

**CIHM  
Microfiche  
Series  
(Monographs)**

**ICMH  
Collection de  
microfiches  
(monographies)**



**Canadian Institute for Historical Microreproductions / Institut canadien de microreproductions historiques**

**© 1995**

## Technical and Bibliographic Notes / Notes technique et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming are checked below.

- Coloured covers / Couverture de couleur
- Covers damaged / Couverture endommagée
- Covers restored and/or laminated / Couverture restaurée et/ou pelliculée
- Cover title missing / Le titre de couverture manque
- Coloured maps / Cartes géographiques en couleur
- Coloured ink (i.e. other than blue or black) / Encre de couleur (i.e. autre que bleue ou noir.)
- Coloured plates and/or illustrations / Planches et/ou illustrations en couleur
- Bound with other material / Relié avec d'autres documents
- Only edition available / Seule édition disponible
- Tight binding may cause shadows or distortion along interior margin / Le reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure.
- Blank leaves added during restorations may appear within the text. Whenever possible, these have been omitted from filming / Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.
- Additional comments / Commentaires supplémentaires:

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modifications dans la méthode normale de filmage sont indiqués ci-dessous.

- Coloured pages / Pages de couleur
- Pages damaged / Pages endommagées
- Pages restored and/or laminated / Pages restaurées et/ou pelliculées
- Pages discoloured, stained or foxed / Pages décolorées, tachetées ou piquées
- Pages detached / Pages détachées
- Showthrough / Transparence
- Quality of print varies / Qualité inégale de l'impression
- Includes supplementary material / Comprend du matériel supplémentaire
- Pages wholly or partially obscured by errata slips, tissues, etc., have been refilmed to ensure the best possible image / Les pages totalement ou partiellement obscurcies par un feuillet d'errata, une pelure, etc., ont été filmées à nouveau de façon à obtenir la meilleure image possible.
- Opposing pages with varying colouration or discolourations are filmed twice to ensure the best possible image / Les pages s'opposant ayant des colorations variables ou des décolorations sont filmées deux fois afin d'obtenir la meilleure image possible.

This item is filmed at the reduction ratio checked below /  
Ce document est filmé au taux de réduction indiqué ci-dessous.

	10X		14X		18X		22X		26X		30X
	12X		16X		20X		24X		28X		32X

J

The copy filmed here has been reproduced thanks to the generosity of:

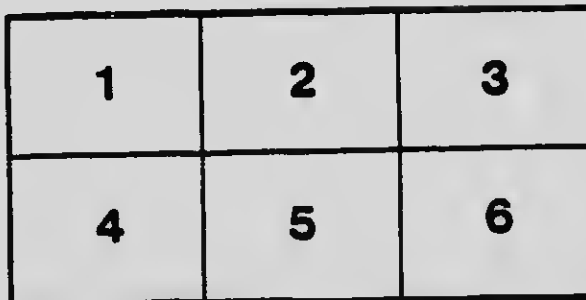
National Library of Canada

The images appearing here are the best quality possible considering the condition and legibility of the original copy and in keeping with the filming contract specifications.

Original copies in printed paper covers are filmed beginning with the front cover and ending on the last page with a printed or illustrated impression, or the back cover when appropriate. All other original copies are filmed beginning on the first page with a printed or illustrated impression, and ending on the last page with a printed or illustrated impression.

The last recorded frame on each microfiche sheet contains the symbol  $\rightarrow$  (meaning "CONTINUED"), or the symbol  $\nabla$  (meaning "END"), whichever applies.

Maps, plates, charts, etc., may be filmed at different reduction ratios. Those too large to be entirely included in one exposure are filmed beginning in the upper left hand corner, left to right and top to bottom, as many frames as required. The following diagrams illustrate the method:



L'exemplaire filmé fut reproduit grâce à la générosité de:

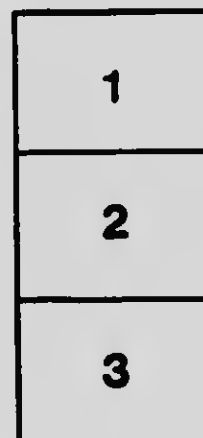
Bibliothèque nationale du Canada

Les images suivantes ont été reproduites avec le plus grand soin, compte tenu de la condition et de la netteté de l'exemplaire filmé, et en conformité avec les conditions du contrat de filmage.

Les exemplaires originaux dont la couverture en papier est imprimée sont filmés en commençant par le premier plat et en terminant soit par la dernière page qui comporte une empreinte d'impression ou d'illustration, soit par le second plat, selon le cas. Tous les autres exemplaires originaux sont filmés en commençant par la première page qui comporte une empreinte d'impression ou d'illustration et en terminant par la dernière page qui comporte une telle empreinte.

Un des symboles suivants apparaît sur la dernière image de chaque microfiche, selon le cas: le symbole  $\rightarrow$  signifie "A SUIVRE", le symbole  $\nabla$  signifie "FIN".

Les cartes, planches, tableaux, etc., peuvent être filmés à des taux de réduction différents. Lorsque le document est trop grand pour être reproduit en un seul cliché, il est filmé à partir de l'angle supérieur gauche, de gauche à droite, et de haut en bas, en prenant le nombre d'images nécessaire. Les diagrammes suivants illustrent la méthode.



# MICROCOPY RESOLUTION TEST CHART

(ANSI and ISO TEST CHART No. 2)



4.5  
5.0  
5.6  
6.3  
7.1  
8.0  
9.0  
10  
11.2  
12.5



APPLIED IMAGE Inc

1853 East Main Street  
Rochester, New York 14609 USA  
(716) 482-0300 - Phone  
(716) 288-5989 - Fax

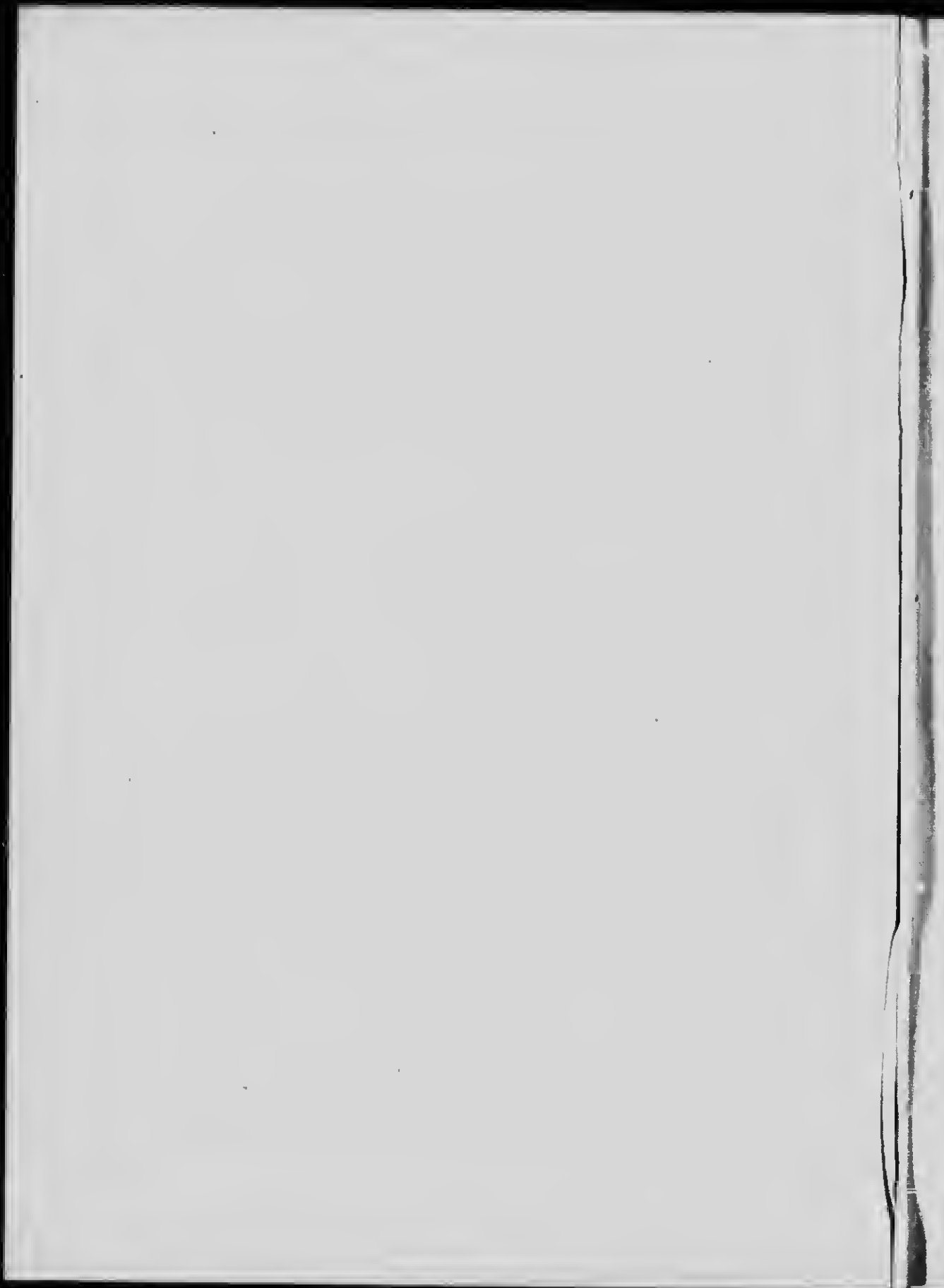


JOSEPH · PENNELLS  
PICTURES OF WAR WORK  
IN ENGLAND



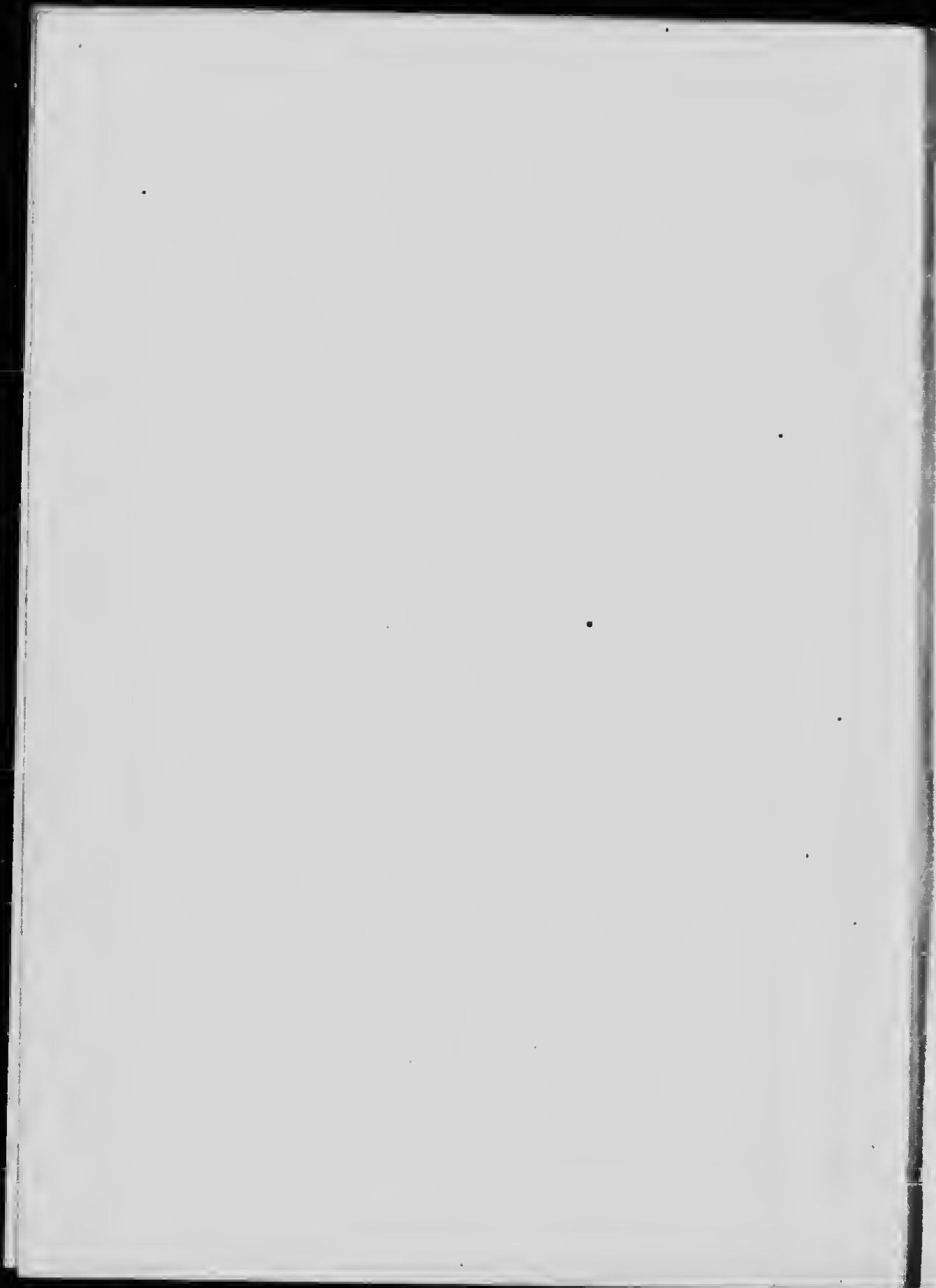
WILLIAM HEINEMANN

Can. Pennell, Joseph B.



**JOSEPH PENNELL'S PICTURES  
OF WAR WORK IN ENGLAND**





# JOSEPH PENNELL'S PICTURES OF WAR WORK IN ENGLAND

REPRODUCTIONS OF A SERIES OF DRAWINGS  
AND LITHOGRAPHS OF THE MUNITION WORKS  
MADE BY HIM WITH THE PERMISSION AND  
AUTHORITY OF THE BRITISH GOVERNMENT  
WITH NOTES BY THE ARTIST AND WITH  
AN INTRODUCTION BY H. G. WELLS

McCLELLAND, GOODCHILD & STEWART  
PUBLISHERS TORONTO

N9155

E55

P45

1917

P\*\*\*

*Printed in Great Britain*

880375

## INTRODUCTION

**T**HERE is still a delusion that war is conducted and controlled by gentlemen in red tabs, gold lace, and spurs; that it is an affair in which infantry fights in formation, cavalry charges gallantly upon field-guns, and supply-trains of horse-drawn wagons follow up the Napoleonic manœuvres of the various generals. Some such idea seemed to prevail even in the highest quarters until the Battle of the Aisne. Things had happened at Liège and Namur that were a little perplexing, but it was only by the end of 1914 that the mass of people began to realize that there was a new sort of war in progress. The bright bayonet-blade of the old warfare had broken off and we were fighting with the butt-end. The armies of the world to-day are undergoing, rather belatedly, the same revolution that overtook our navies in the 'seventies and 'eighties. The engineer has got hold of them. The avalanche of change has started; it will not rest again until it has buried every scrap of the soldier's solemn paraphernalia of horse and drill as completely as it has buried the frigates and three-deckers of fifty years ago.

The form and texture of the coming things are not yet to be seen in their completeness upon the modern battlefield. One swallow does not make a summer, nor a handful of aeroplanes, a " tank "

or so, a few acres of shell-craters, and a village here and there pounded out of recognition do more than foreshadow the spectacle of modernized war on land. War by these developments has become the monopoly of the five great industrial Powers; it is their alternative to end or evolve it, and if they continue to disagree, then it must needs become a spectacle of majestic horror such as no man can yet conceive. It has been wise of Mr. Pennell therefore to make his pictures of modern warfare not upon the battlefield but among the huge industrial apparatus that is thrusting behind and thrusting up through the war of the gentlemen in spurs. He gives us the splendours and immensities of forge and gun-pit, furnace and mine-shaft. He shows you how great they are and how terrible. Among them go the little figures of men, robbed of all dominance, robbed of all individual quality. He leaves it for you to draw the obvious conclusion that presently, if we cannot contrive to put an end to war, blacknesses like these, enormities and flares and towering threats, will follow in the track of the tanks and come trampling over the bickering confusion of mankind.

There is something very striking in these insignificant and incidental men that Mr. Pennell shows us. Nowhere does a man dominate in all these wonderful pictures. You may argue perhaps that that is untrue to the essential realities; all this array of machine and workshop, all this marshalled power and purpose has been the creation of inventor and business organizer. But are we not a little too free with that word "*creation*"?

Falstaff was a "creation" perhaps, or the Sistine sibyls; there we have indubitably an end conceived and sought and achieved; but did these inventors and business organizers do more than heed certain unavoidable imperatives? Seeking coal, they were obliged to mine in a certain way; seeking steel, they had to do this and this and not that and that; seeking profit they had to obey the imperative of economy. So little did they plan their ends that most of these manufacturers speak with a kind of astonishment of the deadly use to which their works are put. They find themselves making the new war as a man might wake out of some drugged condition to find himself strangling his mother.

So that Mr. Pennell's sketchy and transient human figures seem altogether right to me. He sees these forges, workshops, cranes, and the like as inhuman and as wonderful as cliffs, or great caves, or icebergs, or the stars. They are a new aspect of the same logic of physical necessity that made all these older things, and he seizes upon the majesty and beauty of their dimensions with an entire impartiality. And they are as impartial. Through all these lithographs runs one present motif, the motif of the supreme effort of Western civilization to save itself and the world from the dominance of the reactionary German Imperialism that has seized the weapons and resources of modern science. They are arranged to shape out the life of a shell, from the mine to the great gun; nothing remains of their history to show except the ammunition dump, the gun in action, and the

shell-burst. Upon this theme all these great appearances are strung to-day. But to-morrow they may be strung upon some other and nobler purpose. These gigantic beings, of which the engineer is the master and slave, are neither benevolent nor malignant. To-day they produce destruction, they are the slaves of the spur; to-morrow we hope they will bridge and carry and house and help again. For that we struggle.

H. G. WELLS

## PREFACE

I DID not make these drawings, etchings, lithographs with any idea of helping on the war, or what artists for some reason are mostly asked to do, help the victims or victors of the war, for I do not believe in war. But as we are in the midst of war, though some of us are not of it—and as war has developed the most incredible industrial energy all over the world—there is no reason why some artistic record should not be made, and my record is in this book.

With the outbreak of war England woke up. Work was speeded up, and to do so workmen and workwomen had to be hunted up and workshops built.

I applied to Mr. Lloyd George, the newly appointed Minister of Munitions, for permission to make pictures of the work that he was directing, and he answered immediately that he "was seeing what could be done in the matter." In due course I got the necessary permissions, though to obtain them it took the united efforts of His Excellency Mr. Page, the American Ambassador, and the Chargé d'Affaires, Mr. Laughlin; the Rt. Hon. H. H. Asquith, the Prime Minister; the Rt. Hon. Lloyd George, the Minister of Munitions, later Minister of War; and the Rt. Hon. E. S. Montague, Mr. Lloyd George's successor as Minister of Munitions. They and their secretaries, and also those of the Foreign Office, eventually brought things off and enabled me to do my drawings, and I wish to thank them.

I have also to thank the various local authorities and the proprietors and directors of the works who freely opened their places to me and showed a personal interest in what I was doing, for, just as in the past there was sympathy between artists and the Church, so to-day there is, at any rate in my experience, sympathy between the men who make things and build things and the men who draw them. They may not always like the result or understand it; in fact, one manager told me he did



not know if my picture was a great work of art, but he did know that to him it was a great puzzle. There were other directors, and my greatest difficulty was not to be killed by the kindness and hospitality shown me.

The men also went out of their way often to come and tell me when things were to be done in other parts of the works that were worth seeing, and in endless ways I was helped. Of course I was a new thing; in but two of these big shops had an artist ever worked before, and though most of the men did not see why I drew things, they described the drawings at times as "Champion," or as "Bonnie"—new terms for art critics—and they were interested; for the artistically untaught man not infrequently sees more like a child what an artist is doing than his well-taught director. But it was a great opportunity, and I have done what I could with it. The officials of the various departments arranged the details of my journeys before I left London, but the carrying of them out was done by the local engineers and officers and directors. I gave them a lot of trouble, I know, which they stood without much complaint; and I have of them, and I hope they have of me, some memories other than endless writing for permits.

I also wish to thank Mr. Wells for writing the Preface. All I can say is that he is the only writer living who knew enough to do it, whom I should have allowed to do it, whom I wanted to do it—and he did it.

And now, at the invitation of the French Government, I may go to that country to see and draw the same sort of work—for the subjects are endless, only time is short—and I can only hope the war may be over before I get off.

JOSEPH PENNELL

## LIST OF ILLUSTRATIONS

THE IRON MINE	I
THE COAL MINE	II
IN THE LAND OF IRON AND STEEL	III
MAKING PIG-IRON: THE BASE OF THE BLAST-FURNACES	IV
FROM THE TOPS OF THE FURNACES	V
FURNACES AT NIGHT	VI
THE BIG GATE OF THE BIG SHOP	VII
THE GREAT TOWER. PIG-IRON	VIII
WITHIN THE FURNACES	IX
THE CAULDRONS	X
THE PERAMBULATOR	XI
THE GREAT HAMMER	XII
IN THE JAWS OF DEATH. ROLLING BARS FOR SHELLS	XIII
STEEL BARS FOR SHELLS	XIV
THE PRESSES	XV
THE URNS: CASTING BIG SHELLS	XVI
"BOTTLING THE BIG SHELL"	XVII
MUNITION WORKS	XVIII
THE SHELL FACTORY	XIX
FINISHING SHELLS	XX
EVENING IN THE MUNITIONS COUNTRY	XXI
THE BAY OF THE THOUSAND GIRLS	XXII
PLANING BIG SHELLS	XXIII
MUNITION TOWN	XXIV
THE ACOLYTES PREPARING THE ALTAR OF THE WAR GOD	XXV
MAKING ARMOUR-PLATE	XXVI
THE OLD SHIPYARD	XXVII
MUNITIONS RIVER	XXVIII
THE GANTRY	XXIX

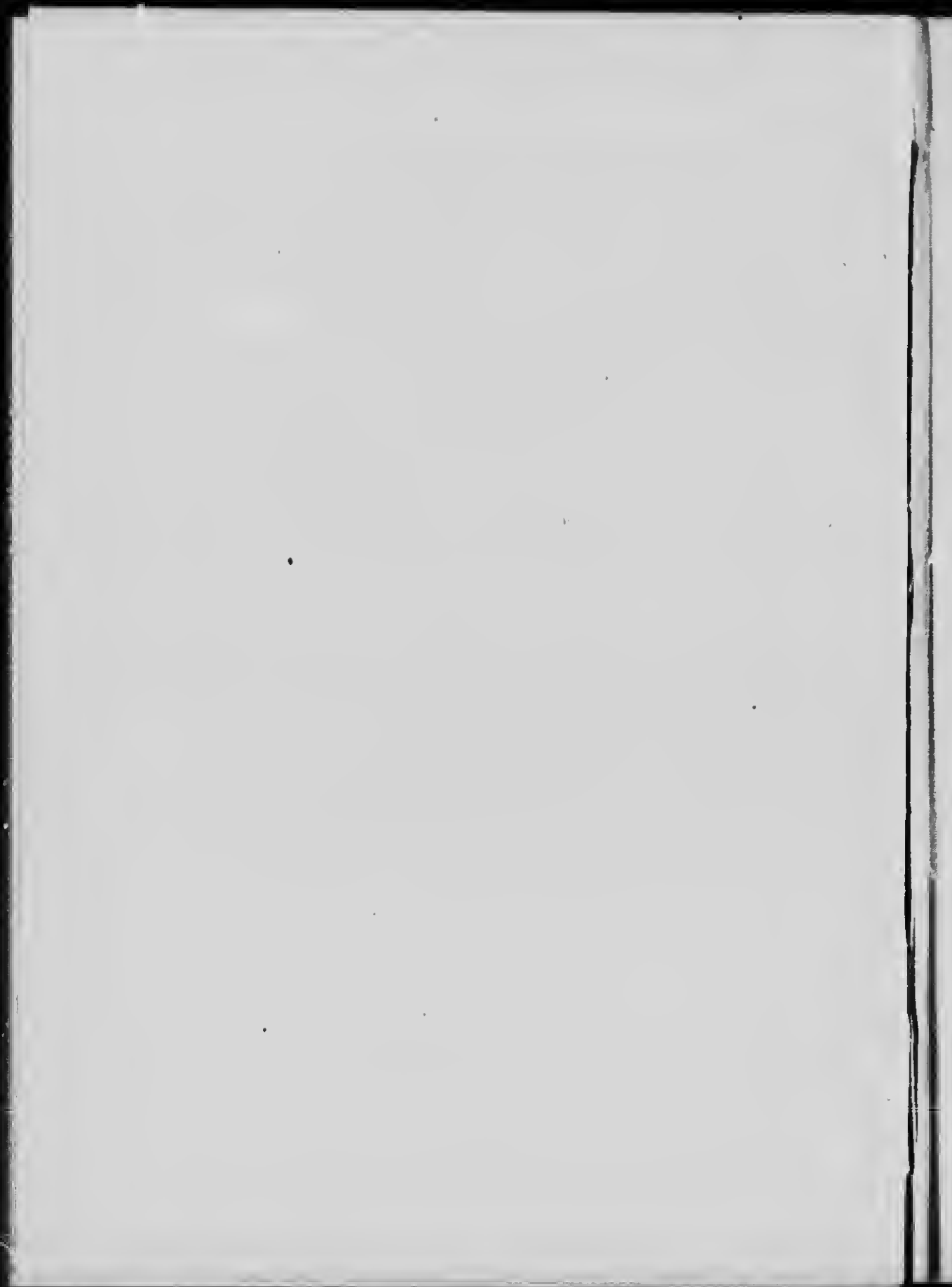
THE GUN FORGE	XXX
THE GUN-SHOP	XXXI
CUTTING AND TURNING A BIG GUN	XXXII
THE BASILICA OF WAR	XXXIII
THE OLD GUN-PIT	XXXIV
THE NEW GUN-PIT	XXXV
BRINOINO IN THE GUN	XXXVI
BUILDING THE GREAT TURRET	XXXVII
FITTING GUNS IN TURRETS	XXXVIII
THE SHOPS AT NIGHT. CHANOINO SHIFTS	XXXIX
READY FOR WAR	XL
TAKING THE BIG GUN AWAY	XLI
FIVE O'CLOCK	XLII
MADE IN GERMANY. THE GREAT CRANE	XLIII
GUN-TESTING	XLIV
MUNITIONS CITY	XLV
BY-PRODUCTS	XLVI
PEACE AND WAR	XLVII
THE BALLOON-SHED	XLVIII
THE BIG BUG	XLIX
THE GREAT CHIMNEY: THE MOTOR PARK	L
SHOT	LI

I  
**THE IRON MINE**

## I THE IRON MINE

**A** WAY off in the hills, but near the sea, is this great gulf fixed—a great gash—and in this is the mine, like the open mines of America, though no longer worked. But all around and about are others working, from which ore is taken, while all the hills are crowned by shafts to-day, bringing up more ore than ever before.





II  
THE COAL MINE

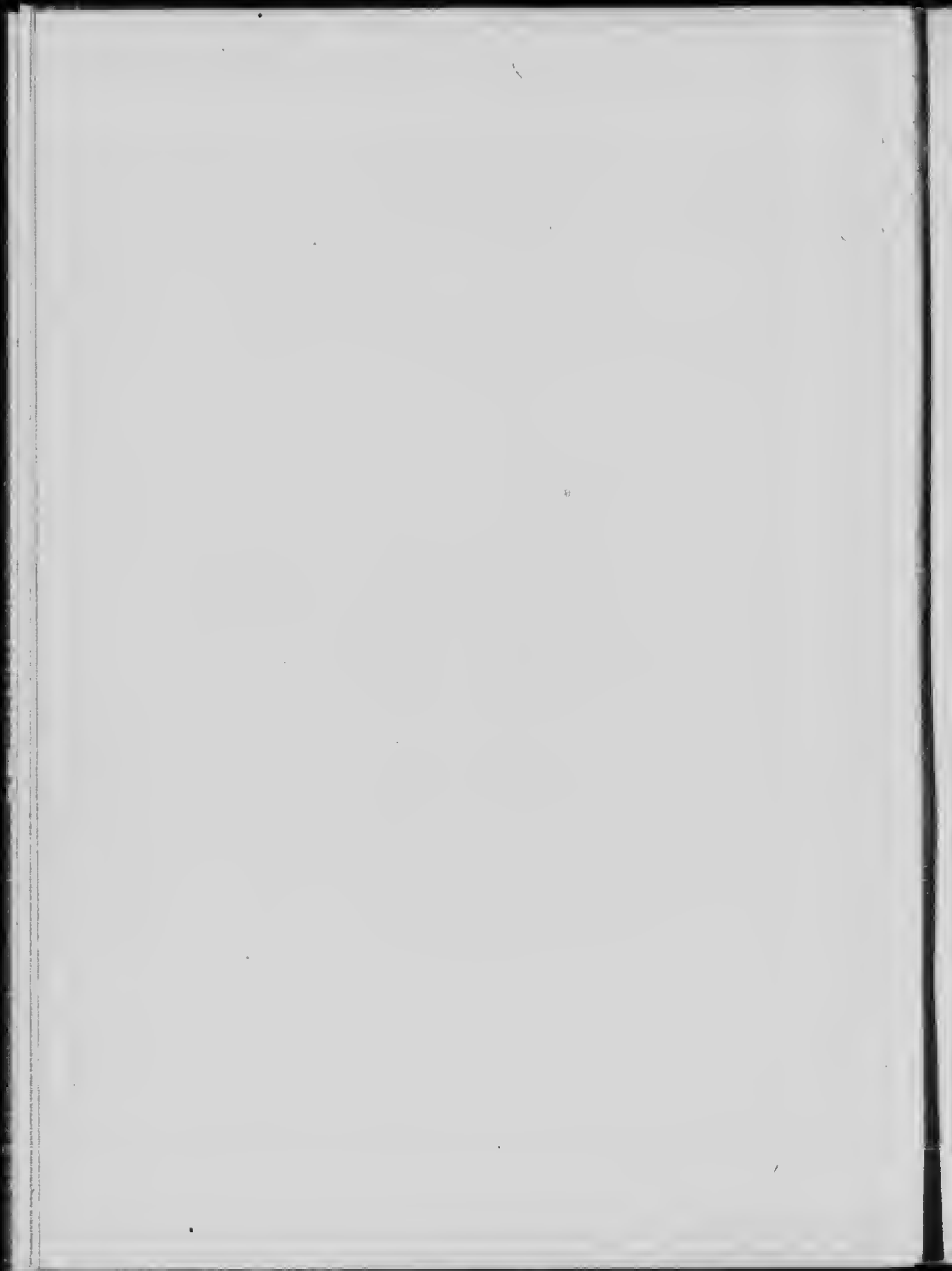
60



## II THE COAL MINE

UP above the new munition town, seen amid the smoke, is the old colliery town and above that the shafts of the mines. As I drew, a Corporal's guard came upon me. "Had I my papers?" It was in a prohibited area. "I never dare to stir without them—I sleep with them. And what credentials have you?" said I. "Only them dirty rags," said he, pointing to his uniform.

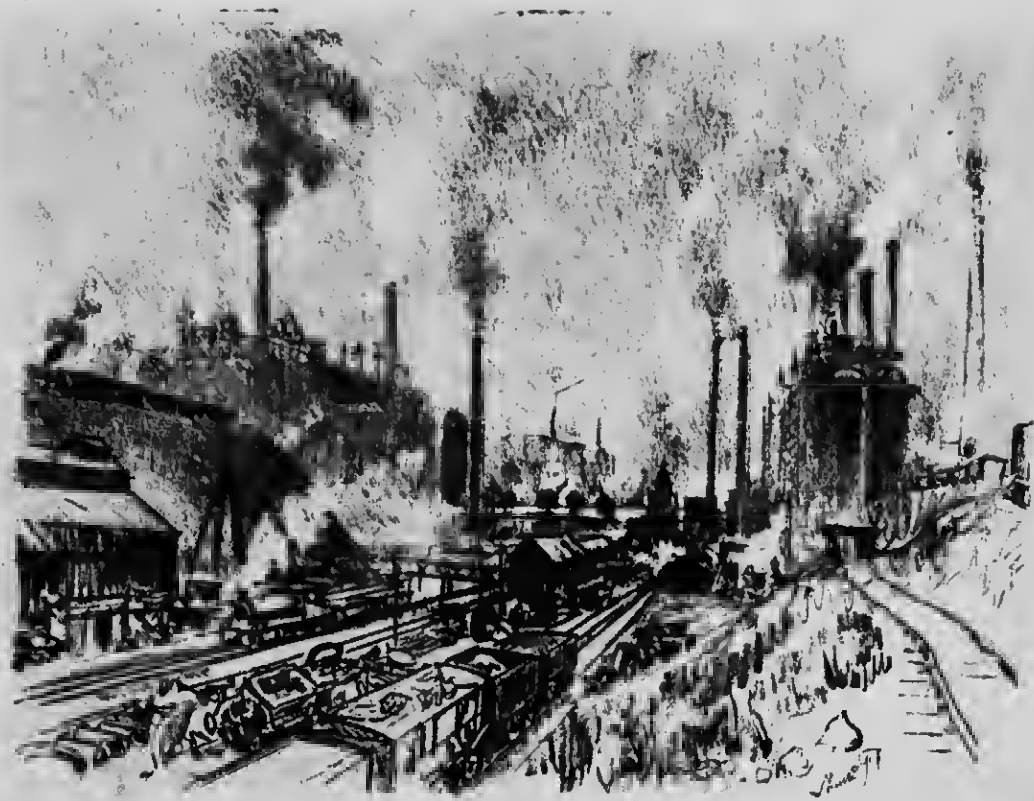


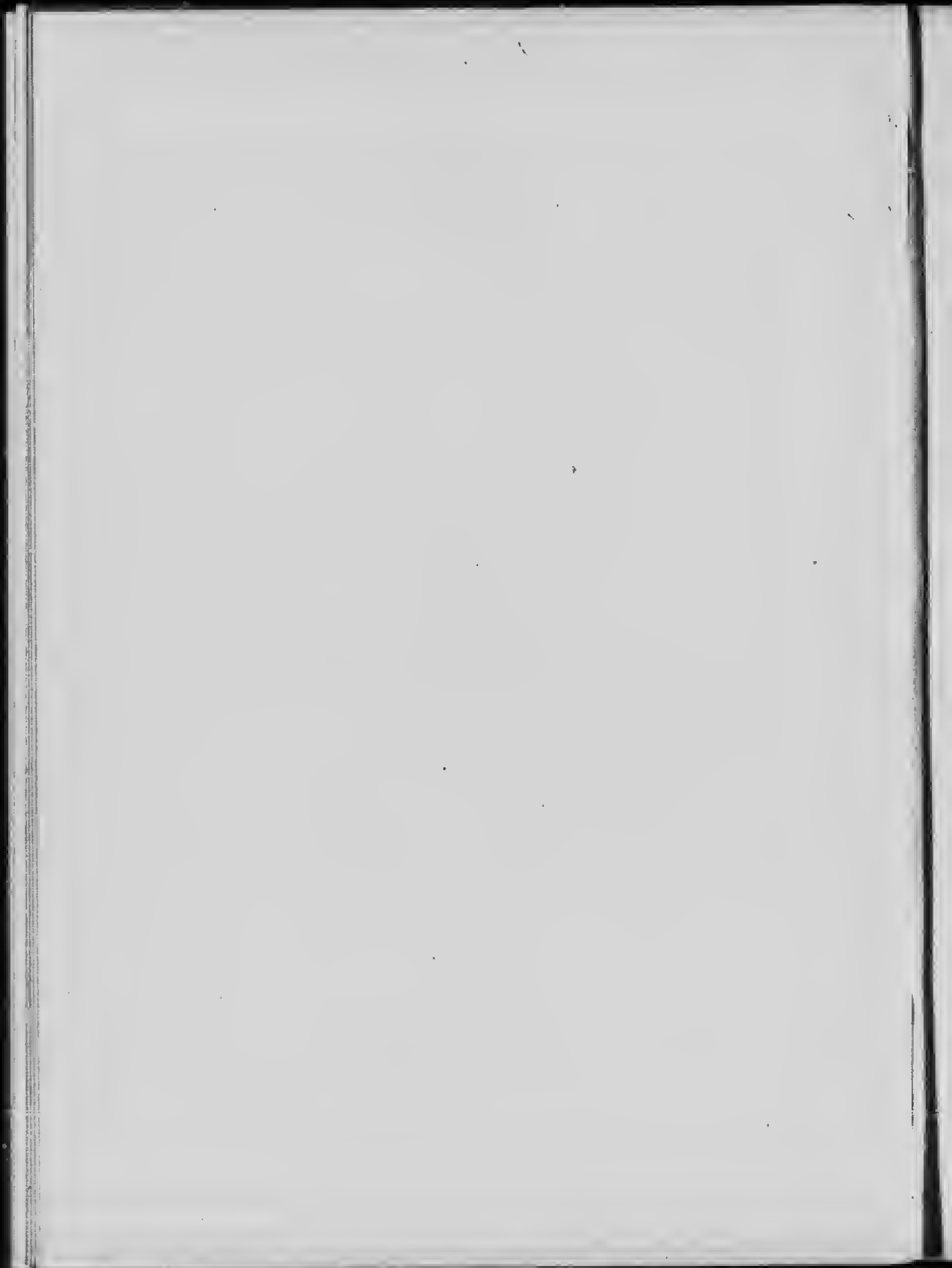


III  
IN THE LAND OF IRON AND STEEL

### III IN THE LAND OF IRON AND STEEL

**A** LAND of mist and mystery in the morning, of glitter and glare at noon, of fire and fury at night. For work never ceases in the Land of Iron and Steel. The furnaces stand in long rows, on each side a mighty avenue, lined with towers and castles ; beyond, the river of work ; and beyond that, more work castles and work palaces.





**IV**

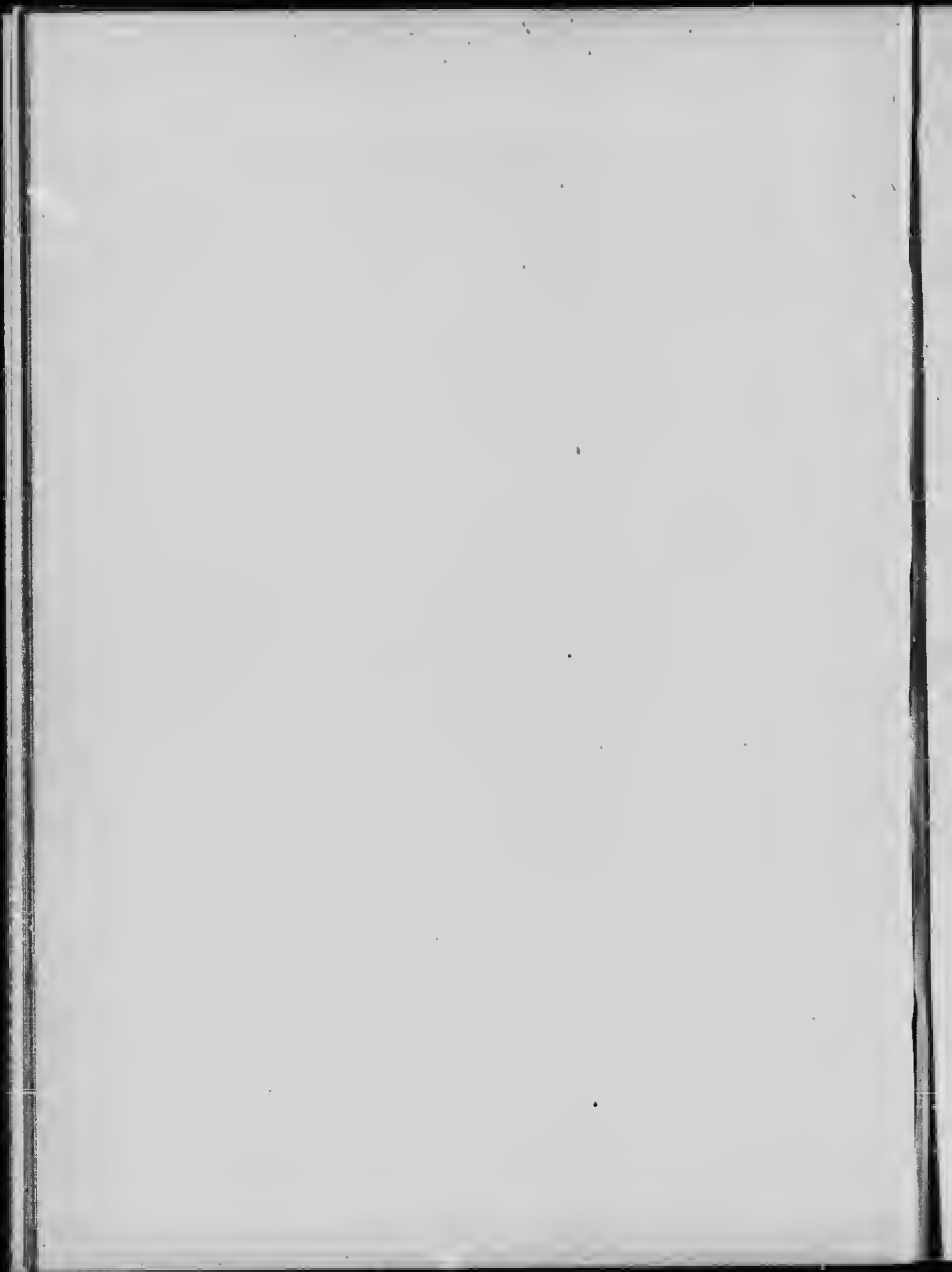
**MAKING PIG-IRON : THE BASE OF  
THE BLAST-FURNACES**



#### IV MAKING PIG-IRON: THE BASE OF THE BLAST-FURNACES

**A** CROSS the great work avenue, half filled with plots, not of flowers but patterns of cooling metal, are other furnaces seen amid rising smoke and steam.





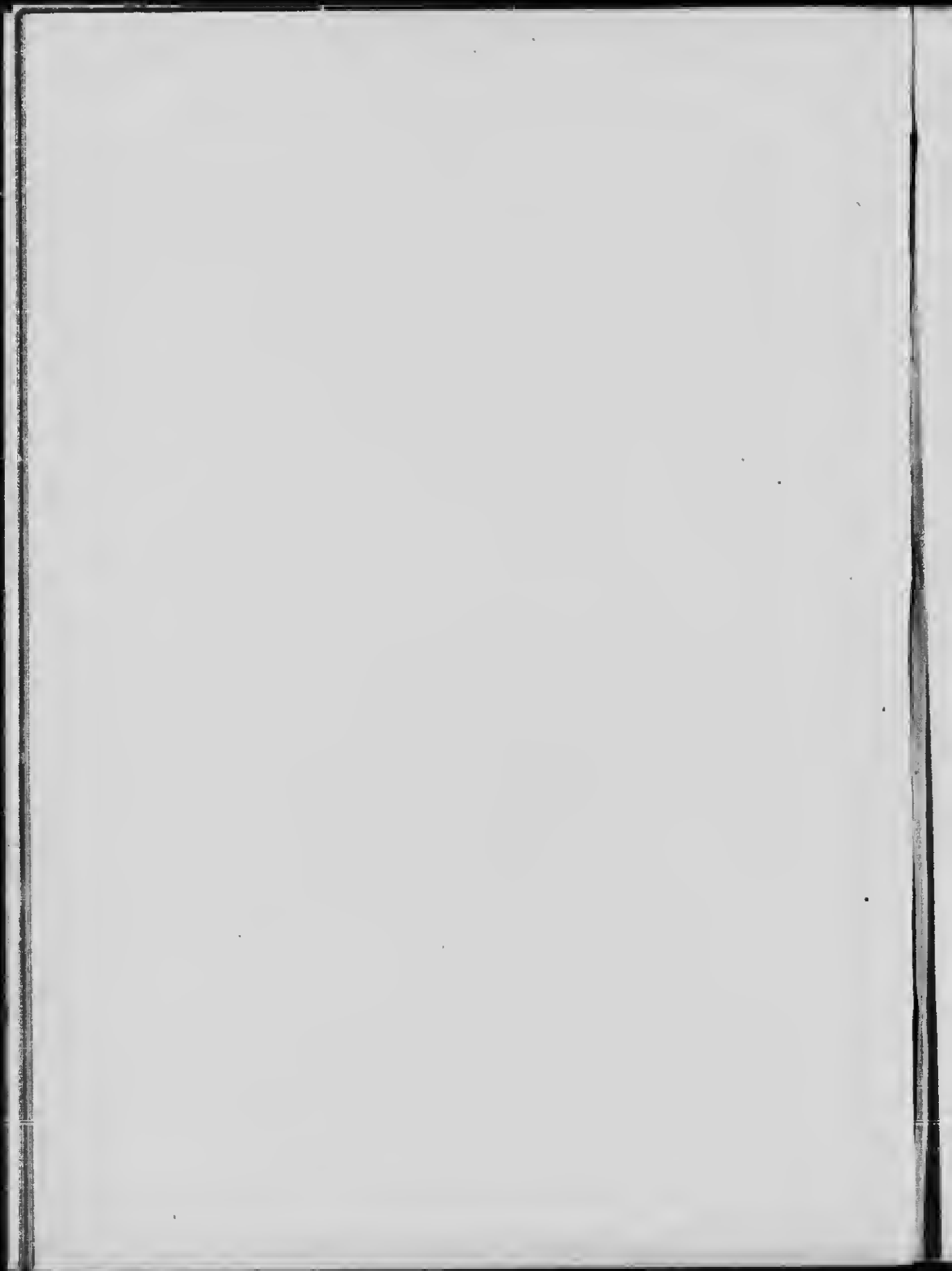
V

FROM THE TOPS OF THE FURNACES

## V FROM THE TOPS OF THE FURNACES

**A** SUBJECT one sees from the top of a sky-scraper—only that is soundless, this is endless sound. From the sky-scraper you look down on little dots of men: here on trains and cranes. And as you look a charge is emptied into the furnace—and the whole place bursts into flame, trembles, roars, then sighs and dies away. Always down below the little figures wheel barrows and push carts. And one day as I talked to a foreman, a lady workman in pants, who must have been the champion of her hockey club, came up, set down her barrow, and said: "Mr. Superintendent, a boy has been grossly rude to me. What shall I do?" "Why, laidee, 'it 'im over the 'ed with 'af a brick out cher barrer!" And she went her way.





VI  
FURNACES AT NIGHT

c



## VI FURNACES AT NIGHT

**N**OT the most ardent bridge-player or the stupidest commercial can pass in the train at night without looking up from his cards or his paper for a moment and seeing how wonderful this Wonder of Work is.





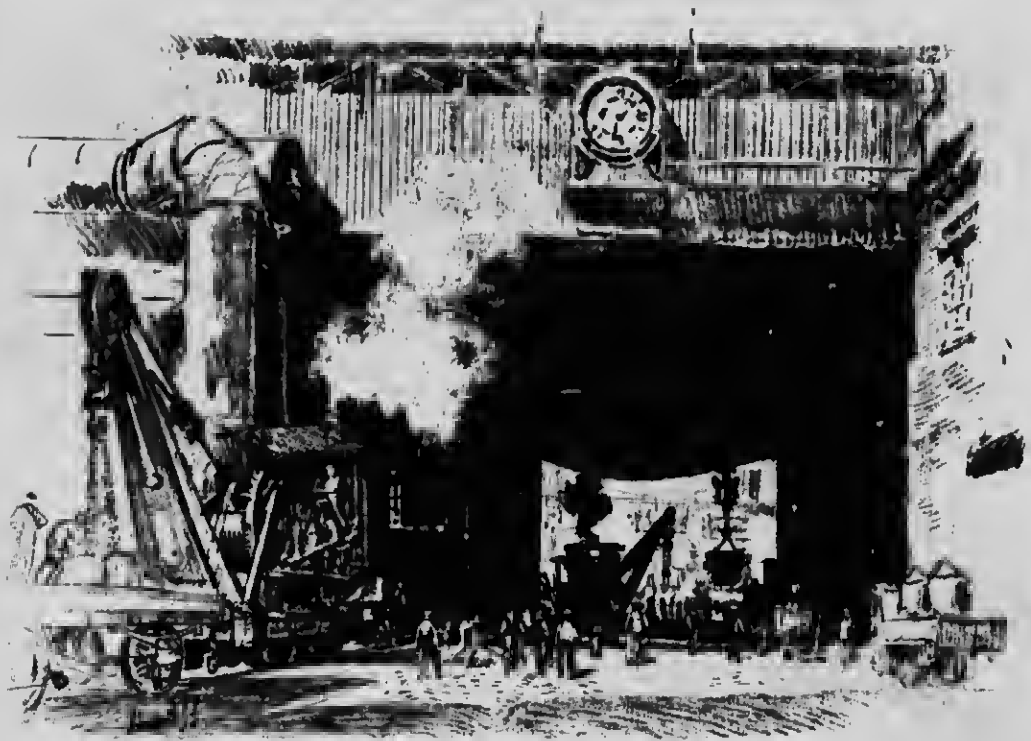
VII

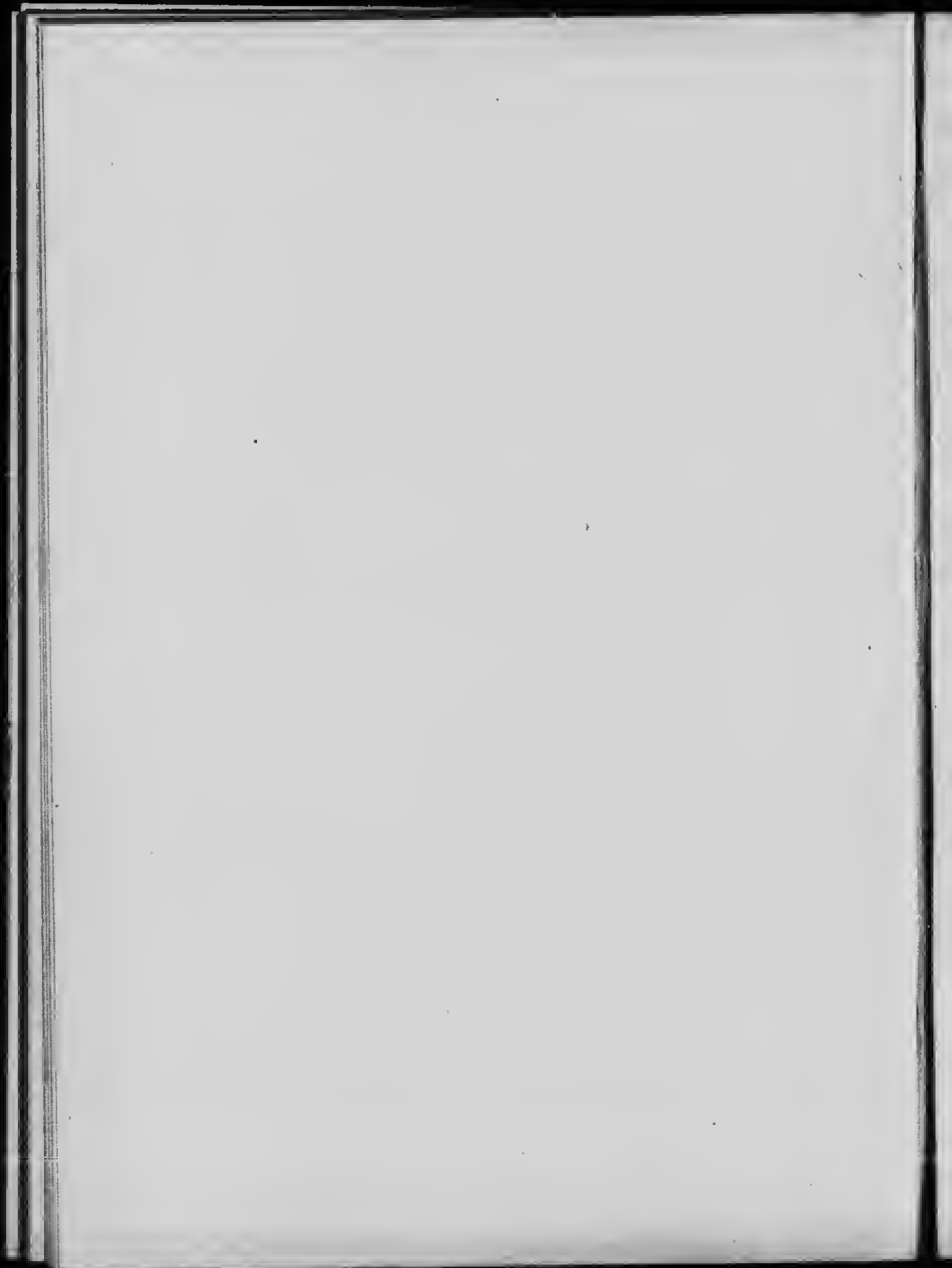
**THE BIG GATE OF THE BIG SHOP**

## VII THE BIG GATE OF THE BIG SHOP

**T**HOUGH the proportions might be better, this entrance to the Work Temple is as fine as though it were covered with carving, and the feeling of mystery within as great as when the cathedral doors open at the end of Mass.

And though there was no music, there came forth the endless roar of the Looms of War. Instead of acolytes were workmen, and in solemn procession the great ladles filled with fire moved to and fro, and the great cranes stalked about, their drivers popes under their umbrellas.





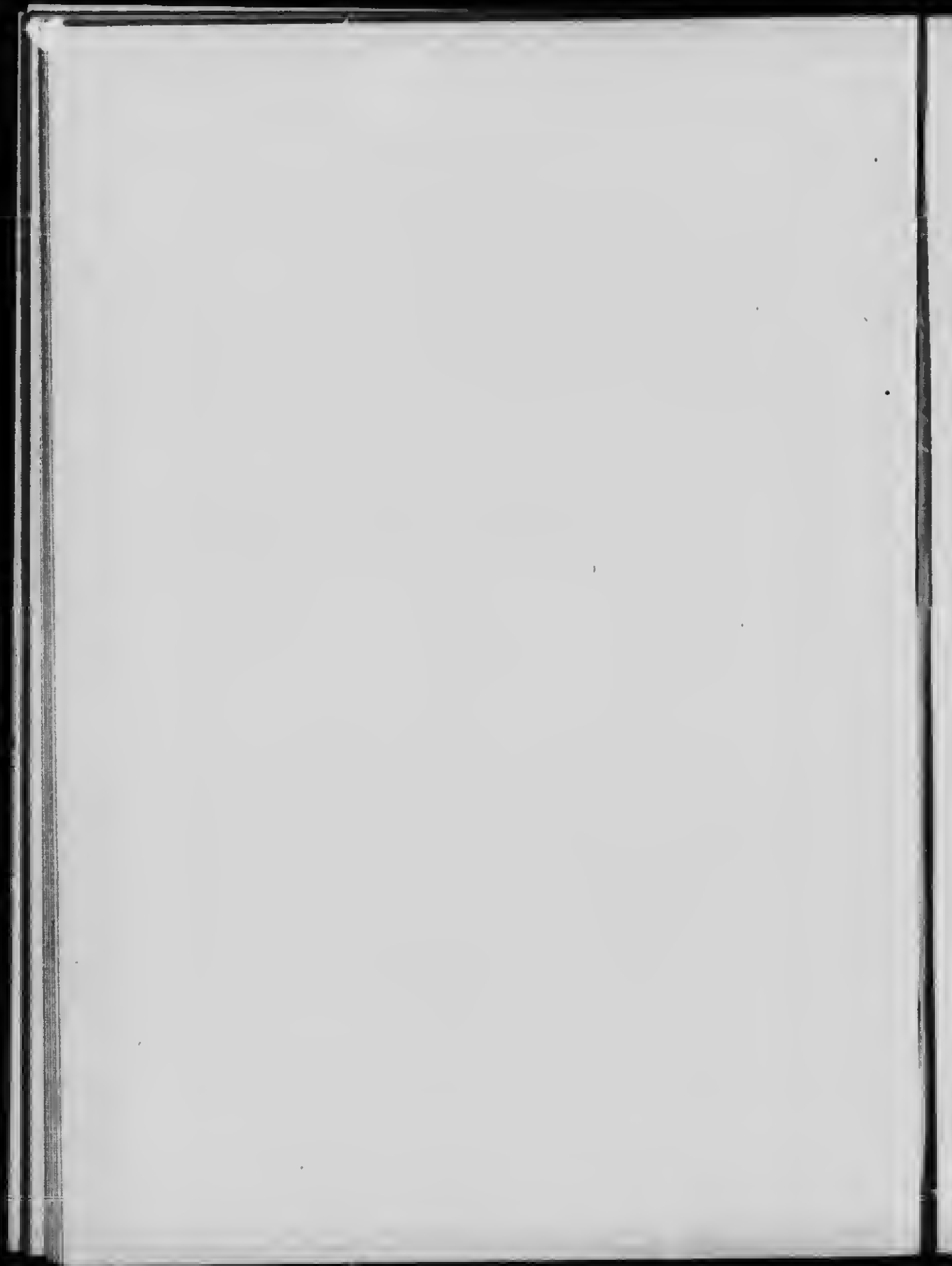
VIII  
THE GREAT TOWER. PIG-IRON



## VIII THE GREAT TOWER. PIG-IRON

**F**ROM the blast-furnaces the iron is brought to this yard, and carried by the cranes to the floor where I sat, to be seized by the great tongs and jaws, which were moving about behind me, and thrust into the furnaces and turned into steel: a flaming, roaring cavern, so bright that the furnacemen wore coloured glasses, so hot they buried themselves in their buttoned-up coats. It was not a pleasant place to work in.



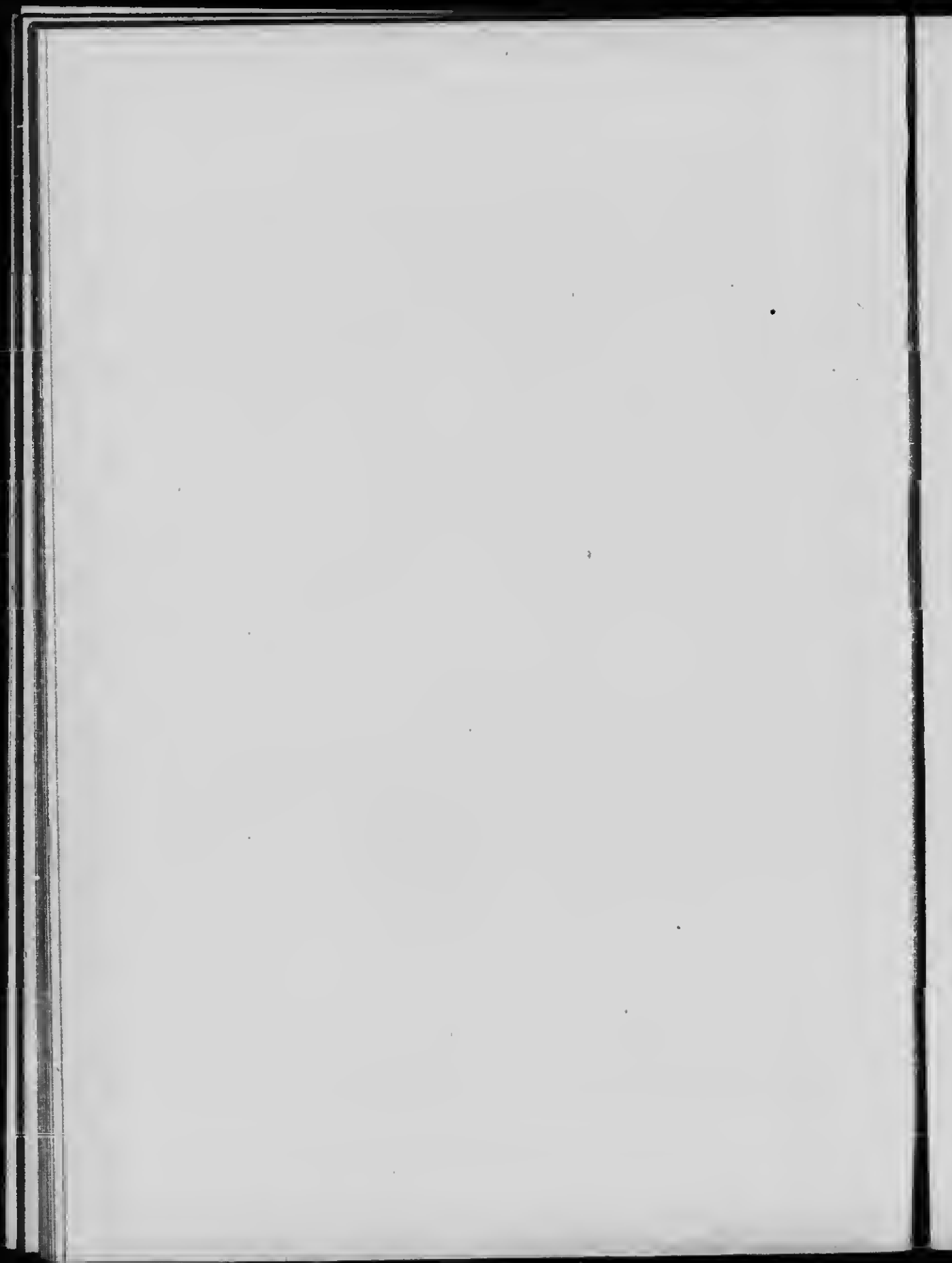


**IX**  
**WITHIN THE FURNACES**

## IX WITHIN THE FURNACES

**A**FTER the pig-iron is melted in the long rows of furnaces, they are tapped and the liquid fire runs into the great ladles, and then the great cranes with their two great claws pick up the ladles and carry them off, and pour the molten metal into crucibles, where it cools into ingots.





X

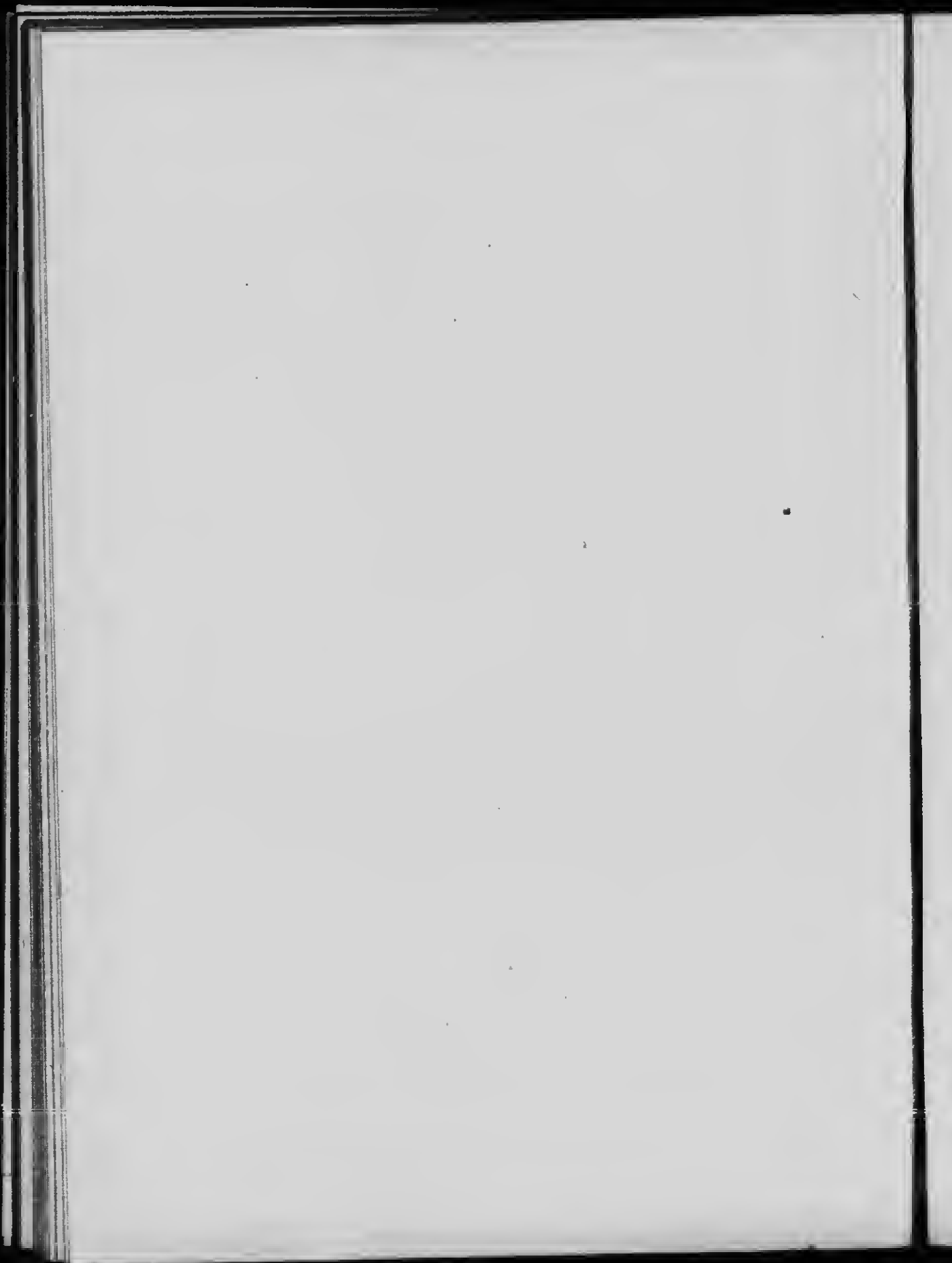
THE CAULDRONS



## X THE CAULDRONS

**A** NOTHER type of furnace—another system, for all these furnaces, all these works, have character—a character as distinct as in any other form of great art, for great work is great art.





XI .

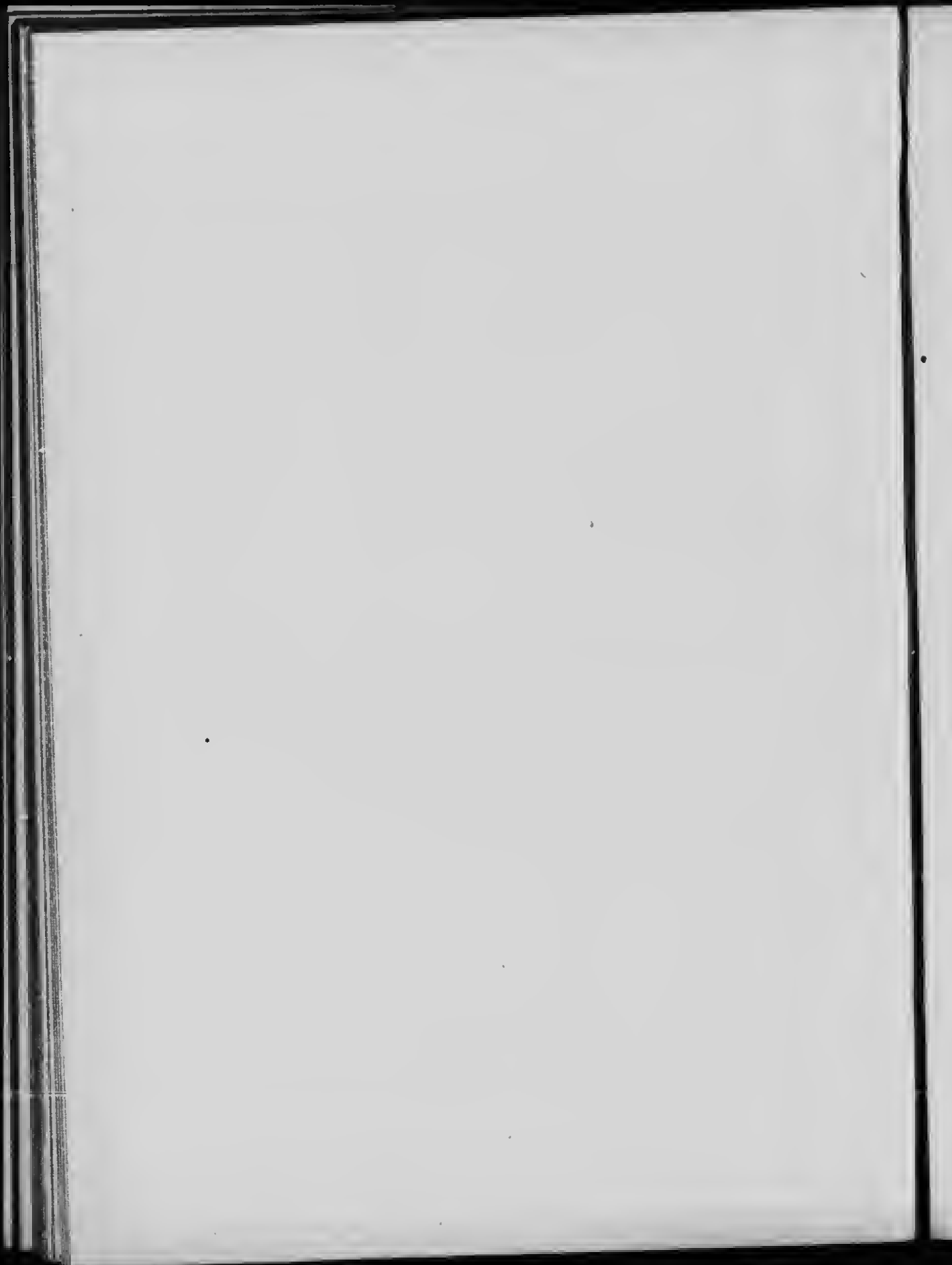
**THE PERAMBULATOR**

## XI THE PERAMBULATOR

**F**ROM beneath a fiery floor—from a fiery furnace—this monster drags the glowing ingots and carries them off to other furnaces or presses, or rolling-mills or hammers, and the workmen tell you, as the policemen do in America, "Mind your step ; safety first."



St. Paul, Minnesota



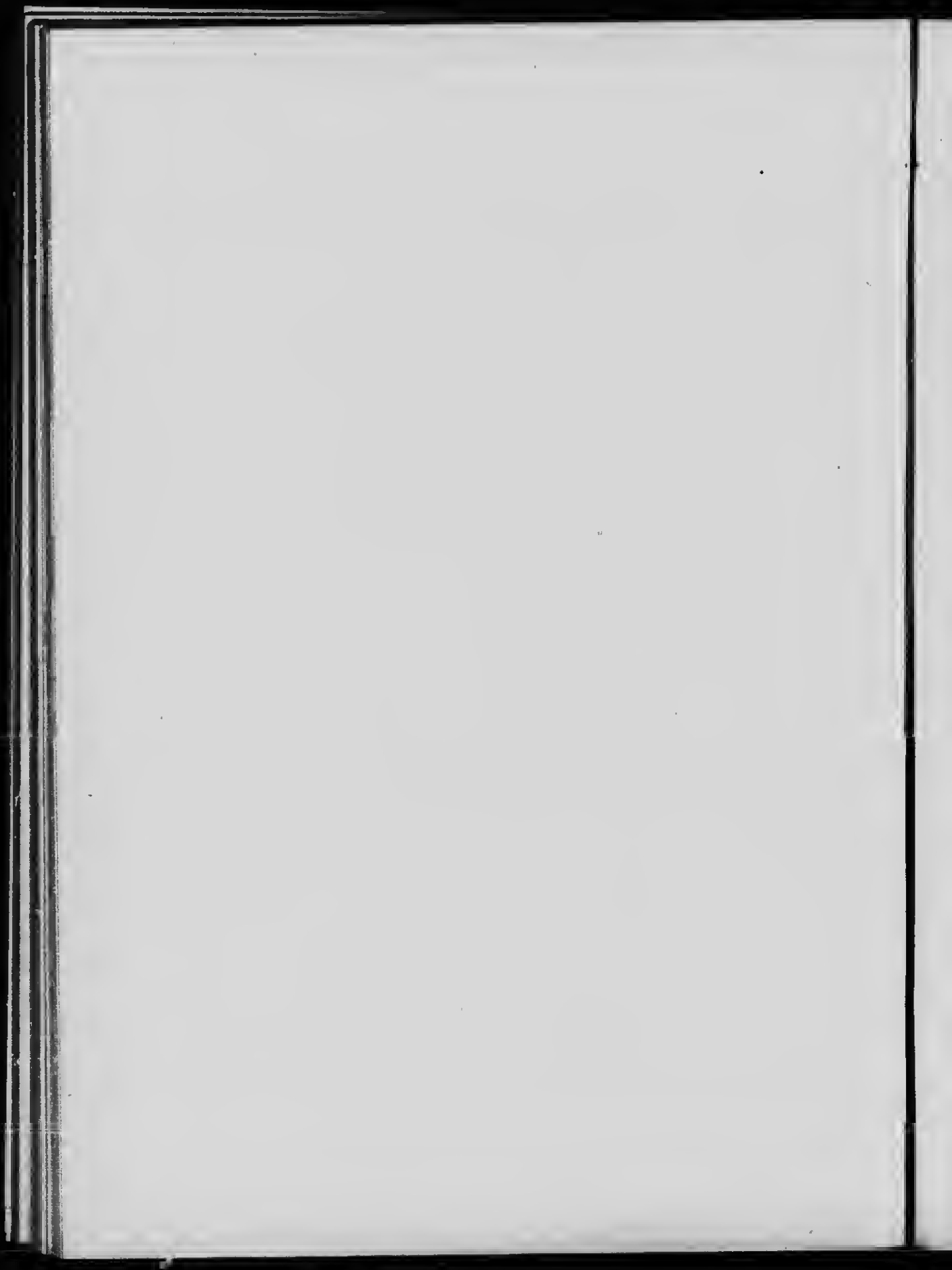
**XII**  
**THE GREAT HAMMER**



## XII THE GREAT HAMMER

**T**HE hammers forge and stamp and press the ingots  
into any shape the forgermen wish.





XIII  
IN THE JAWS OF DEATH. ROLLING  
BARS FOR SHELLS

XIII IN THE JAWS OF DEATH. ROLLING BARS  
FOR SHELLS

**F**ROM these jagged jaws the fiery serpent sorts shrieking and squirming, vomiting sparks—it was an ingot just before—only to be drawn back again, and again vomited forth, longer and thinner, cast out in heat and noise infernal. Then it crawls away to cool in long bars or to be cut into ingots by the guillotine.





XIV

STEEL BARS FOR SHELLS



#### XIV STEEL BARS FOR SHELLS

**T**HE white-hot bars, escaping from the jaws, writhe and twist about, raising in agony their fiery heads, and then either climb a long incline into the light, or squirm down into dark pits. Then they come forth into a great shed, or a great yard, and there they lie awhile to cool, till they are seized, by cranes or moving platforms, and brought to the guillotine, which cuts them into the lengths for shells.





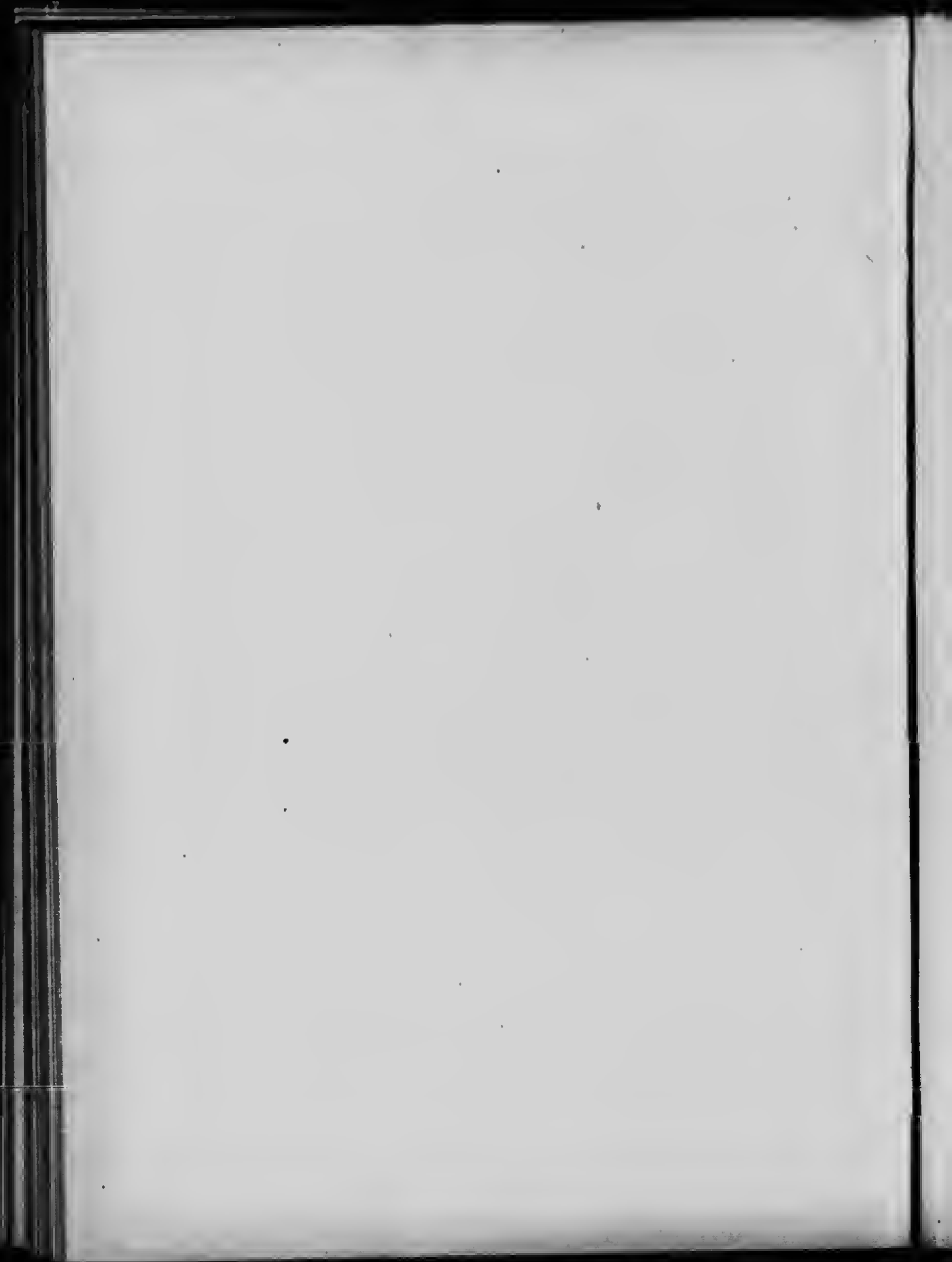
XV  
THE PRESSES

## XV THE PRESSES

**B**EFORE the press its master stands; a white-hot ingot is put in, the press comes down, and in a moment it is the body of a shell. The master seizes it with his tongs; standing black against the burst of steam, he whirls it round, and two men take it in their tongs and carry it off red-hot to the branders.



THE UNIVERSITY OF CHICAGO PRESS



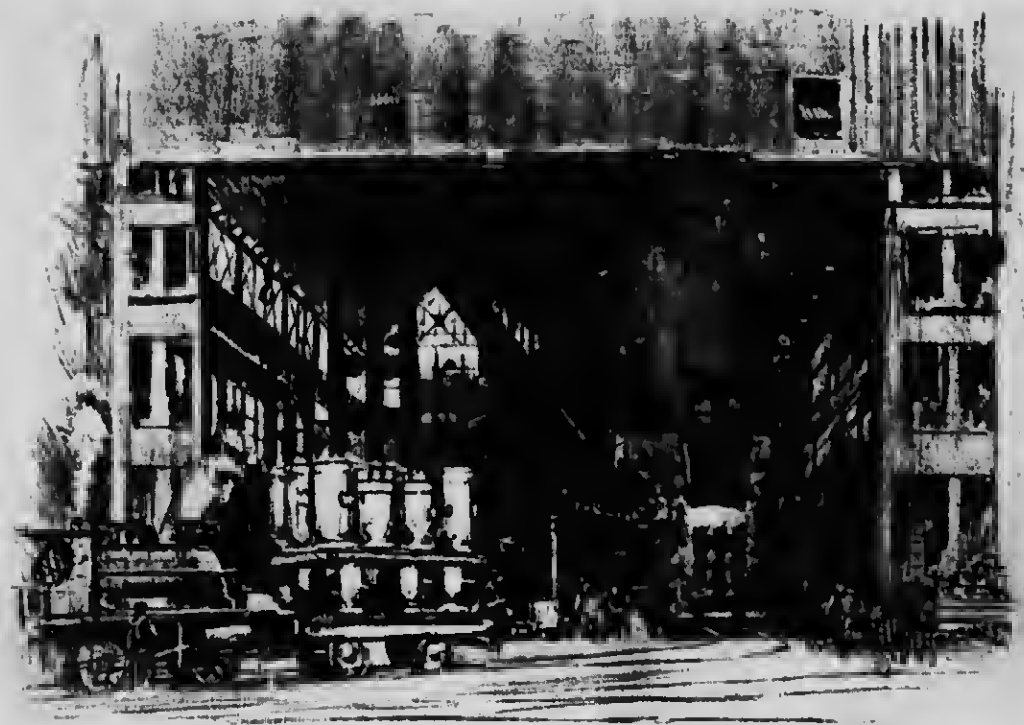
**XVI**

**THE URNS : CASTING BIG SHELLS**



## XVI THE URNS: CASTING BIG SHELLS

**I**N the heart of the big shop, the big ladle full of molten metal fills the urns; then they are dragged out and carried away to be "bottled."





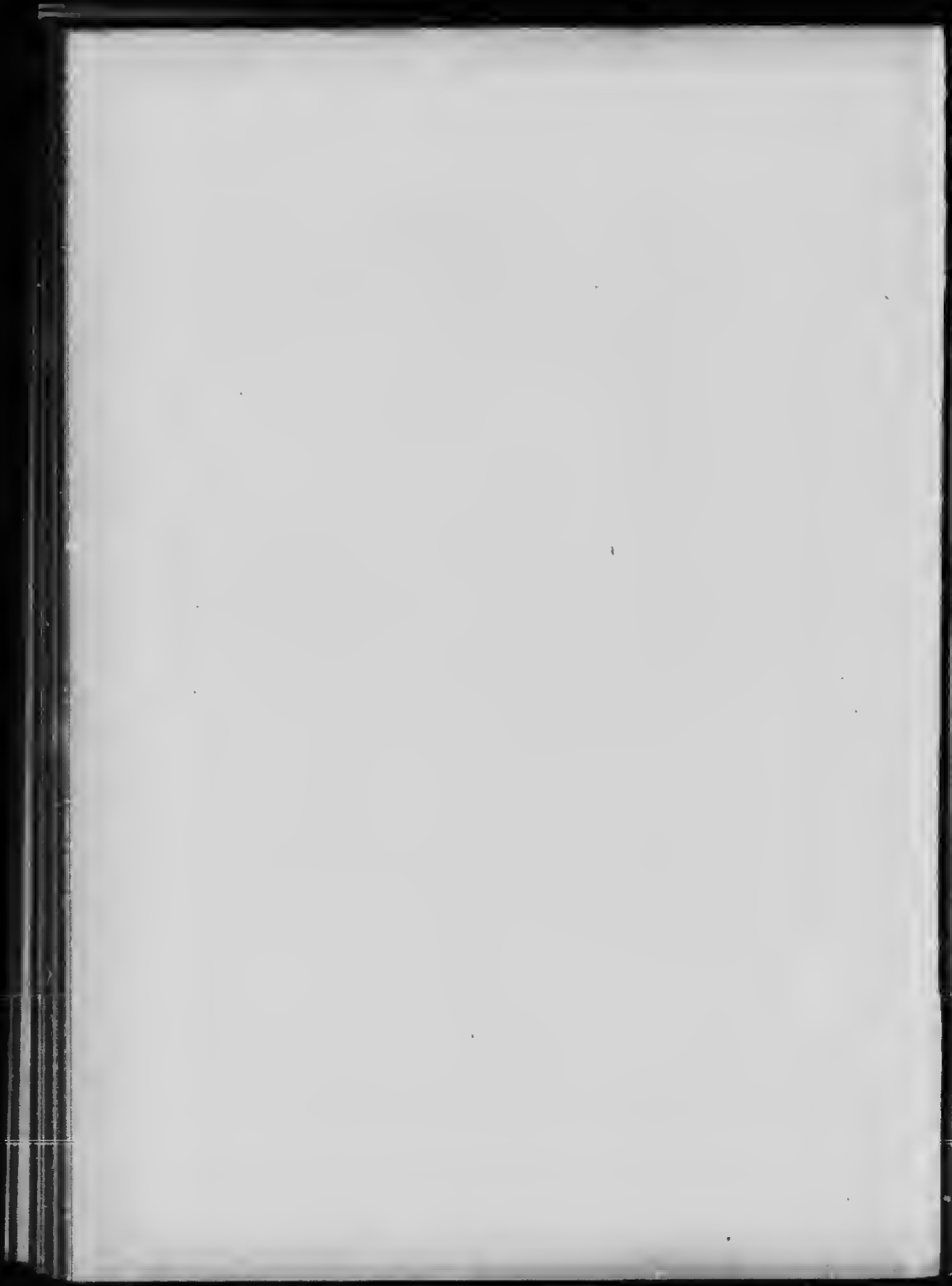
XVII

"BOTTLING THE BIG SHELL"

## XVII "BOTTLING THE BIG SHELL"

**T**HIS shop was an old factory where a big press had been set up. The walls had all been white-washed and against them the press and the figures told strongly. The afternoon I saw the bottling—the first time the big shells were bottled—the crane which was to carry them from the furnace to the press was not ready, and the work was done by men, but they made a far finer composition, for in these works you seldom see "the man-power." The machines do all, and are more human than the men who manage them.





**XVIII**  
**MUNITION WORKS**

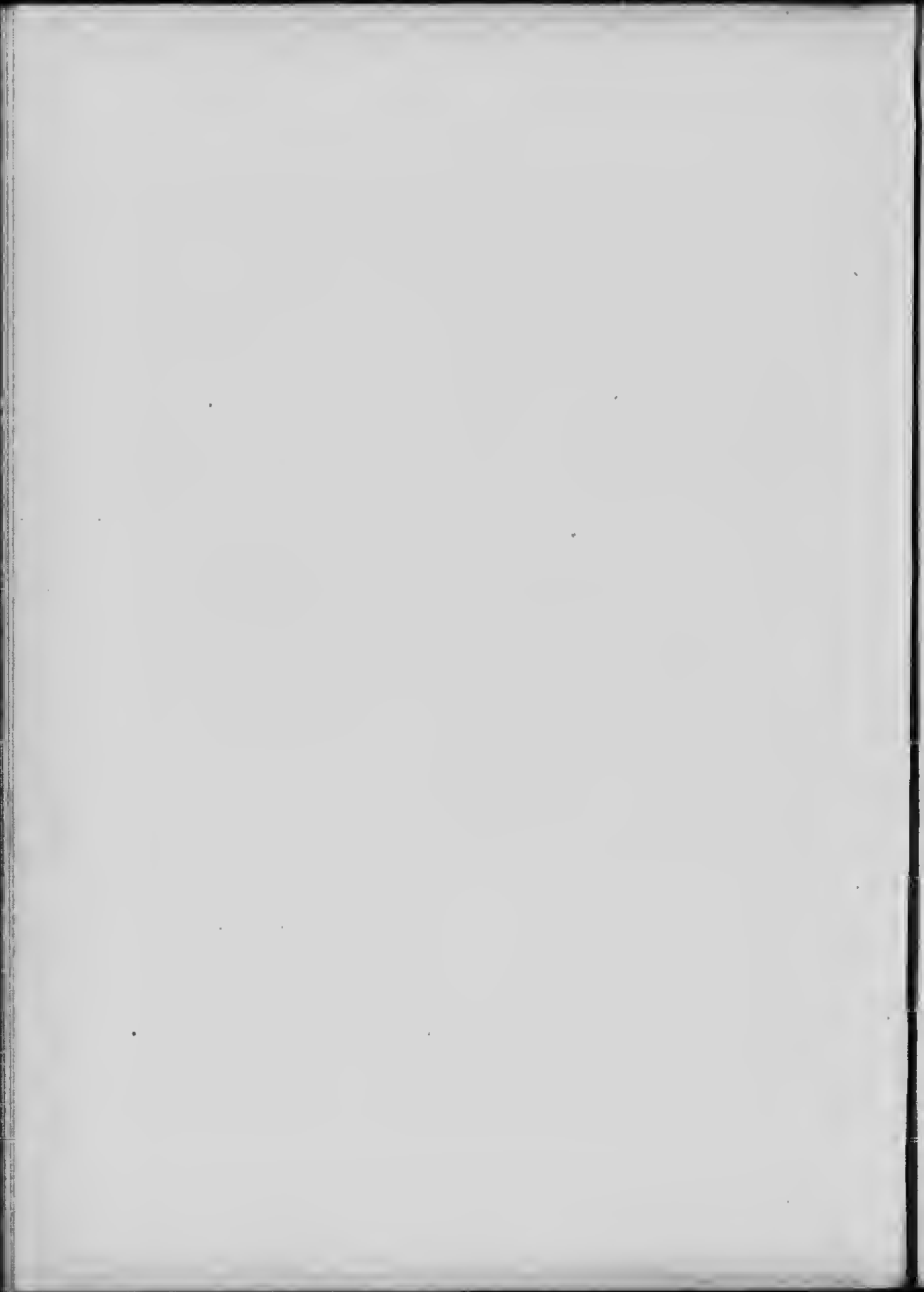


### XVIII MUNITION WORKS

I HAVE no idea how many of these worksapes I have drawn, etched, lithographed, painted. I am told I should not do so many—I “spoil the market”—but I shall draw them wherever and whenever I find them, or rather, find that they appeal to me. Whoever criticized an Old Master for his thousands of sketches and drawings? The trouble is that most painters to-day are so lazy or so stupid that they do not see and cannot present the wonderful things around them, and they blame and criticize the few artists who can and do.

And how much finer are the lines of chimneys than the lines of trees, while the slowly rising smoke gives the sky a beauty it never had before.



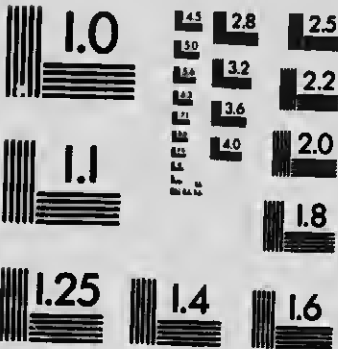


**XIX**  
**THE SHELL FACTORY**



# MICROCOPY RESOLUTION TEST CHART

(ANSI and ISO TEST CHART No. 2)

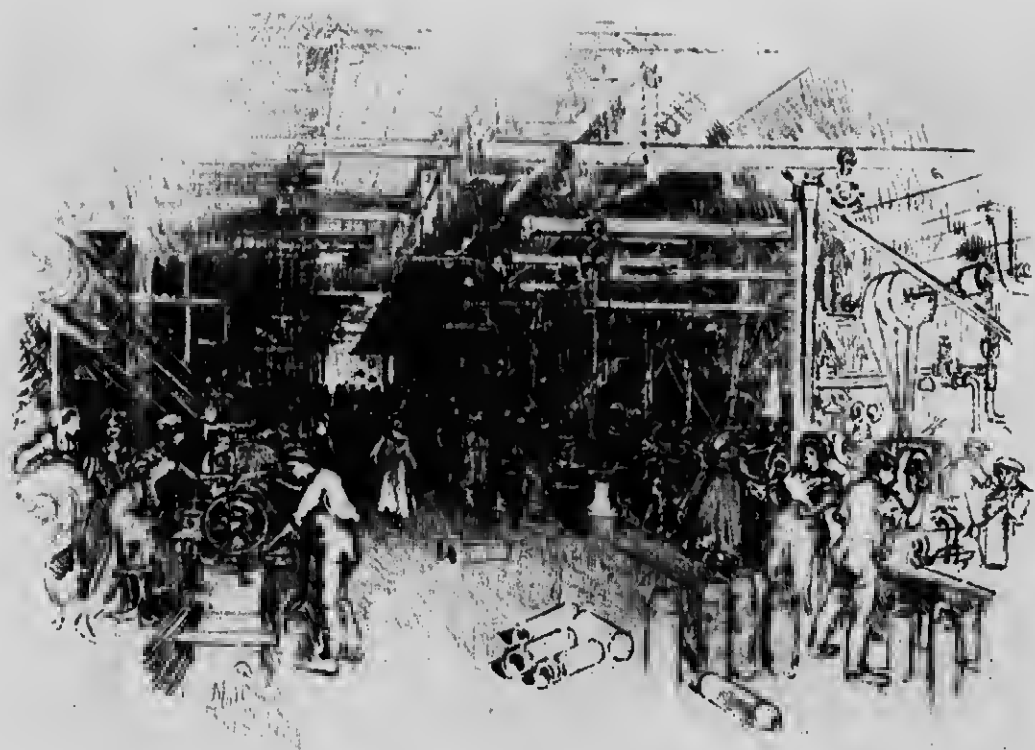


**APPLIED IMAGE Inc**

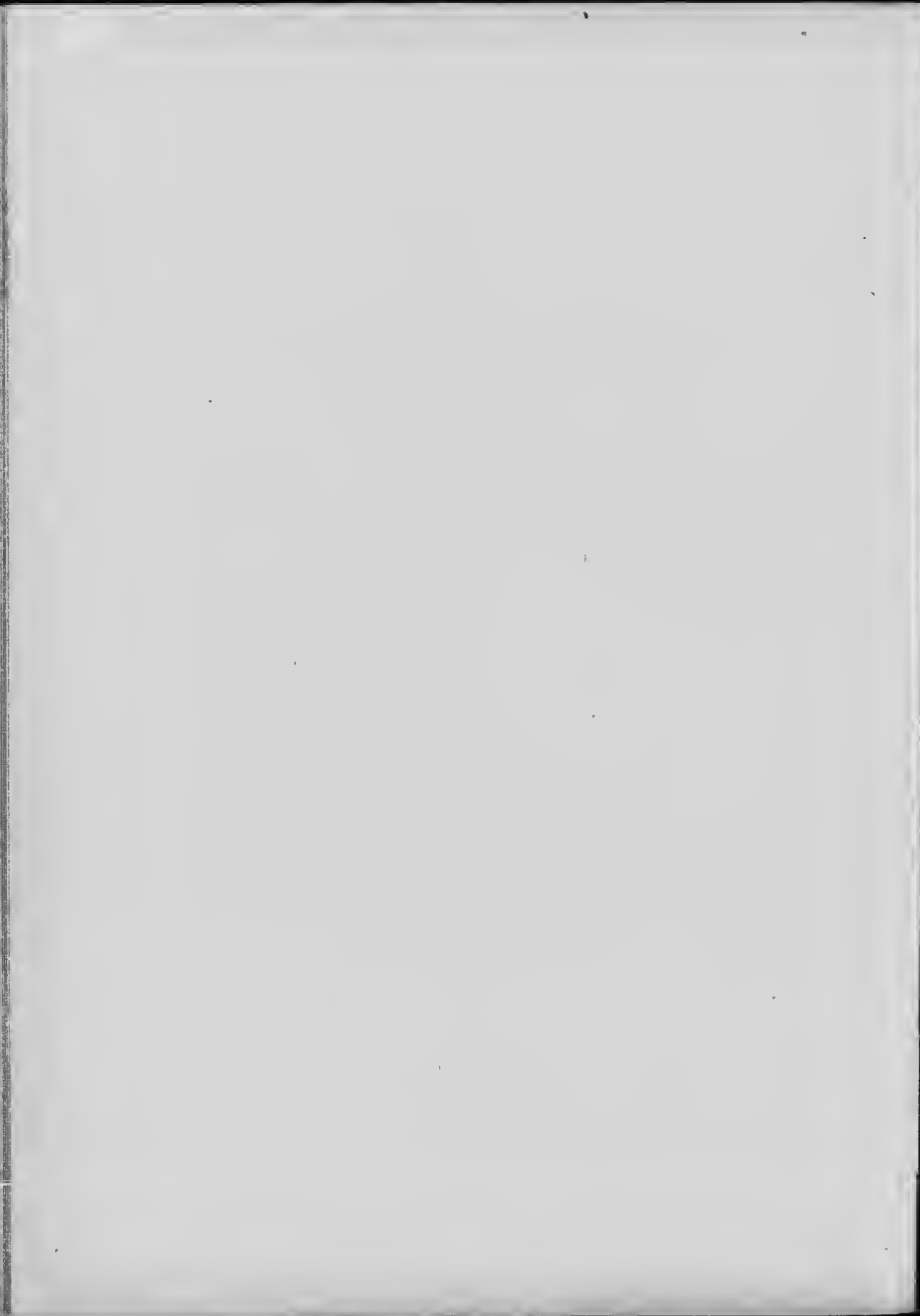
1653 East Main Street 14609 USA  
Rochester, New York  
(716) 52-0300 - Phone  
(716) 288-5989 - Fax

## XIX THE SHELL FACTORY

I HAVE drawn one of the shell factories that have grown up all over the country within the last year. It is wonderful to see these girls planing, grinding, polishing the shells; it fascinates, but is intolerable, it is horrible, when you think that all this is done to kill people. But you must not think—if you do you will go mad. The world is mad to-day.





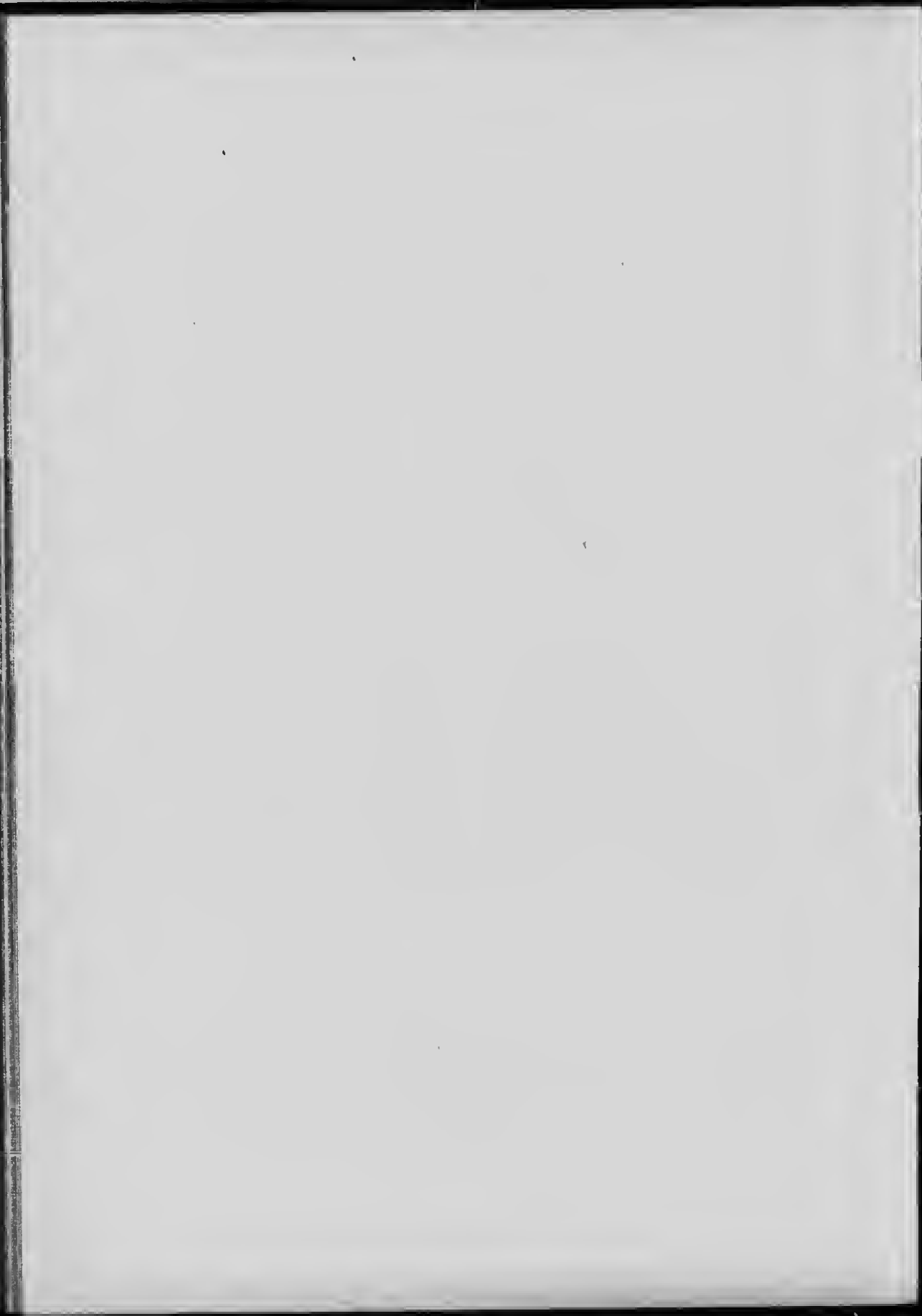


**XX**  
**FINISHING SHELLS**

XX FINISHING SHELLS

**L**ARGER shells being finished.





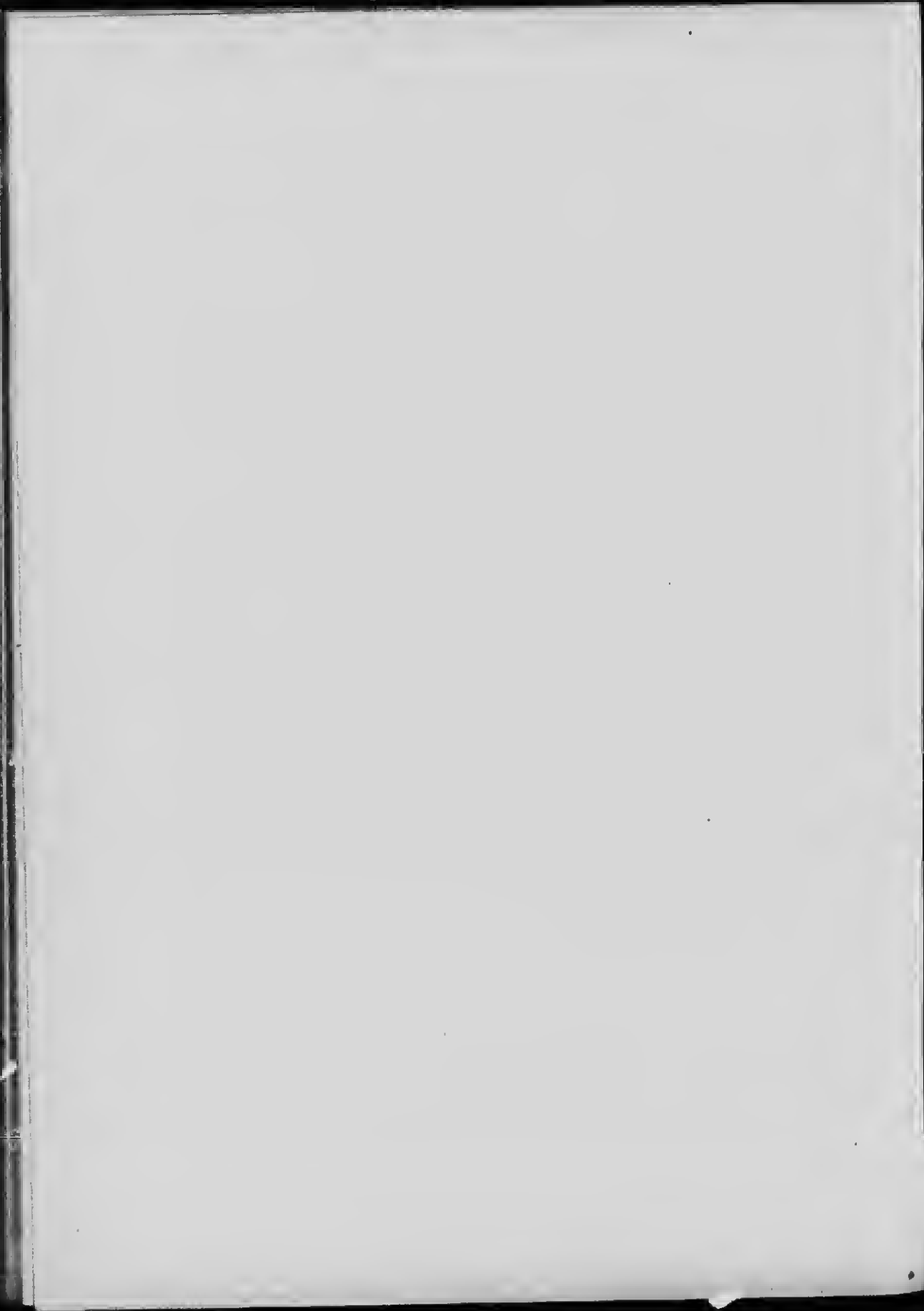
**XXI**  
**EVENING IN THE MUNITIONS**  
**COUNTRY**

## XXI EVENING IN THE MUNITIONS COUNTRY

AS I came back one evening from a hunt for subjects, on the top of a tram, having found nothing, I found this. On one side the near shell factories glowing with blue-white light, on the other the far-away furnaces bathed in fire, in the foreground the quiet canal and the noisy train, the twinkling signals below, and into the calm heavens the smoky incense of war slowly rising.







XXII

THE BAY OF THE THOUSAND GIRLS

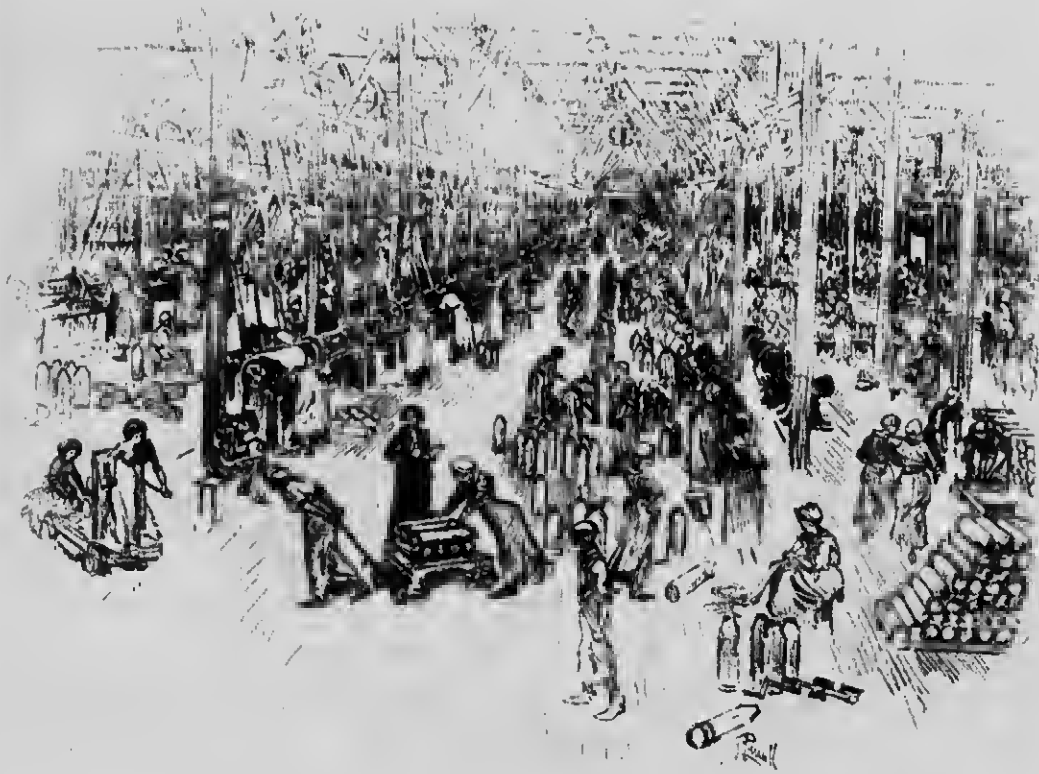
## XXII THE BAY OF THE THOUSAND GIRLS

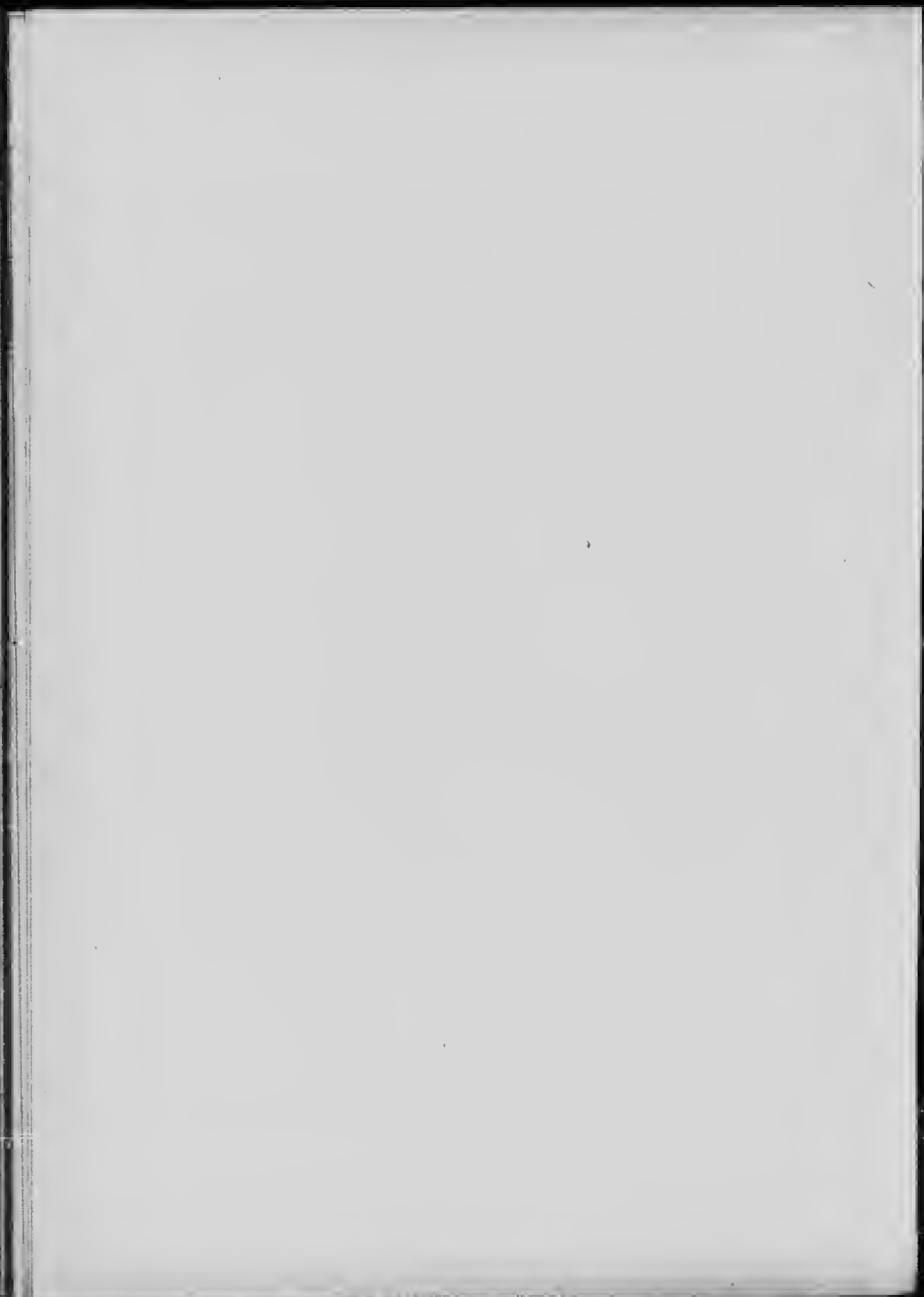
ONE of nine or ten bays and other rooms besides in this huge factory—the site of which they tell you was a field a few months ago.

There was scarcely a man about the place, only those setting-up and adjusting machines.

The women were doing everything—as I have tried to show. And one of the foremen said I showed too much.

“Now you’ve drawered ’em ’uggin’ ’emselfs. Now I’ve told ’em they wasn’t to ’ug theirselfs, and you’ve gone and done ’em a doin’ it.” “Well, they were,” said I.

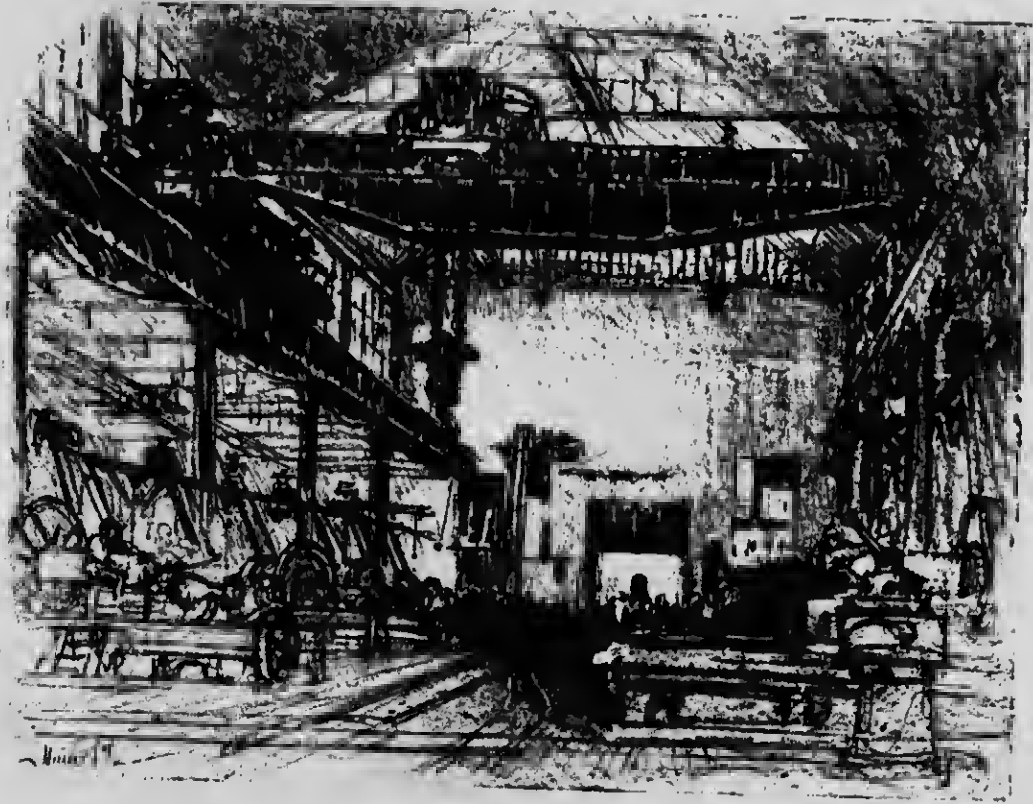




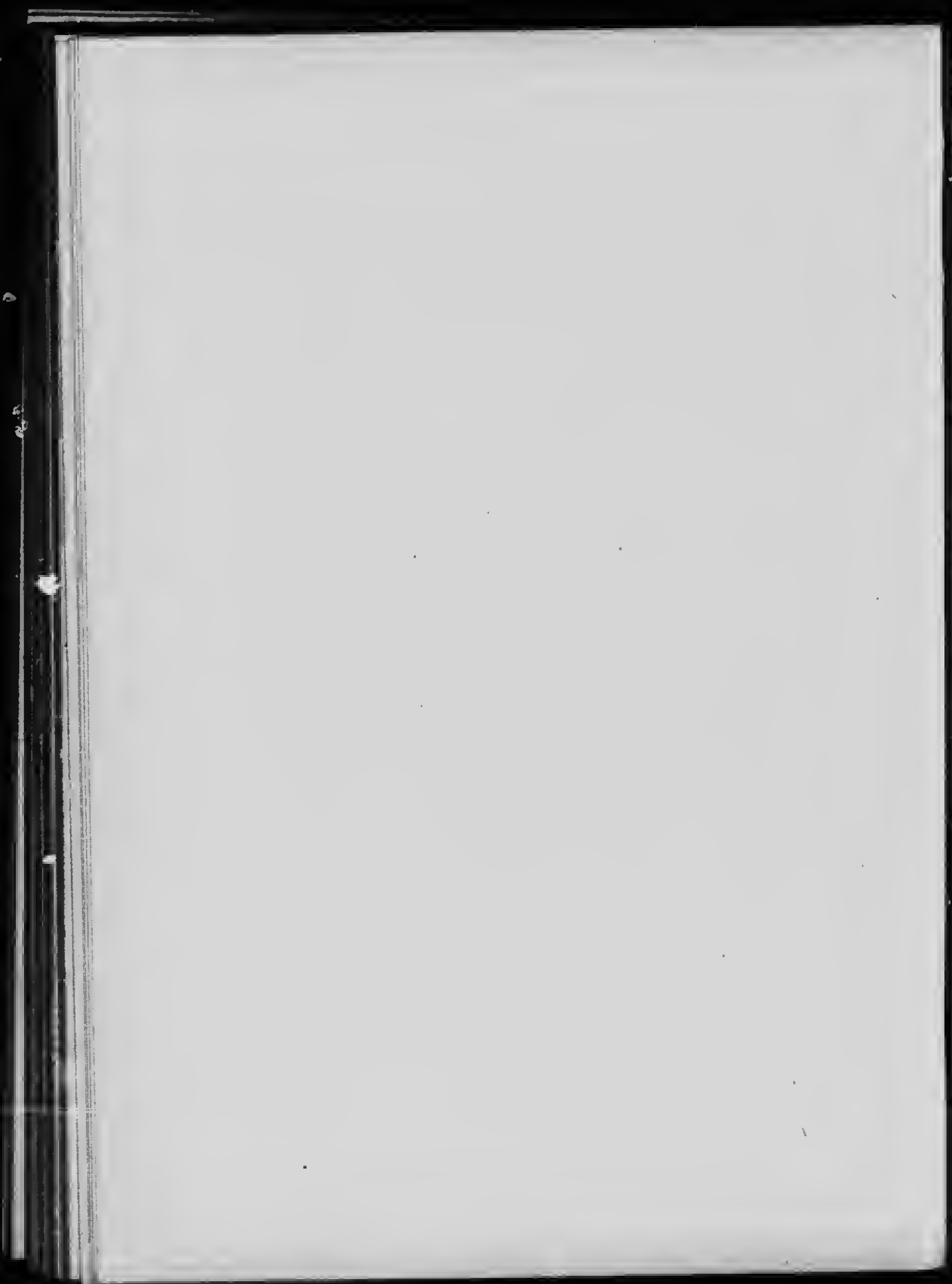
**XXIII**  
**PLANING BIG SHELLS**

### XXIII PLANING BIG SHELLS

**T**HIS was an old disused shop, with great brick walls and small skylights and few windows, but it had been taken over for munition works, the walls white-washed, and new machinery set up, and against the white walls the lathes and planes and cranes stood out. When I was there it was being fitted up, and the engineers told me too how fine it was at night, but I did not see it.





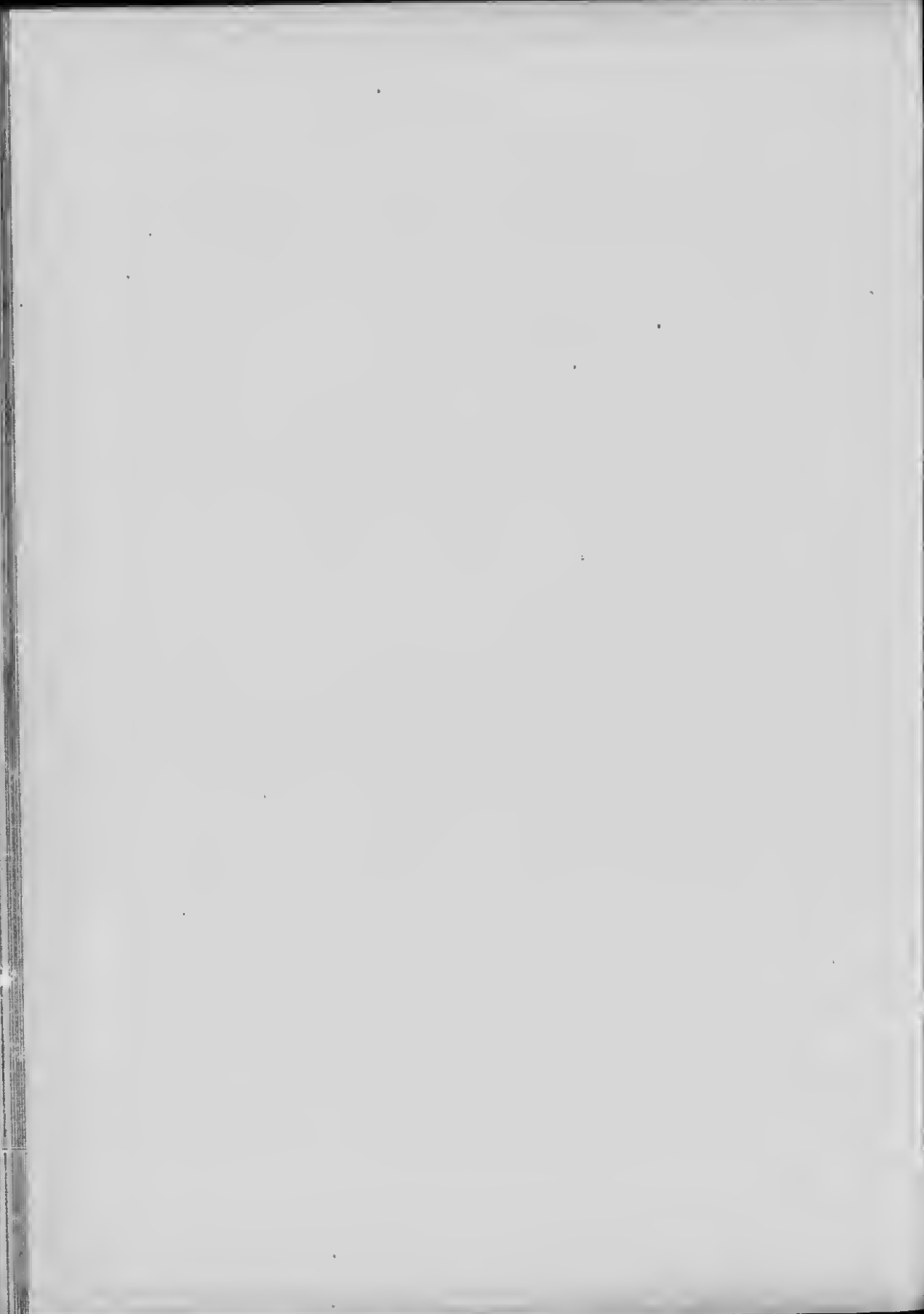


**XXIV**  
**MUNITION TOWN**

#### XXIV MUNITION TOWN

**A**LL over the country these munition mushroom-towns are springing up; mostly they are dumped down over the plains; this one climbed and covered the hill-side and so was picturesque—the others are pitiful. A little more money would have made them as decent as the workmen's dwellings at Panama, but that was not spent, and they are the most depressing human huts I have ever seen.





XXV

THE ACOLYTES PREPARING THE  
ALTAR OF THE WAR GOD

**XXV THE ACOLYTES PREPARING THE ALTAR  
OF THE WAR GOD**

**N**O cathedral is more impressive, no altar finer, but instead of decking it with flowers the men were making it ready to roll more armour-plate. This drawing is but another proof that great work is great art, and that art to-day is joined to science, not religion, and the effect is just as fine.



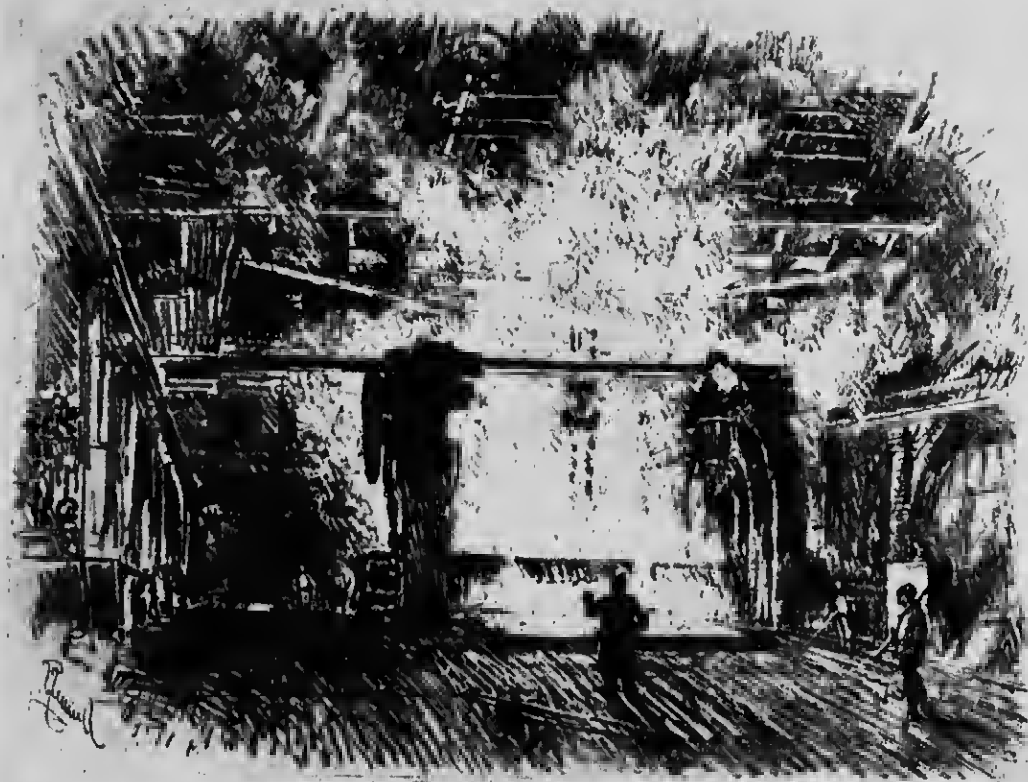


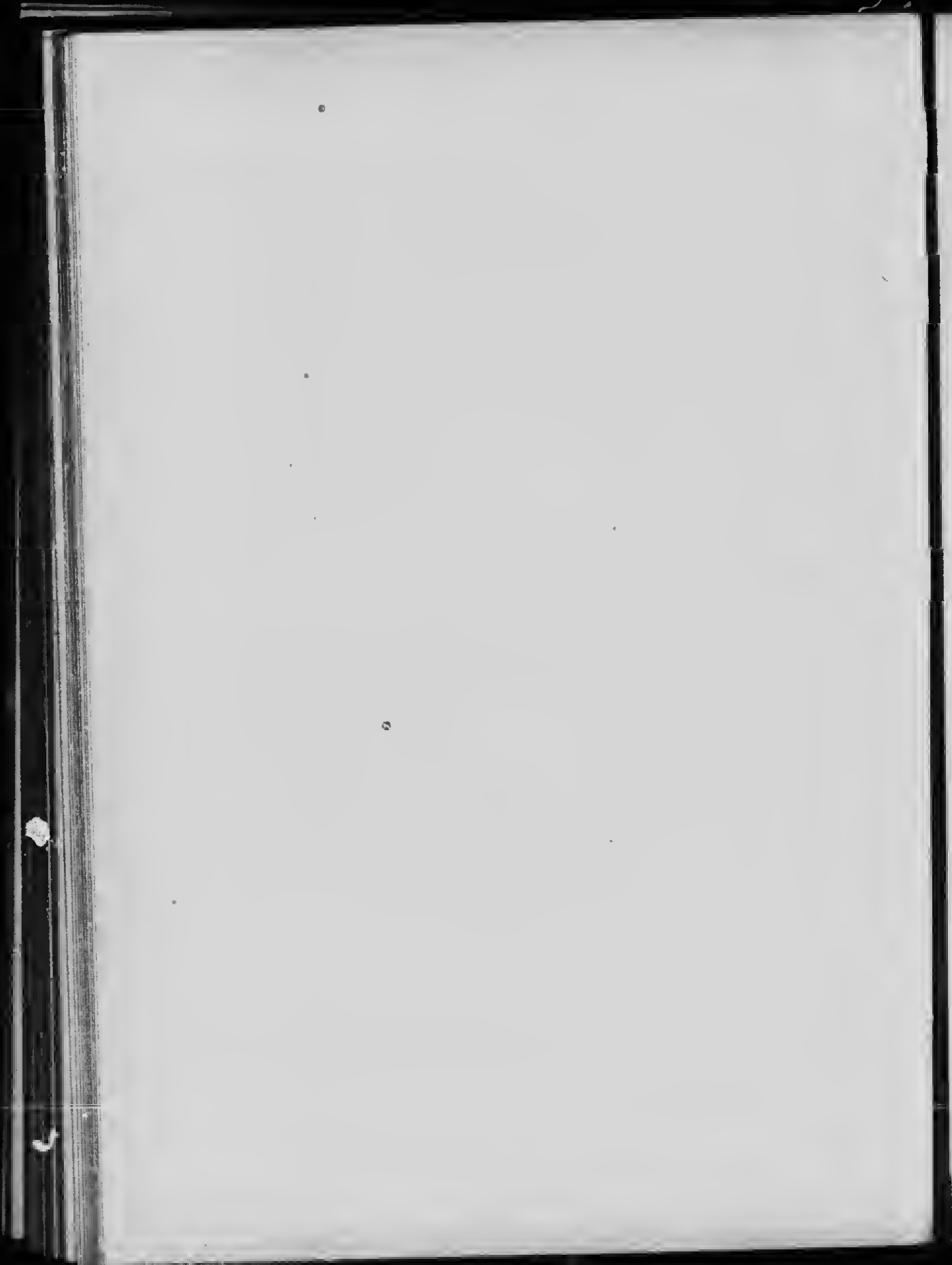


**XXVI**  
**MAKING ARMOUR-PLATE**

## XXVI MAKING ARMOUR-PLATE

I NEVER had the chance to see a big plate rolled, but probably this little one was just as good. The hot metal was covered with brushwood to burn off the cooling scale, which is like a beautiful patina upon it, and the brushwood blazed in the dark shop to the roof; while, as in all great work, only two or three men were about—the one who signalled in the foreground, the one who ran the mill and controlled its rolls, standing like a statue over all.

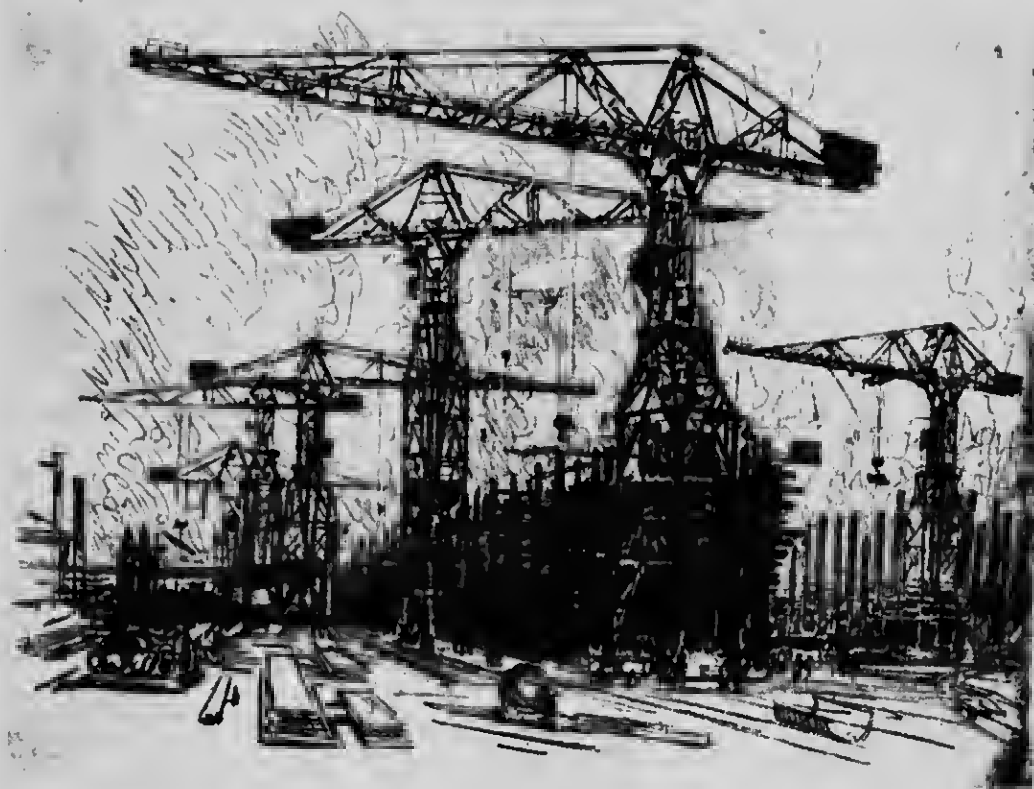




**XXVII**  
**THE OLD SHIPYARD**

## XXVII. THE OLD SHIPYARD

**T**HE Admiralty would not let me draw the naval shipyards, but here were merchant ships being built. I had never seen anything like these cranes nor the way they started to build the ships out of doors anywhere, and the ships just grew and the cranes came and helped to build them.





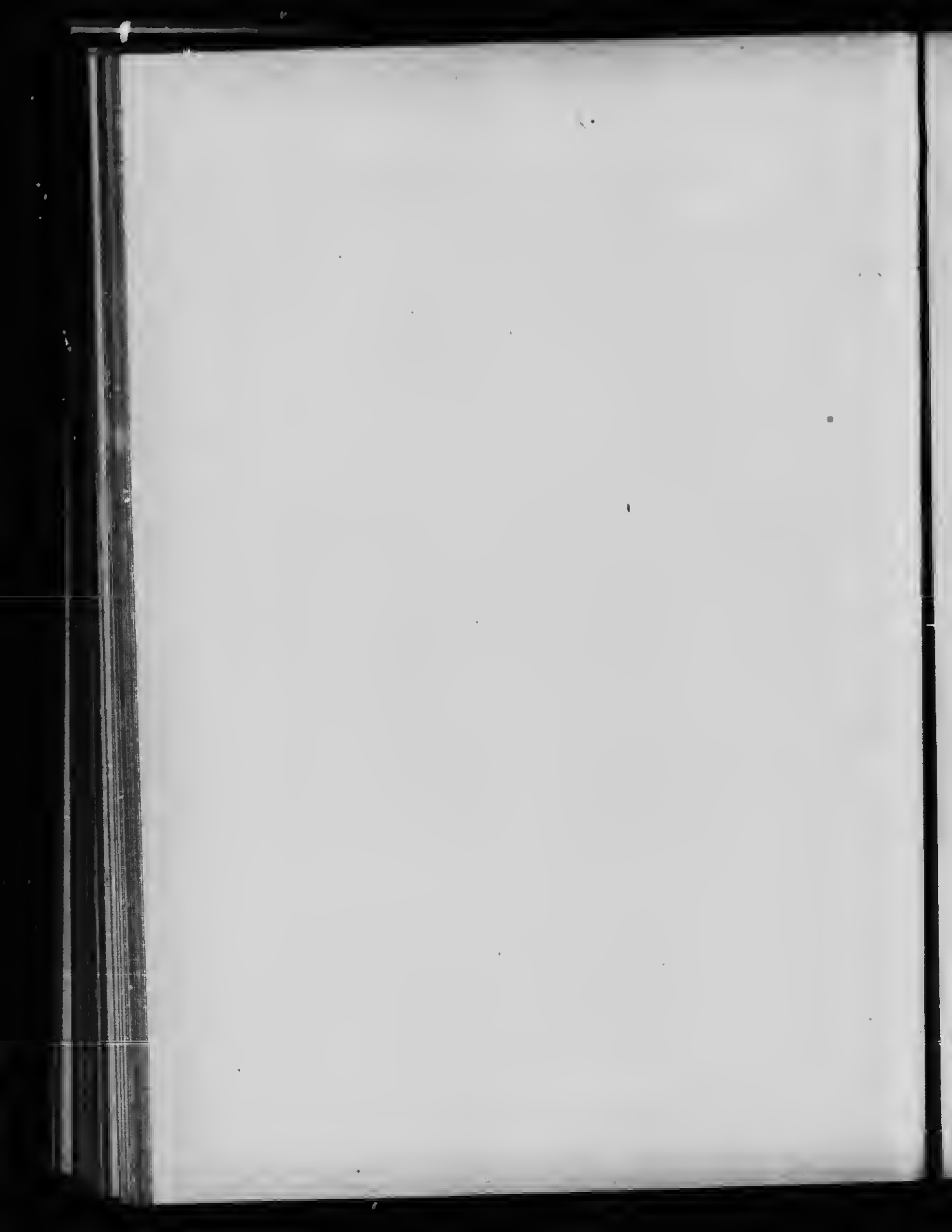


**XXVIII**  
**MUNITIONS RIVER**

## XXVIII MUNITIONS RIVER

**T**HE most amazing subject of all, but I was only allowed to get glimpses of it, not to go upon it, though once when I was arrested I was taken for a cruise on it in the hope of finding a chief constable whose existence I did not know of and to whom none of the other local, national, county, military, munitions, and war officials whose consent I had obtained had referred me—however, it ended all right.

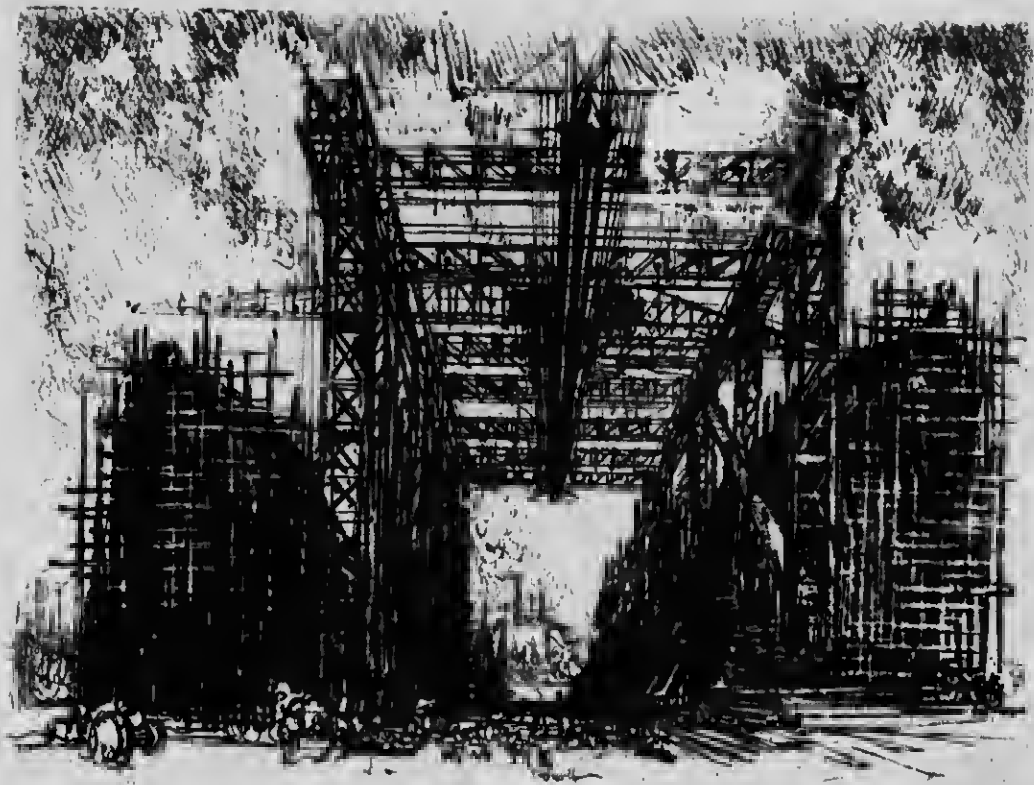




**XXIX**  
**THE GANTRY**

## XXIX THE GANTRY

**A** MERCHANT-SHIP YARD. The gantry was more like those I have seen in Germany. If I had only been allowed to draw the naval yards I saw, I could have made this series complete, and no secrets would have been revealed, but a record would have been made.



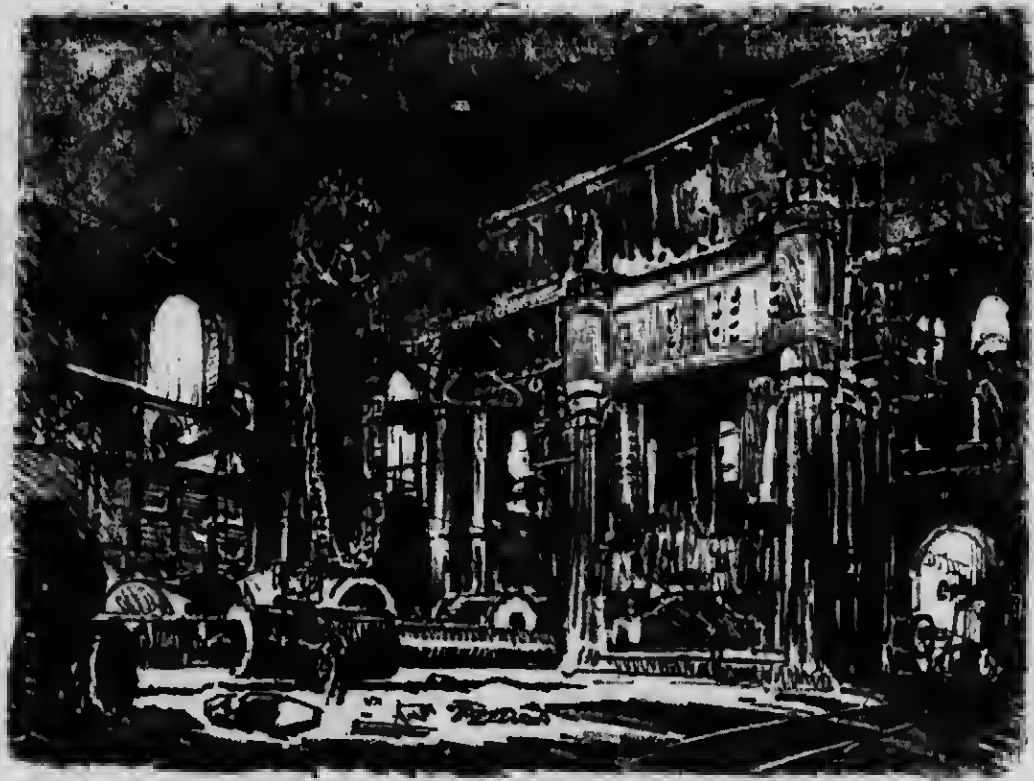




XXX  
THE GUN FORGE

### XXX THE GUN FORGE

**W**HEN the solid metal has been roughly shaped in the furnace and press it is again heated, and then the great chain carries it to the forge, and this monster crushes, forges, and moulds it into shape—the shape of a gun.

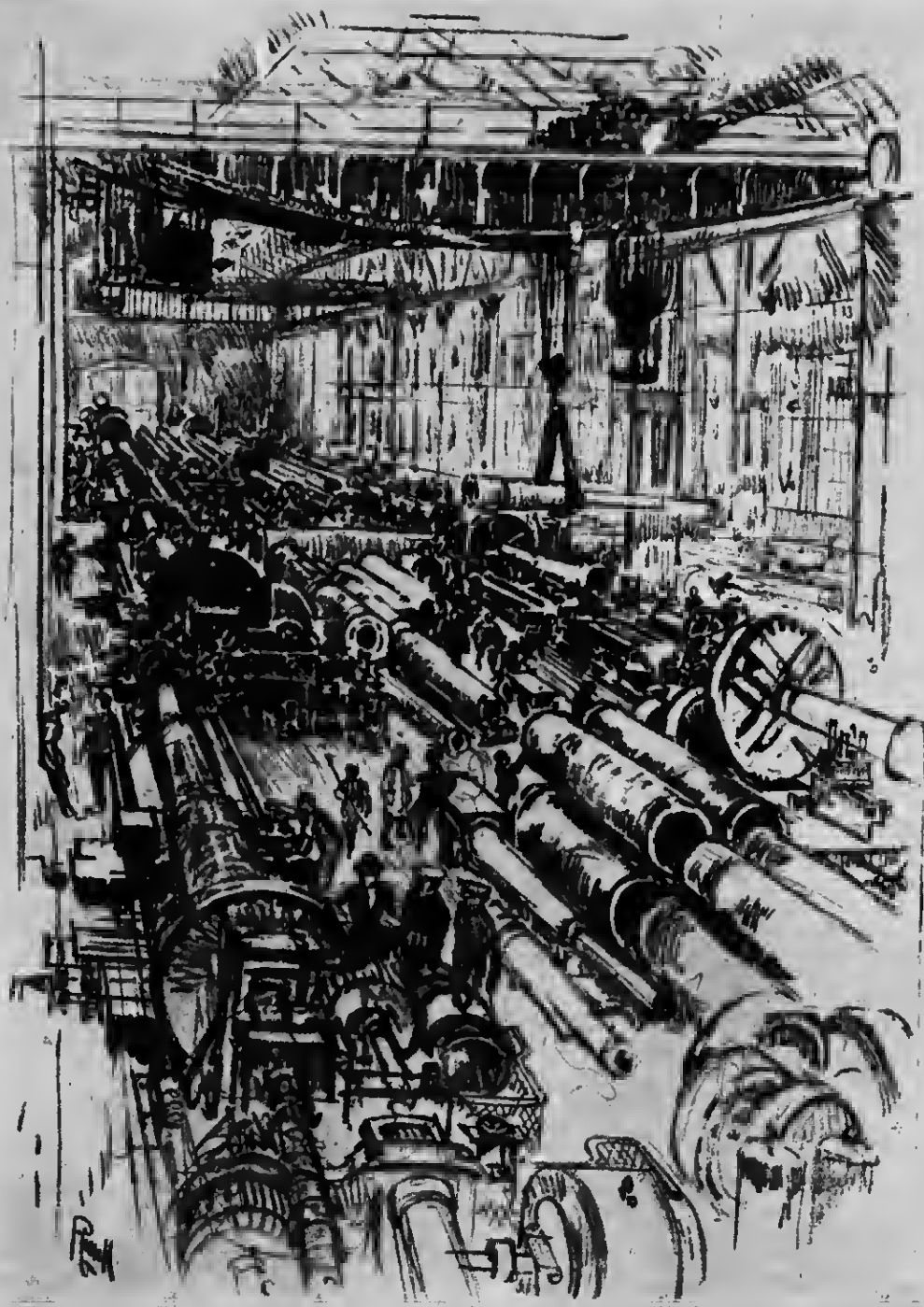




XXXI  
THE GUN-SHOP

### XXXI THE GUN-SHOP

**W**HEN the guns are forged, either whole or in part, they are brought into the gun-shop, bored, and planed. They come in silently, high in air, and then are lowered in place, lie in rows, in piles, in masses, waiting their turn to be finished.





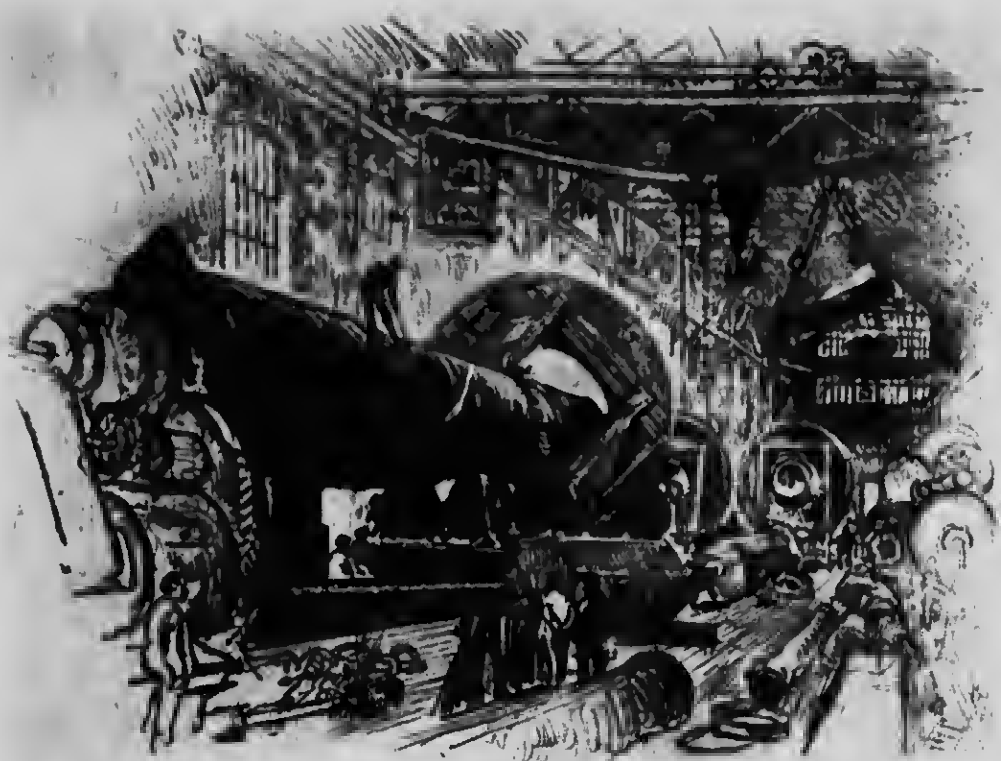


XXXII

CUTTING AND TURNING A BIG GUN

### XXXII CUTTING AND TURNING A BIG GUN

**A**LL the week I was in this shop the big gun stood there on a great trestle, and all the while the great lathe, or plane, kept turning and turning at the end of it; once in a while a man would look at it, or do something to it, or pick up steel shavings, but all the while the machine kept turning, and all the while nothing seemed to happen, but I suppose it did: it was all silent, ceaseless force.



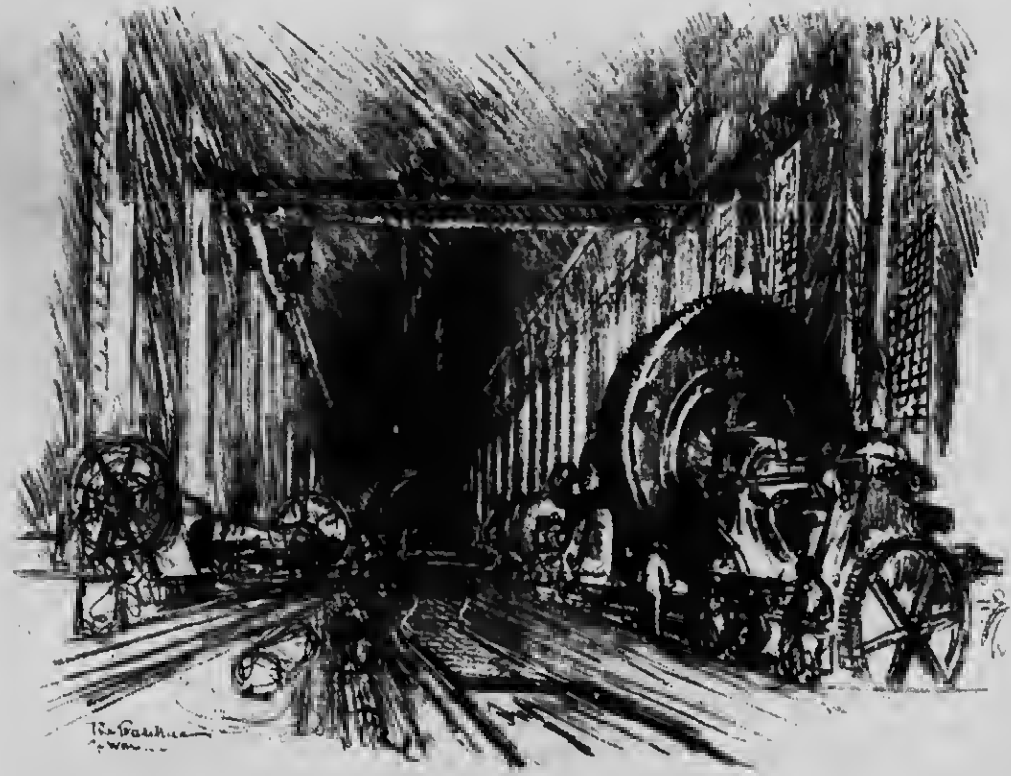


XXXIJI

THE BASILICA OF WAR

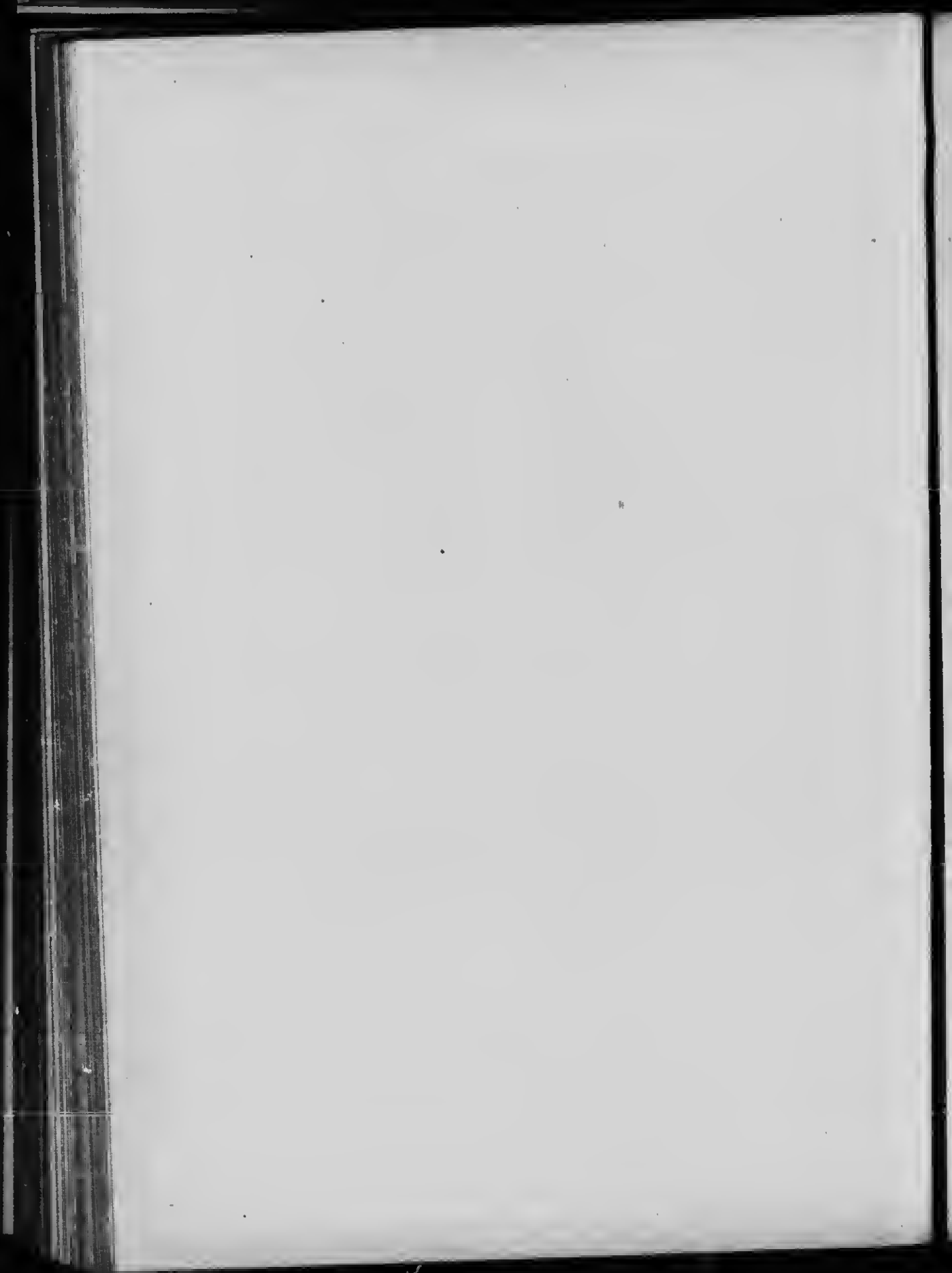
### XXXIII THE BASILICA OF WAR

**H**ERE was another big gun-planing shop, built on the same lines as a religious shop—why call it anything else? Only instead of shrines and side-altars were lathes and planes; at the far end instead of a reredos were the wheels of war; instead of cardinals' hats, chains hung from the roof.



The Washhouse  
by W. M. W.



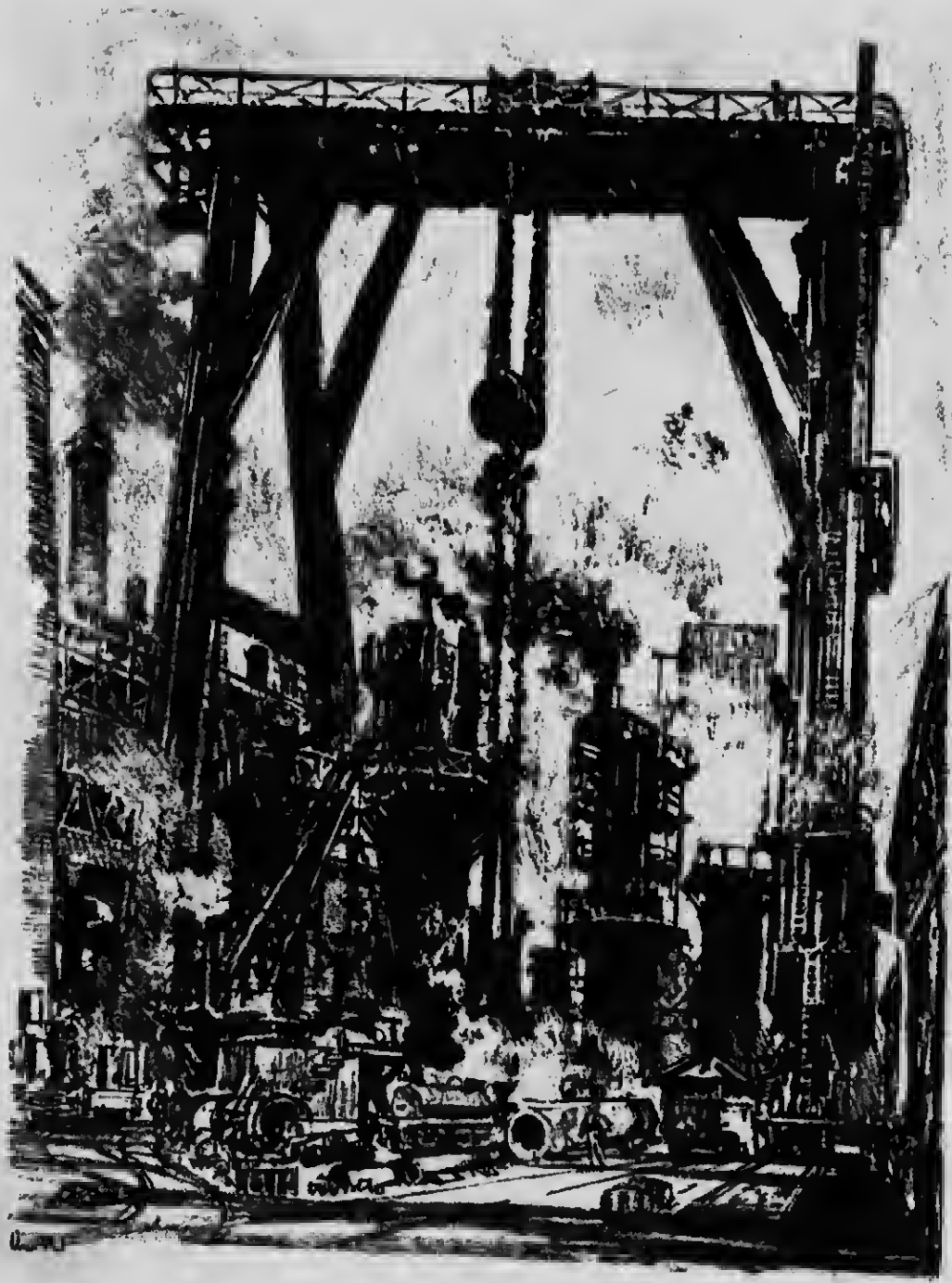


XXXIV

THE OLD GUN-PIT

#### XXXIV THE OLD GUN-PIT

**A**T one period of their creation the guns are given an oil-bath: the crane seizes them, lifts them, and then lowers them into the strange-shaped towers where they are heated; then it raises them again and drops them into an oil-bath, where they are left to harden and cool.



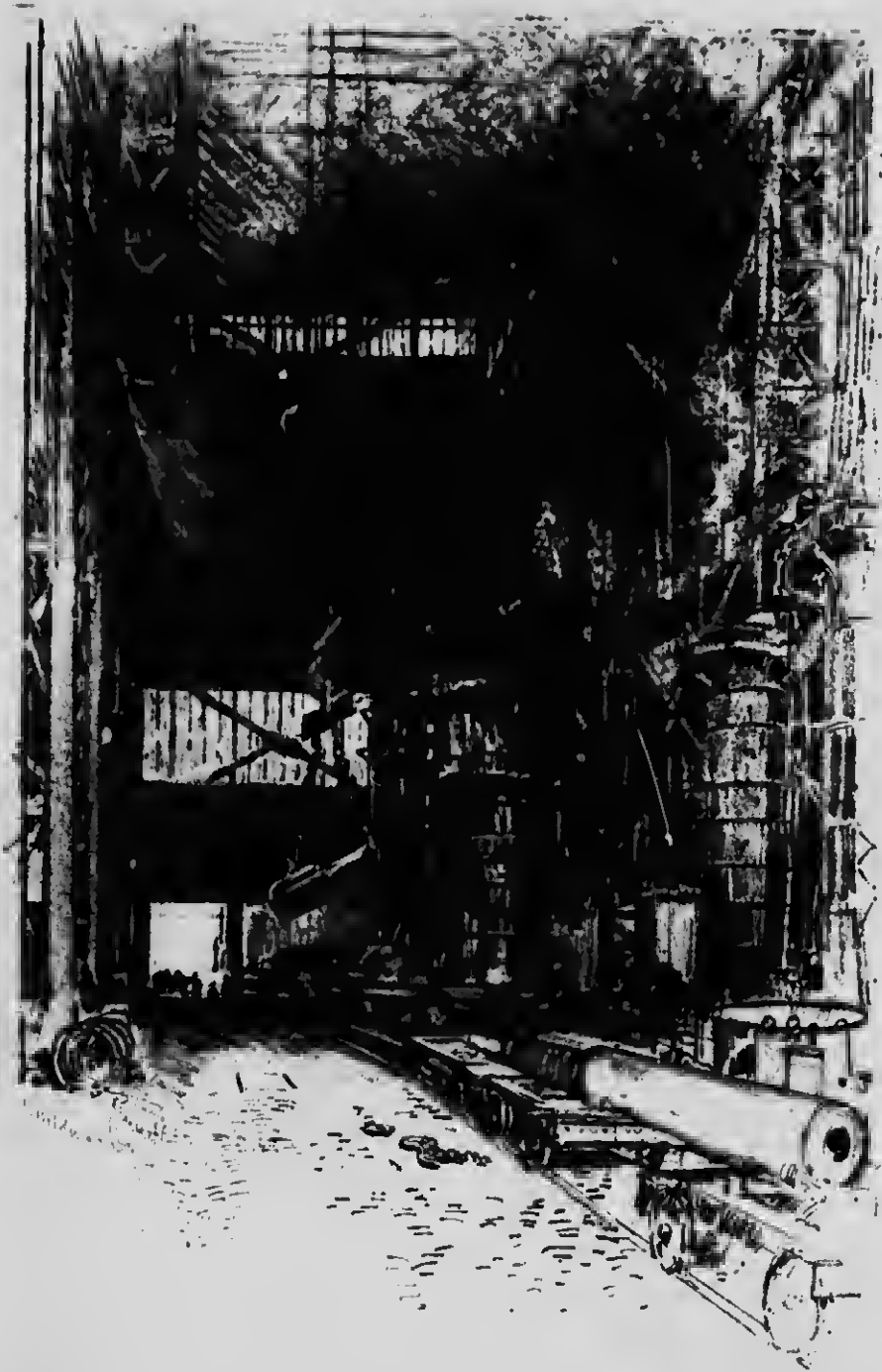


XXXV

THE NEW GUN-PIT

XXXV THE NEW GUN-PIT

**T**HE new pits are like the old, only they are in a great hall, and instead of monstrous forms, there are marvellous effects—suggestions in mighty, lofty vagueness.







**XXXVI**  
**BRINGING IN THE GUN**

### XXXVI BRINGING IN THE GUN

**O**N one side was the river, on the other "the bank"; between, the glass and iron palace where the great turret was being built. And as I drew and wanted something to show the right and the height of the building, the engine dragged in a gun to be fitted in the turret and my subject was before me.



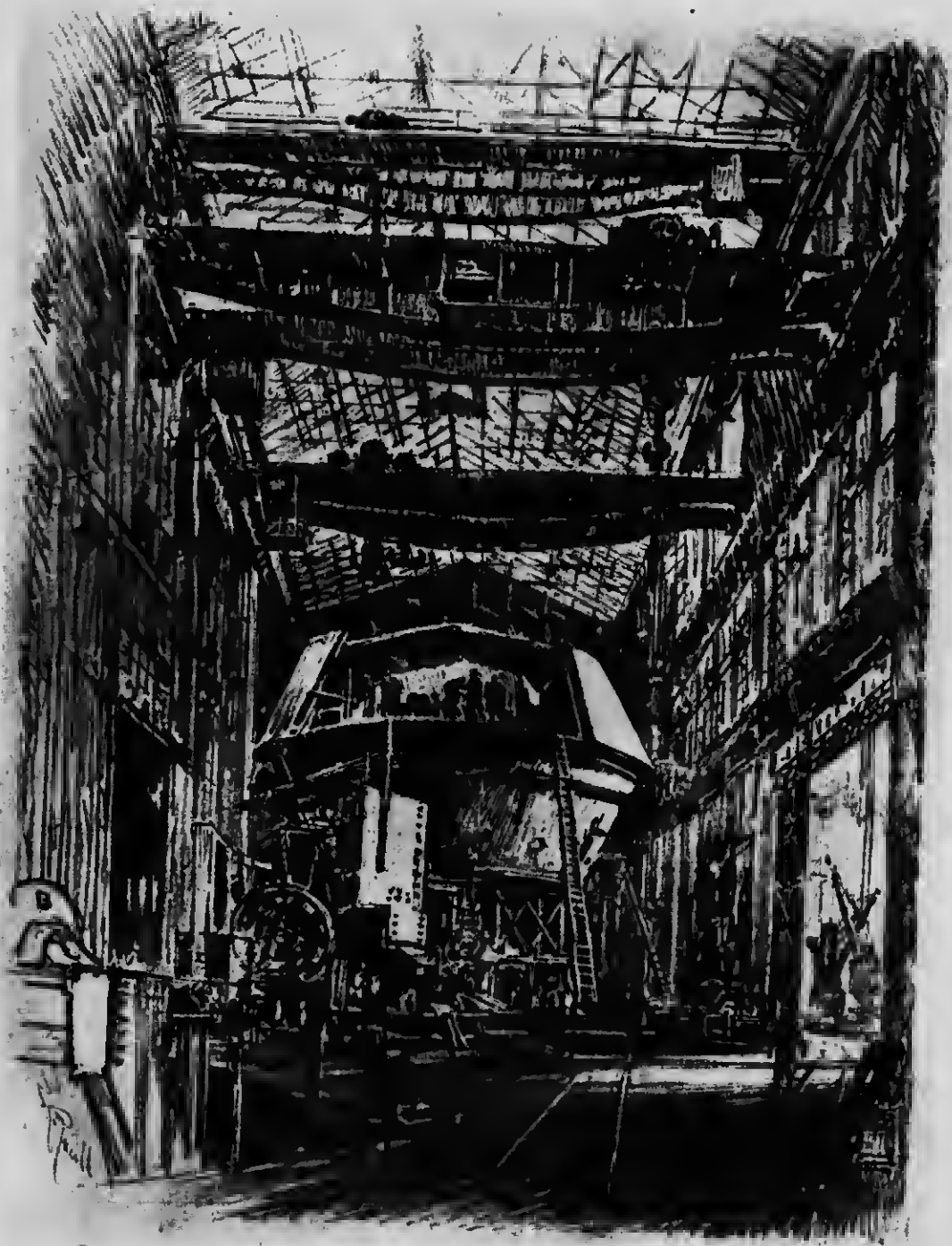


XXXVII

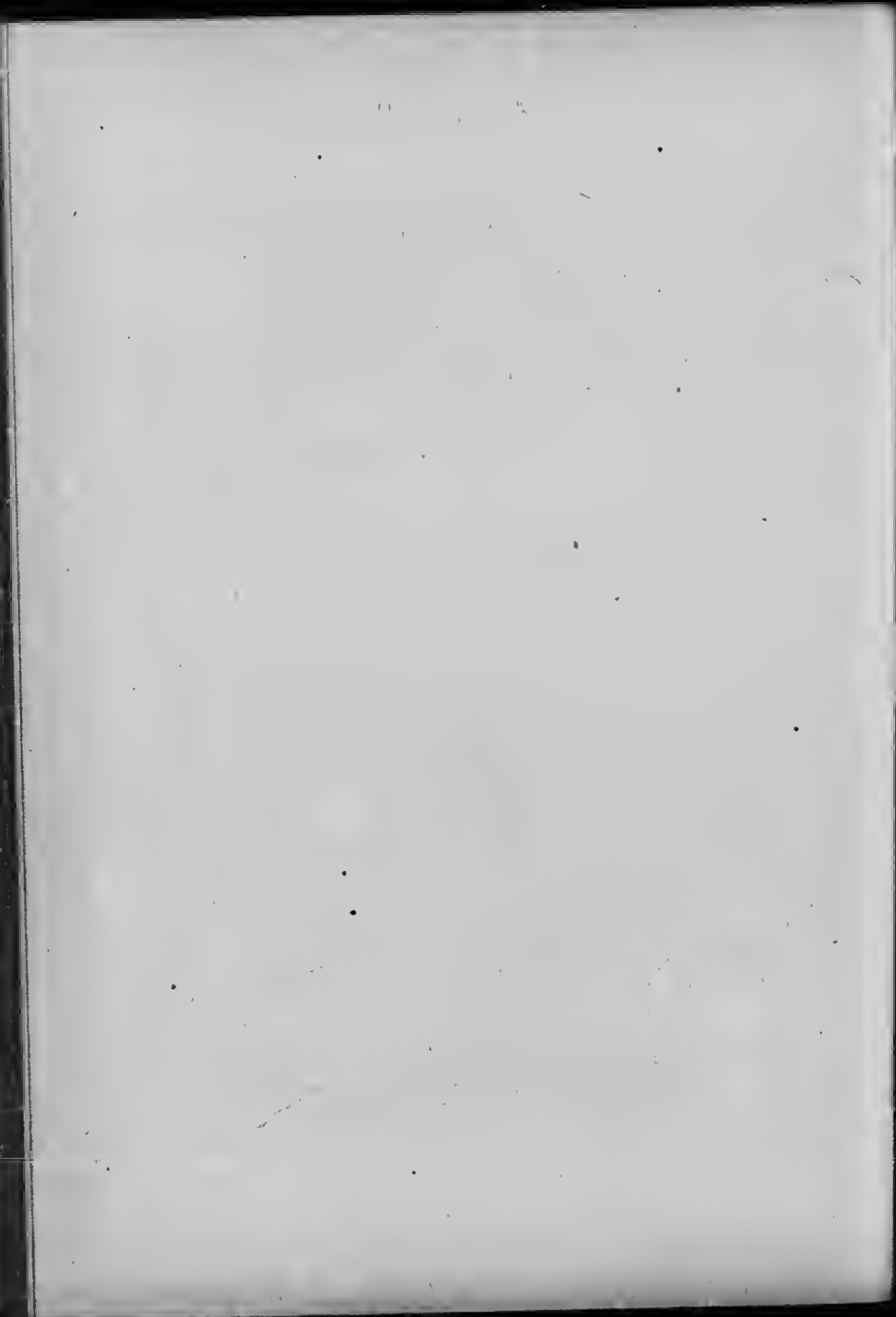
BUILDING THE GREAT TURRET

### XXXVII BUILDING THE GREAT TURRET

**S**TORY above story, all glass and iron, rises the shop where the great turrets ere built, and below the floor in deep pits their bases stand. This is the other end of the shop in the previous picture. The open part of the turret made a design—the Pediment of War and Labour. Here was the Greek idea carried out by British workmen, and no British artist has ever seen it. It was left to me. But from something of this sort in Greece, Greek artists got their scheme of decoration when they were building their temples.



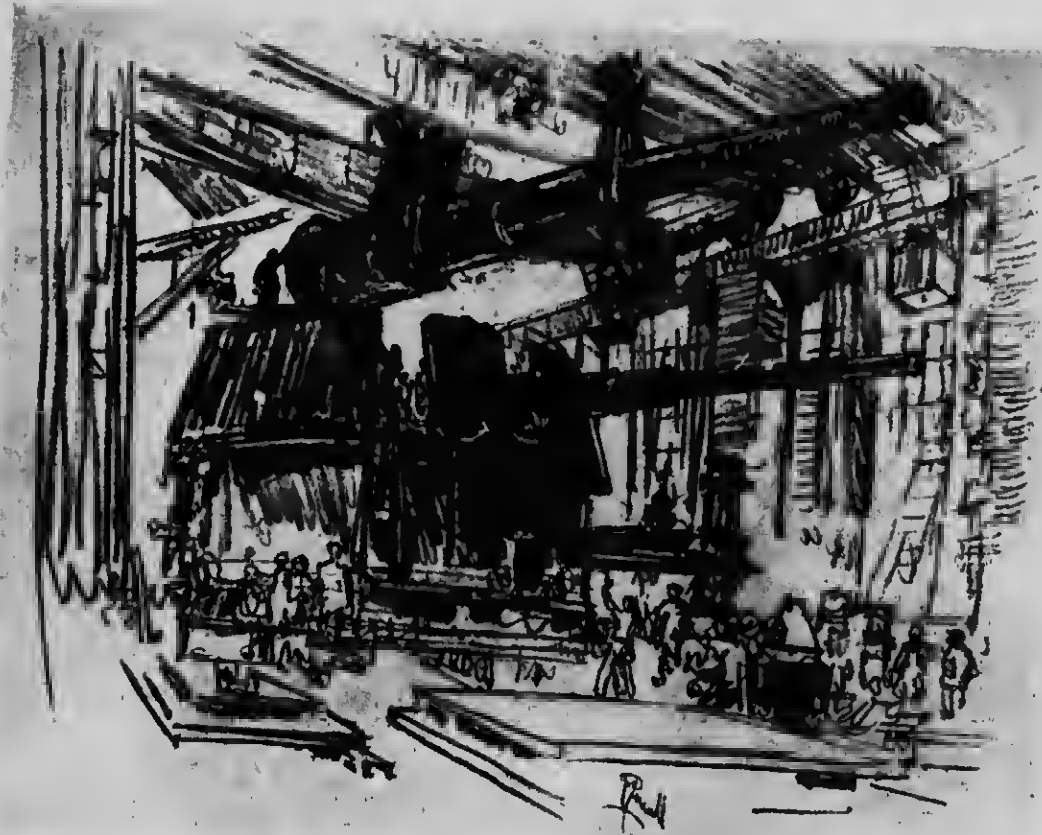


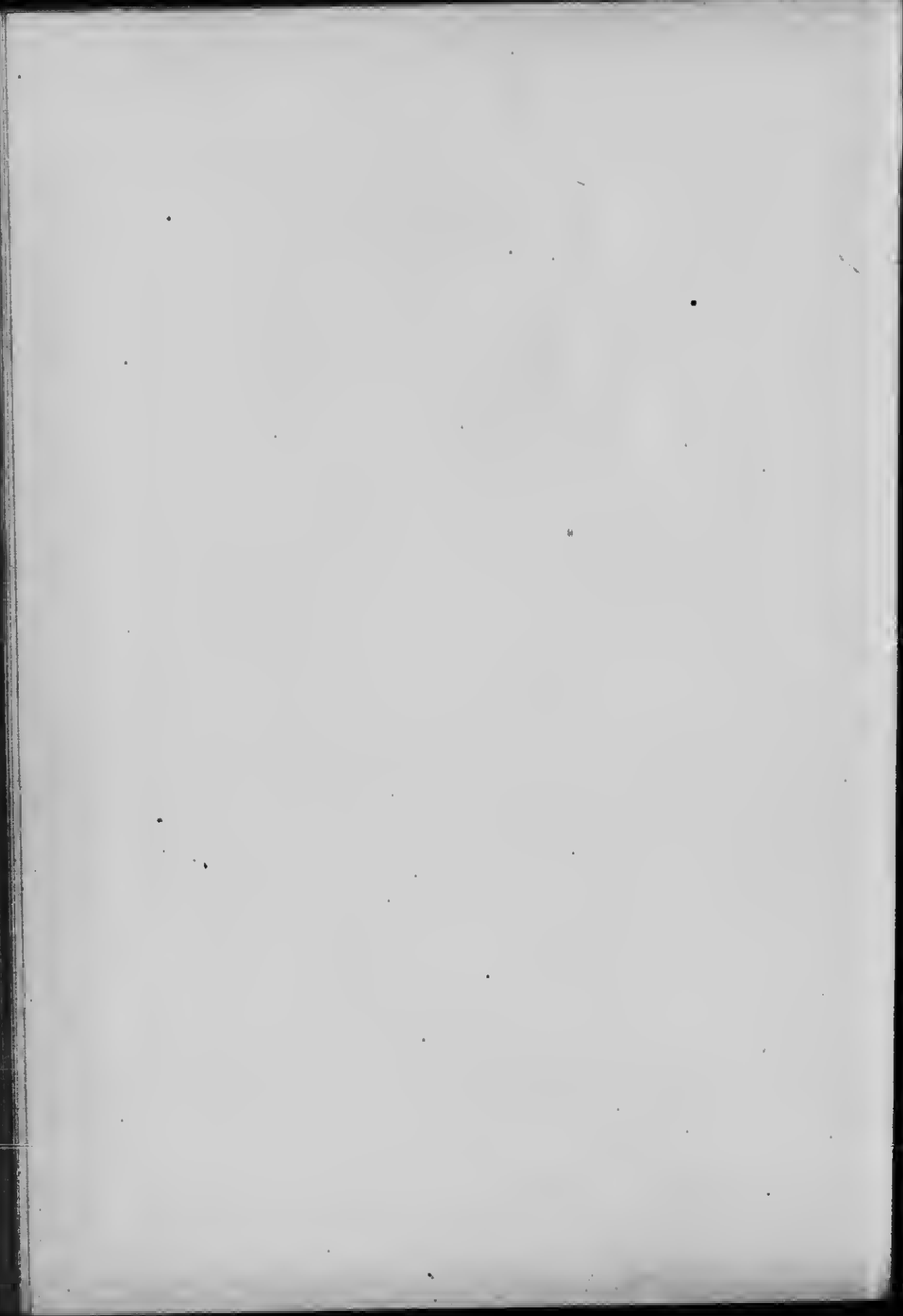


**XXXVIII**  
**FITTING GUNS IN TURRETS**

### XXXVIII FITTING GUNS IN TURRETS

**I** SAW these smaller guns being fitted in a turret in another shop. They are put in and then the turret is tried. When I saw it the whole floor was covered with parts: it was like a watchmaker's table magnified a million times. The parts were all behind me and the authorities did not seem to want me to draw them. This is the same subject that I found at Essen but very different.





XXXIX

THE SHOPS AT NIGHT. CHANGING  
SHIFTS

**XXXIX THE SHOPS AT NIGHT. CHANGING  
SHIFTS**

**B**LACK was the bridge, black the crowd crossing it, black the crowded trams. The blue-white light glowed from the ever-working shops, and the lights upon the cranes by the river-side, and on the railroad tracks, suggested the workseape by their ever winking, twinkling lines and groups and dots and masses of lamps.



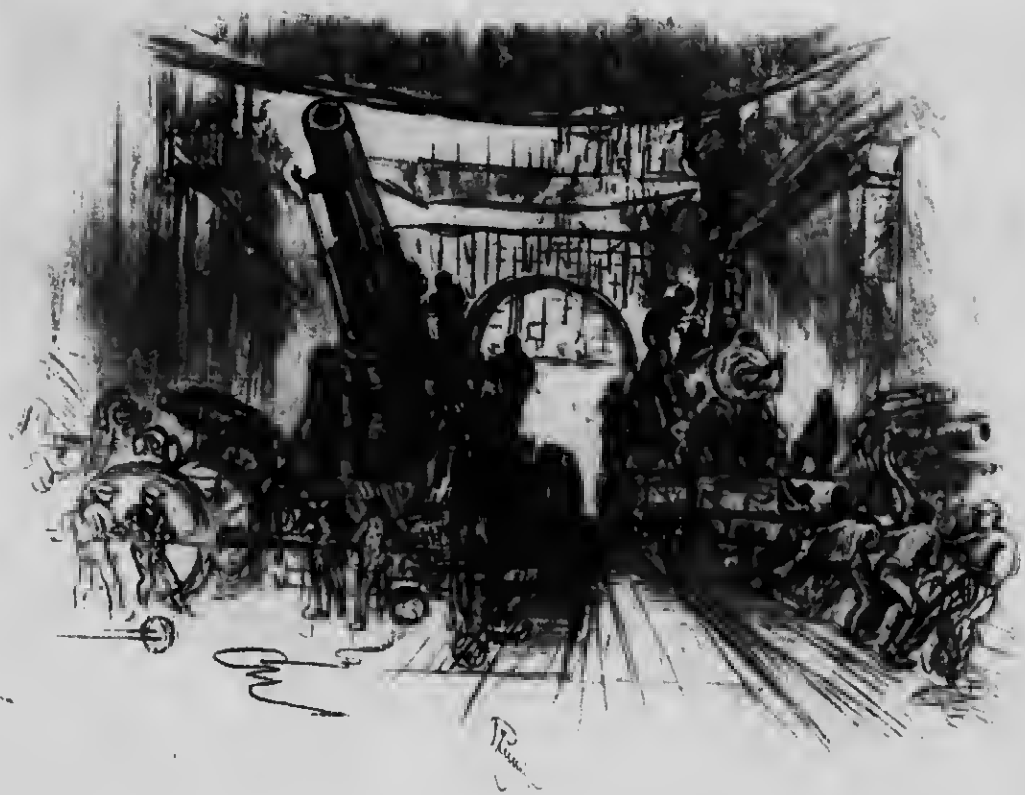




**XL**  
**READY FOR WAR**

## **XI. READY FOR WAR**

**T**HE mounted howitzer was getting its finishing touches; it had been tested, and soon the great doors would open, the engine puff in, carry it off on its long journey to the front to do its infernal work—a triumph of misdirected energy and skill, for “War is Hell.”





XLI

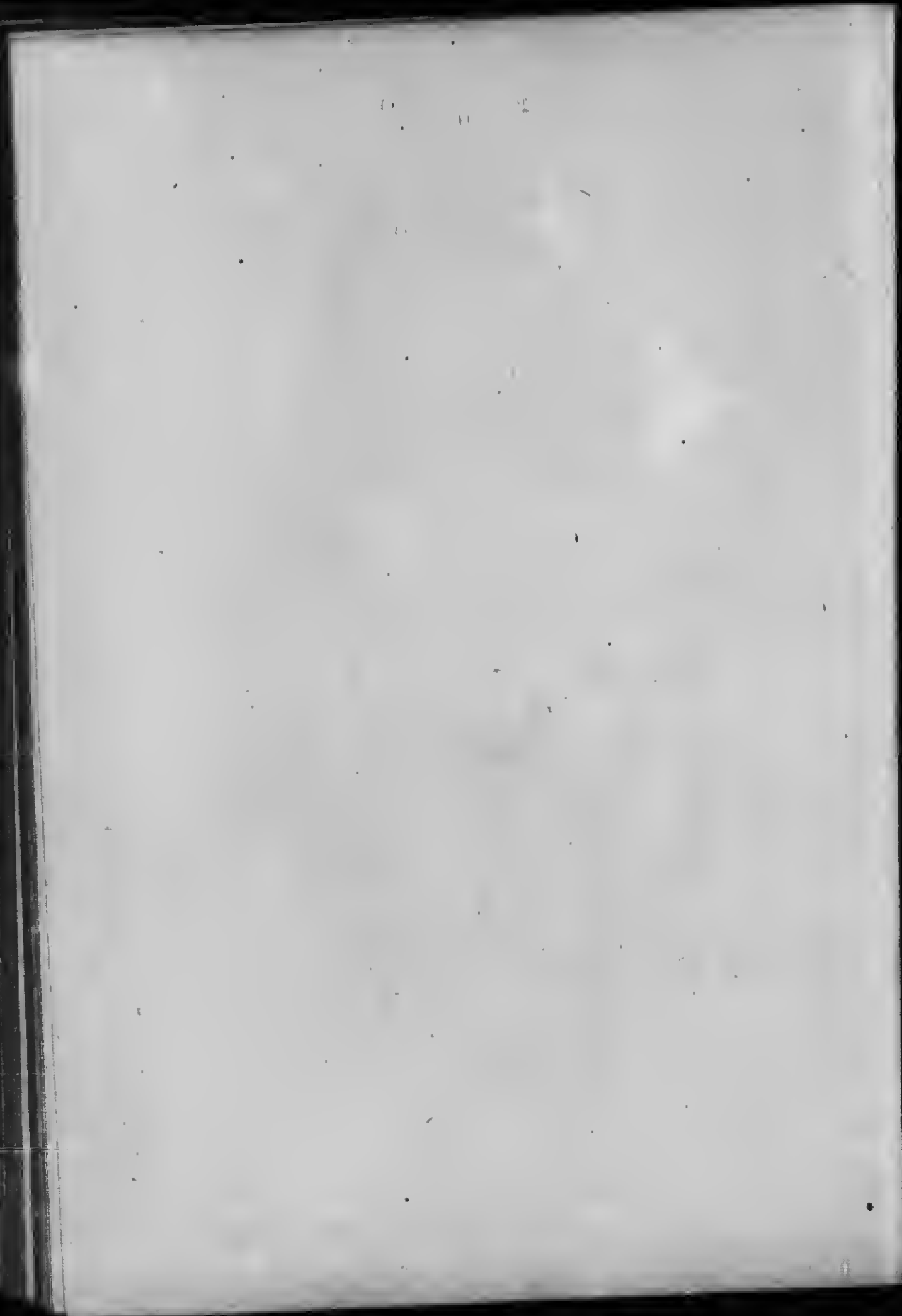
TAKING THE BIG GUN AWAY

## XLI TAKING THE BIG GUN AWAY

**W**HEN this big gun had been fitted, and tried in its turret, it was again taken out, carried to the river-side, and, between them, the four cranes put it on a barge, and that carries it off to its ship, or its carriage.







**XLII**  
**FIVE O'CLOCK**

**XLII FIVE O'CLOCK**

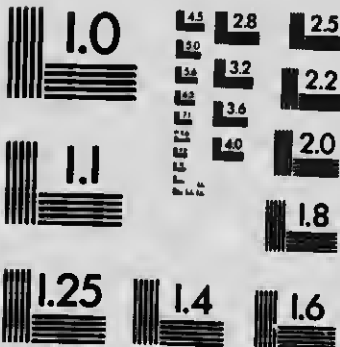
**W**ITH the first note of the buzzer, the workers come out, a solid mass; you fly from thousands and thousands of them, and when they have gone another mass swarms in, for the work never stops, the mills never rest, and every eight hours the same thing happens.





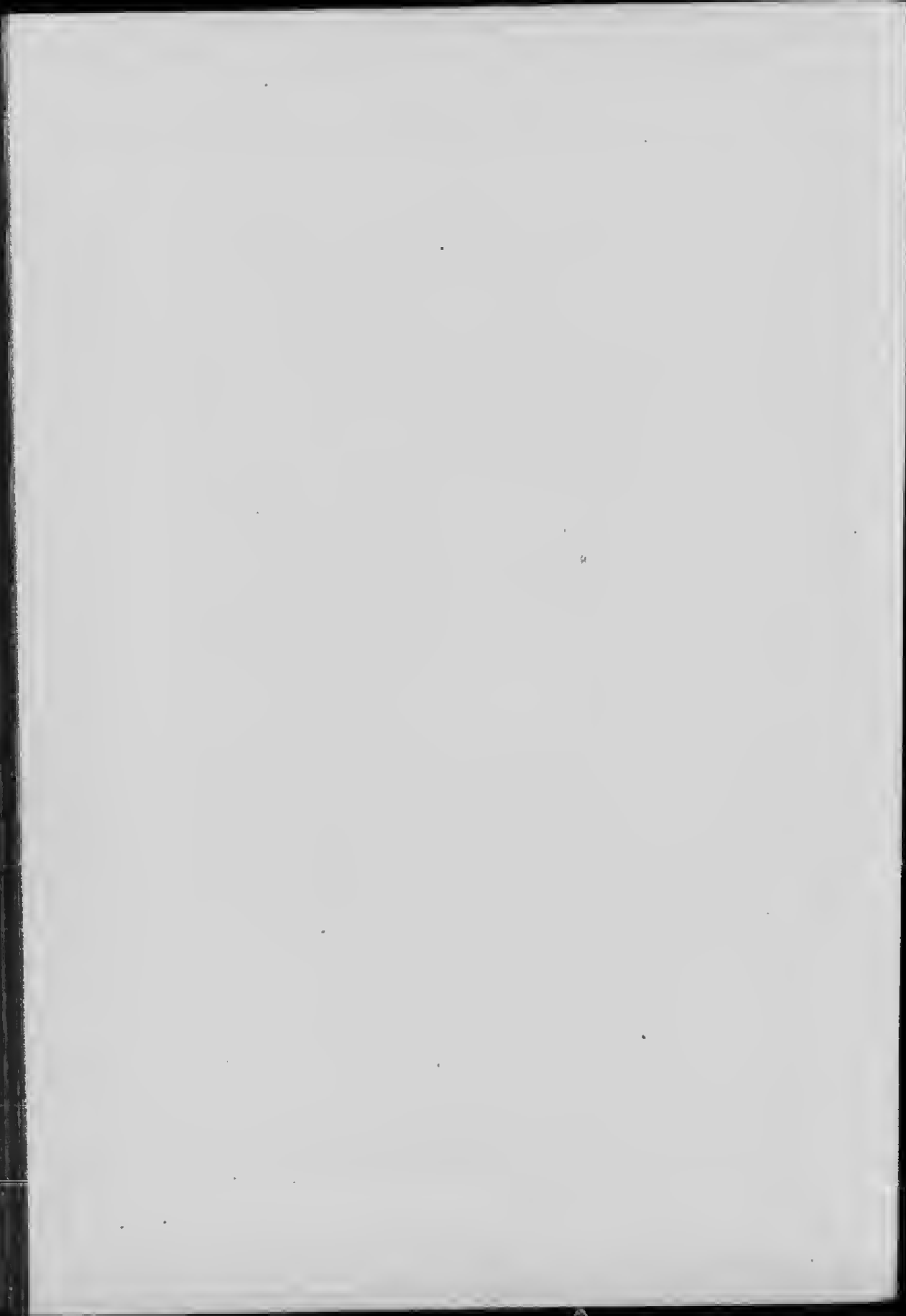
# MICROCOPY RESOLUTION TEST CHART

(ANSI and ISO TEST CHART No. 2)



**APPLIED IMAGE Inc**

1853 East Main Street 14609 USA  
Rochester, New York  
(716) 482-0300 - Phone  
(716) 288-5989 - Fax

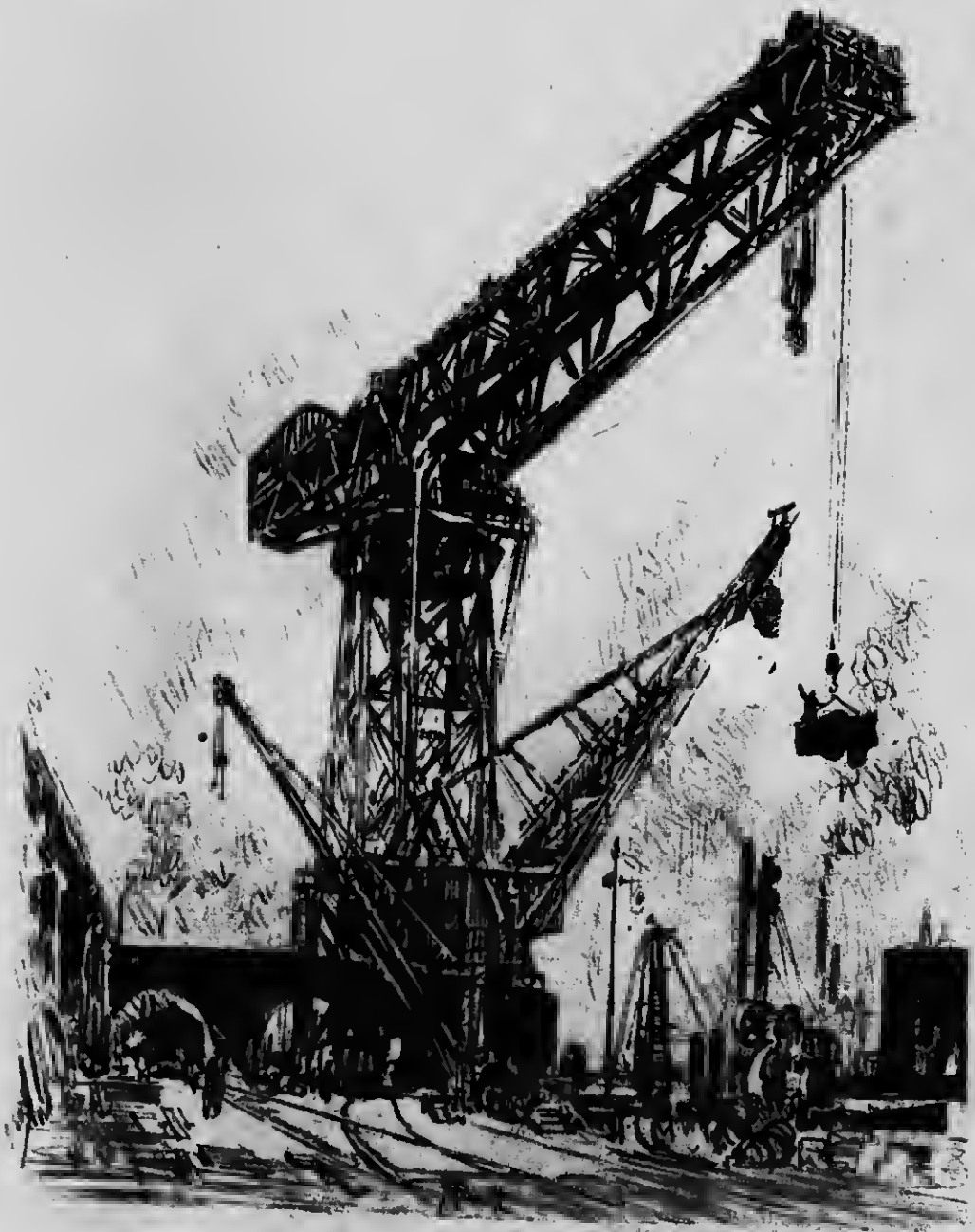


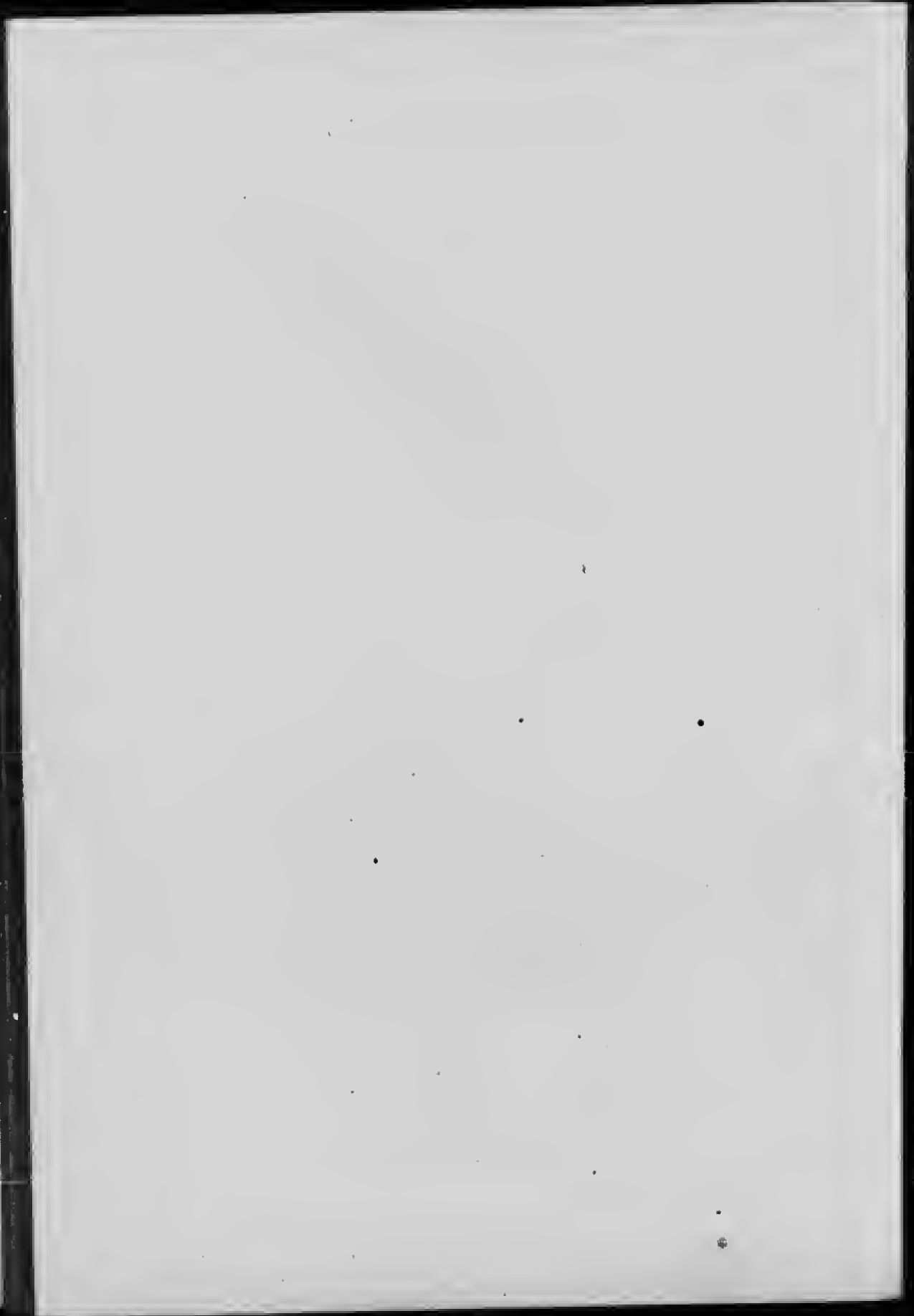
**XLIII**  
**MADE IN GERMANY. THE GREAT**  
**CRANE**



**XLIII MADE IN GERMANY. THE GREAT  
CRANE**

**I** KNEW it. I had drawn the twin brother of this monster two years before in the docks at Hamburg, and when I asked the engineer if it was not so, he said it was, and also pointed out how the smaller cranes, put up previously, showed the growth of the Wonder of Work.

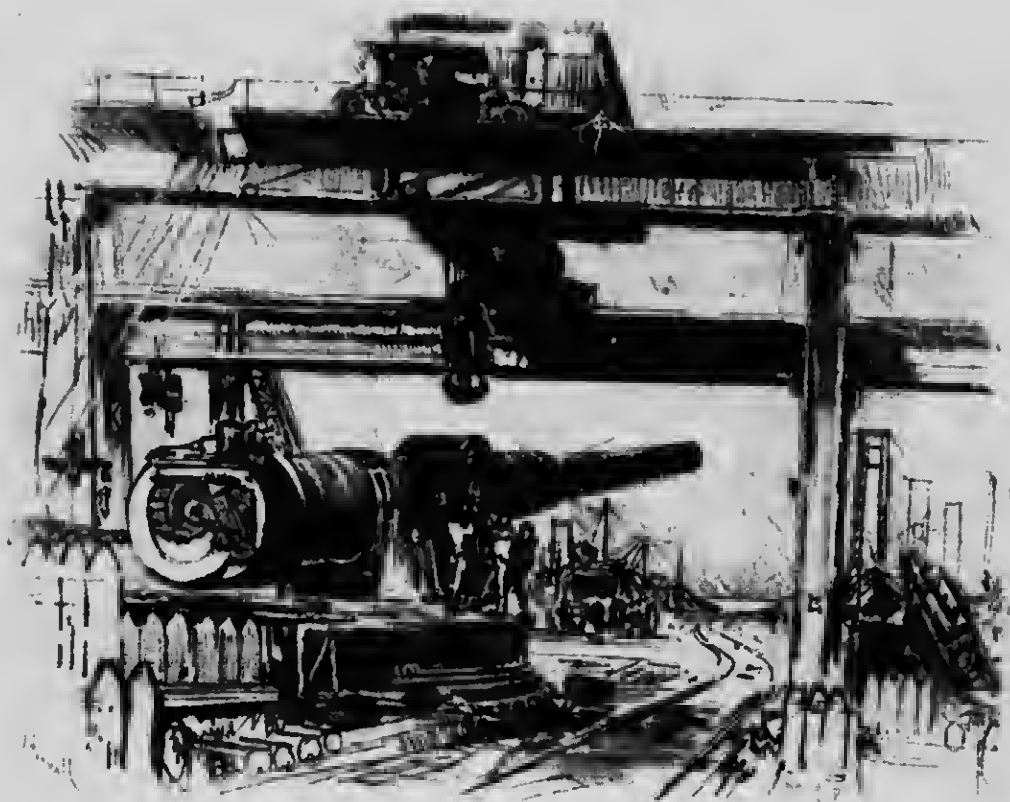


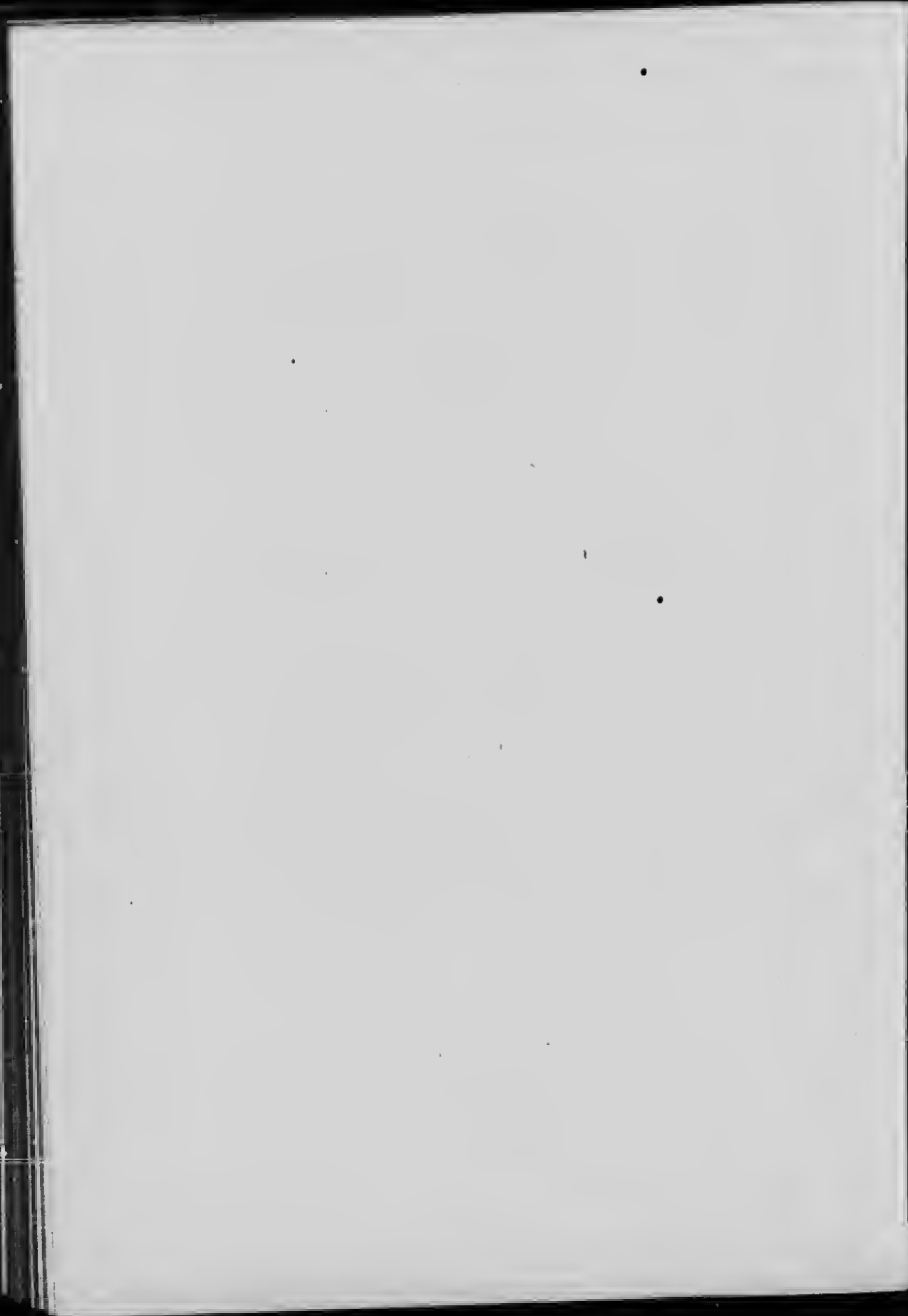


**XLIV**  
**GUN-TESTING**

#### XLIV GUN-TESTING

**T**HEY took me to the testing-ground, but, on a day when there was no testing, for they told me I should have to go into a bomb-proof cellar, put stoppers in my ears, and keep my mouth open, and then would see nothing, and that there was nothing, anyway, but a puff of vapour, to see. So I went when they were getting the gun ready to test and made the drawing.





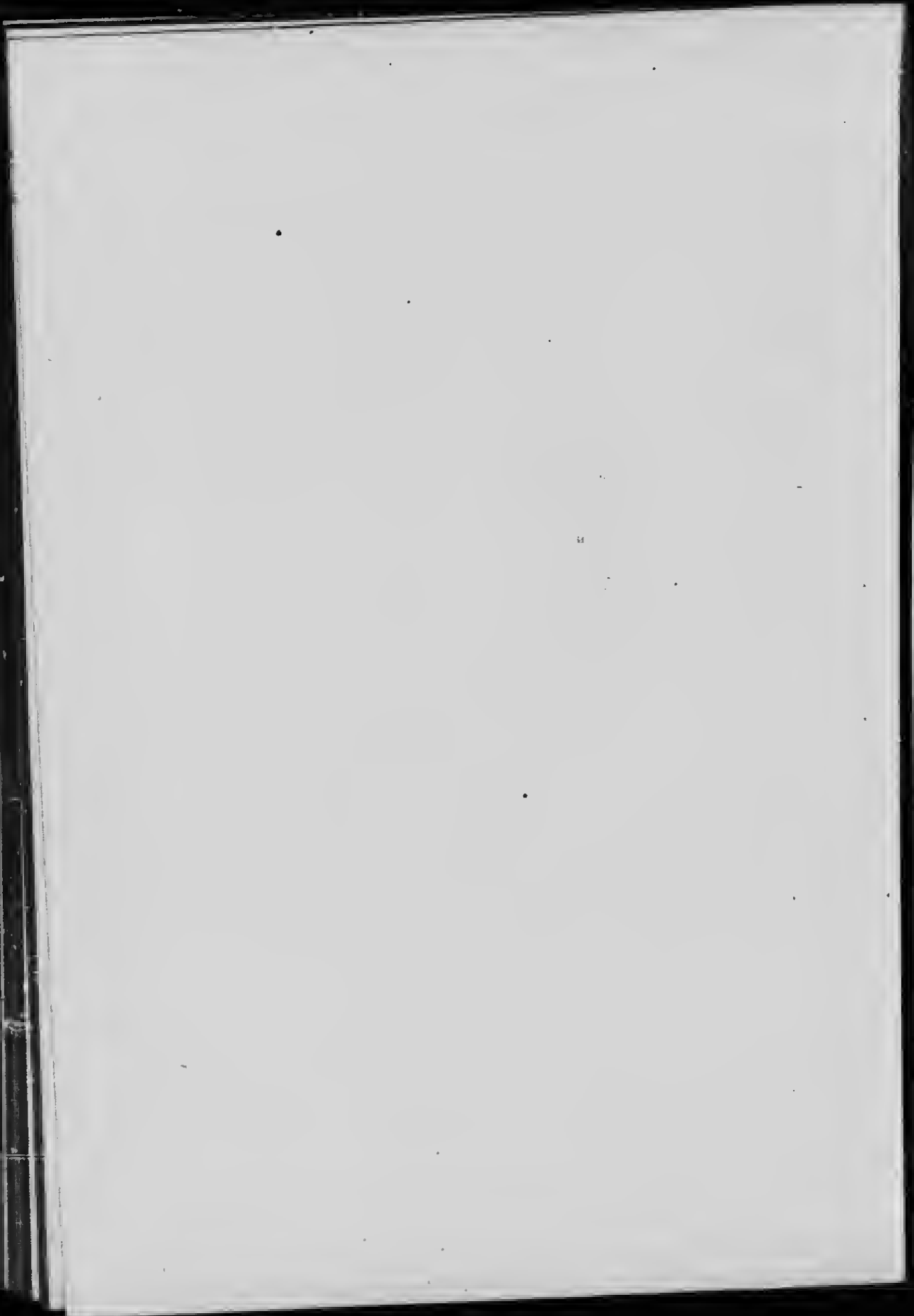
**XLV**  
**MUNITIONS CITY**



## **XLV MUNITIONS CITY**

**H**OW wonderful is all this energy, this smoke, this colour. How the city set upon its hills reveals and conceals itself—yet its frown is terrible. Lately I read an art book which contained a few lines of description of these cities and the country where they are, for in order to show "the terror" of the land, the author wrote of "the black-smirched valleys," "the gloomy sky" under which "the train darted through forests of smoking chimney-stacks" and over grimy, trough-like streets. That these might be wonderful, pictorial, magnificent, the record of our age, never occurred to him; it has never occurred to any writer but Wells.



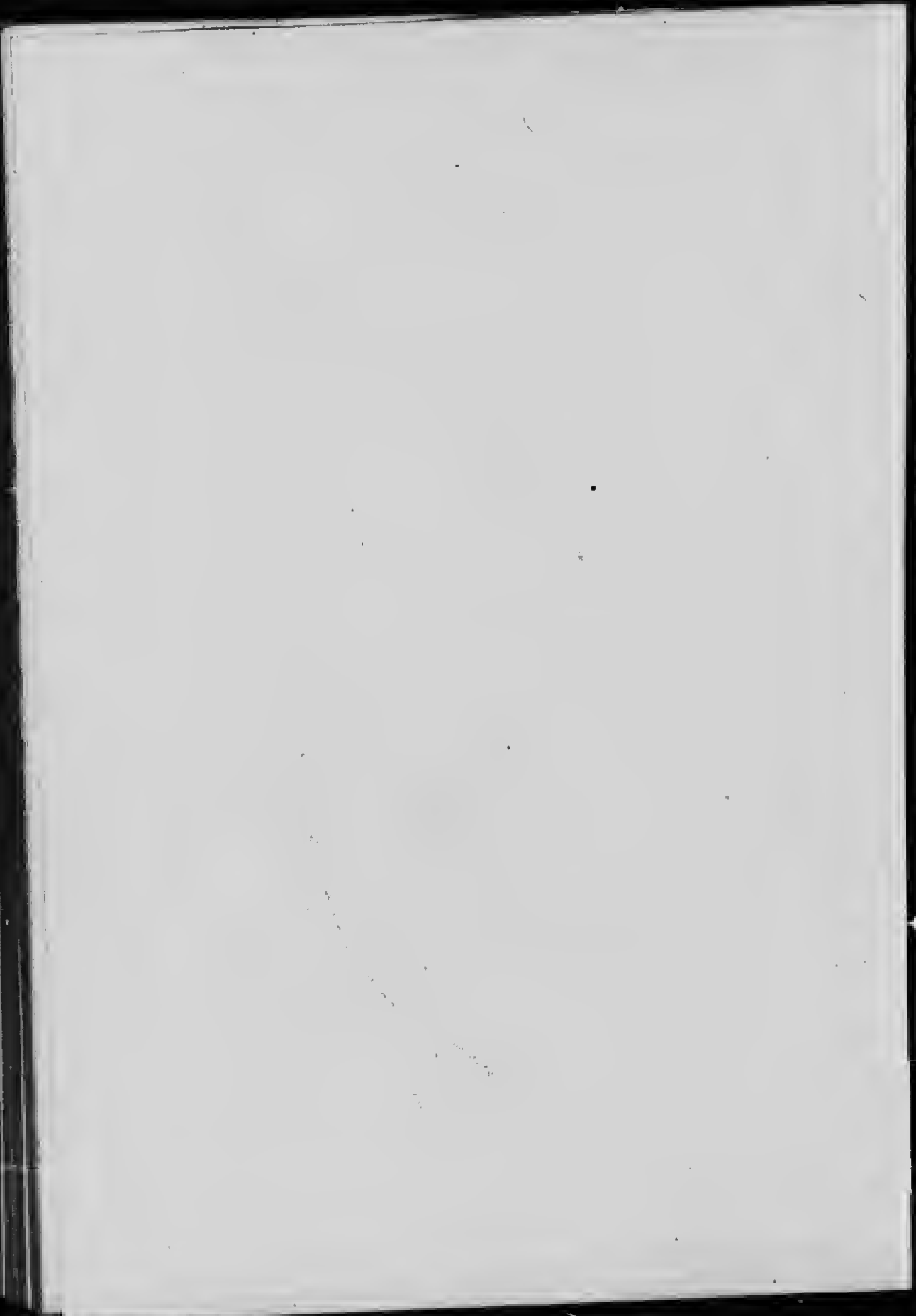


**XLVI**  
**BY-PRODUCTS**

## XLVI BY-PRODUCTS

**T**HE new sort of coke ovens are the most pictorial subjects I saw—when they are at work—because they are all effect, all bathed and wrapped in fume and steam and smoke, and these make for me, and give to me, my motives, though there is great work behind them.



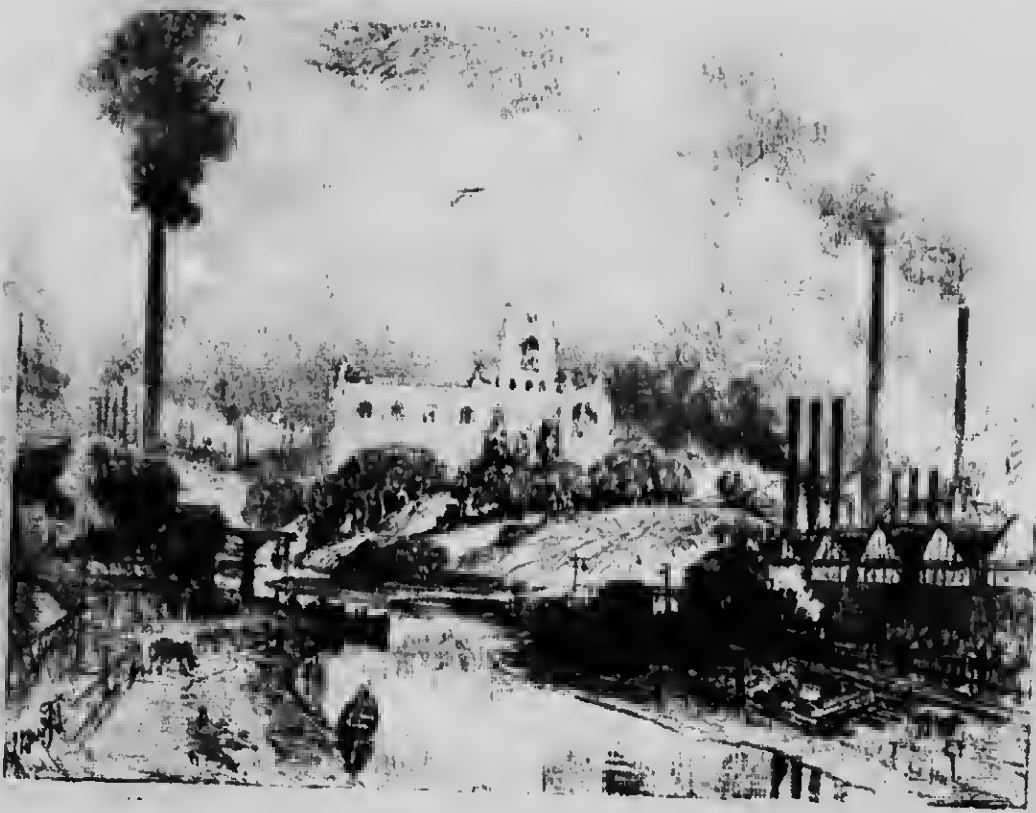


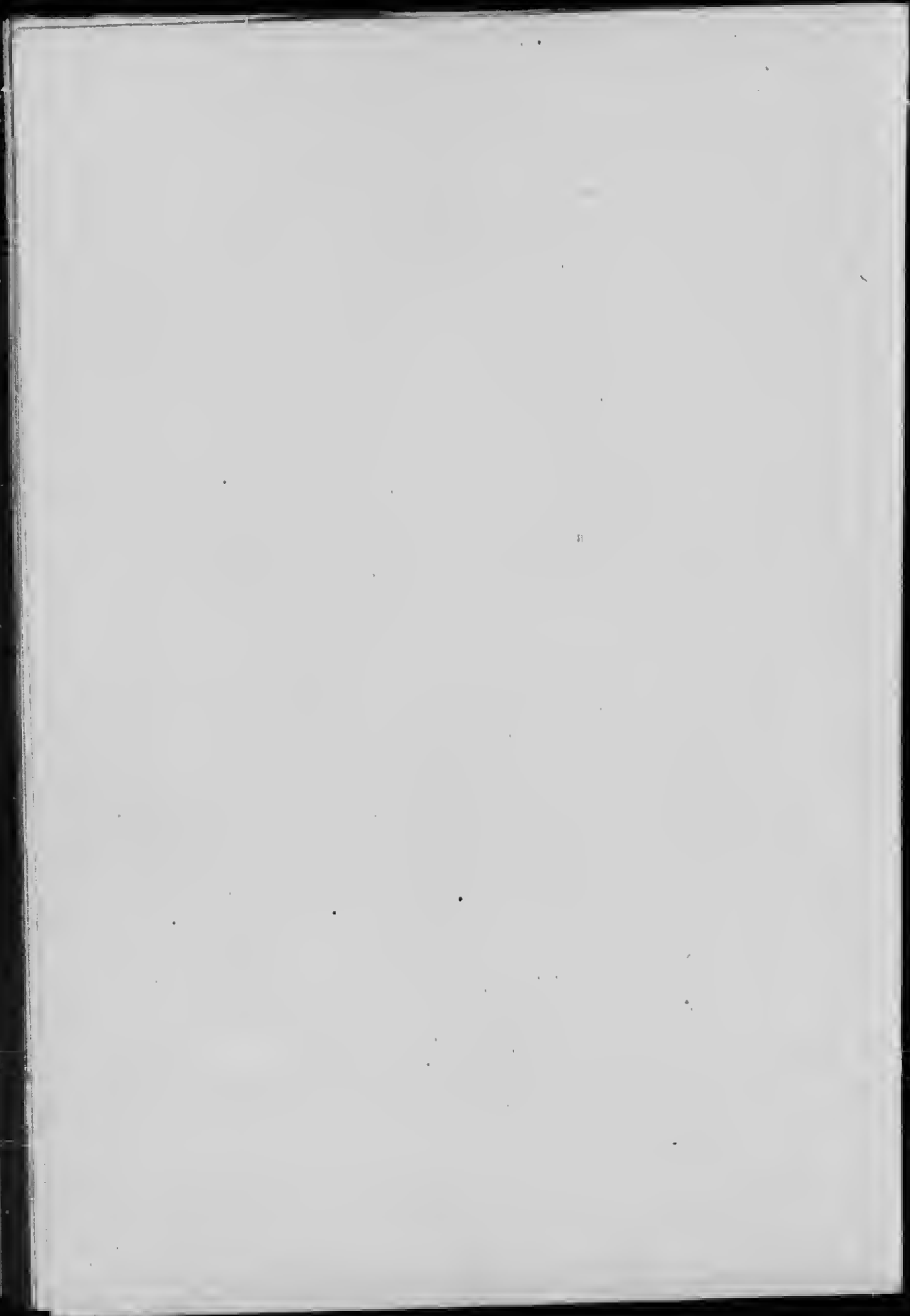
**XLVII**  
**PEACE AND WAR**



## XLVII PEACE AND WAR

**W**HAT would Ruskin have said to this? The beautiful old abbey, built in, surrounded by, yet still dominating the munition factories? What would he have said to the aeroplane noisily soaring over it? I neither know nor care. I only know it was a fine composition as I saw it that morning, and so I drew it.

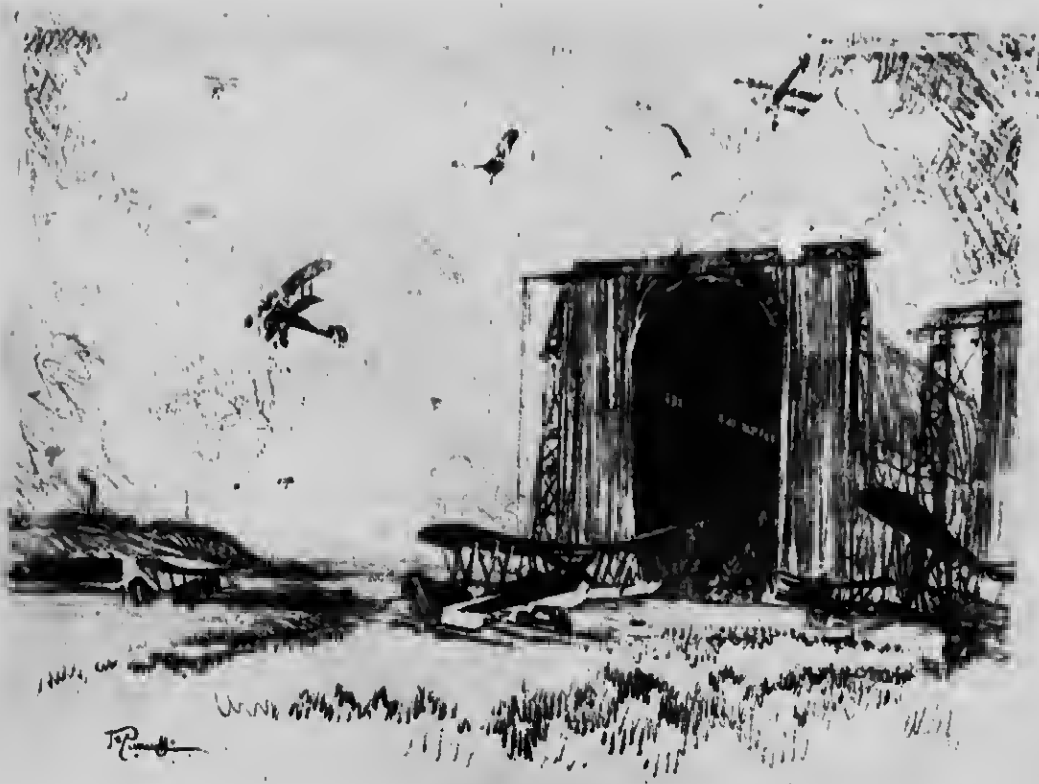




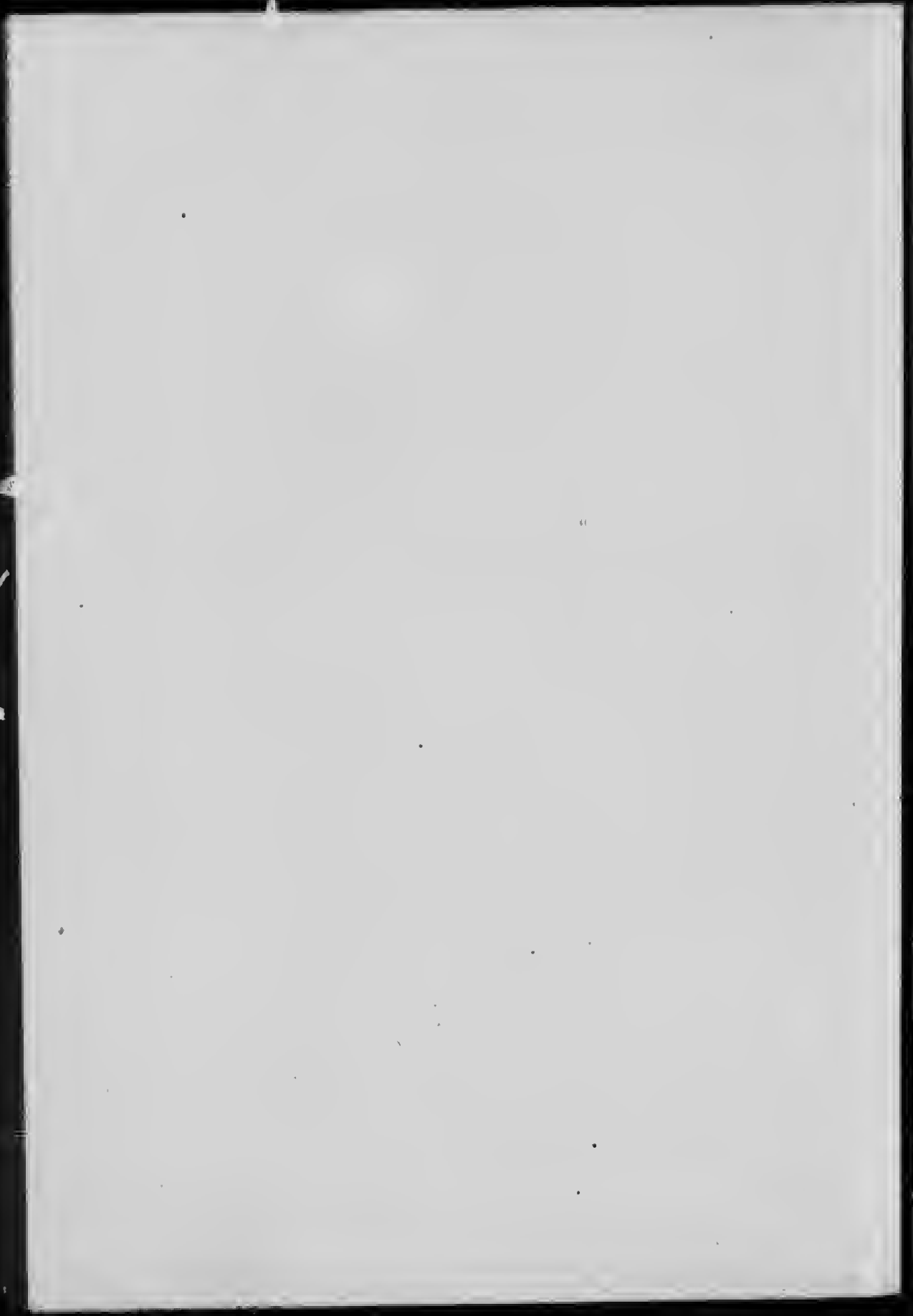
**XLVIII**  
**THE BALLOON-SHED**

## XLVIII THE BALLOON-SHED

**A**ROUND and about, all over the plain, the birds and bugs lie at rest, their wings making wonderful lines against the sky, wonderful colours on the grass. Then they stir and hum, and skim over the ground and roar, and rise in the air and sail away, and only the huge empty shed remains and the long box on a lorry, which too is leaving with the sign on it, "Mesopotamia, via Cardiff," whither another air-machine is being shipped.



Small vertical text on the right edge of the page, likely a page number or reference code.



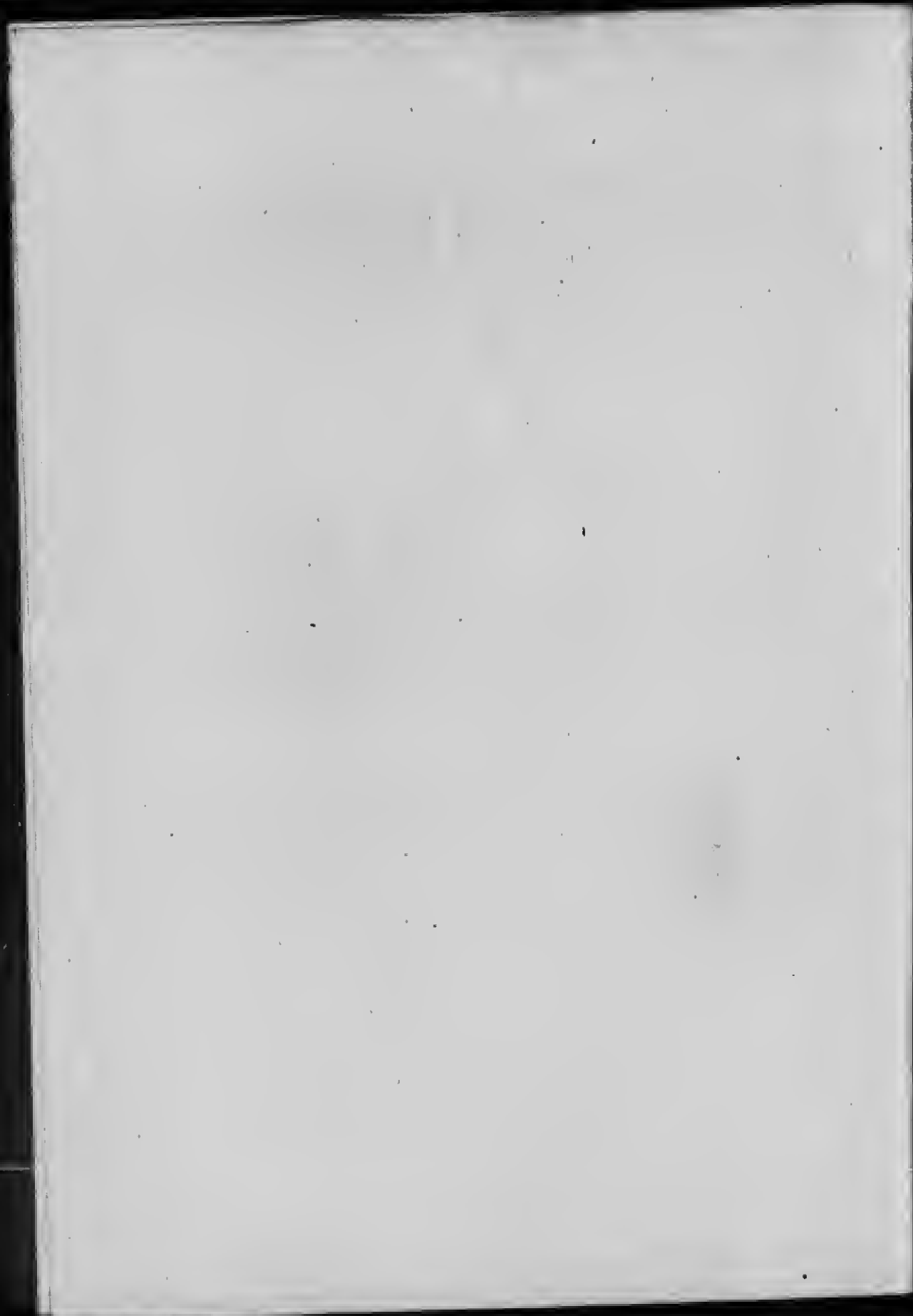
**XLIX**  
**THE BIG BUG**



**XLIX THE BIG BUG**

**H**ORRIBLE and awful it stood in its lair—ready  
to start on its voyage of destruction.





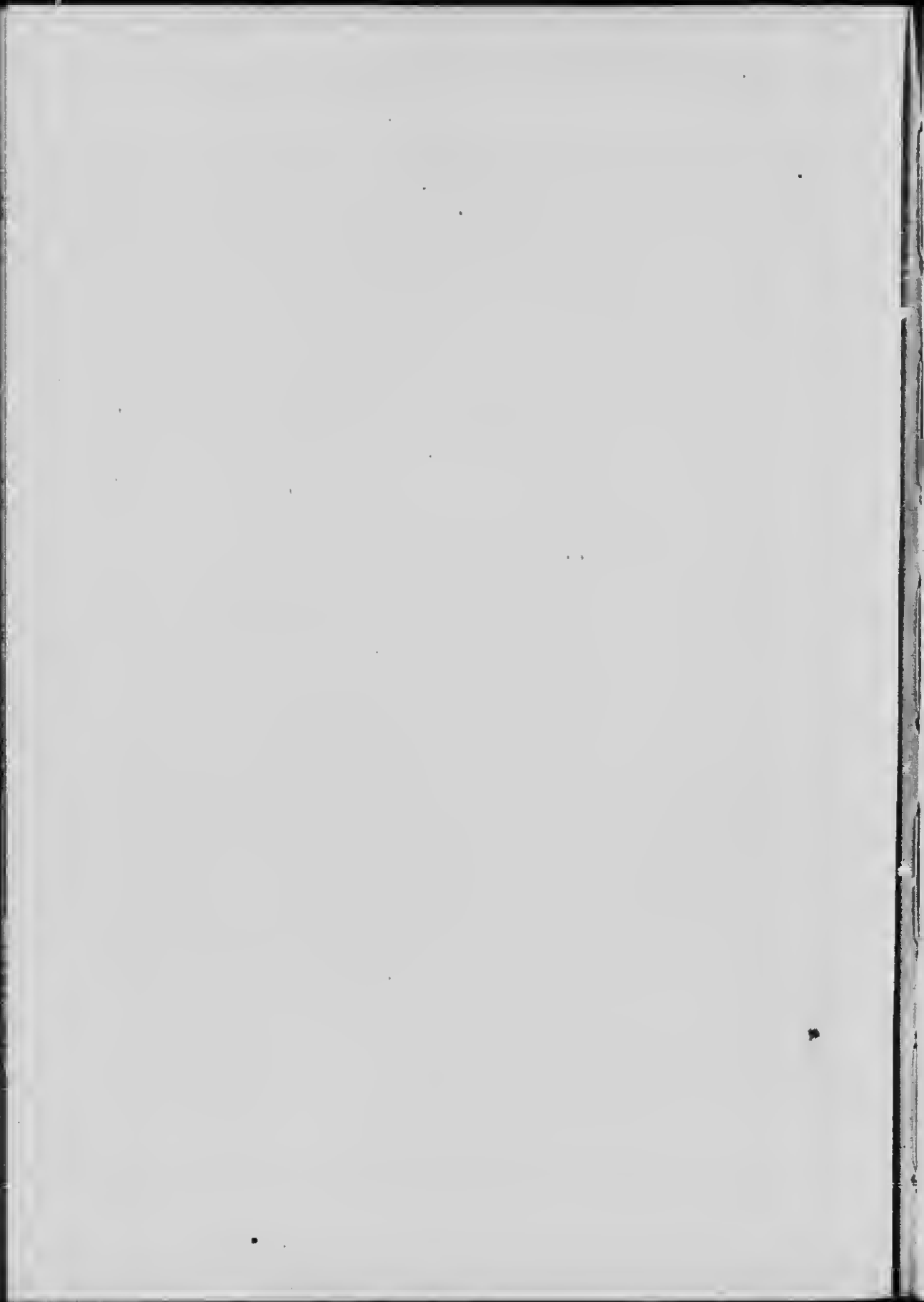
L

THE GREAT CHIMNEY : THE MOTOR  
PARK

## L THE GREAT CHIMNEY: THE MOTOR PARK

**I** HAVE drawn this great chimney for thirty-four years, but I never grow tired of it or of the town where it stands, for with every hour of the day and night it changes—really every minute the smoke clouds are new in form and colour. The park of motor-lorries was new—a fleet of them—collecting munitions of war and carrying them off to feed the War God.





LI  
SHOT



LI SHOT

**T**HIS is what I see every night out of my window—  
have seen for two years and some months, and  
would give anything never to see again.

Yet Wells says the drawing of the shot-tower is the  
only commonplace subject among them all.



REPRODUCED AND PRINTED AT  
THE COMPLETE PRESS  
WEST NORWOOD  
LONDON



