

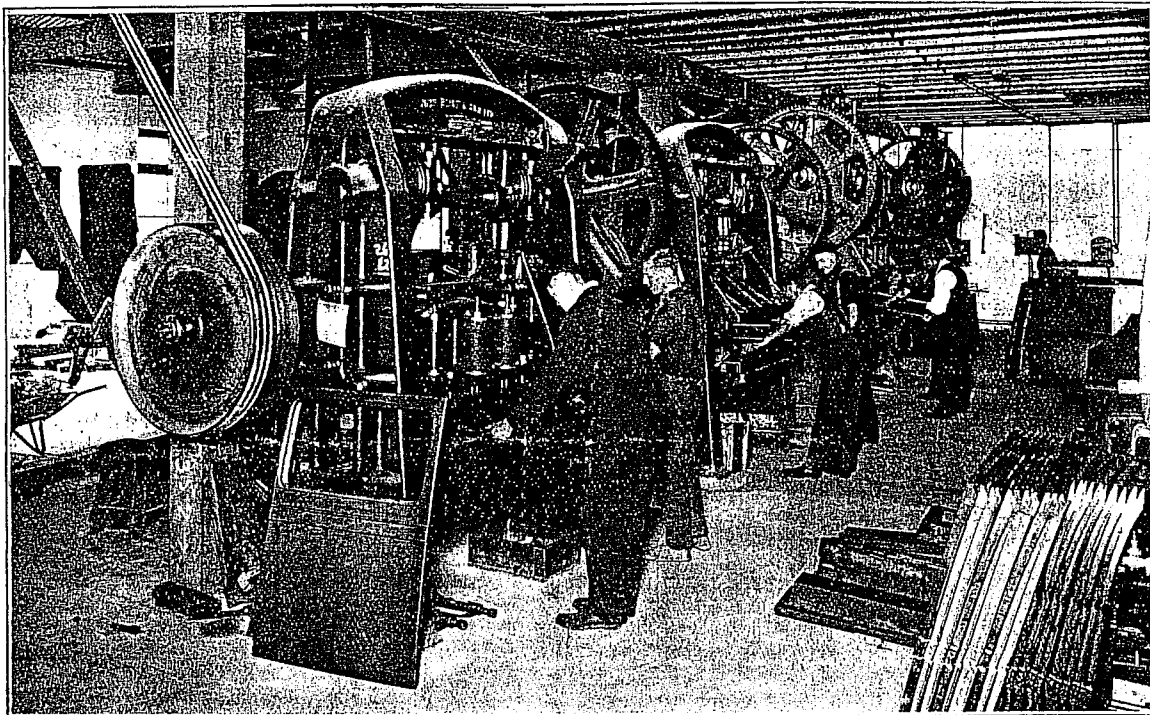
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*With the Compliments of:-*

**G. A. & L. HARRINGTON  
LTD.,**

**CAMPERDOWN, N.S.W.**





Important Development in the Preparation of Motor Body Parts. Complete Doors being Stamped Out in One Process, at the Works of G. A. & L. Harrington, Ltd., Camperdown, N.S.W.

## Metal Motor Body Fittings in the One Piece

Important Development in the Production of Stampings of Magnitude. — Enterprise of G. A. & L. Harrington, Ltd., Camperdown, N.S.W.

(By W. North White.)

THE requirements and demands of the motor car body-builder are somewhat imperative, so much so that great concentration has been made by engineers catering for the wide field offered to them in the production of suitable metal accessories for the proper equipment of the motor car.

Minor parts are, obviously, simple in construction, and present but little difficulty, either in the preparation of dies or the designing of the presses to be utilised in the work, but it is in the greater and wider scope of the engineers' work that consistent enterprise must be the keyword, if success is to attend the efforts of those engaged in this business—a business where competition runs keen.

Primarily, the scope of enterprise indulged in by the makers of motor body parts is responsible for the success which has attended the activities of numerous engineering firms scattered throughout the Australian Continent, and secondly (but none the less important) has been the value of the response given to them by the larger engineering firms, which have come readily to their aid in the production of metal-stamping machines, which shall accomplish work, practically unthought of but a decade or so ago.

The motor car is a vacillating vehicle, inasmuch as the makers are changing models about every year, and is only standardised in one or two main points, such as the engine, the method of control, and the character of the chassis. But the

body, like the maker's creations, consistently performs a "volte face."

This has naturally led to the eventuation of a scheme of enterprise which is commendable on the part of the motor body-builders and those who supply them, inasmuch as doors (for instance) are generally much the same, but even if this not be so, car users of a certain type are at all times anxious, when replacements are rendered necessary, to secure from the body-builder the exact replica of, say, a damaged door, as that which formerly was fitted to their car. And this means mass production.

Again, in regard to doors. These have hitherto been made in two pieces, a system which has proved efficient, but one which, of course, lent itself to improvement. And it is in this improvement that the story of the work of G. A. and L. Harrington, Ltd., of Salisbury Road and St. Mary Street, Camperdown (N.S.W.), commences.

The principals of the business—Mr. G. A. and Mr. L. Harrington—are two brothers, who originally started as sheet-metal workers in Harris Street, Sydney, eleven years ago, and their subsequent rise in the industrial world constitutes one of the many manufacturing romances which are scattered through the pages of Australia's industrial history.

Owing to the effects of a fire which occurred in premises adjacent to their own in Harris Street some three years ago,

and through which their factory there was seriously damaged, it was decided to improve their manufacturing facilities, with the result that an island site was acquired at the corner of the streets mentioned above, and so successful was the result of the work carried on there, that within eighteen months afterwards additional premises were taken on the opposite corner, one which also constitutes an "island" site.

Now the firm (which, by the way, has recently become a limited liability company) occupies an enviable position so far as its own output of work is concerned, for the reason that the two factories are in the happy situation of being able, each and individually, to pass over work from one department to another with the greatest facility, the distance between the two sections of the business being but a matter of a few feet. Moreover, inward or outgoing material can be received or despatched independently from either the machine shop or the main works.

A characteristic feature of Messrs. Harrington's dual factory is that it is most excellently lighted by natural means, the floors are of concrete and the roof of each section lofty, assuring perfect ventilation, there being at all times a healthy flow of pure air throughout the two buildings.

Apart from the work performed, a visitor is immediately impressed with the general layout of the plant, the general works being designed to fulfil the most

satisfactory demands of a mass production scheme of works, and both here and in the machine shop, the machines have been so placed as to give the greatest con-

Harrington's factory is one which has the possibilities of opening up a new era in the production of motor parts, and one which, also, may prove of great potential

body work of a metal character required for a car, can be produced at the Camperdown works with the utmost expediency, and users can rely that every piece of accessory manufactured will not vary by the nearest fraction of an inch.

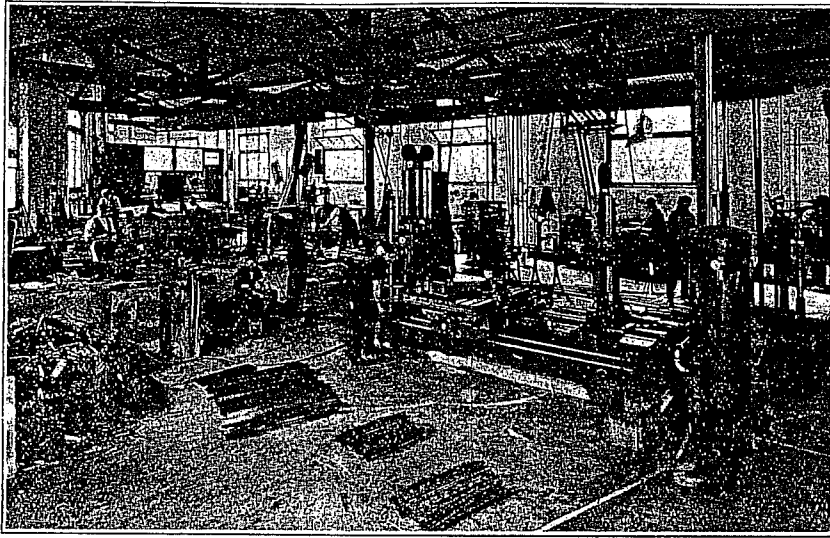
The general parts are easily negotiated, but it is in the production of the one-piece door that Messrs. Harrington have proved their enterprise by the advancement made by them in this direction. A one-piece door must necessarily be of the greatest use to the motor body-builder, and when it is understood that rush orders can be completed almost in any quantity within a few days from date of receiving order to date of delivery, it is apparent that the Harrington organisation has been based upon a firm footing.

In illustration of this, it may be mentioned that the capacity of this section of the works is such that 350 complete sets of body fittings can be, and are produced by the firm every week. This output is an astounding one, but reflects with the greatest credit upon this organisation.

Before visiting the machine shop, a word may well be added in support of the foregoing paragraph. Messrs. Harrington make all their own dies, have a special tool-making department, and also have installed at the works the usual "hospital for dies," by means of which only the greatest degree of success can be achieved in the process of manufacture, no matter whatever the engineering work under consideration may be.

Up-to-date engineers know the full value to be received by being prepared to do such work, and Messrs. Harrington have wisely availed themselves of this form of internal self-preservation. In a word, the press shop is wholly self-contained, and dependent upon no outside assistance but that given by their own machine shop.

Crossing the few feet, already referred



This Illustration gives an Excellent Idea of the Fine Machine Shop of Messrs. Harrington, Ltd., referred to in the accompanying Letterpress.

venience to the operators engaged upon any particular undertaking.

To deal firstly, then, with the general works themselves. No fewer than 33 presses have been installed here, all of which have been thoughtfully arranged in rows, so as to achieve the utmost amount of efficiency in output.

This section of the works, or press shop, has an area of 9000 super feet, and from here the main productions of Messrs. Harrington's emanate.

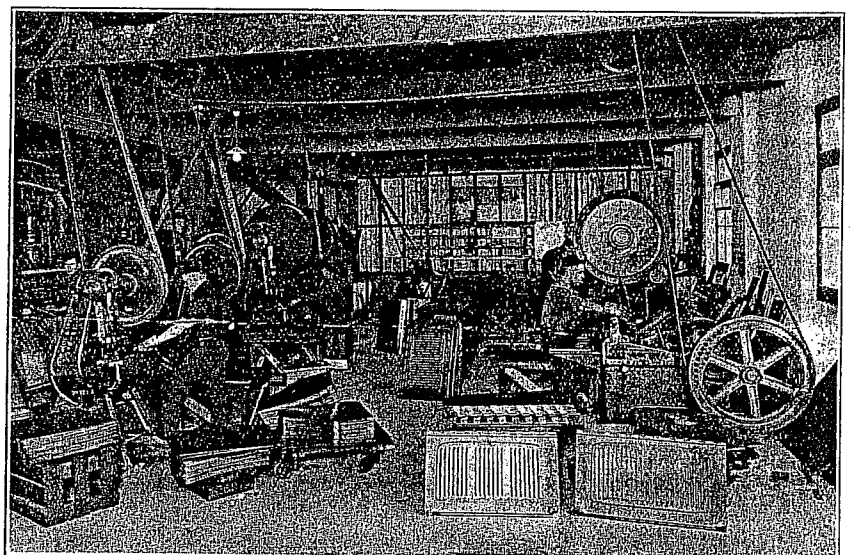
One series of presses is devoted to the pressing of bonnets from the sheet-metal, another range is engaged upon the production of door parts and other necessary adjuncts to the motor car, while the last range is equipped to meet the requirements of a heavier class of trade. This particularly characterises the "one-piece production," made popular by this firm. At the moment there are presses in operation which work up to no less than 140 tons pressure, for the production of doors all in one piece, and there has now been installed a new press—the second only of its kind in Australia—which will develop this "one-piece" scheme of enterprise considerably.

This new press is of solid construction, and reflects the greatest credit upon its factors, Messrs. John Heine & Son, Ltd., of Leichhardt (N.S.W.). It is of solid construction, being (roughly) 4ft. square on its base, and running up to 10ft. in height. The whole unit is of the most sturdy construction, and is capable of producing 1500 motor car door frames per week. Truly a very fine output. All the working parts are solidly built, the method of operating the dies is of the simplest character, and the finished product is such as would delight the most fastidious builder of motor bodies. This is not said without due regard to the responsibilities we have to observe as recorders of industrial activities. The new press installed at Messrs.

value in the future industrial work of motor body production in the Commonwealth.

In regard to the operation of the machine, the sheet-metal is placed in the press, and without any difficulty whatever the whole motor car door is pressed out completely with its natural embossings and beads or heading. By the scheme of design of dies, the window openings and reveals are fully allowed for, and when formed, the stampings provide the greatest accuracy, and also a general ensemble of excellence in appearance.

The minor presses, of course, are devoted to the fabrications of accessories, such as slam plates, foot rails, bonnet clips, spring dovetails, tread plates, bumper cages, cushion dowels, and the like.



A Noteworthy Feature of the General Lay-out of these Works is the Systematisation of the Planning of the Machinery and its Consistent Uniformity in the matter of "Heavy" and Durable Units.

The exemplification of systematisation has produced excellent results in the activities of Messrs. Harrington. All motor

to, we enter the well-equipped machine shop, which has a total area of 5000 super feet. Here we find the usual ranges of

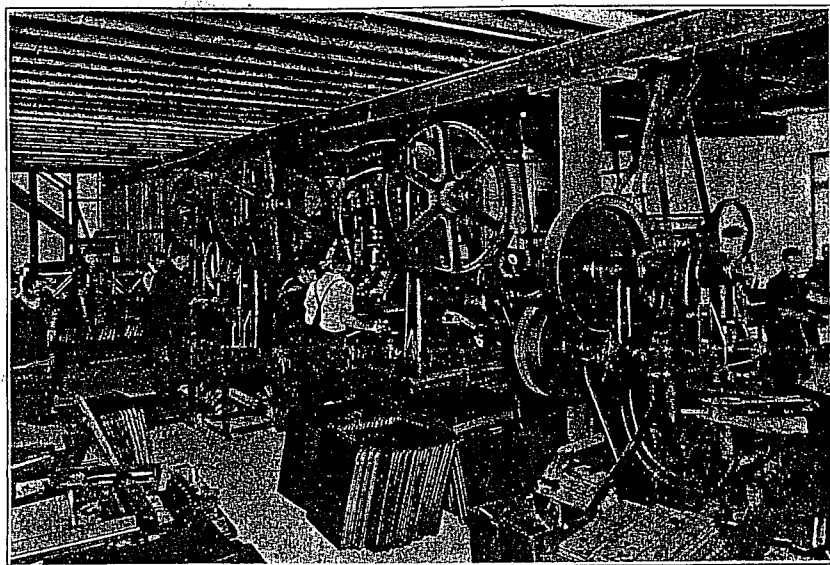
machines for boring, drilling, cutting, and altogether the two works, though minor stamping, and other accessories to really a composite whole, are absolutely

house (Mr. G. P. Harrison) is now touring America and Europe with the view of assimilating latest methods and ideas, which will naturally be placed at the disposal of the Australian organisation upon his return.

Messrs. Harrington have risen during the past decade to a high position in the motor engineering industry, and their foresight in grasping opportunities is another indication of that enterprise which characterises the work of all true Australians who have the interests of the manufacturing community of the Commonwealth at heart.

The possibilities for the development of the motor body-building industry in Australia are boundless, and a great future exists for the cementing, and further increasing the Commonwealth's interests in the production of (not only parts), but a complete "tout ensemble."

In any event, it is satisfactory to record degrees of progress which have been made through consistent energy and enterprise, and in this direction credit must be given to Messrs. Harrington for the important part they have played as a firm, and also as individuals, in the establishing of an



Motor Body Parts, Factored under "Mass" Production Conditions by Messrs. G. A. & L. Harrington, Ltd.

the usual work conducted by the metal-worker.

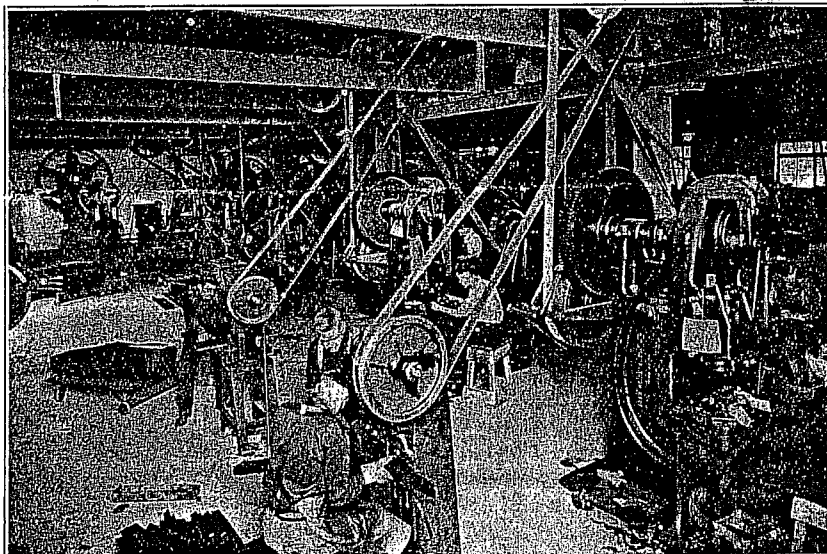
A very fine type of Wetzel boring machine has been installed, and it may also be added that all the machines in this department are independently worked, and, in certain instances, by compressed air.

In addition and coincidentally with the general scheme of the work performed, it has to be mentioned that a most perfect and rigid scheme of inspection has been instituted. Every part, whether from the presses direct or after finishing, is carefully tested to the finest degree, so much so that practically every article distributed from the Camperdown factories can be relied upon to be "true to template." Any differentiation, however slight, is immediately detected, and the piece discarded by the overseer, and it is in that Messrs. Harrington have gained such an enviable reputation among those building bodies for motor cars.

The works also contain their own electric welding and oxy-acetylene welding plants, together with furnaces for the annealing of metal work and the preparation of dies. Messrs. Harrington also have established their own pattern-making shop,

self-contained, and are in the position of being able to supply the needs of motor body-builders in every respect.

In order to further illustrate the enter-



A Busy Corner of the Camperdown Works, where Finishing and other Operations are in Course of Progress.

prise of the firm, it may be added in conclusion, that a younger member of the

excellent unit in Australia's secondary industrialism.

