot welding operation.



Model P.T. 15

Heavy Duty

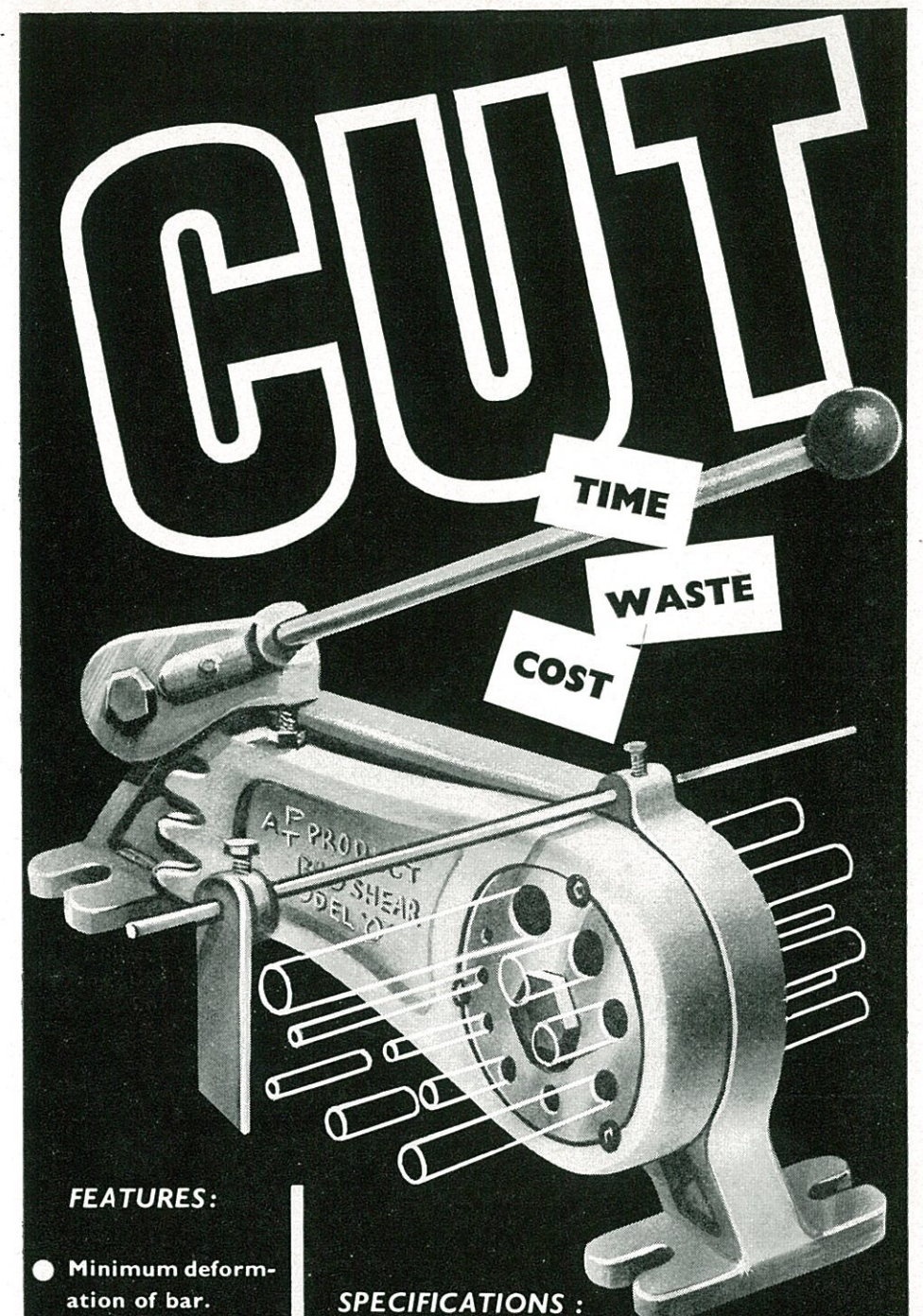
Designed for instant one-hand clamping and two-way release. Trigger may be pushed in either direction to release pressure immediately.



with
your...

**DAWN
P.T.**

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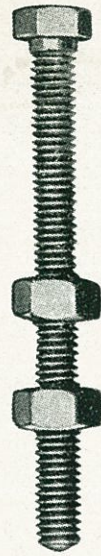
FEATURES:

- Minimum deformation of bar.
- No burr left on either cut portion.
- High cutting speed.
- Exceptional ease of operation.

SPECIFICATIONS:

- ★ Maximum material capacity $\frac{3}{8}$ " dia. steel bar.
- ★ Cutting head thickness 1".
- ★ Overall height (excluding handle) 7".
- " length 13".
- " width $3\frac{3}{8}$ ".
- ★ Nett weight 24 lbs.
- ★ Cutting head is provided with 9 holes ranging from $\frac{1}{16}$ " to $\frac{5}{16}$ " dia.
- ★ Cutting head holes are reamed to .005" to .008" oversize to provide the best possible cut on all standard cold finish bars.

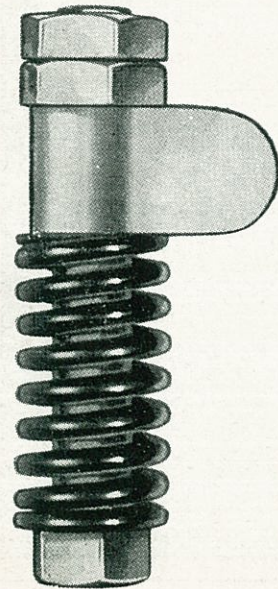
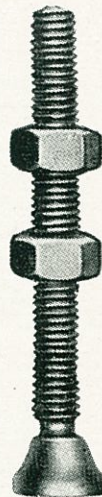
TOGGLE CLAMP ACCESSORIES



Illustrated here is the excellent range of P.T. Toggle Clamp Accessories . . . It will pay you to study these accessories carefully. Their use in various applications will save time and money because they are specifically devised to assist towards the ultimate in clamping efficiency. All spindles are heavily copper-plated to throw off welding spatter. All lengths quoted are length of thread.

"FIXED PAD" ADJUSTABLE SPINDLE ASSEMBLIES		
Part No.	Description	Suitable for:
2538 FP	2½ in. x 3/8 in. B.S.F.	SU-107-25, TU-107-25, T-106-20, T-106-25, T-106-30, T-110, SS-114-15
3038 FP	3 in. x 3/8 in. B.S.F.	SU-107-35, TU-107-35, T-110, SS-114-15
3538 FP	3½ in. x 3/8 in. B.S.F.	SU-107-50, TU-107-50, T-110, SS-114-15
3050 FP	3 in. x ½ in. B.S.F.	SS-107-25, TS-107-25, T-109, SS-114-25, SS-114-30
3550 FP	3½ in. x ½ in. B.S.F.	SS-107-35, TS-107-35, T-109, SS-114-25, SS-114-30
4050 FP	4 in. x ½ in. B.S.F.	SS-107-50, TS-107-50, T-109, SS-114-25, SS-114-30
5558 FP	5½ in. x 5/8 in. B.S.F.	SS-104, SS-114-30

"SWIVEL FOOT" ADJUSTABLE SPINDLE ASSEMBLY		
Part No.	Description	Suitable for:
2538 SF	2½ in. x 3/8 in. B.S.F.	SU-107-25, TU-107-25, T-106-20, T-106-25, T-106-30, T-110, SS-114-15
3038 SF	3 in. x 3/8 in. B.S.F.	SU-107-35, TU-107-35, T-110, SS-114-15
3538 SF	3½ in. x 3/8 in. B.S.F.	SU-107-50, TU-107-50, T-110, SS-114-15
3050 SF	3 in. x ½ in. B.S.F.	SS-107-25, TS-107-25, T-109, SS-114-25, SS-114-30
3550 SF	3½ in. x ½ in. B.S.F.	SS-107-35, TS-107-35, T-109, SS-114-25, SS-114-30
4050 SF	4 in. x ½ in. B.S.F.	SS-107-50, TS-107-50, T-109, SS-114-25, SS-114-30
5558 SF	5½ in. x 5/8 in. B.S.F.	SS-104, SS-114-30



"SPRING LOADED" ADJUSTABLE SPINDLE ASSEMBLY		
Part No.	Description	Suitable for:
2538 SL	2½ in. x 3/8 in. B.S.F.	SU-107-25, TU-107-25, T-106-20, T-106-25, T-106-30, T-110, SS-114-15
3038 SL	3 in. x 3/8 in. B.S.F.	SU-107-35, TU-107-35, T-110, SS-114-15
3538 SL	3½ in. x 3/8 in. B.S.F.	SU-107-50, TU-107-50, T-110, SS-114-15
3050 SL	3 in. x ½ in. B.S.F.	SS-107-25, TS-107-25, T-109, SS-114-25, SS-114-30
3550 SL	3½ in. x ½ in. B.S.F.	SS-107-35, TS-107-35, T-109, SS-114-25, SS-114-30
4050 SL	4 in. x ½ in. B.S.F.	SS-107-50, TS-107-50, T-109, SS-114-25, SS-114-30
5558 SL	5½ in. x 5/8 in. B.S.F.	SS-104, SS-114-30

LEFT: This assembly allows you to clamp parts that vary as much as ¼ in. in thickness, without manual adjustment. This is particularly desirable when holding castings or sheet metal of varying gauges. Manual adjustment, therefore, is infrequent. All portable P.T. Toggle Clamps can also be equipped with this feature, which provides automatic adjustments of spindle gap.