

**CIHM
Microfiche
Series
(Monographs)**

**ICMH
Collection de
microfiches
(monographies)**



Canadian Institute for Historical Microreproductions / Institut canadien de microreproductions historiques

© 1998

Technical and Bibliographic Notes / Notes techniques 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 noire)
- 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 / La 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 modification 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
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12x		16x		20x		24x		28x		32x

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

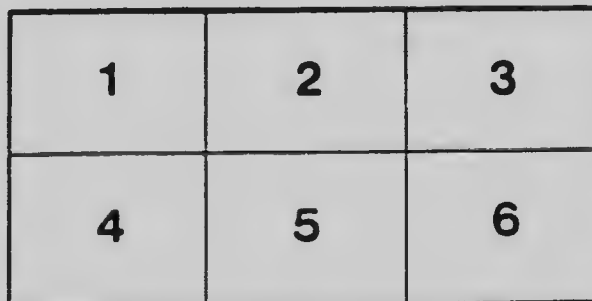
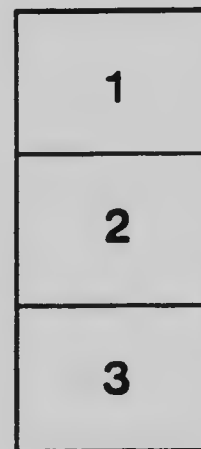
Department of Rare Books
and Special Collections,
McGill University, Montreal

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 shell contains the symbol \rightarrow (meaning "CONTINUED"), or the symbol ∇ (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:

Department of Rare Books
and Special Collections,
McGill University, Montreal

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 apparaîtra sur la dernière image de chaque microfiche, selon le cas: le symbole \rightarrow signifie "A SUIVRE", le symbole ∇ 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.

DEC 3 1912

R



CANADA'S
SIXTH INDUSTRY

CANADA'S SIXTH INDUSTRY

BY HOWLAND E. WATSON
IN CANADIAN MAGAZINE
ISSUE FOR OCTOBER, 1911



CANADA'S SIXTH INDUSTRY



MACHINE THAT TAKES
SHOE UP IN PLACE

HAVE you ever watched a shoe in the making? Have you travelled from one intricate mass of cams and levers to another and so on down the long line of machines, performing seemingly impossible operations, with an accuracy and dispatch that almost passes understanding? If you have never done so, take firm hold on the first opportunity, for every operation performed by these machines has something to do with your comfort, your pocketbook, or your vanity.

The Canadian boot, like good wine, "needs no bush." Its reputation is firmly established. Upon any equitable basis, it will at the present time bear favorable comparison with the best produced in any other country. The enterprise of Canadian manufacturers and the constantly increasing skill and efficiency of Canadian labor make the boot and shoe industry loom large on the country's commercial horizon. All of these things are matters of common knowledge, but of the complexities and travail from which this great industry has arisen, of the unique and particularly advantageous conditions which have favored its marvellous growth during the past ten years, as well as the remarkable and efficient machines which form the equipment of the factories making high-grade boots, little or nothing has been written.

Other industries have their marvellous machines, the modern loom, the Linotype, the Monotype, and various automatic machines now in use excite your wonder

and admiration, but here you have a whole system of machines, many of them as intricate and as finely adjusted as a watch, performing with marvellous accuracy, operations which, but a short time ago, were thought to be impossible through any other medium than the human hand. Each fills exactly its place in the general scheme, constantly preparing for operations that are to follow, for in the making of a high grade shoe there are no really minor operations. Some of the operations may seem to be less important than others, but if you watch carefully the work of succeeding machines in their sequence, you will find the inaccrate work of a single machine, like the iniquities of a sinful generation, if not discovered, is visited upon each of the machines which follow until the completed product emerges a pariah among its fellows and scornfully known among shoemakers as a "bat," a "crab," or a "cripple."



CLICKING MACHINE CUTS DIFFERENT
PARTS OF SHOE UPPER

Fortunately, this now seldom occurs, for there is no system of machines in the world so finely adjusted to each other's requirements and which receive such constant and expert attention. No other aggregation of machines meets and successfully copes with so many and such variable conditions: different sizes, shapes, qualities, and a never-ending procession of styles, are made on one set of machines. It is here that we touch the very foundation upon which the shoe industry has been built up and advanced as in no other period in its history, for it is but a

comparatively short time since conditions were decidedly different when there was no system of machines, as the term is now understood among shoe makers. Each manufacturer's equipment was obtained from a wide variety of sources, some he bought and others he hired. Some received a certain amount of attention from those who had placed them in his factory—others almost none. Unfortunately, shoe machinery is not an exception to the general rule. Parts wear out and break, adjustments go wrong. In former times when this happened production in many factories would cease at that point until the machine had been placed in proper running order. Delays were often long and vexatious, for prior to 1860 Canadian shoe manufacturers obtained the greater portion of the machinery they used from different makers, most of them located in or near Boston. Sometimes the maker supplied but a single machine, in other instances several, but in any case the shoe manufacturer was not only obliged to meet the terms upon which the machine was ordinarily placed in Boston, but to pay such customs charges as were levied against it, and all the expenses of the expert usually sent from Boston to set up the machine and teach its operation from the time he left Boston until he returned. Under these conditions, it is not surprising that the boot and shoe manufacturing industry of Canada advanced but slowly. Many manufacturers preferred to cling to such primitive means as the awl, waxed ends and hammer



LASTING MACHINE WHICH DRAWS
UPPER OF SHOE SMOOTHLY AND
TIGHTLY AROUND LAST

-- shoe making implements as old as the Egyptian temples—operating only such machines as seldom required adjustment or attention, rather than submit to the vexations and losses which attended the use of improved machinery and methods even then available, but only on the conditions as set forth.

It was a crucial period in the history of the industry. Foreign manufacturers operating under more favorable circumstances found in Canada a ready and even eager market for their surplus productions. The industry was anxiously awaiting the advent of a Moses to lead it safely from the sea of trouble in which it found

itself. Such was the state of affairs when, in 1860, the United Shoe Machinery Co. of Canada was formed, an event which undoubtedly transcends all others in the history of an industry which, in its evolution from the purely hand processes and implements of only half a century ago, has passed through many revolutions, many of them almost spectacular in character.

The United Shoe Machinery Co. of Canada established its factory and offices in Montreal. It secured some of the best machines then in use for fastening the soles and heels to boots and finishing them. It improved them. It invented or purchased others to fill in the gaps for which there was no machine. It harmonized their action, adjusting them to each other's requirements, until



GOOD LATE WELT SEWER WHICH SEWS SHEET
UPPER TO INSOLE AND WELT LEAVING
TOP PERFECTLY SMOOTH INSIDE



PREVIOUS TO 1899.
TOP FLOOR OF THIS BUILDING.



FROM 1899 TO 1902

EARLY FACTORIES OF THE UNITED SHOE MACHINERY CO. OF CANADA

it had a system of machinery for attaching the soles to shoes, as shown in making the very high-grade type of boot known as the "Goodyear Welt," which is truly marvellous. All of this was accomplished only at the expenditure of much money and untold effort. But it did more than supply machines. It kept them in working condition. It established branch offices in Quebec and Toronto. It maintained in each office a supply of machine parts in order that any mishap to a machine might be readily repaired. When it is stated that this company in the regular routine of its business makes over 83,000 different kinds of machine parts, varying from a machine base, weighing over a ton, to the most minute machine screw, the magnitude of this undertaking can be readily comprehended.

More than this, the company maintains in each of its branch offices a corps of men who are not only expert machinists, but expert shoemakers as well—men competent not only to repair machines, but to teach their operation and to give expert advice. This corps of men is placed at the disposal of its patrons by the company. If any office of the company is notified of a mishap, a man is immediately sent to take care of it. The vexatious delays and the losses which beset the trade so short a time ago have disappeared. Each one of the company's patrons, be he large or small, knows that he is entitled to the same service that his competitor receives. It seems to have been a cardinal principle in the building of the



GOODYEAR AR-ROUNDER, WHICH SHAPES THE SOLE OF THE SHOE



FAC TORY OCCUPIED FROM 1902 TO 1911 TWO ADDITIONS HAVE BEEN BUILT IN THIS PERIOD



NEW MANUFACTURING PLANT OF THE U
MO



OF THE UNITED SHOE MACHINERY CO. OF CANADA
MONTREAL

company's business to play no favorites, and the sincerity of the company's efforts is apparently never questioned by its customers.

While the quality of the company's service and the efficiency of its machines, through improvements and new inventions, have constantly increased in value to the industry, it has aimed constantly to reduce the cost to its patrons, and with results that have earned their cordial approval.

The United Shoe Machinery Company of Canada has apparently been successful in performing the things it set out to do, for the boot and shoe industry has prospered as at no other time in its history. The company has been constant and diligent in anticipating the requirements of the industry it has served so well. From the small factory occupied the first year of its existence, it soon moved to one of

larger capacity, and in 1903 built the fine plant it has since occupied on Lagachetiere Street, Montreal. It is now completing a new manufacturing plant in one of the suburbs of Montreal, which it is said will be a model in economical production and convenience. The illustrations of the different buildings occupied by the company afford a most striking index to the prosperity which has attended the boot and shoe industry, for the business of the company has increased in exact ratio to the advance of the industry itself.

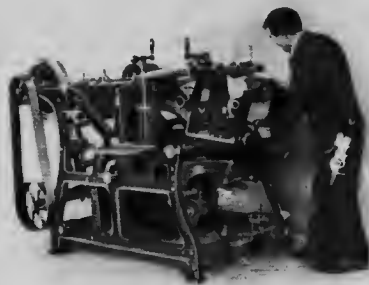
Success, however, has its penalties, and the United Shoe Machinery Company of Canada has not escaped. It has been



GOODYALR SEWCOOR, WHICH SEWS
OUTSOLE TO WHEEL

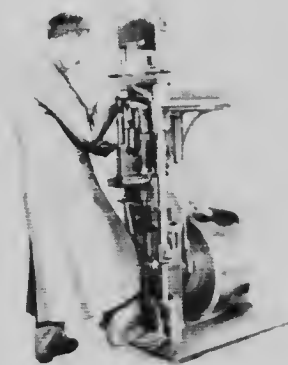
charged that it is a monopoly, and paradoxical as it may seem after the description of the wonderfully increased prosperity of the shoe industry—that it is acting in restraint of trade. Fortunately, these accusations do not come from the company's patrons, who apparently are well satisfied with present conditions, but from competitors of the company, some supplying but single machines, none with more than a small number of machines for performing operations widely divorced and therefore lacking every essential advantage which comes from the use of machines in a closely adjusted system. Promoters of these machines have naturally found but little demand for what they had to offer.

The charges are, however, based upon the peculiar conditions under which shoe manufacturers obtain their equipment of machinery—conditions which are probably without a parallel in any other branch of industry, for the boot manufacturer is not obliged to purchase his equipment of machinery—he can lease it. Many of the machines he can purchase outright if he so desires, some of them are only placed in factories on lease, in which case the owner of the machines participates to some small degree in the saving which the machine makes in the shoe-making process. This is the so-called Royalty System, a method of placing machinery as old as shoe machinery itself and a condition originally imposed by the manufacturers of shoes and closely adhered to in most instances ever since.



GOODYEAR LEVELER WHICH AUTOMATICALLY
ROLLS OUT ANY UNEVENNESS IN
BOTTOM OF SHOE

This royalty plan has been a factor of the most supreme importance in building up the industry. It is related that Gordon McKay, one of the earliest builders of shoe machinery, tried in vain to sell his earliest machines. Shoe manufacturers, while acknowledging the efficiency of the machines and the undoubted saving their adoption would make in their business, did not have the money to pay the moderate price for which he offered them, or, in some instances, lacked faith in the future of making shoes by machinery. In his desperation, McKay made several unavailing efforts to sell his business, including all rights in the machinery, and finally evolved the scheme of placing them on a royalty, when they were eagerly accepted by manufacturers of shoes, many of whom became wealthy through their use.



HILLING MACHINE WHICH DRIVES
ALL THE NAILS AT ONE TIME

McKay formulated a lease which manufacturers using his machines were required to sign. The provisions of this lease were no more onerous than those which the average householder is required to sign. The shoe industry is familiar with them, for practically every successful maker of shoe machinery has been obliged to follow the custom established by McKay about fifty years ago.

In some instances the manufacturer pays a small sum for each shoe on which the machine performs its part of the work, in others the shoe machinery company places the machine in the factory of the manufacturers without charge.

and gets its return from the material used in connection with it, such as wire, nails, tacks, etc.; it being agreed that only material supplied by the company shall be used, and that a slight increase over the market price shall be charged. Even in the periods when the price of metals was greatly enhanced, this company has found a way to maintain a very nearly even price for such materials, and has never increased the price charged to manufacturers.

The average rate of royalty, direct and indirect, which this company now receives on all classes of shoes is less than two and one-fifth cents per pair. On some grades of shoes it is but three-quarters of a cent per pair, and the highest paid on the highest grade of Goodyear Welt shoes, the best which can be bought, is only six cents. Very few shoes pay a royalty as high as this, and the majority of shoes made in Canada pay a royalty of only a cent and a half a pair. In any case the return paid for the use of machinery cuts no figure in the retail price. Out of this small sum the company pays the whole cost of manufacturing machines—of developing and purchasing new ones—of administration—in short, the entire expense of conducting its business.

Under this, the royalty system, a shoe manufacturer can start in business with a modest capital and, although shoes are made on a close margin of profit, the capital being in liquid form can be turned several times a year, thus giving the manufacturer a substantial profit on the total volume of business, while giving the consumer the benefit of the narrow margin of profit on each pair of shoes. There is no other industry of any consequence of which this is true. The manufacturer of

textiles, before beginning business, has to install a complete equipment of machinery at a cost which is prohibitive, except to concerns of very large capitalization. The industry is thus concentrated in very few hands, while the industry of making shoes is divided among different concerns of varying size, and competition is made almost inevitable by the system under which any manufacturer, no matter what his relative importance may be, can get his machinery on terms as advantageous as those obtainable by his most prosperous competitor. Instead of worrying about the depreciation of his machinery, he knows that he is on equal terms with every other manufacturer, and that he can confine his attention to the manufacture and sale of shoes, keeping practically all his capital in quick assets.

It is under these conditions that the shoe industry has advanced most rapidly. The small amount of capital required to obtain such a remarkable equipment of machines has made it possible for many shoe manufacturers, who are now numbered among the most prosperous, to enter business on their own account, who, under different conditions, would have been debarred from doing so. It is for this reason that many young men now growing up in the industry regard with slight favor any suggestion that will tend to change these conditions, believing that if the manufacturer is compelled to purchase his machinery outright, it will tend to build up a monopoly in the manufacture of shoes among those who can control the immense capital which would be required.

The United Shoe Machinery Company of Canada has never attempted to monopolize the production of shoe machinery. In the factories of many of its

customers the machines of its competitors are running with those of its own production; in fact, there are whole departments in which there are few, and in many cases no machines supplied by it. There is nothing in the agreement between the manufacturers and the company to prevent such a condition.

It is thus that the boot and shoe industry of Canada has advanced through discouragements and difficulties to the proud distinction of being the sixth in importance in the Dominion, at the last census. What the figures of the census now in progress will disclose is a matter of much interest to those actively engaged in the making of shoes. That the industry has continued its remarkable progress is best shown in the ever-improving quality of the goods produced and the attention which the product of Canadian factories is attracting in the markets of the world.

Of the future—who shall say? It is difficult, particularly for those engaged in the industry, to believe that the trend of public affairs and policy should point to a return of the troublesome conditions from which the industry has so recently emerged; but only the destiny which shapes the ends of industries can answer.

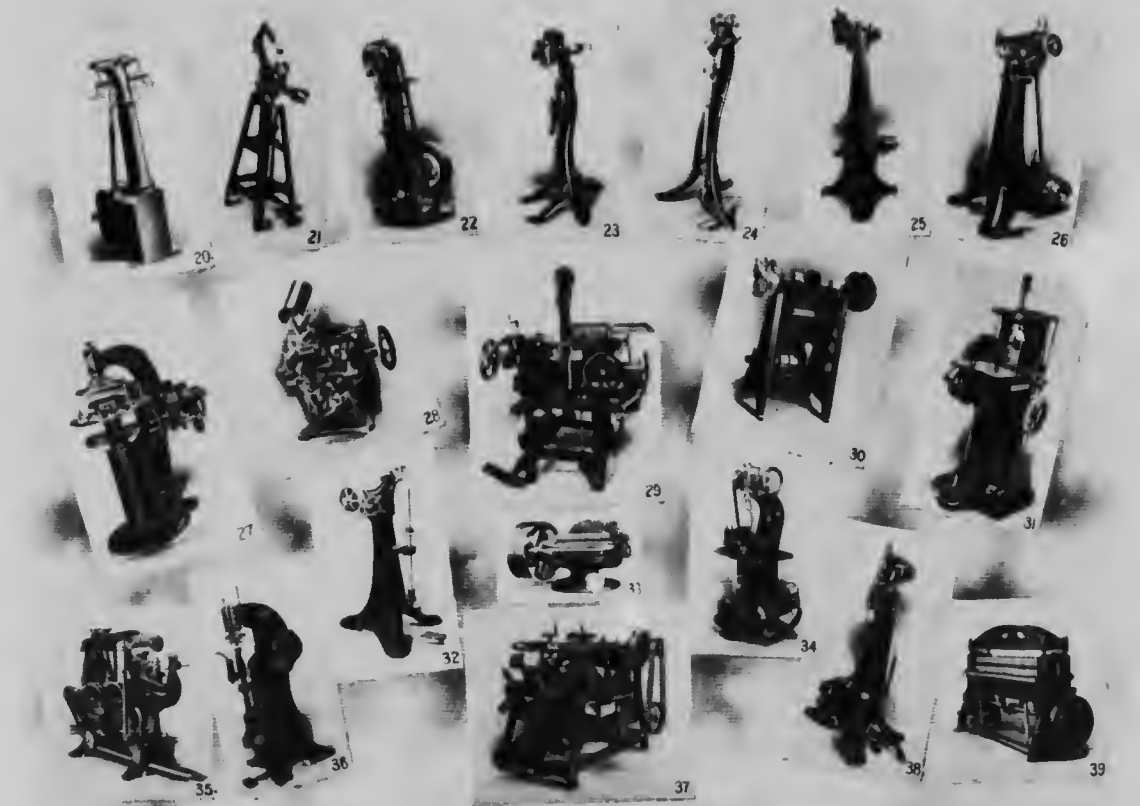
On the following pages will be found illustrations showing a few of the machines used in the modern shoe manufacturing.



- 1 Jans Heel Trimming Machine
- 2 Crest Heel Blanking Machine—Model B
- 3 Goodyear Improved Sole Laying Machine—Twin
- 4 Hurlaway Stitch Separating Machine
- 5 Universal Slugging Machine
- 6 American Twin Sole Moulding Machine—Model C
- 7 Goodyear Universal Rounding and Channeling Mch

- 8 Goodyear Universal Inseam Trimming Machine
- 9 American Lightening Heeling Machine
- 10 McKay Automatic Heel Loading and Attaching Mch
- 11 Goodyear Welt and Turn Machine—Model C
- 12 Ideal Clipping Machine—Model C
- 13 Con Hand Method Welt Lasting Machine
- 14 F. S. M. Co Insole Tacking Machine No. 1

- 15 Goodyear Outsole Rapid Lockstitch Machine
- 16 Universal Power Eyeletting Machine
- 17 Improved Geared Sole Cutting Machine—Model 14 C
- 18 Rex Rotary Pounding and Trimming Machine—Model B
- 19 Goodyear Insole Tack Pulling Machine



20 Frion Twin Edge Setting Machine—Model S
 21 Goodyear Heel Turning Machine
 22 Imperial Heel Breasting Machine—Model B
 23 Universal Double Clinch Machine
 24 Goodyear Welt Indenting and Barning Machine
 25 Feather Edge and Shank Reducing Machine—Model H
 26 Goodyear Universal Welt Beating Machine

27 Planet Rounding Machine—Model D
 28 Duplex Eyeletting Machine
 29 U. S. M. Co. Lasting Machine No. 5
 30 Upper Cleaning Machine—Model R
 31 Monarch Counter and Box Toe Skiving and Finishing Machine
 32 Rex Hammer Pounding Machine

33 Well Cutting Machine—Model S
 34 McKay Sewing Machine—Model B
 35 Goodyear Welt and Turn Shoe Leveling Machine
 36 Regent Stamping Machine—Model C
 37 Goodyear Automatic Sole Leveling Machine
 38 Goodyear Universal Channeling Machine
 39 Gearless Sole Cutting Machine—Model E



- | | | |
|---|--|---|
| 60. Rapid Standard Screw Machine | 67. Rex Pulling Over Machine | 74. Centennial Splitting Machine Model A |
| 61. Crescent Toe Googing Machine Model C | 68. Improved Gearless Sole Cutting Machine Model A | 75. Buffing Machine Model G |
| 62. Eagle Upper Stamping Machine Model H | 69. Latex Nail Lacking Machine Double Head | 76. Goodyear Last Pulling and Resetting Machine |
| 63. Miller Lasting Treering Machine Model H | 70. Amazeen Skiving Mch. Model No. 7 and Grinder | 77. Summit Splitting Machine Model P |
| 64. Pluma Skiving Machine Model D | 71. Automatic Heel Compressing Machine No. 4 | 78. Summit Splitting Machine Model M |
| 65. Loose Nailing Machine | 72. Eagle Sole Stamping Machine Model C | 79. Champion Heel Last Skiving Machine Model A |
| 66. Goodyear Upper Stapling Machine | 73. Goodyear Flexible Sole Machine Model B | 80. Improved Baby Sole Cutting Machine Model P |



