BIRD & LUCAS, Ironfounders

the Glebe, Sydney

an Exercise in Oral History

Written & Researched

by

Barry Groom

for

Judy Birmingham
Historical Archaeology Unit

University of Sydney

Funded by the Australian Heritage Commission
Table of Contents

Preface to Industrial Sites Series

I History

II The Industrial Process

III Plates

IV Bird & Lucas Catalogue 1904
1. HISTORY

The firm of Bird & Lucas, Ironfounders, commenced operations in August, 1900, on a site cornered by Phillip Street and Cowper Lane, Glebe. An anniversary catalogue, published by the company to mark the fourth year of its existence, has on its title page, the claim:

"At once, we confess that we can't do everything, and so long as Bird & Lucas is a firm, we shall probably not make steam engines or build battleships, but we CAN make Light castings, and make them well. We've been doing this work all our lives - the last 4 years on our account; and we are proud to say that during that latter period WE'VE NEVER LOST A CUSTOMER THROUGH BAD WORKMANSHIP, nor have we ever had a complaint about the quality of our castings.

We are both working proprietors, anxious to maintain and extend a reputation for good-class work; and knowing a Casting from the furnace to the emery wheel, we exercise personal supervision over every Hobbin, Barrow Wheel, or Register Grate that leaves the premises......

BIRD & LUCAS"

The site of Ne. 2 Phillip Street, then the location of the foundry, has an interesting history, which begins as early as 1884; the street itself having been laid down one year earlier. In that year, the premises is listed in the John Sands Directory as being occupied by one Duncan McPherson, Moulder., a concern which may have been very shortlived, for in the following year, the Directory lists the site as belonging to a Charles Smith, Saddler.

The Directory for 1886 shows Smith as still operating from No. 2, from a building which faced Coulson Bros., Ironfounders, listed as being situated directly across the road.

By 1887, as the evidence from the Directory of that year indicates, Coulson Bros. had shifted their operations from across the road, and were then doing business from no. 2. There is no mention of Charles Smith, Saddler. By 1889, Coulson Bros. had become W. R. Wise, Engineer, listed in subsequent years as W. R. Wise, Casting Foundry. This foundry commenced operations under the name of Bird & Lucas from August, 1900.

The primary source of information for the foundry's earliest years, is the oral testimony of Albert William Hickman, an only survivor, who commenced working at the Phillip Street site in 1905, as a boy of 16. "Young Bert", as he was then called by William Bird, is shown standing second from the right in the photograph on Plate 2, taken in 1907, which gives one a clear impression of the general layout of the Phillip Street foundry in those early times. (It was pulled down in 1929).
It was taken in the rear work-yard of the foundry against the side-wall of B. Stone & Son, Stovemakers, which was situated directly alongside Bird & Lucas in Phillip Street which runs to the left of the photograph. Daniel Lucas and William Bird stand behind the workmen. The former was a moulder by trade, whilst Bird concentrated more on the administrative aspects of foundry management. Their respective roles within the firm are, in this case, adequately confirmed by their dress and appearance.

William Bird had migrated to Australia from Birmingham, England, where he had been a close friend of Albert Hickman's father, sometime before 1887, whilst Daniel Lucas had come originally from Edinburgh in Scotland. It is not known whether they had worked for W. R. Wise prior to August 1900, when they acquired the ownership of the foundry and commenced operations under the name of Bird & Lucas, Ironfounders.

The firm maintained a close working relationship with B. Stone & Son, next door, and many of the workmen in the photograph hold Patterns, used for the casting of panels for the Waratah Stove, a product of that firm.

With regard to the layout of this early foundry, Phillip Street was situated to the left of the buildings shown in this photograph whilst Cowper Lane crossed it almost at right angles, running behind the foundry shown here. The houses in the far background faced onto Cowper Street, and were situated between this street and Cowper Lane, which ran parallel to one another. In fact, Daniel Lucas himself lived at this time in the house almost wholly obscured by the main foundry building.

The buildings of the foundry, which are all included in the photograph, were, from extreme left to right the coke shed, the open structure facing in towards the inner work-yard, where naturally, the coke for the furnace was stored. Alongside it was the main gate to the foundry on Phillip Street. Adjacent to the coke shed was the paint shed, (see Plate 3) where oils and other liquids essential to a foundry were kept. The smaller of the two remaining buildings, which were situated at right angles to the above mentioned, contained the office and the so-called Dressing Shop where the completed castings were filed and cleaned.

To the right of this is the actual foundry itself. Its roof-line, according to Albert Hickman, betrays a little of the early history of the site. There are in fact two main structures, joined to one another. The innermost is an extension, added by Bird and Lucas sometime between 1900 and 1905, the other, clearly discernable by its gabled roof, is the original Wise Foundry (Refer to Plate 8).

The furnace stack was located at the left hand end of this building(s), in the cleft of the roof-line and is, therefore, hidden from view.

The population of Glebe by 1901 had reached 19,220, and the workmen of the foundry, who numbered around 15 during these early years, were kept reasonably busy fulfilling orders solely for a local market. The firm produced a great diversity of wares during its first years of business, for both public and private interests. Its 1904 catalogue displays such items as baker's ovens, truck and barrow wheels, light castings for plumbers, light industrial castings, etc; as well as fireplaces, table stands, and elaborate sham hinges. Grace Bros. then, as now, on Broadway, were one of Bird & Lucas's biggest customers, along with B. Stone & Son, makers of the Waratah Stove.
Albert Hickman's recollections of life and work at the Bird & Lucas Ironfoundry in the early 1900's are still quite clear. He remembers William Bird, who was then living at West Kogarah, a Sydney suburb, as a quiet, somewhat shy man who attended Church every Sunday without fail. This was definitely not in keeping with the character of his partner Dan Lucas. This jovial and boisterous Scotsman would quite often rattle the foundry windows with the cry of: "Go and get your coat, laddie!" whenever he had recourse to sack a slovenly workman.

Those who, like Albert Hickman, commenced working for the firm at an early age received a wage of 6 shillings per week and they worked from 7:15am until 5:15pm. After a 5 year apprenticeship, they became what was known then as a 'journeyman', with a weekly salary of £2.8s.

All of the raw materials used by the foundry during this early era were transported to it by horse and cart, or sometimes even by lorry; they were then unloaded by hand at the factory gates. The pouring of the molten metal too, was performed without the aid of any machinery, such as light cranes, etc.

The land upon which the foundry stood was, during the first decade of this century, leased to Bird & Lucas for the rather small amount of £1 per week by the Church of England, viz the agency of Bernard Stone, who was a very active member of Saint Barnabas Church, Broadway. It also paid business tax to the Government worth £17 per year. Apart from these statistics, little else is known about the economic management of the company, since all of the early records have been either lost or destroyed. (It should be made clear to the reader that to refer to Bird & Lucas at this stage as a 'company' is somewhat erroneous, since it did not register as such until September 1928).

However, it is known that at sometime in the latter half of the first decade of this century, the firm of Bird & Lucas won a Government contract to supply the schools throughout N.S.W. with desk stands. The profits of the firm rose accordingly, and more workmen were employed as a result. This satisfactory state of affairs was to continue for quite a long time, despite the fact that the contract with the Government was lost only four years later, (to Foster's Foundry, a competitor), due to the outbreak of World War I.

During this conflict, the firm of Bird & Lucas, Ironfounders, was classed as an essential industry, and its workmen exempted from military service. Instead, they were employed at the foundry, hard-pressed to fulfil the many military contracts now undertaken by the company, chiefly involved with the production of 'half-cases' for hand grenades.

During the immediate post-war years, and well into the 1920's, the Australian iron and steel and associated industries entered a boom period as the country began rapidly industrialising. Bird & Lucas even acquired their own lorry.

The early 1920's also saw some major changes in the ownership of the Bird & Lucas foundry, for in 1921 Daniel Lucas died. His shares in the company, and his directorship were acquired by one Samuel Wilkes, an engineer who had been brought out from England by William Bird some years earlier, and who had also married one of Bird's three daughters, Myra. He is shown in the photograph on Plate 6, which was taken in April 1922, standing on the far right with a hat on. In that same year, Thomas Henry Hickman, Albert's older brother, was approached by William Bird, as a friend of the...
family, to join the firm. He had been until that time, the
foreman at the Anthony Hordern & Sons foundry at Brickfield Hill,
and his experience and expertise were much needed after the death
of Daniel Lucas. He eventually, with the subsequent death of
William Bird in 1923, acquired the shares of that man and so became
director along with Samuel Wilkes.

The business continued to prosper throughout the 1920's, and
in August 1928, the firm first appears in the Government records,
giving official notification to the then Registrar of Joint Stock
Companies that the office of the company was situated at 2 Phillip
Street, Glebe. Three weeks later, on the 12th September, 1928,
Bird & Lucas was first registered as a company, with a capital of
£5,000 divided into 5,000 shares of £1 each22... (see Plate 10).
The principal shareholders then were Samuel and Myra Wilkes; Thomas
and Alice Hickman; Walter Tester and Roy Head, Solicitors, of Sydney;
and one Charles Baker, Managing Law Clerk, of Ashfield. The
directors were registered as Samuel Wilkes and Thomas Hickman.

At that time, the foundry was still leasing its land from the
Church of England, but - the Church now refused to renew the lease
from the end of that year23. It had been Church policy to maintain
Glebe as primarily a residential area, and it was perhaps in
pursuance of this policy that it had decided to terminate the lease
of the foundry, now known as Bird & Lucas Ltd. Throughout the 1920's,
the Church was being subjected to much criticism for continuing its
attitude. One observer of the time wrote:

"as one walks along George Street, west from Railway Square
to Grace Bros. one notices in the side streets, large
factory buildings and stores and workshops; but the moment
Broadway is passed, the observer is faced with rows of
houses and cottages owned by the Church. The land is
suitable for the erection of large stores and factories,
but as it was tied up for so long, potential buyers were
forced further out".24

"Further out", in this case had meant on or near the reclaimed
land along the foreshores of Rozelle Bay and Blackwattle Bay,
(see map) which was totally unsuited for residential use. In the
late 1920's, this was still the cheapest industrial land available
in the general vicinity, and Bird & Lucas Ltd., catering to a very
localised market could ill-afford to look elsewhere. On the 20th
September, 1928, therefore, a signed agreement between Sam Wilkes
and Tom Hickman, the directors of Bird & Lucas Ltd., was lodged
with the Registrar of Joint Stock Companies advising that body that
the firm was in the process of purchasing land at the end of Sheehy
Street, Glebe, and that the sale was expected to be completed by
the 4th October, and that the price of the land was two thousand
two hundred pounds (£2,200)25.

By the 18th April, 1929, the Registrar had been notified that
the office of Bird & Lucas Ltd. was situated at 26 Sheehy Street,
Glebe26. There were at that time twelve men working for the
company27.

The area of land bounded by Cook Street, Glebe Point Road and
Forsyth Street down to Blackwattle Bay, had, in earlier times been
dominated by a mansion situated within it named 'Strathmore', (see
Plate 11) and this house had belonged to the Church since 1899.
In the same year that Bird & Lucas Ltd. had moved into the area
it had been converted into a home for boys. It was finally demol-
ished in 194628. Albert Hickman well remembers the stables which
were knocked down to make room for the site of the new foundry, and which must have at one time been associated with the old house. A larger factory than had been at Phillip Street was erected on the new site, which measured 83.5 metres along Cook Street, 40.56 metres at its western end and 38.4 metres at its eastern end. (For plan of the site and its buildings, see Plate 12).

Not long after the move was completed, the Great Depression struck. Bird & Lucas Ltd. was forced to lay off most of its workers, and only four men remained at the factory; the directors Sam Wilkes and Tom Hickman, and Albert Hickman and Tom's son Russell, who had been working for the firm since 1922. The new furnace, erected only 12 months earlier, was too large for the firm's vastly decreased workload (their only customers during these years were Grace Bros., Henry Simons Pty. Ltd., and Jarman Bros.) and one with a smaller 'melt' was constructed. Conditions worsened, and in January 1931, the then directors mortgaged the company for £4,000; to be paid back with an interest of 6% per annum from October 1933. Soon after, Sam Wilkes was forced to withdraw completely from the company because of serious illness, and his shares and directorship were therefore acquired jointly by Albert Hickman, and his nephew Russell. Bird & Lucas Ltd. had now become a family business, just over 30 years after Albert Hickman had first commenced working there as a boy of 16 in 1905.

The Depression slowly passed, and orders, mainly from localised private industrial concerns (a phenomenon which explains why the company has never really felt the need to advertise its wares), began to flow into the office of the firm once more. In May 1937, the company officially became known as 'Bird & Lucas Pty. Ltd.', after the men at the foundry had voted upon a special resolution.

The Advent of World War II once again saw the workmen of Bird & Lucas exempted from military service, and during these years, the foundry produced light castings for machines of the munitions industry. In the immediate post-war years, there was a serious shortage of labour, and as a consequence one finds the firm having to advertise for three consecutive months in the local papers simply in order to attract two boys, with no experience, to work at the foundry.

The older men who still work at the foundry today, remember the 1950's as a very busy era indeed; work was so plentiful that orders were sometimes running three months behind schedule. The firm, as well as doing work for companies such as Grace Bros., Austral Roller Shutters Pty. Ltd., White Elevators, Van Gelders, Richard Brady & Sons Pty. Ltd., Henry Simon Pty. Ltd., and E. G. Bishop Pty. Ltd., etc., was hard-pressed to fulfill a Government contract involving the production of drain-grates for the city of Canberra. The workforce at this time, numbered upwards of 22 men, each of whom worked a 44 hour week. On the 28th November, 1956, a meeting of shareholders increased the capital of the company from £5,000 to £15,000, an indication of the prosperous state of the company at that time.

However, the early 1960's were troubled times indeed for the foundry, as it was for small industry in general, and a great many of Bird & Lucas's competitors were forced to close down. The firm itself was saved only by the timely action of one of its major customers, H. D. Poingdestre, Patternmaker, who bought into the company and so became a joint managing director. Prior to this move, he had in fact, been leasing a part of the foundry floor space for his own use, and the virtual merger enabled Bird & Lucas
Pty. Ltd. (and H. D. Poingdestre, as it then became known) to survive.

Today, the foundry, which is still in operation at 26 Sheehy Street, Glebe, employs over 20 men; and despite some serious problems with local residents about pollution, is nevertheless being run at full capacity. It is owned and managed today by Les and Jack Hickman, both sons of Albert Hickman, and by Russell Hickman's widow, Maude Hickman and also one John Grant, who replaced Herbert Poingdestre upon his retirement in 1974. The latter, however, still leases a small part of the foundry to carry on his own private business.

* * * * * * *

Since this monograph was written, the Bird & Lucas Foundry has come under serious threat of closure and redevelopment. Nevertheless, the old foundry remains of considerable interest and significance in the history of Glebe, not least in its visual mementoes in the neighbourhood streetscapes and interiors. Much of the early ironwork architecture of Glebe (i.e. iron lacework, fireplaces, register grates, hinges, table-stands, chairs, etc.,) has emanated from the Bird & Lucas Foundry, which has been operating in that area for nearly a century. Fortunately, the original patterns for many of these pieces have been kept by the foundry's owners, and are now housed in a dark and dusty storeroom at the foundry itself. If, as at this stage seems likely, the foundry is eventually forced to close down, then at least these should be preserved; preferably by the Museum of Applied Arts and Sciences at Ultimo.
II. THE INDUSTRIAL PROCESS

The actual process of industry used at the foundry today differs little from that of 70 years ago; apart from the utilisation of some of the more obvious benefits of technological progress. For example, the heavier pouring is now done with the aid of the light over-head crane.

The company still, despite its location quite near to a major waterway, transports all of its raw material by road; since the relatively small quantities used by the foundry do not justify its use. Coke, scrap iron, and limestone are used in the actual melting process, whilst sand is required to make the moulds, into which the molten metal is poured. On an average casting day, about 5-6 tons of molten metal is produced and poured. The firm today, specialises in the making of light industrial castings, pulleys, bearings, etc., whilst also producing a large number of 'pot-bellied' stoves, for sale in shops to the general public.

The actual processes involved are set out clearly in the chart on Plate 13, which should be viewed in correlation with the foundry ground-plan on Plate 14.

The process commences with the loading of the furnace, or as it is correctly termed, the cupola. The required amount of scrap and pig iron is thrown into the mouth of the cupola by hand, to sit atop a 3 foot bed of coke, which provides a sufficient quantity of heat necessary for the 'melt'. To this is added a shovel full of limestone, mined locally, which acts as a flux.

The molten metal is then poured from the cupola into a receiving trough, from whence it is transferred to either a small wheeled trolley or to the bucket of the light overhead crane, to be taken to the awaiting moulds and poured. This load constitutes a single 'charge' and the charge is repeated, using each time, a lesser amount of coke, until the required quantity of metal has been poured, usually between 5 and 6 tons on any one cast day, as mentioned above. The charge is fed into the cupola from an elevated platform, or 'stage' as the workmen call it, which is situated about 15 feet above the ground level, and accessible by a ramp which greatly facilitates the loading of the raw materials.

The whole of the pouring process, from the loading of the cupola to the actual pouring of the moulds, is illustrated in detail on Plates 15 to 23.

The making of the moulds, into which the molten metal is poured after being transferred from the cupola is a somewhat more complex process, even more so since there are two main types of moulds used at the foundry.

The one process begins with a machine known as a 'Fordath', or in simpler terms, a mould maker. Sand, the chief component of any mould, is piped into the machine from its storage tower, and is there calibrated automatically with the other major mould ingredient, the so-termed 'Alkyl-Resin Binder', a mixture of compounded linseed oils, which acts both as a glue and binder. A chemical catalyst is also added. Once sufficiently mixed, the material is then poured from the spout of the Fordath and into awaiting 'pattern moulds' and 'core boxes'; where they are left until properly set, which is only a matter of 25 minutes. The core box and moulding pattern panels are then removed, and the set and ready moulds are then placed on the ground to await the pouring of the metal.
Many of the cores for these moulds are still made (i.e. set) in the old-fashioned manner, using a core oven-heated by a coal fire. (See Plate 20)

The other principal mould type used at the foundry are made of reclaimable black sand—a mixture of loam, Bentonite and coal dust which is produced without the aid of the Fordath, the compound being mixed, and remixed, in a small sandmill. Moulds of this type however are not suitable for many of the castings produced at the foundry today, and thus both variants are used, the sand of the latter being re-used, the former being simply broken up and thrown away. (See Plates 24-27)

Once the nearly finished castings are removed from their moulds, they are dressed and cleaned, (Plate 29), and so delivered to the customer, these being almost without exception small Sydney-based light engineering firms, such as the Consolidated Bearing Company, or Van Gelders Engineering Co. etc..., and others mentioned previously in the text.

REFERENCES

(1) A copy is still kept today at the foundry itself, now located at 26 Sheehey Street, Glebe.
(2) Deduced from early maps of the area, available from the Registrar General's Department and the Sydney City Council Department of Planning.
(3) The John Sands Directory, 1884. Available in the City of Sydney Public Library.
(4) Ibid, 1886.
(5) Ibid, 1887.
(6) Ibid, 1889.
(7) The foundry is however, listed in the Sands Directory as W. R. Wise until 1902. This must have been an oversight, since the evidence from the firm's catalogue of 1904 seems irrefutable, since it is specifically stated in it that August 1904 marked the fourth year of Bird & Lucas's existence.
(8) This is certainly the case. All of the firms early records have been destroyed, and of its early workmen, only Hickman is still living. Yet, it should be pointed out to the reader that this man's recollections, wherever it has been possible to have them checked, have proven to be detailed and correct in every respect.
(9) Oral testimony of Albert William Hickman.
(10) A.W.H.
(11) Ibid
(12) Ibid
(14) A. W. H.
(15) Ibid
(16) Ibid
(17) Ibid
(18) Ibid
(19) Ibid
(20) Ibid
(21) A. W. H.
(23) A. W. H.
(25) Documents of the C.A.C. (See 22)
(26) Ibid
(27) A. W. H.
(28) F. MacDonell, The Glebe p.46 (Sydney 1975)
(29) A. W. H.
(30) Leichhardt Council, Rate Records.
(31) C.A.C. Documents
(32) Ibid
(33)'The Glebe Observer' Fri. June 6, to Fri. October 31, 1947. Available at the Mitchell Library.
(34) C.A.C. Documents.
ADDENDA: It should also be brought to the attention of the reader that much of the early ironwork architecture of Glebe (i.e. iron lacework, fireplaces, register grates, hinges, tablestands, chairs, etc.) has emanated from the Bird & Lucas foundry, which has been operating in that area for nearly a century. Fortunately, the original patterns for many of these pieces have been kept by the foundry's owners, and are now housed in a dark and dusty storeroom at the foundry itself. If, as at this stage seems likely, the foundry is eventually forced to close down, then at least these should be preserved; perhaps preferably by the Museum of Applied Arts and Sciences at Ultimo.
III. PLATES

PLATE 1

WILLIAM BIRD AND WIFE ON BOARD THE SHIP "OPIA"; WHICH WAS TAKING THEM BACK TO ENGLAND FOR A HOLIDAY. circa 1912
PLATE 2

PHOTOGRAPH TAKEN IN THE REAR WORKYARD OF THE PHILLIP ST FOUNDRY. circa 1907
Refer to page 2 for a descriptive analysis of the old foundry site, as shown in the photograph.

PLATE 3

THE MEN OF BIRD & LUCAS, circa 1908
PLATE 4

THE MEN OF BIRD & LUCAS, circa 1918

PLATE 5

PHOTOGRAPH TAKEN INSIDE THE PHILLIP ST FOUNDRY. circa 1920

In the foreground are mouldings used to make panels for the Waratah Stove.

(Albert Hickman, our chief source of information for the early years, is standing 2nd from right in the white shirt.)
PLATE 6

THE MEN OF BIRD & LUCAS, April 1922.
This photograph shows the intersection of Phillip St and Cowper Lane. The bricked wall to the extreme right belongs to B. Stone & Son, Stovemaker.

PLATE 7

TAKEN FROM A CATALOGUE PUBLISHED BY THE FIRM IN AUGUST 1904.
KENT GRATES.

These are in sizes 12, 14 and 16, with

MOVABLE BACKS.

By this means, the fire may be made larger or smaller at will. This is another speciality.
PLATE 8

SKETCH PLAN OF THE OLD BIRD & LUCAS FOUNDRY:
(FROM PHOTOGRAPH ON PLATE 2 AND THE MEMORY OF
ALBERT HICKMAN)
COWPER L.

OFFICES & "DRESSING" SHOP

PAINT SHOP

COKE SHED

MAIN FOUNDRY

ORIGINAL WISE FOUNDRY (PRE-1900)

BIRD & LUCAS EXTENSIONS (1900-1905)

REAR WORK-YARD

B. STONE & SON., STOVEMAKERS
A PAGE FROM THE COMPANY'S WAGEBOOK, DATED APRIL 29TH, 1929.
The 'off' does not always indicate illness; if there was not enough work then men were simply asked not to come in.
<table>
<thead>
<tr>
<th>EMPLOYER'S FULL NAME</th>
<th>DAILY</th>
<th>( \text{4} )</th>
<th>( \text{7} )</th>
<th>( \text{b} )</th>
<th>( \text{7} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 D. Heathman</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 D. Smith</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 D. Jones</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 D. Baker</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 D. Richards</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 D. Anderson</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 D. Taunton</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 D. Brown</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 D. Lee</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*This sheet must be filled on an INK DAILY and kept at the Workshop or Factory from where the Employee resides as his Evidence.*
PLATE 10

BIRD & LUCAS BECOMES A COMPANY - SEPTEMBER 1928.
PLATE 11

'STRATHMORE': FROM A MAP OF 1896.
PLATE 13

FLOW CHART OF THE FOUNDRY PROCESS.
PLATE 14

BIRD & LUCAS IRONFOUNDRY GROUND PLAN 1979
PLATE 15

VIEW OF THE FOUNDRY FROM COOK ST: ON THE LEFT IS THE SAND TOWER; IN THE CENTRE IS THE FEEDING PLATFORM WHERE THE RAW MATERIALS ARE FED INTO THE FURNACE. ABOVE IS THE FURNACE STACK, SO SHAPED BECAUSE OF THE ADDITION OF A WATER FILTER WITH A FLOW CAPACITY OF 40 GALLONS PER MINUTE.

PLATE 16

THE CUPOLA. IN THE LEFT FOREGROUND IS THE 'HOOK & PULLEY' OF THE OVERHEAD CRANE.
PLATE 17

VIEW OF THE FURNACE & THE FEEDING PLATFORM.

---

PLATE 18

SCRAP IRON BEING THROWN INTO THE MOUTH OF THE FURNACE FROM THE FEEDING PLATFORM.
PLATE 19

MOLTEN METAL BEING POURED FROM THE CUPOLA INTO THE RECEIVING TROUGH. IN THE LOWER FOREGROUND IS THE BUCKET OF THE LIGHT OVERHEAD CRANE.

PLATE 20

ONCE THE RECEIVING TROUGH IS FILLED THE CUPOLA IS STOPPED WITH A CLAY PLUG.
PLATE 21

A 'METAL BOGEY', OR WHEELED TROLLEY USED TO POUR LIGHT CASTINGS. THE CABLE AND HANDLE ATTACHMENT IS NOT FOR A BRAKE, BUT FOR A 'TURN & POUR' RELEASE.

(SEE PL. 23)

PLATE 22

POURING THE METAL INTO THE MOULDS USING THE 'BOGEY'.
PLATE 23
POURING THE METAL INTO THE MOULDS WITH THE LIGHT OVERHEAD CRANE.

PLATE 24
THE 'FORDATH', WHICH MIXES AND POURS THE MOULDING SAND/ALKID-RESIN COMBINATION.
PLATE 25

A 'SNAP BOX', USED TO SHAPE & COMPRESS THE MOULDS MADE OF RECLAIMABLE BLACK SAND.

PLATE 26

COMPLETED MOULDS AWAITING POURING. EACH ONE HAS BEEN CLAMPED.
PLATE 27

COMPLETED REPETITION MOULDS AWAITING POURING. IN THE CENTRE BACKGROUND IS THE SAND MILL, USED TO RECONDITION THE RECLAIMABLE BLACK SAND.

PLATE 28

A CORE OVEN, IN WHICH MOULD CORES ARE 'SET' BY THE HEAT OF A COAL FIRE.
PLATE 29

DRESSING THE FINISHED CASTINGS; IN THIS PARTICULAR CASE THEY ARE INDUSTRIAL BEARING CAPS.
IV. BIRD & LUCAS CATALOGUE 1904
What We Make

A Booklet devoted to
Light Castings.

BIRD & LUCAS,
GLEBE FOUNDRY,
GLEBE, SYDNEY.
THIS month completes the fourth year of our existence, and we thought we should like to mark the anniversary by bringing out a New Illustrated Catalogue, showing exactly what we are making, and indicating our capabilities.

At once we confess that we can't do everything, and so long as Bird & Lucan is a firm, we shall probably not make steam engines or build battleships. But we CAN make Light Castings, and make them well. We've been doing this work all our lives—the last 4 years on our own account; and we are proud to say that during that latter period WE'VE NEVER LOST A CUSTOMER THROUGH BAD WORKMANSHIP, nor have we ever had a complaint about the quality of our Castings.

We are both working proprietors, anxious to maintain and extend a reputation for good-class work; and knowing a Casting from the furnace to the emery wheel, we exercise personal supervision over every Hobbin, Burner Wheel, or Register Grate that leaves the premises.

Our Prices are right also, but are not quoted here for obvious reasons. Just drop us a post-card for a quotation for any line in this catalogue, and even if an order does not follow, you'll have no reason to complain of want of courtesy or attention.

Our three claims are—First Class Quality, Reasonable Prices, and Prompt Execution of Orders.

BIRD & LUCAN.
SKELETON GRAVE.

Made in two sizes,
12 x 9 and 12 x 6.

No Rough Finish, but
One of Our Specialties.

BASKET GRAVE.

Handsome in appearance,
112 x 9, carefully fitted.

> XXXX

XXX

> XXXX

XXX

> XXXX

XXX

> XXXX

XXX
FURNACE or COPPER DOORS, made in sizes 2 to 3 in heavy and 2 to 4 in light castings. These doors are made for either right or left hand, thus giving added convenience should the copper be built in an awkward corner.

TRIVETS or Kettle Stands to attach to grates.
Three samples of standard designs.
PLUMBERS' CAST FITTINGS.

We claim to be the only Local Makers of these Fittings. Ee. Rees, Hoadley, and Haskins, Esq. recently said: "These fittings are generally imported, but Burns & Gaynor have manufactured the manufacture with satisfactory results." We are able to supply in any quantity, at prices which compare favorably with any on the market. Fittings, etc., Socket, etc., etc., and etc.
TRUCK and BARROW WHEELS.

Sizes:
Truck 5 to 12 in., Barrow 9 to 11 in., 2½ square hole and 16 in.;

In the case of the heavy wheels, a feature is
the wrought iron spindles cast in. These are
not likely to fracture easily, as sometimes
happens in the case of cast spindles.
WATER BOXES.

SOOT BOX.

INSPECTION BOX.
GOTHIC GRATES.
Size 12 x 8.

SHAM HINGES.
For Church doors, etc., in fine castings and Berlin Black. In the past these have generally been imported, but we have commenced turning out these "Shams" at a lower price and in better finish than the imported. This illustration is a direct photograph from the hinge itself. This will show the finish.

LOUVRE ATTACHMENT
For Register Grates. This is a new feature and when desired, will be made to any grate ordered. It is a "shutter flap," which, upon being dropped, prevents the heat from escaping up the chimney, but at the same time allows any smoke to pass away. Certainly this contrivance fills a long felt want. Kindly specify if this is required when ordering.
Iron Feet, with Special Knee Rest.

Two and three feet. Hobbins and Quartettes.
HEAVY TRUCK WHEELS.

With or without Flange. Sizes from 8in. to 12in.
Specially Strong and Well Finished.

ROUND AND SQUARE GULLY GRATES.

Sizes:
Round, from 3in. to 21in.
Square, from 10in. to 120in.
Also 11in. x 11in., 12in. x 12in.
14in. X 14in., 15in. X 15in.
FORGE BACKS.
Sizes 14 x 15, 16 x 16, 17 x 18, any sized holes.

Fig. 12.

TUE IRONS.
Nos. 1, 2 and 3.
For Blacksmiths and Iron workers.

Fig. 11.

BOTTOM GRATES.
For copper, in all sizes.

Fig. 10.

CAST ELBOWS.
For copper flues.

Fig. 9.
BIRD & LUCAS.
Glebe Foundry.

OBLONG TABLE STAND.
In two designs. These are handsome, strong, and well finished.
Height, 20, 0.0.
STAND.
For round marble topped table, three legs, with floral design ornamentations. Height 36 in.
REGISTER GRATES,

Made in three sizes, 30 x 30, 36 x 36, 39 x 39, all with 1850 fire.

This is a special point, the usual thing being a 1850 fire. Furthermore, these measurements are actual, not nominal. The illustration speaks volumes for the appearance of these grates, and we guarantee the finish to be the best possible.
TILED GRATE.

Size: 38 in. x 38 in. overall with 18 in. fire.

This Grate may be had in either Iron or Tiled Canopy. We make a specialty of this, and the finish and cast will be found perfect. "A handsome grate at equal cost to many of poorer quality."
BAKERS' OVENS.

It will be noted that these ovens have banding all round the edge. We have adopted this process of manufacture because it undoubtedly adds to the strength and heat-resisting power of the ovens. Warehousemen and Hardware Merchants will do well to note this point when ordering.

Sizes: Oven door, 18in. x 12in. Frame, 23in. x 15in., weight 29lbs.; Peel plate, 40in. front, 25in. at back, weight 29lbs.; 8 bars. Furnace and Ashpit frame, 18in. wide, 43in. high, weight 19lbs. Two Rampers, 10in. x 12in., 4.5in. wrought bolts.
TRUCK and BARROW WHEELS.

Sizes:
Truck 5 to 12 in., Barrow 16 in. 2\(\frac{1}{2}\) square hole and 16 in. 2\

In the case of the navy wheels, a feature is
the wrought iron spindles cast in. These are
not likely to fracture easily, as sometimes
happens in the case of cast spindles.
Fig. 12.

WATER BOXES.

Fig. 14.

SOOT BOX.

Fig. 15.

INSPECTION BOX.
Iron Feet, with Special Knee Rest.

Fig. 19.

Two and three feet. Hobbins and Quartettes.
HEAVY TRUCK WHEELS.

With or without Flange. Sizes from 8in. to 12in.
Specially Strong and Well Finished.

ROUND AND SQUARE GULLY GRATES.

Sizes:
Round, from 5in. to 12in.
Square, from 4in. to 12in.
Also 10in. x 13in., 12in. x 15in.
14in. x 14in., 15in. x 15in.
FORGE BACKS.
Sizes 14 x 13, 14 x 15, 17 x 18, any sized holes.

TUE IRONS.
Nos. 1, 2 and 3.
For Blacksmiths and Iron workers.

BOTTOM GRATES.
For coppers, in all sizes.

CAST ELbows.
For copper flues.
BAKERS' OVENS.

It will be noted that these ovens have beading all round the edge. We have adopted this process of manufacture because it undoubtedly adds to the strength and heat-resisting power of the ovens. Warehousemen and Hardware Merchants will do well to note this point when ordering.

Sizes: Oven door, 18in. x 12in. Frame, 24in. x 153/4in., weight 20lb. 13lbs., Peel plate, 40in., front, 25in., at back, weight 20lb. 7lbs., 8 bars, Furnace and Ashpit frame, 18in. wide, 45in. high, weight 130lbs., 2 Dampers, 10in. x 12in., 43in. wrought bolts.
PLUMBERS' CAST FITTINGS.

We claim to be the Only Local Makers of these Fittings. *The Australasian Hardware and Machinist Journal* recently said—"These fittings are generally imported, but Bird & Lucas have undertaken the manufacture with satisfactory results." We are able to supply in any quantity, at prices which compare favourably with any on the market. Fittings, 2 in.; Sockets, 3 in., 4 in., and 6 in.