# DIRECTORY TO THE IRON AND STEEL WORKS OF THE UNITED STATES

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AMERICAN IRON AND STEEL ASSOCIATION

# DIRECTORY TO THE IRON AND STEEL WORKS OF THE UNITED STATES

Trieste

# DIRECTORY

TO THE

# IRON AND STEEL WORKS

OF THE

# UNITED STATES.

EMBRACING THE

BLAST FURNACES, ROLLING MILLS, STEEL WORKS, FORGES, AND BLOOMARIES IN EVERY STATE AND TERRITORY.

PREPARED AND PUBLISHED BY

THE AMERICAN IRON AND STEEL ASSOCIATION.

CORRECTED TO SEPTEMBER 1, 1884.

PHILADELPHIA:
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1884.

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Philadelphia.

# PREFACE.

We present herewith to the members and correspondents of The American Iron and Steel Association the seventh edition of our Directory to the Iron and Steel Works of the United States. This edition has been thoroughly revised to the 1st of September of the present year, and, as in previous editions, no pains have been spared to make it both full and accurate. All the old features have been retained, and new features have been added.

On a succeeding page will be found a complete summary of the number and capacity of the iron and steel works which are described in this edition of the Directory, compared with the summary which accompanied the sixth edition of the Directory, which was corrected to July 25,,1882.

There was a decrease of 11 in the number of furnaces in the United States between July, 1882, and September, 1884, or from 686 to 675. Between these dates many new furnaces were built, principally furnaces of large capacity, but a large number of old and badly-located furnaces were definitely abandoned, a few were burned down and will not be rebuilt, and a few were torn down to be rebuilt. The total number abandoned, burned down, and torn down was 38. The number of new furnaces built was 27.

The 675 blast furnaces which were completed on the 1st of September last were classified according to fuel as follows: 221 bituminous coal and coke, 221 anthracite, 232 charcoal, and one gas. The 686 completed furnaces on July 25, 1882, were classified as follows: 210 bituminous, 225 anthracite, 250 charcoal, and one gas. These figures show an increase of 11 bituminous furnaces, a decrease of 4 anthracite furnaces, and a decrease of 18 charcoal furnaces.

While there were eleven more furnaces on July 25, 1882, than on the 1st of September last, the nominal capacity of all the furnaces, using the figures given to us by manufacturers, had increased from 8,000,000 net tons in 1882 to 9,300,000 net tons in 1884. We use the word "nominal" in qualifying the capacity of furnaces because it is important to remember that the aggregate figures for both the years 1882 and 1884 represent the highest possible production by all the furnaces if they were all in operation at the same time and each furnace was running under the most favorable circumstances—conditions which are, of course, impossible. What the actual capacity of our furnaces may be under an urgent demand with high prices is probably 25 per cent. less than the nominal estimate given above, or 6,975,000 net tons, instead of 9,300,000 net tons; that is, 6,227,678 English tons, instead of 8,303,571 English

tons. There are many reasons why the highest estimated capacity can not be attained, only one of which we will mention.

Many of the furnaces retained in our list in 1882 and 1884, the capacity of which helps to form the aggregates for those years, have been out of blast for several years, and being unfavorably situated and of antiquated construction will probably never be put in blast. We do not positively *know* what their future will be, and hence do not feel authorized to place them in our abandoned list. This Directory tells *where furnaces are located*, but it does not assume to point out those which can not hereafter make pig iron at a profit, and hence have no more right to be counted as existing furnaces than if they had not been built. We use due diligence in ascertaining what furnaces have actually been abandoned, but we can not class as abandoned a furnace which the owner tells us he *has not abandoned*. It is, however, our deliberate judgment that the whole number of furnaces in this country to-day which are in blast or will ever be put in blast does not exceed 600, instead of the 675 of which this Directory furnishes a description.

The number of rolling mills and steel works in the United States has increased from 400 in July, 1882, to 434 in September, 1884. Between these dates 45 new works of the character described were built, but in the same period 11 rolling mills and steel works were abandoned, leaving a net increase of 34. Most of the new works were built to make nails and spikes. In the period mentioned the number of nail machines increased from 4,030 to 5,695. This is a great increase in nail-making capacity. It is noticeable that some o the new rolling mills are located in sections of the country that have not heretofore given much attention to the manufacture of iron in any form. Minnesota, Iowa, and Texas have each built a rolling mill for the production of bar iron since 1882. These are the first rolling mills in their history. Before another edition of this Directory appears many rolling mills that have until recently been engaged in rolling iron rails must be converted into mills for rolling iron in other forms, or else must be abandoned.

Since July, 1882, the number of Bessemer steel works in the country has increased from 15 to 21, with one additional works in course of erection at the present time. The number of converters has increased from 36 in July, 1882, to 46 in September, 1884. The number of completed open-hearth steel works has increased in the same period from 27 to 35, with 3 new works now in course of erection. We had 51 open-hearth furnaces in July, 1882, and 58 in September, 1884. Our crucible steel works have increased from 35 to 41 in the same period, and the number of steel-melting pots from 3,490 to 3,594.

Further details in the summary will be found to be interesting, but need not be referred to here.

PHILADELPHIA, September 1, 1884.

# SUMMARY.

| Iron and Steel Works. | September 1, 1884. | July 25, 1882. |
|---|---|---|
| Number of completed Blast Furnaces, | 675 | 686 |
| Number of Blast Furnaces building on September 1, 1884,—10 Bituminous, 2 Anthracite, and 4 Charcoal; total, | 16 | 30 |
| Annual capacity of completed Blast Furnaces, in pig iron, net tons, | 9,300,000 | 8,000,000 |
| Annual capacity of the Bituminous Furnaces, net tons, | 4,850,000 | 4,125,000 |
| Annual capacity of the Anthracite Furnaces, net tons, | 3,175,000 | 2,750,000 |
| Annual capacity of the Charcoal Furnaces, net tons, | 1,275,000 | 1,125,000 |
| Number of completed Rolling Mills and Steel Works, | 434 | 400 |
| Number of Rolling Mills and Steel Works building, | 4 | 16 |
| Number of Rolling Mills making rails, | 71 | 80 |
| Number of Single Puddling Furnaces (a double furnace counting as two single ones), | 5,265 | 5,018 |
| Number of Heating Furnaces, | 2,782 | 2,598 |
| Number of Trains of Rolls, | 1,555 | 1,424 |
| Annual capacity of Rolling Mills in finished iron and steel, net tons, | 7,600,000 | 7,000,000 |
| Number of Rolling Mills having Nail Factories, | 81 | 66 |
| Number of Nail Machines, | 5,695 | 4,030 |
| Number of Nail Factories building, | 2 | 2 |
| Number of Nail Machines to be used in the new Factories, | 67 | 158 |
| Number of completed Bessemer Steel Works, | 21 | 15 |
| Number of Bessemer Steel Works building, | 1 | 1 |
| Number of Bessemer Converters on September 1, 1884,—46 completed and 3 building, | 46 | 36 |
| Annual capacity in ingots, net tons, | 2,490,000 | 2,150,000 |
| Number of completed Open-hearth Steel Works, | 35 | 27 |
| Number of Open-hearth Steel Works building, | 3 | 5 |
| Number of Open-hearth Furnaces on September 1, 1884,—58 completed and 5 building, | 58 | 51 |
| Annual capacity in ingots, net tons, | 550,000 | 400,000 |
| Number of completed Crucible Cast-steel Works, | 41 | 35 |
| Number of Steel-melting Pots, | 3,594 | 3,490 |
| Annual capacity in ingots, net tons, | 115,000 | 105,000 |
| Number of Miscellaneous Steel Works, | 6 | 6 |
| Number of Steel Manipulating Works, | 55 | 47 |
| Number of completed Forges, making wrought iron from ore, | 70 | 72 |
| Annual capacity in blooms and billets, net tons, | 75,000 | 75,000 |
| Number of completed Bloomaries, making blooms from pig iron, | 53 | 52 |
| Annual capacity in blooms, net tons, | 70,000 | 70,000 |

## RECEIVED TOO LATE FOR CORRECTION IN THE PROPER PLACE.

### BLAST FURNACES.

The furnace of the Kent Iron Company (page 3) is 34 x 10. D. J. Warner is president of the company.

The officers of the Macungie Iron Company (page 13) are James Singmaster, President, and R. R. Robb, clerk.

Buchanan & Fisher Limited, P. O. Box 88, Harrisburg, Pa. Cupola furnace, built in 1884, for the production of pig iron from blast-furnace and mill cinder. Owners, Harvey Fisher, George Buchanan, and John H. Scott.

The Brierfield Coal and Iron Company (page 44) is the name of the company which owns Bibb Furnace.

Estill and Fitchburg Furnaces (page 50) are owned by the Central Kentucky Lumber, Mining, Manufacturing, and Transportation Company, Clay City, Powell county.

The Midland Blast-Furnace Company (page 64) has removed its office from 411 Olive st. to the Turner Building on Eighth st., near Olive.

### ROLLING MILLS AND STEEL WORKS.

Ellis and Lessig's Steel and Iron Company Limited (page 102) will place in its mill 3 heating furnaces, one train of 22-inch rolls, and 50 nail machines; the works will produce steel nails, and will be put in operation in the spring of 1885. George B. Lessig, President; J. B. Lessig, Secretary; William S. Ellis, Treasurer; Thomas Searles, Superintendent.

# CONTENTS.

## BLAST FURNACES.



## ROLLING MILLS AND STEEL WORKS.