

# MAKING

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## IRON AND STEEL



INDEPENDENT MILLS  
IN PITTSBURGH, 1820-1920



JOHN N. INGHAM

# Making Iron And Steel Independent Mills In Pittsburgh 1820 19

**Robert B. Gordon**



## **Making Iron And Steel Independent Mills In Pittsburgh 1820 19:**

**Making Iron Steel** John N. Ingham, 2015-12-18 John Ingham's in depth examination of small and mid sized Pittsburgh steel mills during the age of Carnegie challenges business historians traditional view that nineteenth century industrial development followed a linear pattern progressing from a handicraft stage to large scale mass production In the steel industry this pattern was best exemplified by Andrew Carnegie but while Carnegie's pattern became the stereotype for the entire industry Ingham argues that his case was actually unique In *Making Iron and Steel* John Ingham introduces the intricate densely textured world of nineteenth century entrepreneurs He observes how those in Pittsburgh handled Carnegie's challenge and the challenge of the mammoth large batch mass production techniques he pioneered He also studies those few who compete directly with Carnegie as well as the larger number who found quieter more isolated corners of the market in which they practiced a slower steadier but highly successful form of market response Finally Ingham shows that the owners of the small iron and steel companies exercised considerable social and cultural influence constituting a large proportion of Pittsburgh's social upper class and influencing the boards of directors of many major manufacturing and banking institutions This in turn translated into political and cultural influence *Making Iron and Steel* is one of the few business history studies that looks at the masses of smaller and medium sized businessmen and the world in which they worked John N Ingham is Professor of History at the University of Toronto His previous works include *Contemporary American Business Leaders* *The Biographical Dictionary of American Business Leaders* and *The Iron Barons* *Pittsburgh Surveyed* Maurine Greenwald, Margo Anderson, 1996-10-15 At the beginning of the century Pittsburgh was the center of one of the nation's most powerful industries iron and steel It was also the site of an unprecedented effort to study the effects of industry on one American city The Pittsburgh Survey 1909 1914 brought together statisticians social workers engineers lawyers physicians economists labor investigators city planners and photographers They documented Pittsburgh's degraded environment corrupt civic institutions and exploited labor force and made a compelling case in four books and two collections of articles for reforming corporate capitalism In its literary history and visual power breadth and depth the Pittsburgh Survey remains an undisputed classic of social science research Like the Lynds Middletown studies of the 1920s the Survey captured the nation's attention and Pittsburgh came to symbolize the problems and way of life of industrial America as a whole A landmark volume in its own right this book of thirteen essays examines the accuracy and impact of the Pittsburgh Survey both on social science as a discipline and on Pittsburgh itself It also places the Survey firmly in the context of the social reform movement of the early twentieth century **Making Industrial Pittsburgh Modern** Edward K. Muller, Joel A. Tarr, 2019-10-22 Pittsburgh's explosive industrial and population growth between the mid nineteenth century and the Great Depression required constant attention to city building Private profit oriented firms often with government involvement provided necessary transportation energy resources and suitable industrial and residential sites Meeting these requirements

in the region's challenging hilly topographical and riverine environment resulted in the dramatic reshaping of the natural landscape. At the same time, the Pittsburgh region's free market private enterprise emphasis created socio-economic imbalances and badly polluted the air, water, and land. Industrial stagnation temporarily interrupted by wars and then followed deindustrialization inspired the formation of powerful public-private partnerships to address the region's mounting infrastructural, economic, and social problems. The sixteen essays in *Making Industrial Pittsburgh Modern* examine important aspects of the modernizing efforts to make Pittsburgh and Southwestern Pennsylvania a successful metropolitan region. The city-building experiences continue to influence the region's economic transformation, spatial structure, and life experience.

**Steel and Steelworkers** John Hinshaw, 2012-02-01 *Steel and Steelworkers* is a fascinating account of the forces that shaped Pittsburgh's big business and labor through the city's rapid industrialization in the mid-nineteenth century, its lengthy era of industrial maturity, its precipitous deindustrialization toward the end of the twentieth century, and its reinvention from hell with the lid off to America's most livable post-industrial city. Hinshaw examined a wide variety of company union and government documents, oral histories, and newspapers to reconstruct the steel industry and the efforts of labor, business, and government to refashion it. A compelling report of industrialization and deindustrialization in which questions of organization, power, and politics prove as important as economics. *Steel and Steelworkers* shows the ways in which big business and labor helped determine the fate of steel and Pittsburgh.

**American Iron, 1607-1900** Robert B. Gordon, 2020-03-24 Winner of the Professional and Scholarly Publishing Award for General Engineering from the Association of American Publishers. Originally published in 1996. By applying their abundant natural resources to ironmaking early in the eighteenth century, Americans soon made themselves felt in world markets. After the Revolution, ironmakers supplied the materials necessary to the building of American industry, pushing the fuel efficiency and productivity of their furnaces far ahead of their European rivals. In *American Iron, 1607-1900*, Robert B. Gordon draws on recent archaeological findings as well as archival research to present an ambitious, comprehensive survey of iron technology in America from the colonial period to the industry's demise at about the turn of the twentieth century. Closely examining the techniques, the hows of ironmaking in its various forms, Gordon offers new interpretations of labor innovation and product quality in ironmaking, along with references to the industry's environmental consequences. He establishes the high level of skills required to ensure efficient and safe operation of furnaces and to improve the quality of iron product. By mastering founding, fining, puddling, or bloom smelting, ironworkers gained a degree of control over their lives not easily attained by others.

**Pittsburgh Rising** Edward K. Muller, Rob Ruck, 2023-05-16 Over 170 years, Pittsburgh rose from remote outpost to industrial powerhouse. With the formation of the United States, the frontier town located at the confluence of three rivers grew into the linchpin for trade and migration between established eastern cities and the growing settlements of the Ohio Valley. Resources, geography, innovation, and personalities led to successful glass, iron, and eventually steel operations. As Pittsburgh blossomed into one of the largest

cities in the country and became a center of industry it generated great wealth for industrial and banking leaders But immigrants and African American migrants who labored under insecure poorly paid and dangerous conditions did not share in the rewards of growth Pittsburgh Rising traces the lives of individuals and families who lived and worked in this early industrial city jammed into unhealthy housing in overcrowded neighborhoods near the mills Although workers organized labor unions to improve conditions and charitable groups and reform organizations often helmed by women mitigated some of the deplorable conditions authors Muller and Ruck show that divides along class religious ethnic and racial lines weakened the efforts to improve the inequalities of early twentieth century Pittsburgh and persist today **A Nation of Steel** Thomas J. Misa,1998-09-04 From the age of railroads through the building of the first battleships from the first skyscrapers to the dawning of the age of the automobile steelmakers proved central to American industry building and transportation In *A Nation of Steel* Thomas Misa explores the complex interactions between steelmaking and the rise of the industries that have characterized modern America *A Nation of Steel* offers a detailed and fascinating look at an industry that has had a profound impact on American life *Duquesne and the Rise of Steel Unionism* James Douglas Rose,2001 Not all workers needs were served by the union Focusing on the steel works at Duquesne Pennsylvania a linchpin of the old Carnegie Steel Company empire and then of U S Steel James D Rose demonstrates the pivotal role played by a nonunion form of employee representation usually dismissed as a flimsy front for management interests The early New Deal set in motion two versions of workplace representation that battled for supremacy company sponsored employee representation plans ERPs and independent trade unionism At Duquesne the cause of the unskilled hourly workers mostly eastern and southern Europeans as well as blacks was taken up by the union the Fort Dukane Lodge of the Amalgamated Association of Iron Steel and Tin Workers For skilled tonnage workers and skilled tradesmen mainly U S born and of northern and western European extraction ERPs offered a better solution Initially little more than a crude antiunion device ERPs matured from tools of the company into semi independent worker led organizations Isolated from the union movement through the mid 1930s ERP representatives and management nonetheless created a sophisticated bargaining structure that represented the shop floor interests of the mill s skilled workforce Meanwhile the Amalgamated gave way to the Steel Workers Organizing Committee a professionalized and tightly organized affiliate of John L Lewis s CIO that expended huge resources trying to gain companywide unionization Even when the SWOC secured a collective bargaining agreement with U S Steel in 1937 however the Union was still unable to sign up a majority of the workforce at Duquesne A sophisticated study of the forces that shaped and responded to workers interests *Duquesne and the Rise of Steel Unionism* confirms that what people did on the shop floor was as critical to the course of steel unionism as were corporate decision making and shifts in government policy

**Making Iron and Steel** John N. Ingham,1991 *Mastering Iron* Anne Kelly Knowles,2013-01-15 Veins of iron run deep in the history of America Iron making began almost as soon as European settlement with the establishment of the first

ironworks in colonial Massachusetts Yet it was Great Britain that became the Atlantic world's dominant low cost high volume producer of iron a position it retained throughout the nineteenth century It was not until after the Civil War that American iron producers began to match the scale and efficiency of the British iron industry In *Mastering Iron* Anne Kelly Knowles argues that the prolonged development of the US iron industry was largely due to geographical problems the British did not face Pairing exhaustive manuscript research with analysis of a detailed geospatial database that she built of the industry Knowles reconstructs the American iron industry in unprecedented depth from locating hundreds of iron companies in their social and environmental contexts to explaining workplace culture and social relations between workers and managers She demonstrates how ironworks in Alabama Maryland Pennsylvania and Virginia struggled to replicate British technologies but in the attempt brought about changes in the American industry that set the stage for the subsequent age of steel Richly illustrated with dozens of original maps and period art work all in full color *Mastering Iron* sheds new light on American ambitions and highlights the challenges a young nation faced as it grappled with its geographic conditions

**Energy Capitals** Joseph A. Pratt, Martin V. Melosi, Kathleen A. Brosnan, 2015-03-23 Fossil fuels propelled industries and nations into the modern age and continue to powerfully influence economies and politics today As *Energy Capitals* demonstrates the discovery and exploitation of fossil fuels has proven to be a mixed blessing in many of the cities and regions where it has occurred With case studies from the United States Canada Mexico Norway Africa and Australia this volume views a range of older and more recent energy capitals contrasts their evolutions and explores why some capitals were able to influence global trends in energy production and distribution while others failed to control even their own destinies Chapters show how local and national politics social structures technological advantages education systems capital infrastructure labor force supply and demand and other factors have affected the ability of a region to develop and control its own fossil fuel reserves The contributors also view the environmental impact of energy industries and demonstrate how in the depletion of reserves or a shift to new energy sources regions have or have not been able to recover economically The cities of Tampico Mexico and Port Gentil Gabon have seen their oil deposits exploited by international companies with little or nothing to show in return and at a high cost environmentally At the opposite extreme Houston Texas has witnessed great economic gain from its oil natural gas and petrochemical industries Its growth however has been tempered by the immense strain on infrastructure and the human transformation of the natural environment In another scenario Perth Australia Calgary Alberta and Stavanger Norway have benefitted as the closest established cities with administrative and financial assets for energy production that was developed hundreds of miles away Whether coal oil or natural gas the essays offer important lessons learned over time and future considerations for the best ways to capture the benefits of energy development while limiting the cost to local populations and environments

**City of Steel** Kenneth J. Kobus, 2015-03-26 Despite being geographically cut off from large trade centers and important natural resources Pittsburgh transformed itself into the most formidable steel making center in

the world Beginning in the 1870s under the engineering genius of magnates such as Andrew Carnegie steel makers capitalized on western Pennsylvania's rich supply of high quality coal and powerful rivers to create an efficient industry unparalleled throughout history In *City of Steel* Ken Kobus explores the evolution of the steel industry to celebrate the innovation and technology that created and sustained Pittsburgh's steel boom Focusing on the Carnegie Steel Company's success as leader of the region's steel makers Kobus goes inside the science of steel making to investigate the technological advancements that fueled the industry's success *City of Steel* showcases how through ingenuity and determination Pittsburgh's steel makers transformed western Pennsylvania and forever changed the face of American industry and business

**Managers and Workers** Daniel Nelson, 1996-01-01 During the early years of this century the classic factory system of the industrial revolution evolved rapidly into a new identifiable form that would characterize American and world industry for most of the twentieth century This transformation as important for industrial managers workers and consumers as the initial creation of the factory is the subject of Daniel Nelson's illuminating synthesis updated and expanded to include the scholarship of recent decades This edition of *Managers and Workers* describes the interrelations between technological and organizational innovation including such familiar developments as the spread of mass production and the emergence of scientific management and other developments that were little known when the first edition of this book appeared such as the revolution in factory architecture the changing role of the foreman and the spread of personnel work The volume also incorporates the best scholarship of the 1970s 1980s and 1990s some of it stimulated by *Managers and Workers* and includes a new chapter on the role of organized labor in the early twentieth century factory The focus of the work however remains the individual managers and workers who created the twentieth century factory system The preeminent historian of the American business firm Alfred D Chandler Jr reviewed the first edition of *Managers and Workers* in *The Journal of Economic History* predicting that this book would long remain the standard work on the origins of the American factory The second edition will make that prediction true for the 1990s and beyond

**Racial Conflict and Violence in the Labor Market** Cliff Brown, 1998 Taking one of the many strikes during the period as a case study argues that the migration of black workers to northern US cities looking for work during World War I and the practice and pattern of racial discrimination by the mainstream labor unions created a split labor market in which black workers had no choice but to scab on strikers Focuses on community level race relations during the strike and also considers the impact of local governments repressing labor the organizational strength of local union and employers efforts to inflame racial tension Developed from a 1996 Ph D dissertation for Emory University Annotation copyrighted by Book News Inc Portland OR

**Historical Dictionary of the Gilded Age** Leonard C. Schlup, James Gilbert Ryan, 2003 Covers all the people events movements subjects court cases inventions and more that defined the Gilded Age

**Devastation and Renewal** Joel A. Tarr, 2004-08-11 Every city has an environmental story perhaps none so dramatic as Pittsburgh's Founded in a river valley blessed with enormous resources

three strong waterways abundant forests rich seams of coal the city experienced a century of exploitation and industrialization that degraded and obscured the natural environment to a horrific degree Pittsburgh came to be known as the Smoky City or as James Parton famously declared in 1866 hell with the lid taken off Then came the storied Renaissance in the years following World War II when the city's public and private elites abetted by technological advances came together to improve the air and renew the built environment Equally dramatic was the sweeping deindustrialization of Pittsburgh in the 1980s when the collapse of the steel industry brought down the smokestacks leaving vast tracks of brownfields and riverfront Today Pittsburgh faces unprecedented opportunities to reverse the environmental degradation of its history In Devastation and Renewal scholars of the urban environment post questions that both complicate and enrich this story Working from deep archival research they ask not only what happened to Pittsburgh's environment but why What forces economic political and cultural were at work In exploring the disturbing history of pollution in Pittsburgh they consider not only the sooty skies but also the poisoned rivers and creeks the mined hills and scarred land Who profited and who paid for such progress How did the environment Pittsburghers live in come to be and how it can be managed for the future In a provocative concluding essay Samuel P Hays explores Pittsburgh's environmental culture the attitudes and institutions that interpret a city's story and work to create change Comparing Pittsburgh to other cities and regions he exposes exaggerations of Pittsburgh's environmental achievement and challenges the community to make real progress for the future A landmark contribution to the emerging field of urban environmental history Devastation and Renewal will be important to all students of cities of cultures and of the natural world

The Innovators, Trade David P. Billington, 2008-04-21 A richly illustrated introduction to the engineering triumphs that made America modern In this age of microchips and deep space probes it's hard to imagine life before electricity or passenger trains An astonishing series of engineering innovations paved the way to the twentieth century and transformed America into the world's mightiest industrial power The Innovators tells the exciting story of the engineering pioneers whose discoveries so dramatically altered commerce industry and world history The book takes readers into the workshops of America's early engineering geniuses explaining how they came up with their ideas and later applied them in the marketplace Devotees of history and technology will appreciate the finely drawn profiles of America's technical wizards from the famous including Robert Fulton the inventor of the steamboat Samuel F B Morse the inventor of the telegraph and Thomas Edison inventor of the first electrical power network to the lesser known such as J Edgar Thompson who built the Pennsylvania Railroad From the author of the critically acclaimed The Tower and the Bridge Features over 80 illustrations of the engineers and their inventions DAVID P BILLINGTON Princeton New Jersey a professor of civil engineering at Princeton University is the author of The Tower and the Bridge and Robert Maillart's Bridges The Art of Engineering which won the 1979 Dexter Prize as the outstanding book on the history of technology

**Racial Conflicts and Violence in the Labor Market** Cliff Brown, 2014-01-09 This book focuses on community level race relations during the 1919



Steel Strike when intense job competition contributed to racial conflict among the nation's steel workers. As the Great Migration brought thousands of black workers to northern cities, their lower labor costs generated racially split labor markets in the industrial sector. Further, the discriminatory policies of labor unions forced many blacks to serve as strike breakers during periods of class conflict. As a result, the migration heightened racial conflict and undercut important union organizing initiatives. The 1919 Steel Strike illustrates how racial divisions crippled many American unions, a pattern that helps to explain the demise of organized labor during the 1920s. No previous studies of the 1919 Steel Strike have systematically compared community processes to determine how local events shaped the strike's outcome. Despite the failure of the 1919 Steel Strike, the varied experiences of workers in different communities reveal much about the causes of racial conflict and the possibilities of interracial solidarity. This study finds that patterns of black migration, local government repression of labor, the organizational strength of local unions, and employers' efforts to inflame racial tension all help to explain community-level variation in interracial solidarity and conflict. Ph.D. dissertation, Emory University, 1996, revised with new preface. Beyond Rust Allen Dieterich-Ward, 2016. Beyond Rust chronicles the rise, fall, and rebirth of metropolitan Pittsburgh, an industrial region that once formed the heart of the world's steel production and is now touted as a model for reviving other hard-hit cities of the Rust Belt. Writing in clear and engaging prose, historian and area native Allen Dieterich-Ward provides a new model for a truly metropolitan history that integrates the urban core with its regional hinterland of satellite cities, white-collar suburbs, mill towns, and rural mining areas. Pittsburgh reached its industrial heyday between 1880 and 1920, as vertically integrated industrial corporations forged a regional community in the mountainous Upper Ohio River Valley. Over subsequent decades, metropolitan population growth slowed as mining and manufacturing employment declined. Faced with economic and environmental disaster in the 1930s, Pittsburgh's business elite and political leaders developed an ambitious program of pollution control and infrastructure development. The public-private partnership behind the Pittsburgh Renaissance, as advocates called it, pursued nothing less than the selective erasure of the existing social and physical environment in favor of a modernist, functionally divided landscape, a goal that was widely copied by other aging cities and one that has important ramifications for the broader national story. Ultimately, the Renaissance vision of downtown skyscrapers, sleek suburban research campuses, and bucolic regional parks resulted in an uneven transformation that tore the urban fabric while leaving deindustrializing river valleys and impoverished coal towns isolated from areas of postwar growth. Beyond Rust is among the first books of its kind to continue past the collapse of American manufacturing in the 1980s by exploring the diverse ways residents of an iconic industrial region sought places for themselves within a new economic order. *Chicago Made* Robert Lewis, 2009-05-15. From the lumberyards and meatpacking factories of the Southwest Side to the industrial suburbs that arose near Lake Calumet at the turn of the twentieth century, manufacturing districts shaped Chicago's character and laid the groundwork for its transformation into a sprawling metropolis. Approaching Chicago's story as a reflection of America's

industrial history between the Civil War and World War II Chicago Made explores not only the well documented workings of centrally located city factories but also the overlooked suburbanization of manufacturing and its profound effect on the metropolitan landscape Robert Lewis documents how manufacturers attracted to greenfield sites on the city s outskirts began to build factory districts there with the help of an intricate network of railroad owners real estate developers financiers and wholesalers These immense networks of social ties organizational memberships and financial relationships were ultimately more consequential Lewis demonstrates than any individual achievement Beyond simply giving Chicago businesses competitive advantages they transformed the economic geography of the region Tracing these transformations across seventy five years Chicago Made establishes a broad new foundation for our understanding of urban industrial America

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