ASBESTOS

FROM MINE TO FINISHED PRODUCT

ASBESTOS AND MINERAL CORPORATION
NEW YORK


277
QVEBEC

1 of 1000 copies

Mines in the Eastern Townships

This Edition is limited to One Thousand Copies, of which this is Number 107

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New York

MCMXIX

FOREWORD

ASBESTOS is no longer popularly known as a fireproof mineral used chiefly as covering for pipes and boilers. Through the cooperation of mineralogists and enterprising manufacturers, its use in recent years has been very widely extended. And while the asbestos industry is comparatively undeveloped, it must be rated as one of the great industries of the world.

In the existing processes of manufacture, the character of the raw material is the determining factor as to its application to articles of merchandise, but inventive genius is continually finding new outlets for this useful material.

Each of the sixty plates illustrating this volume is accompanied by a brief description stripped of all technical terms. The purpose is to give to the limited number into whose hands the book finds its way, a pictorial presentation of the mining of raw asbestos and its manufacture into finished goods for distribution.

The mines illustrated are in Canada. The asbestos manufacturing plants shown are in the United States. These plants convert the raw material into a great variety of asbestos products among which may be mentioned, asbestos paper, millboard, brake band lining, yarns, cloth, shingles, pipe covering and household utensils.

Included in the series of plates are twelve, illustrating as many distinct types of raw asbestos selected from our unique collection of more than three hundred specimens gathered from all parts of the universe and considered the largest, most interesting and most important collection extant.

In publishing this limited edition for complimentary distribution, we are seeking to contribute a work of permanent value in the way of illustrated literature to the libraries of those especially interested in the subject of asbestos.

ASBESTOS AND MINERAL CORPORATION

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LIST OF ILLUSTRATIONS—Continued

PLATE I

In this view of an asbestos dump at Black Lake, Canada, may be seen the method of carrying away waste rock and sand by means of a belt conveyor.

PLATE II

Bird's-eye view of an asbestos property at Black Lake, Canada, showing an asbestos mill and dump, blacksmith's shop, storage bin and other necessary buildings.

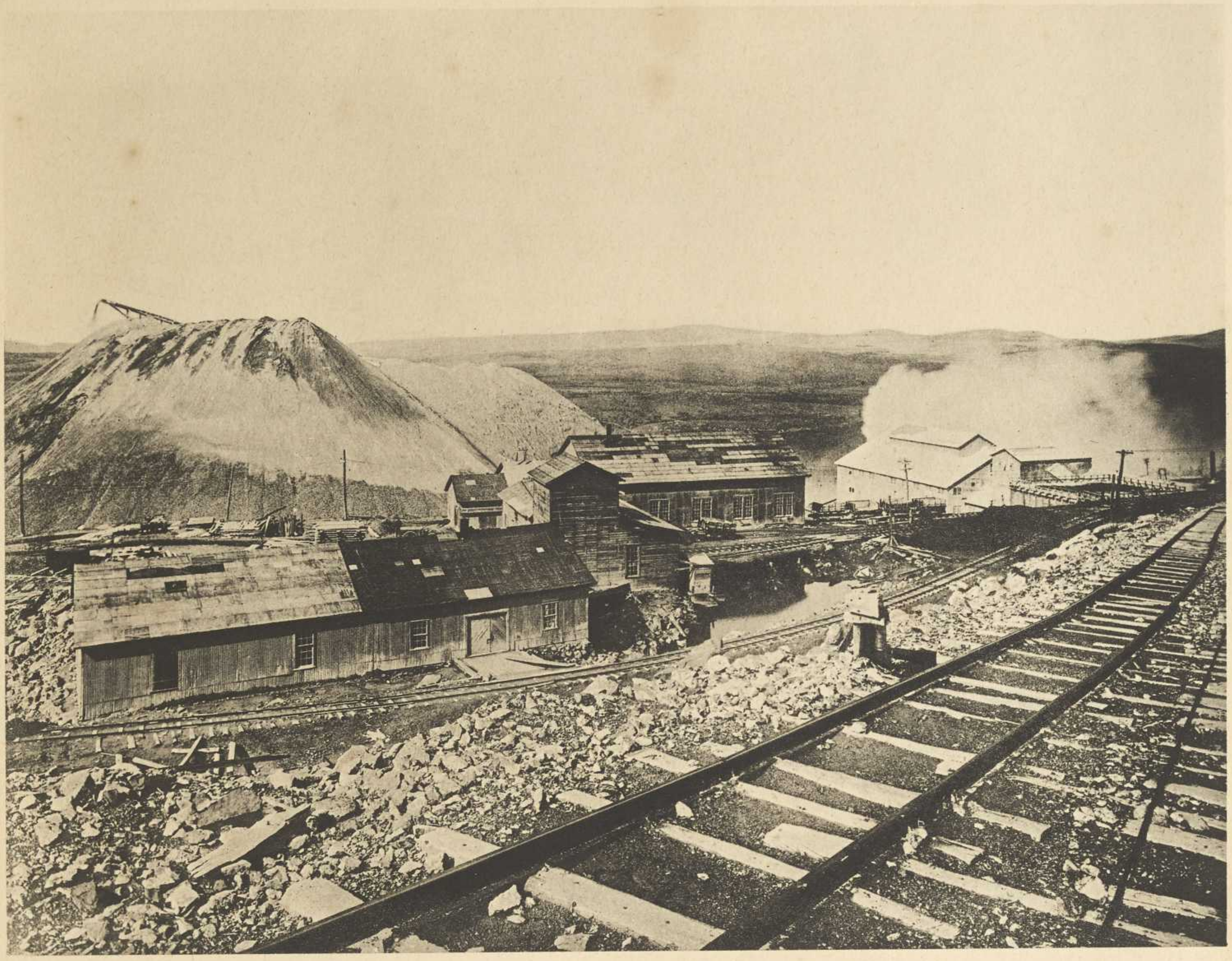


PLATE III

View of an open cut in a pit of an asbestos mine, showing a small engine and tipple cars used for transporting rock.

PLATE IV

An asbestos mill at Black Lake, Canada. The view shows an old pit filled with water, and the method of conveying rock into the mill by an overhead track.

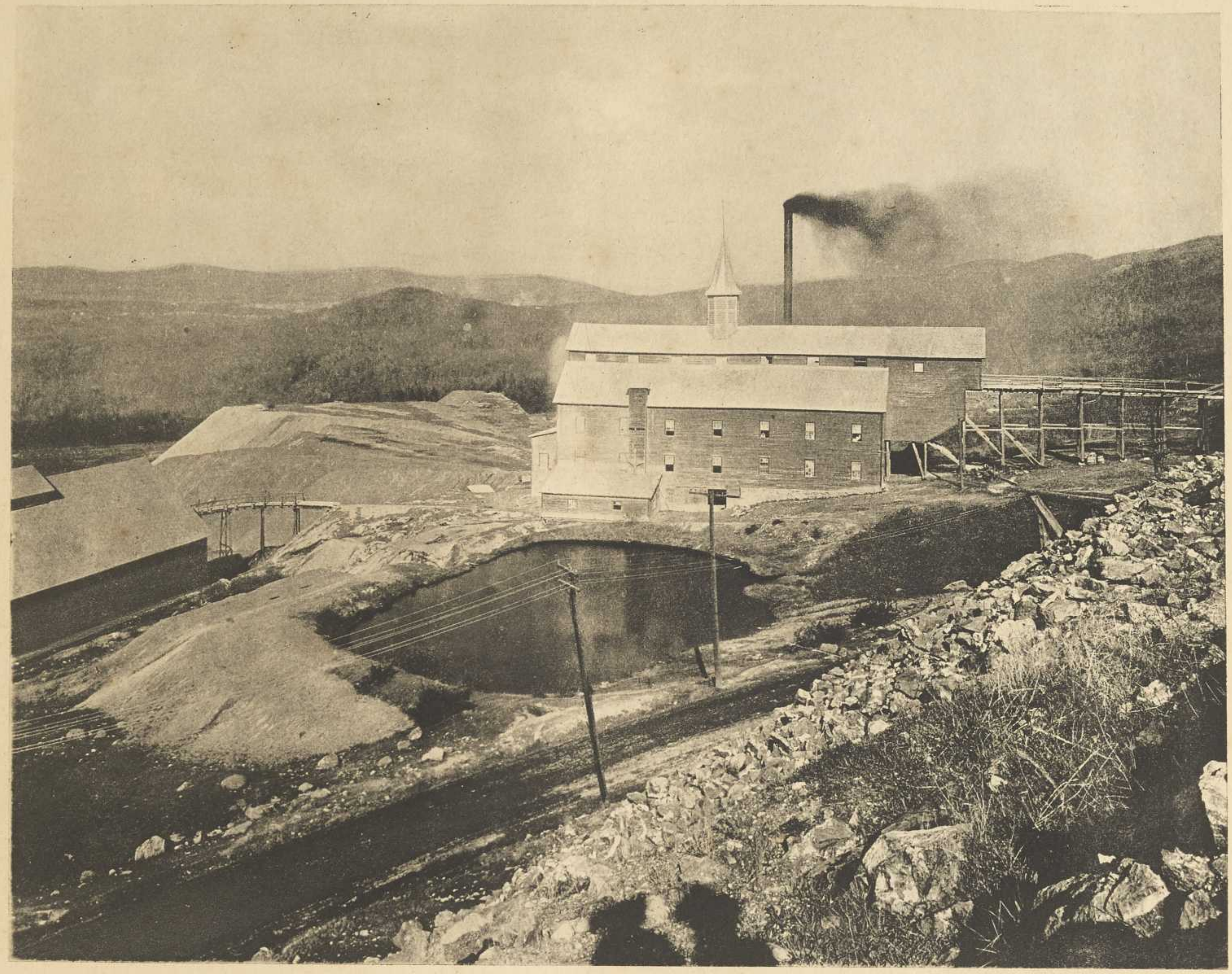


PLATE V

A pit of an asbestos property at Black Lake, Canada. Steam drills are at work. Ladders for men to use for entering the pit may be seen, as well as overhead conveyors. The conveyors on the property shown in Plate I may be seen in the distance.

PLATE VI

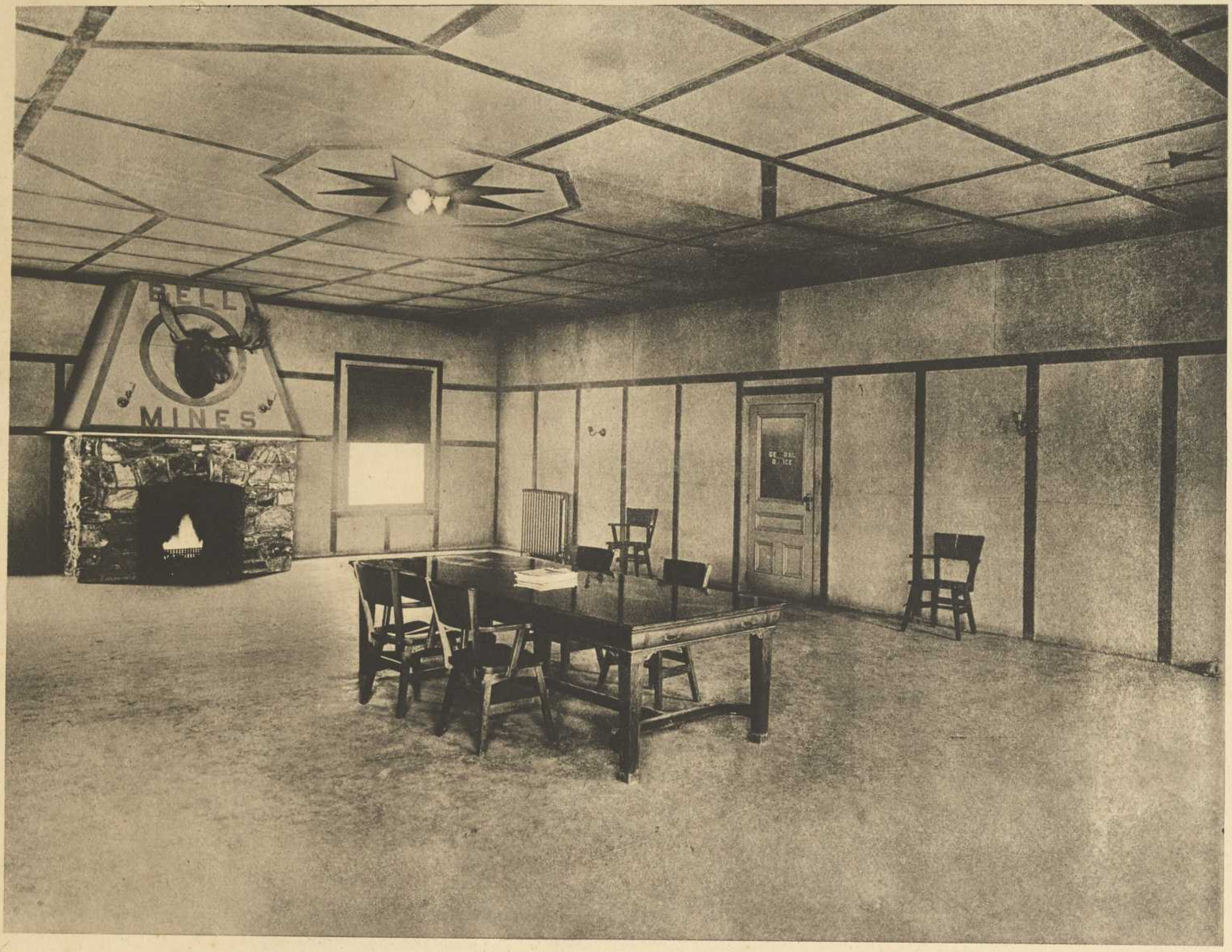
Interior of a storage shed at an asbestos mill, showing the method of piling bags of raw material, and an overhead passage-way which enables the laborers to utilize all of the vertical space.

PLATE VII

Bird's-eye view of a mill for the fiberization of asbestos at Thetford Mines, Canada. In the picture may also be seen the narrow and broad gauge railroad tracks on the property.

PLATE VIII

Interior view of an office of an asbestos mine at Thetford Mines, Canada. This is literally an asbestos room, the walls, ceiling, floor and fireplace being built of asbestos. The crude veins may be seen in the fireplace construction.


BELL
MINES
GENERAL
OFFICE

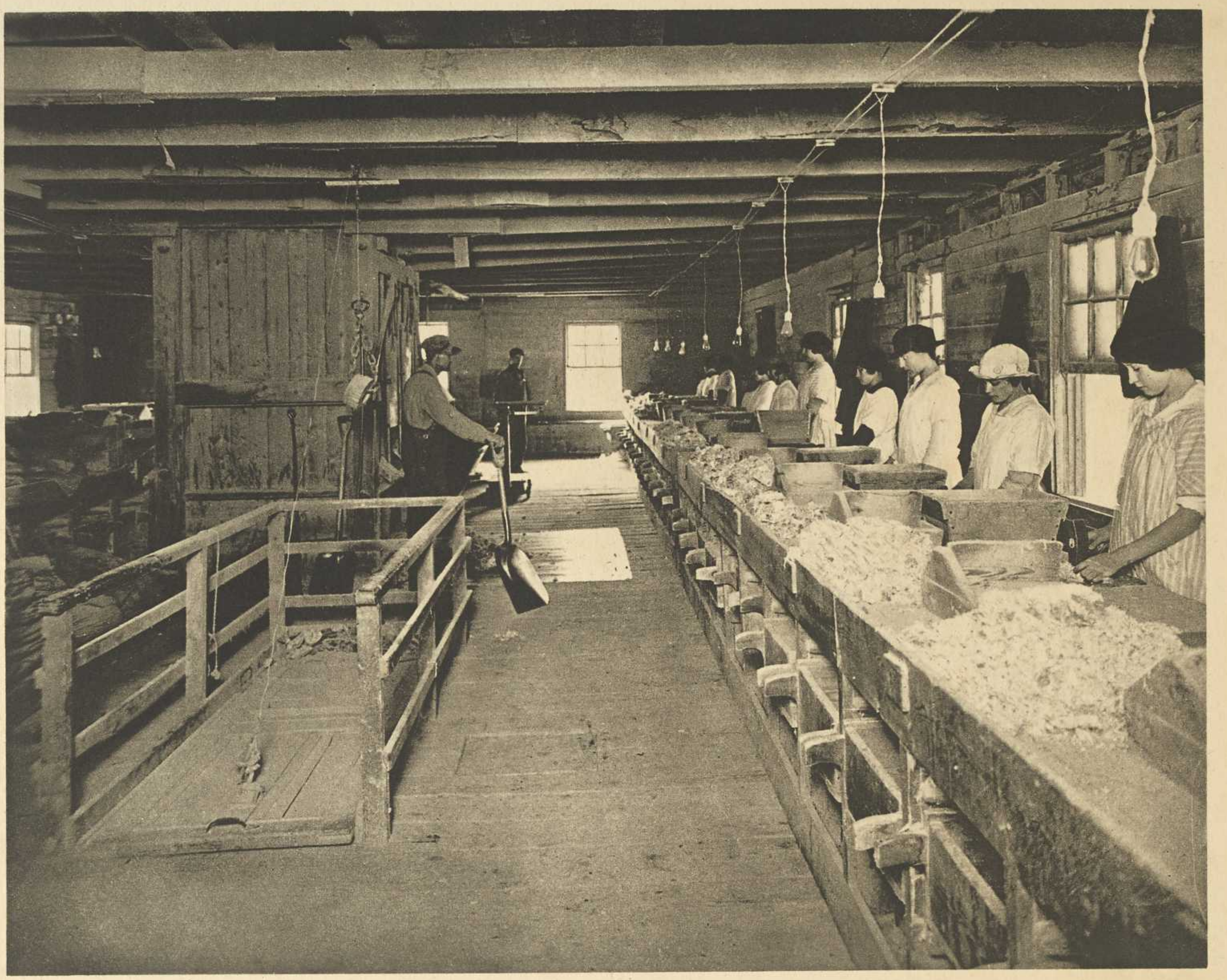
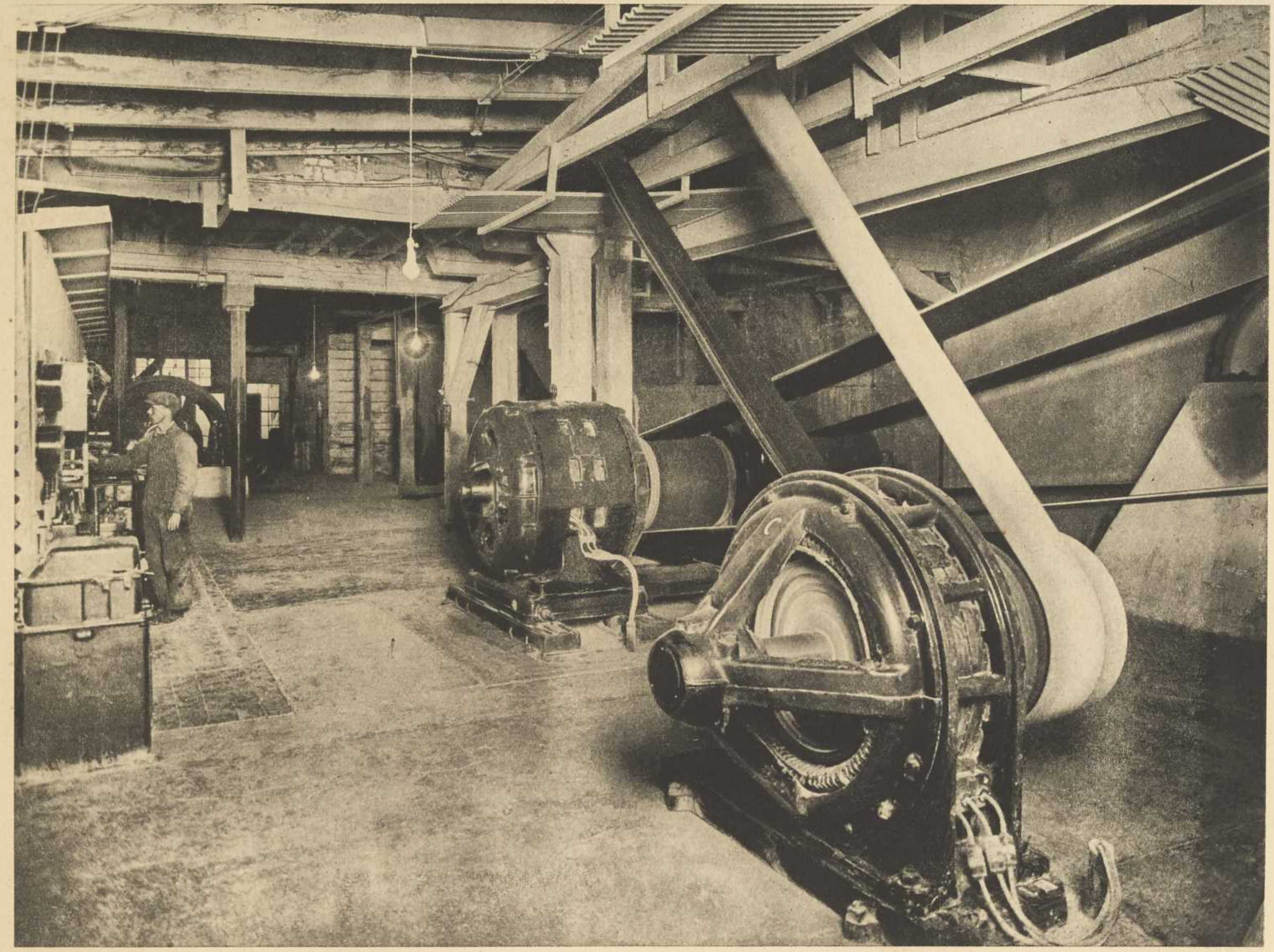


PLATE IX

Interior of a cobbing shed of an asbestos mill showing girls cobbing or sorting No. 1 and No. 2 Crude.

PLATE X

A section of a motor room of an asbestos mill at Thetford Mines, Canada, where the motive power is by the direct drive from the motors. As at the majority of asbestos mines in Canada, there is here an auxiliary steam plant to be called into service in case the electric power becomes inoperative.




№ 91

PLATE XI

A tunnel or incline through which cars are hoisted at an asbestos mine at Thetford. In this illustration one may see the method of elevating the crude material without the necessity of overhead hoisting.

PLATE XII

This view of an asbestos mine at Thetford Mines, Canada, shows a crane by means of which large pieces of rock are moved around before the block holes are drilled for blasting into smaller pieces preparatory to loading the tunnel cars shown in the foreground, for hoisting on the incline seen in Plate XI.

PLATE XIII

A dump at Thetford Mines, Canada. There is seen in this picture a method of dumping from tipple cars entirely different from that shown in Plate I where the conveyor is employed. While the method here shown requires considerably more ground space than does the conveyor system, it is more economical because in a given time more rock and refuse can be handled.

PLATE XIV

This view of a crane in a pit at Thetford Mines, Canada, shows block holes being drilled by compressed air prior to blasting. The boxes shown are used for removing the small pieces of rock.

PLATE XV

Bird's-eye view of an asbestos mill at Thetford Mines, Canada. The features of this illustration are the power-plant, the tracks running into the first story of the mill, and the overhead tracks running into the second story.

PLATE XVI

Wall rock in an asbestos mine with asbestos veins plainly visible.

PLATE XVII

In the foreground of this scene is a mass of dead rock between two asbestos properties at Thetford Mines, Canada. On either side of the towering rock may be seen in the distance a bird's-eye view of an asbestos mill.

PLATE XVIII

Another view of the dividing rock shown in Plate XVII. Here may be seen the anchor cableways for cableway heads shown in Plate IX, and a tunnel for men to enter during blasting operations.

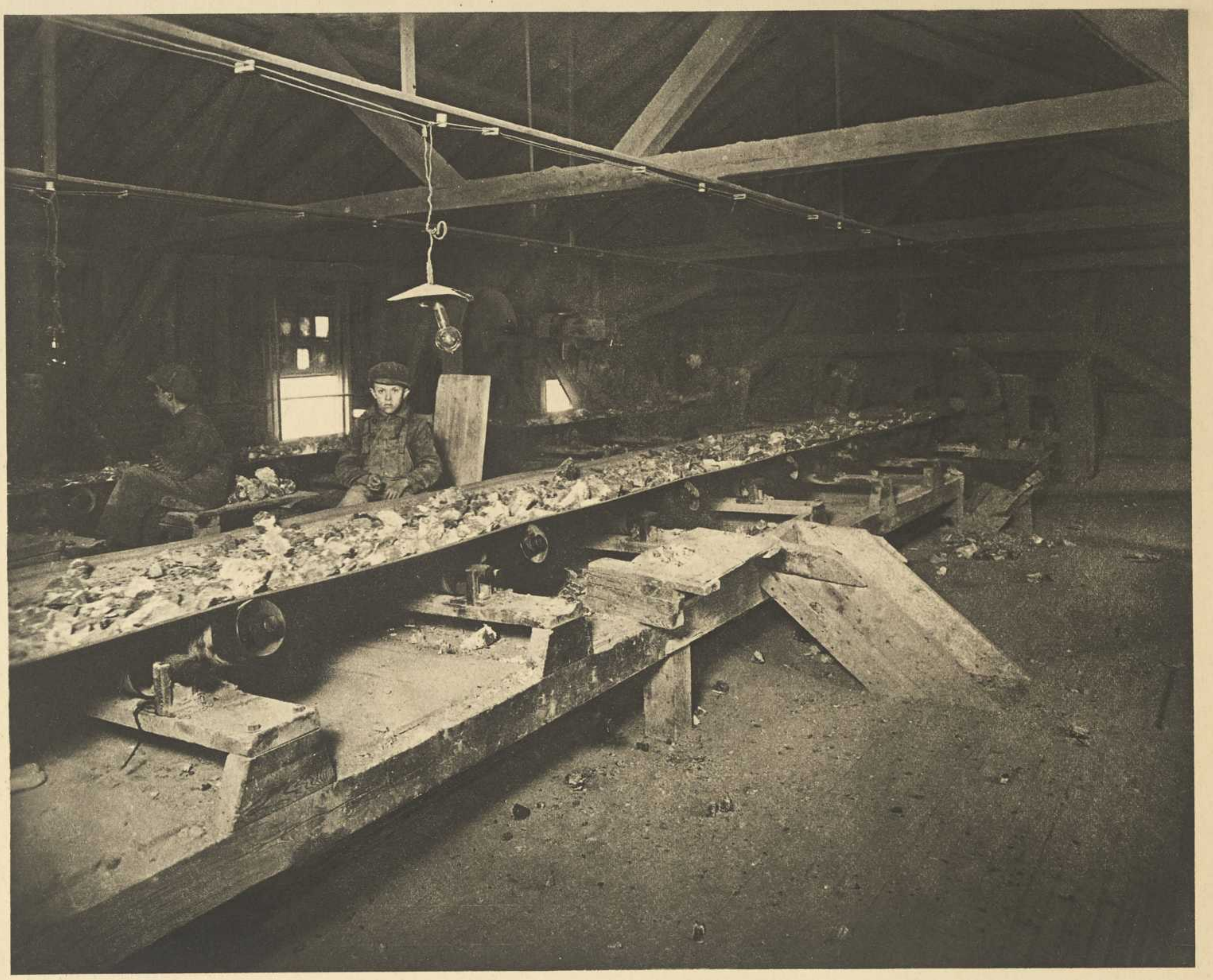


PLATE XIX

Interior view of an asbestos mill showing a slow running conveyor belt for picking out crude prior to its being sent to a cobbing shed.

PLATE XX

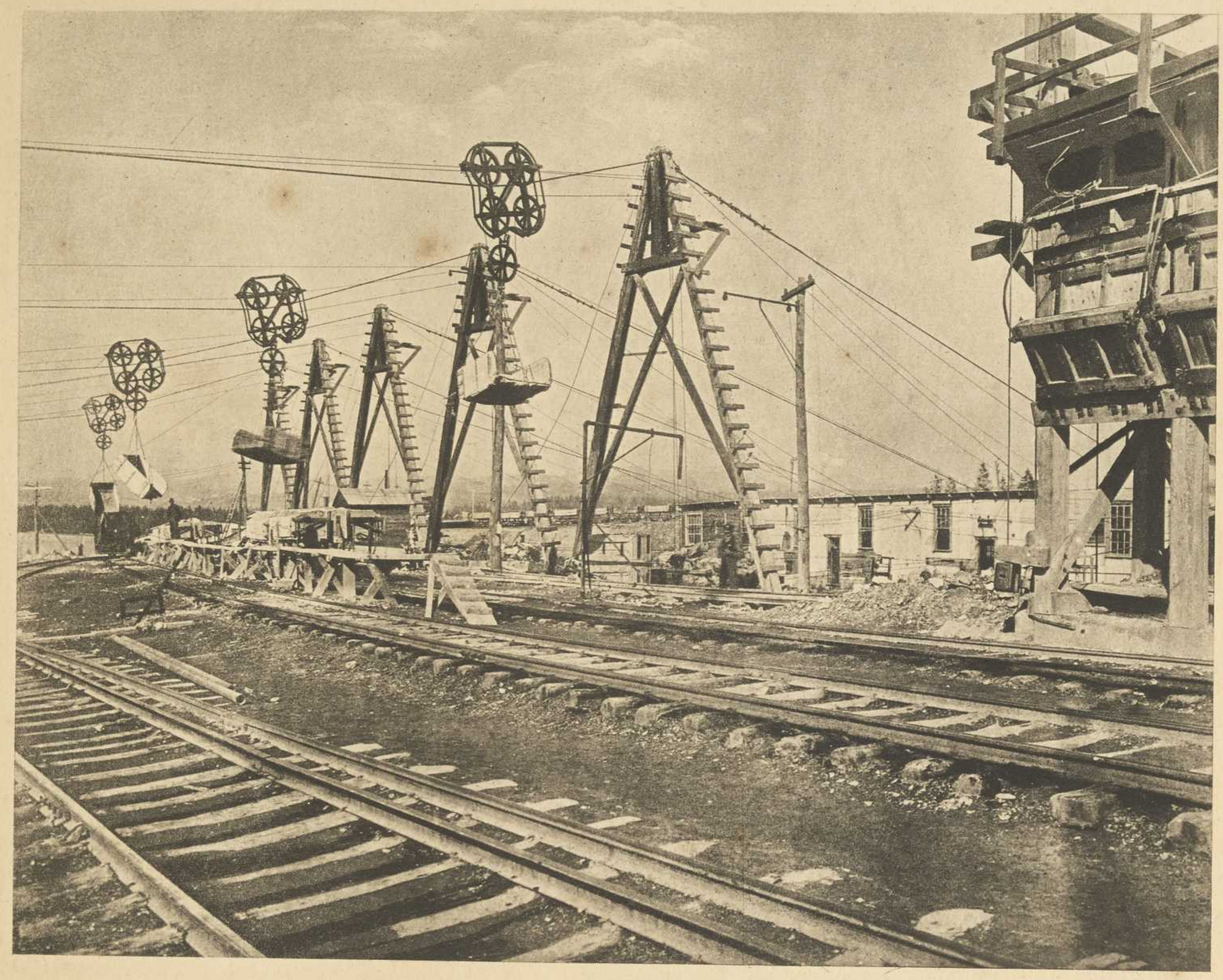
A modern asbestos mill with engine-house, drier and storage sheds at Thetford Mines, Canada.

PLATE XXI

An asbestos pit (sometimes called "Asbestos Quarry") showing terrace workings and a village in the distance.

PLATE XXII

Cable headways at an asbestos plant, illustrating the method of hauling from a pit to a dumping platform at a higher elevation, and showing also boxes in which asbestos rock is hoisted preparatory to being conveyed to the mill.




CANADIAN GOVERNMENT RAILWAYS
C.G.R.
60640
SEABOARD
15633

PLATE XXIII

This view of an asbestos property at East Broughton, Canada, shows the means of loading direct from the mill into cars.

PLATE XXIV

An asbestos property at East Broughton, Canada. In this picture may be seen a steam shovel for loading rock into cars which are drawn up an incline into a crusher-shed. After the rock is crushed, it is dropped onto a conveyor belt and carried to a storage bin and small crusher seen in the distance. Then the material goes through a drier-house where the smokestack shows, and from there is conveyed to the mill where the material is fiberized, separated, graded and bagged.

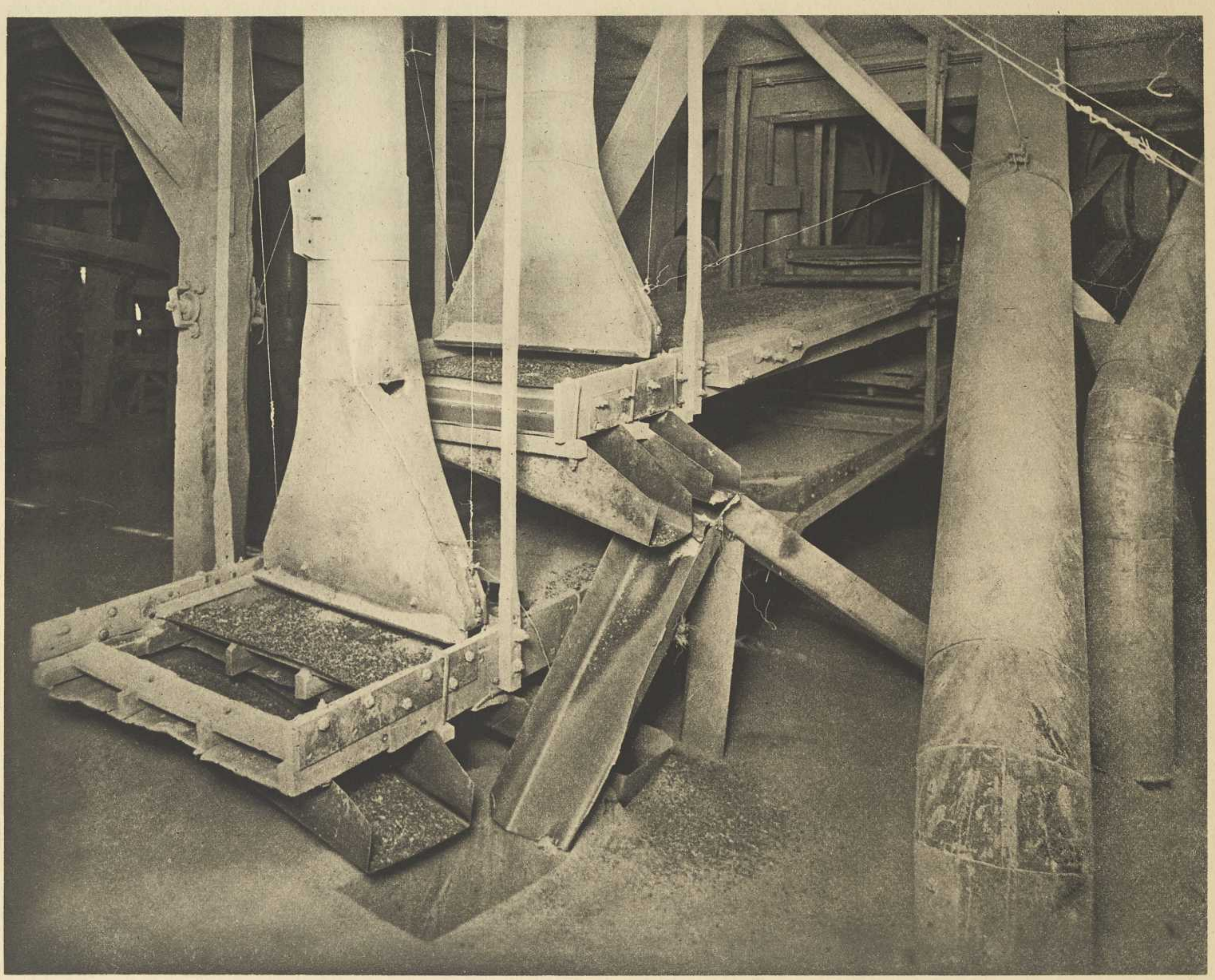


PLATE XXV

An interior view of an asbestos mill showing separating screens with suction pipes.

PLATE XXVI

A close view of an asbestos mill. In this picture may be seen the fiberizing mill, the dump and other buildings necessary for the operation of an asbestos plant.

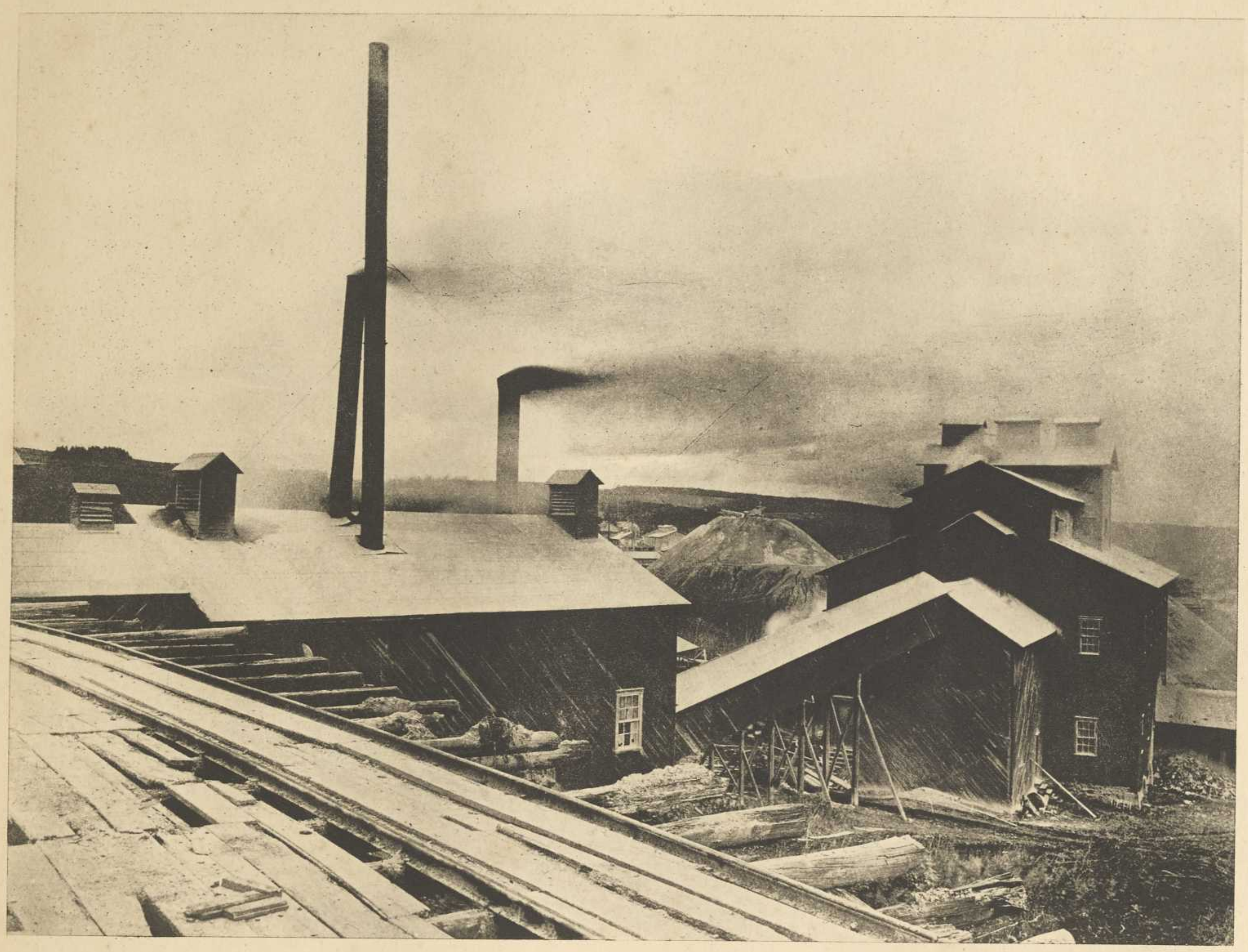
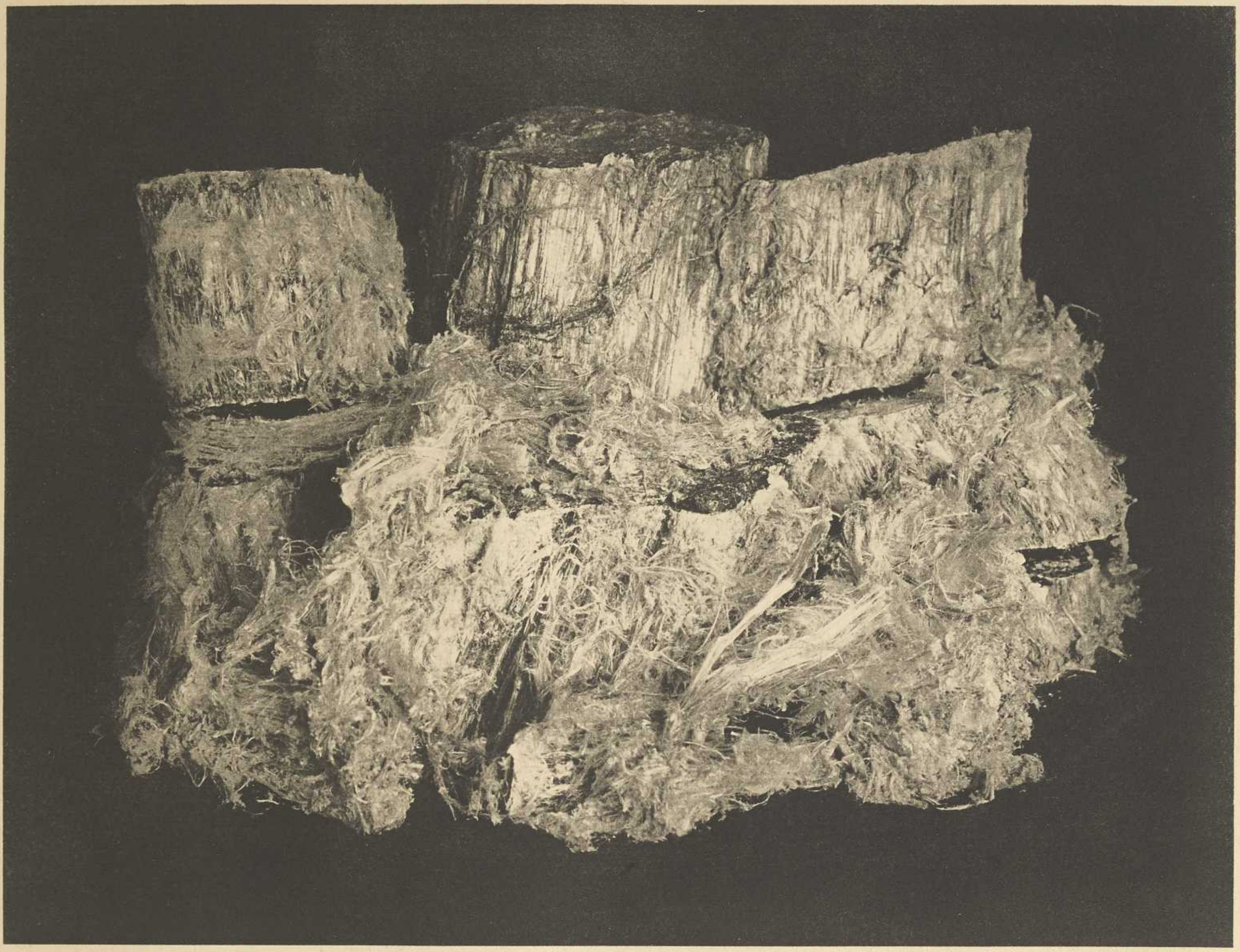


PLATE XXVII

A shallow pit at East Broughton, Canada. In this illustration may be seen the method of overhead stripping, as well as a temporary conveyor over the pit.

PLATE XXVIII

Specimen of crude asbestos obtained in Canada. This material is a true chrysotile asbestos of great tensile strength and silkiness, and must be distinguished from asbestos found in other parts of the world. The average length of this crude, which is known as No. 1, is 2½ inches, although the general run of No. 1 Crude is 1 inch and upwards. No. 2 Crude is less than 1 inch in width.



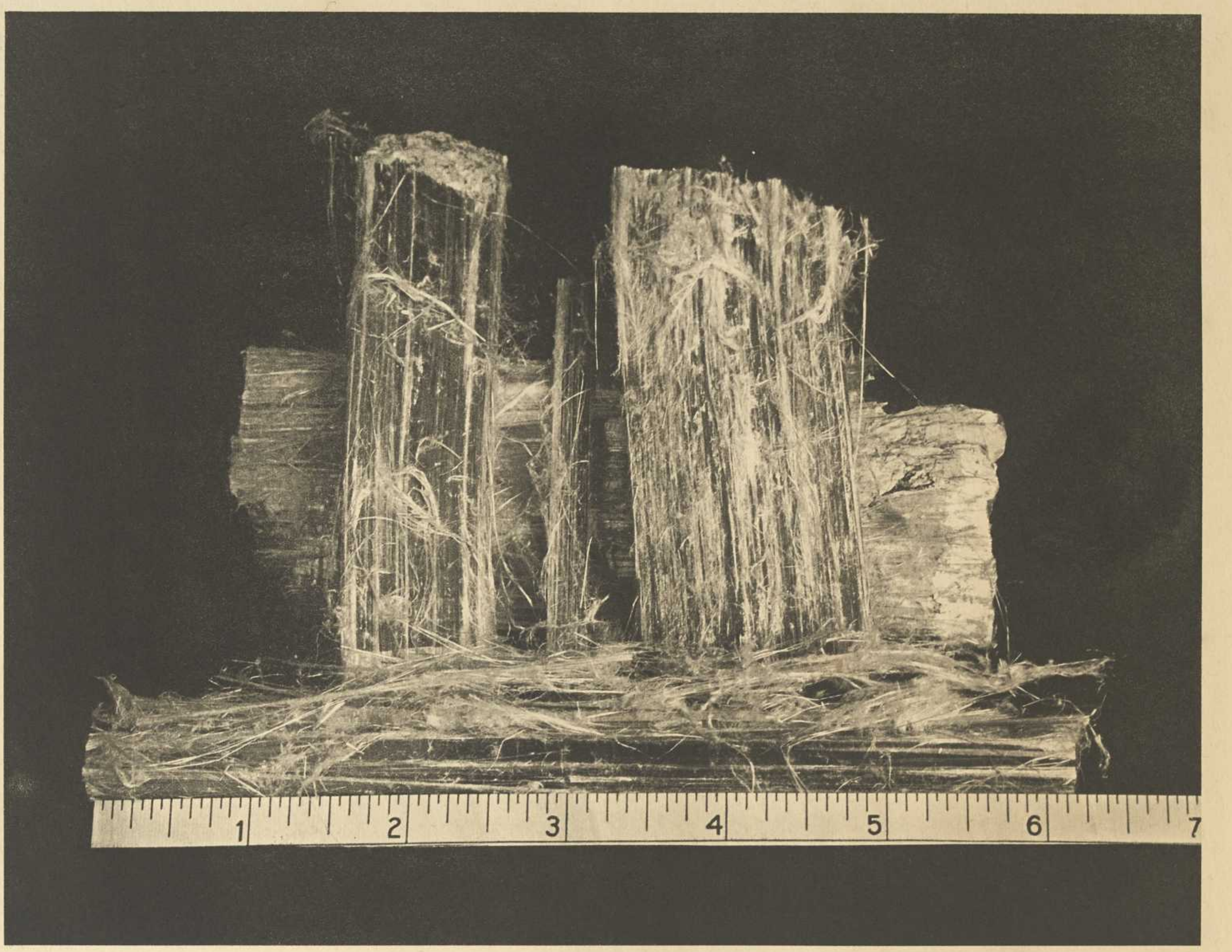

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PLATE XXIX

Specimen of Australian chrysotile asbestos produced in Western Australia. The commercial value of this is enhanced by its exceptionally long and silky crude veins, but it is unobtainable on account of the pockety nature of the product and the difficulties encountered in transportation.

PLATE XXX

Specimen of crystallized asbestos-bearing rock showing the new veins of asbestos visible under a microscope.

PLATE XXXI

A specimen of asbestos crude found in the Porcupine District in Ontario, Canada. Judged by the illustration, this material resembles the Thetford crude shown in Plate XXVIII, but, having no tensile strength, it is unfit for spinning, and therefore, of no commercial value.

PLATE XXXII

A specimen of asbestos found in Arizona. Although this material is much longer than that found in the Province of Quebec, Canada, it has neither the same tensile strength nor the silkiness of the latter. It may, however, be mixed with Canadian crude and the combination used for spinning purposes.

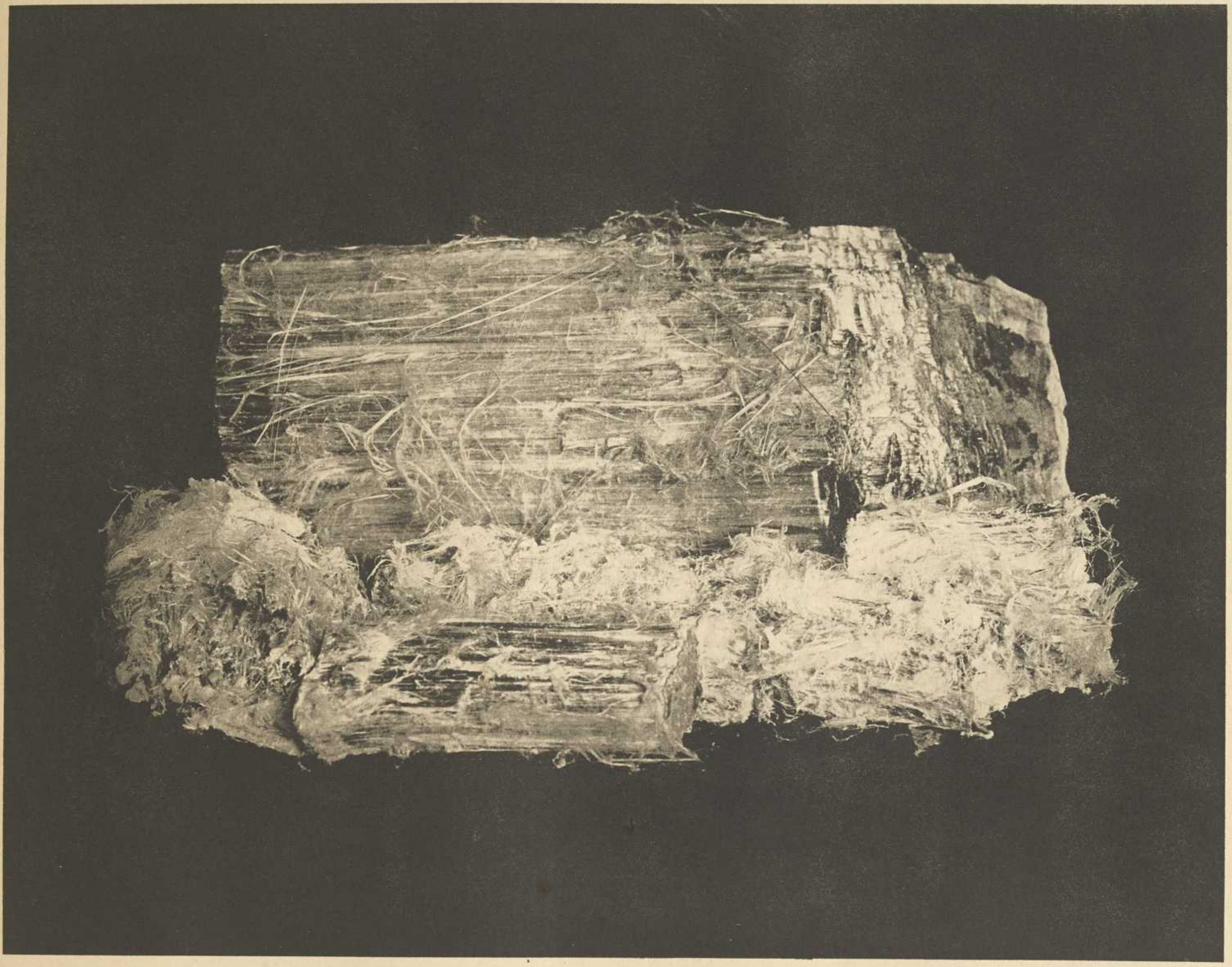


PLATE XXXIII

A specimen of amphibole asbestos found in Cuba. This material must not be confounded with chrysotile asbestos found in commercial quantities exclusively in Canada. Amphibole asbestos is found in the United States as well as in various other parts of the world in large quantities. It is unfit for spinning but is used for asbestos cement and other purposes where short fibre can be employed, as in paper fillers, etc.

PLATE XXXIV

A specimen of blue asbestos, found in the Cape District of South Africa. This material is used in large quantities by English manufacturers. It is mined cheaply but requires special machinery for handling. Not until very recently has the American manufacturer used blue asbestos in any appreciable quantity, but by mixing it with the Canadian material, there is produced a blue-white product which finds a very good sale.

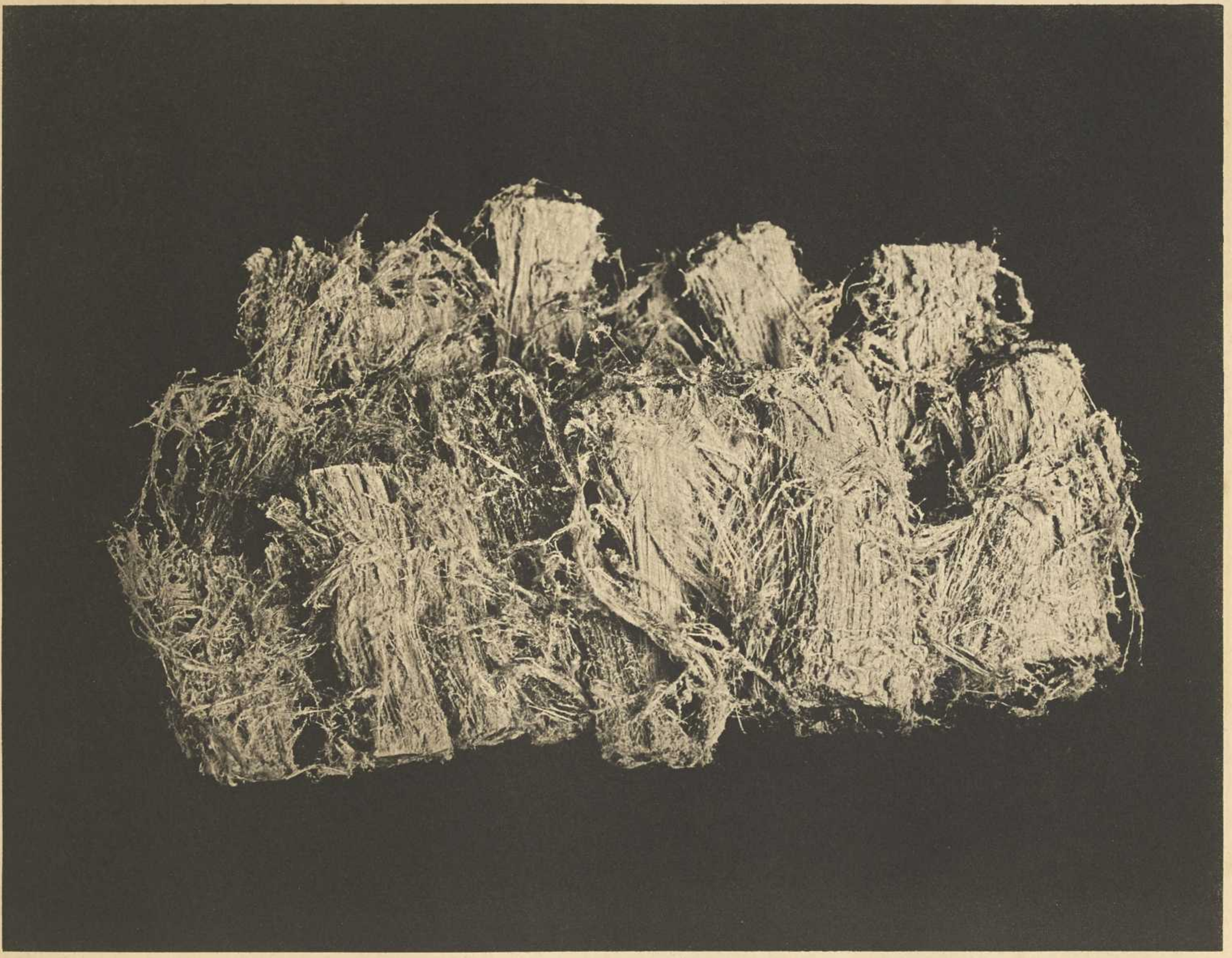
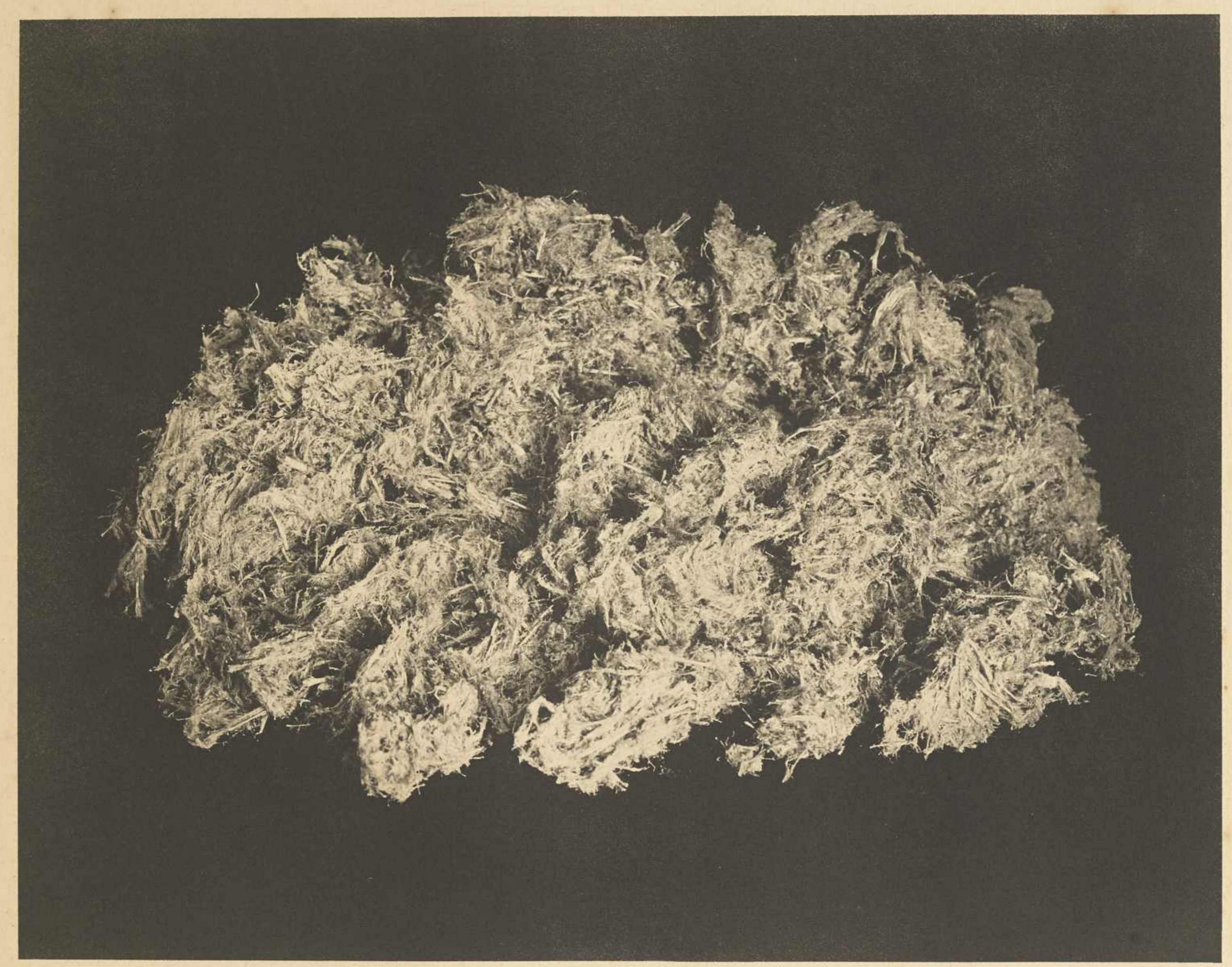


PLATE XXXV

A specimen of California asbestos found in pockets. The fibre is very long, but rather harsh. So far this material has not been found in commercial quantities and it is not suitable for spinning purposes.

PLATE XXXVI

A specimen of asbestos found in the Ural Mountains in Russia. This material is used largely in manufacturing asbestos shingles. Unlike the machinery method employed in Canada, the Russians use practically no machinery on account of the cheapness of labor. Before the war these properties were worked to a considerable extent, but at the present time are not being operated.



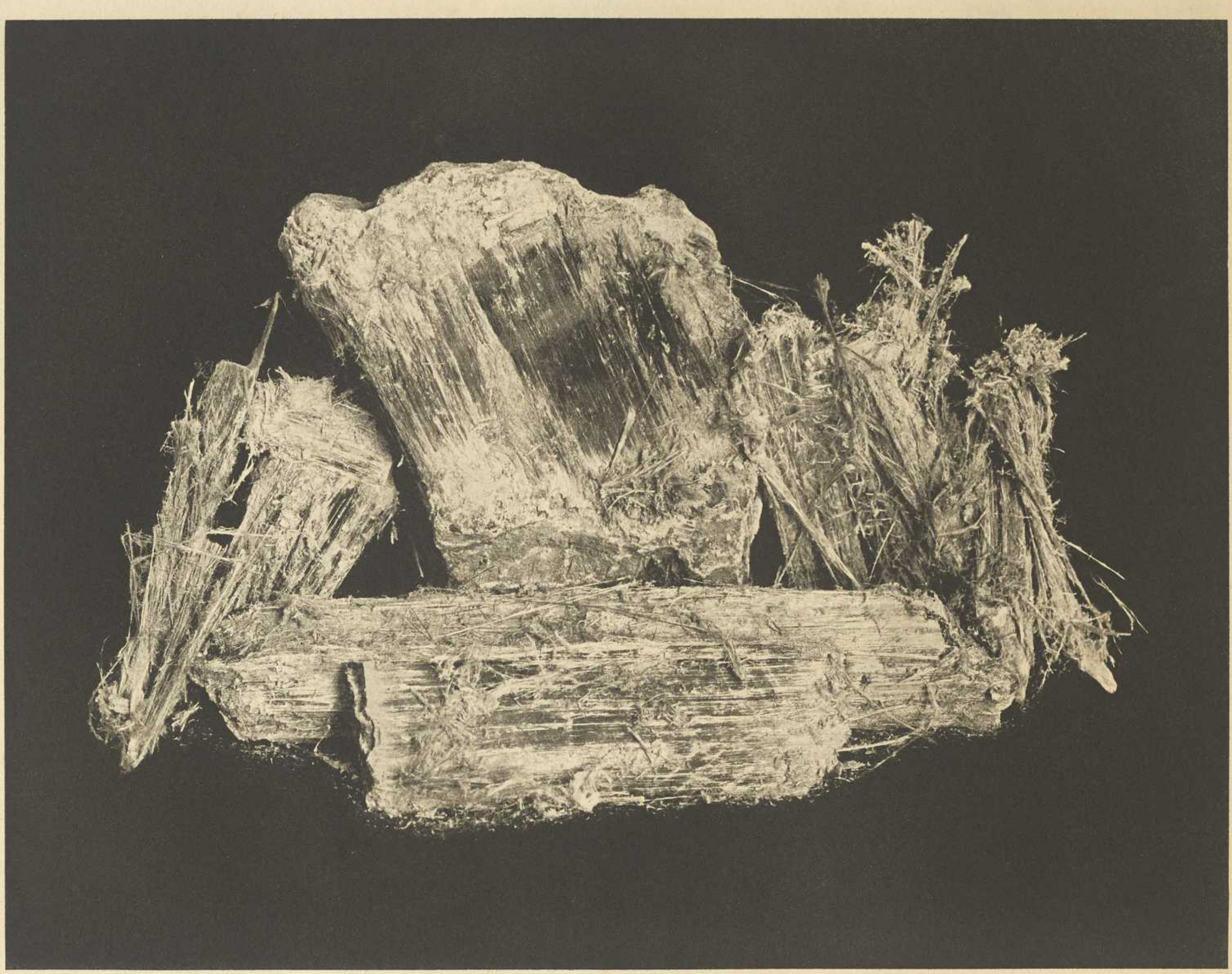


PLATE XXXVII

A specimen of blue asbestos found in large blocks in Bolivia, South America. Not capable of being spun, it has no commercial value. The properties being situated so far from transportation facilities, the working of them is unprofitable.

PLATE XXXVIII

A specimen of brown African asbestos. This material is found in South Africa in large quantities, varying in length from one inch to one foot. Unsuitable for spinning purposes, it is very seldom used by manufacturers because of its harshness, which, when put over the carding machine, causes the cards to wear out very quickly.

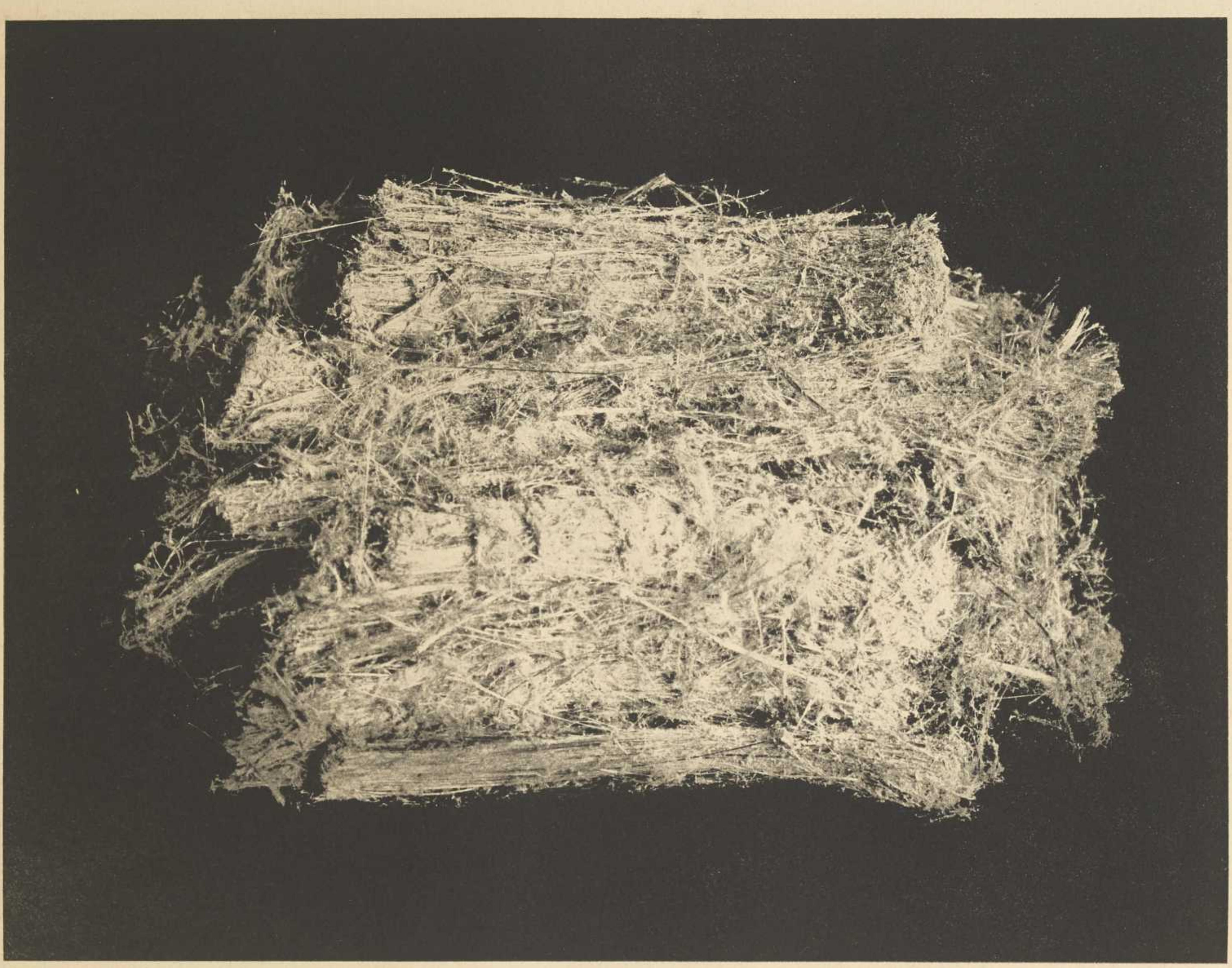
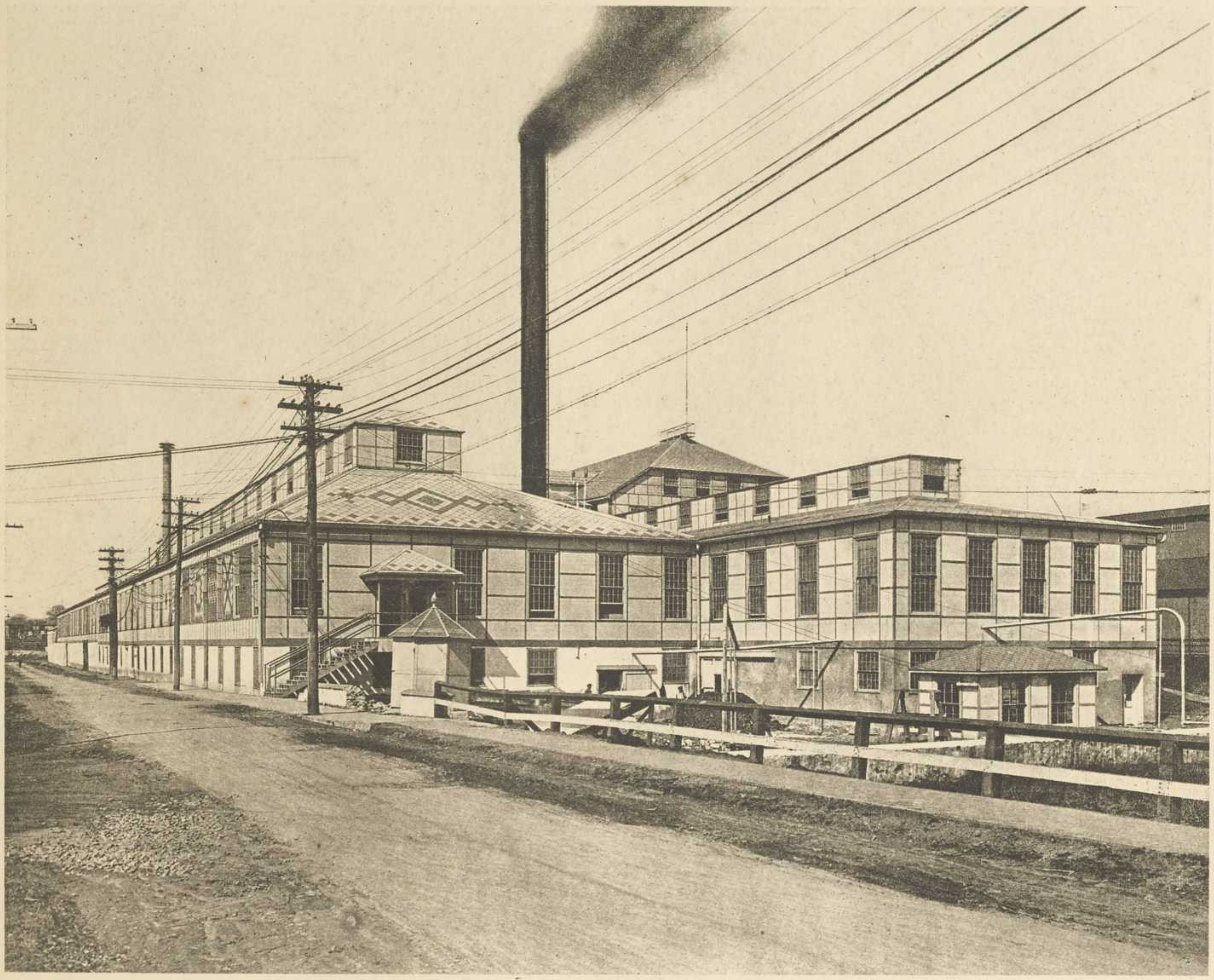


PLATE XXXIX

A specimen of Chinese asbestos whose fibre matter shows great brittleness. The upright material shown consists of fibres collected and tied in small bundles that weigh one-half pound each. This method of handling is possible on account of the cheapness of Chinese labor. The product is harsh and hence is workable only by manufacturers of asbestos shingles.

PLATE XL

Exterior of an asbestos manufacturing plant built entirely of asbestos lumber and asbestos shingles.



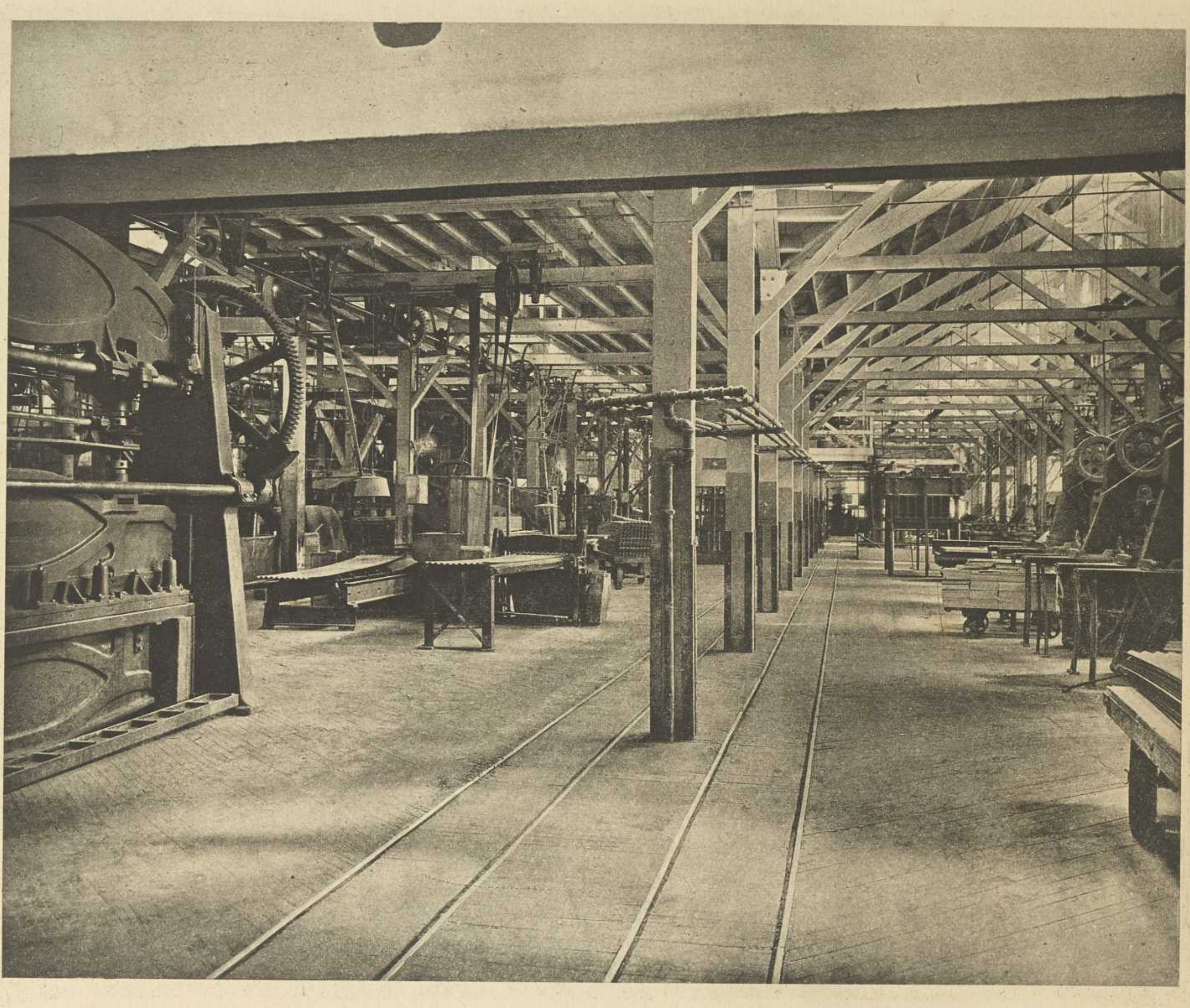


PLATE XLI

Machinery for the manufacture of asbestos corrugated lumber, asbestos shingles and asbestos siding.

PLATE XLII

Drying-room in an asbestos manufacturing plant showing asbestos shingles stacked for drying and bags of Portland cement used in conjunction with asbestos fibre for manufacturing shingles.

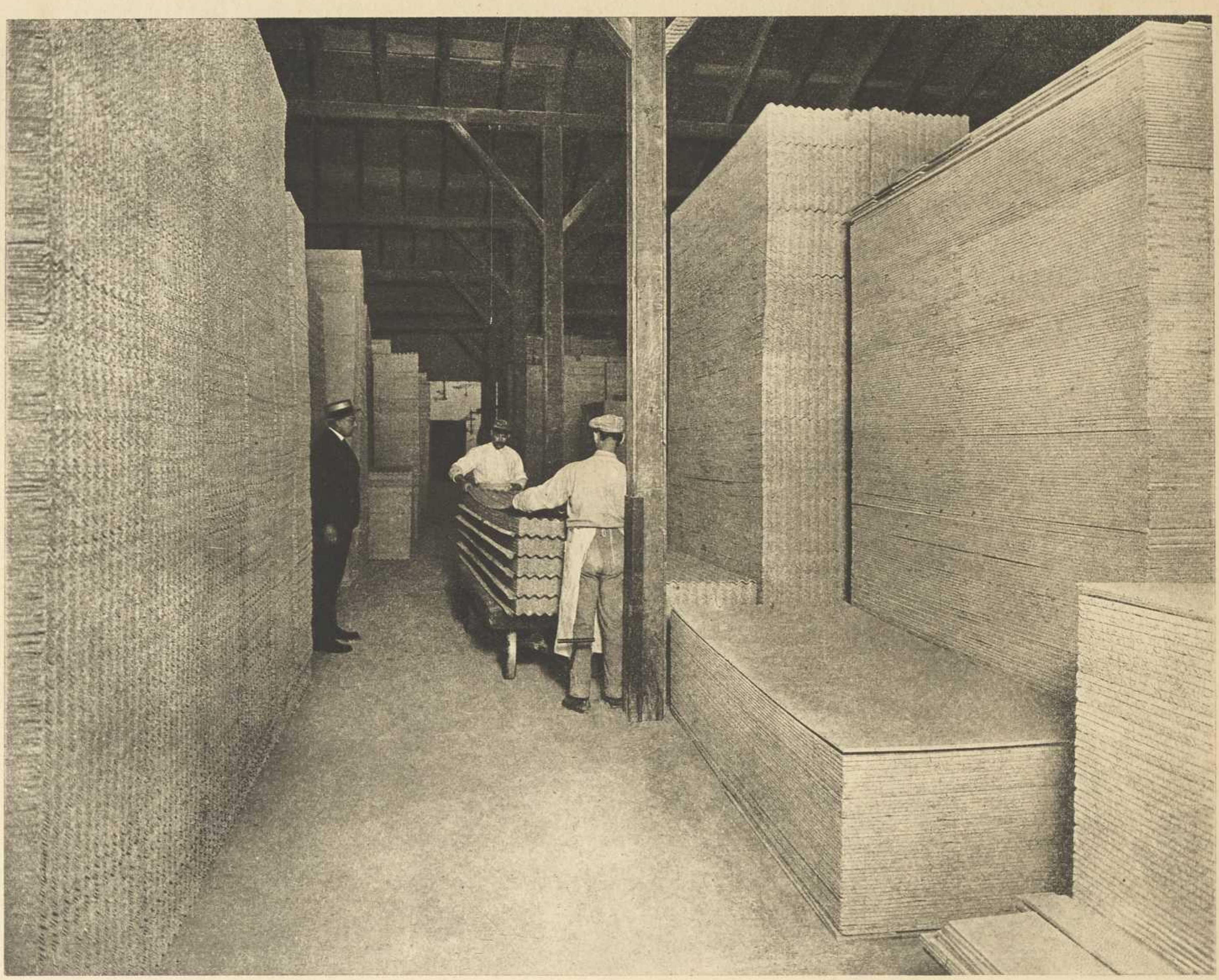


PLATE XLIII

A large room in an asbestos manufacturing plant showing asbestos corrugated lumber stacked preparatory to being crated for shipment.

PLATE XLIV

Mule spinners for spinning asbestos in the textile department of an asbestos manufacturing plant, showing also yarn on the bobbins for the weaving department.

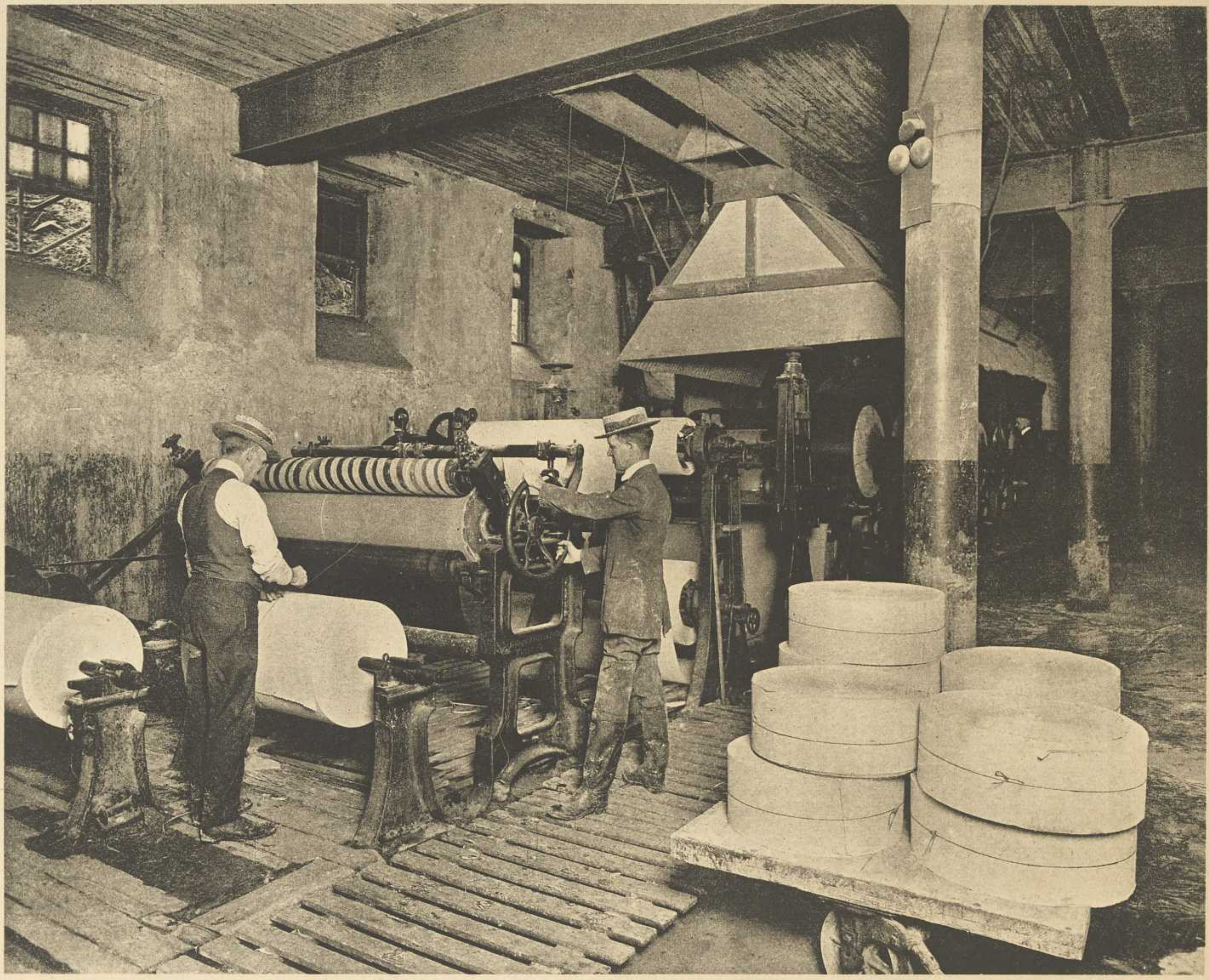
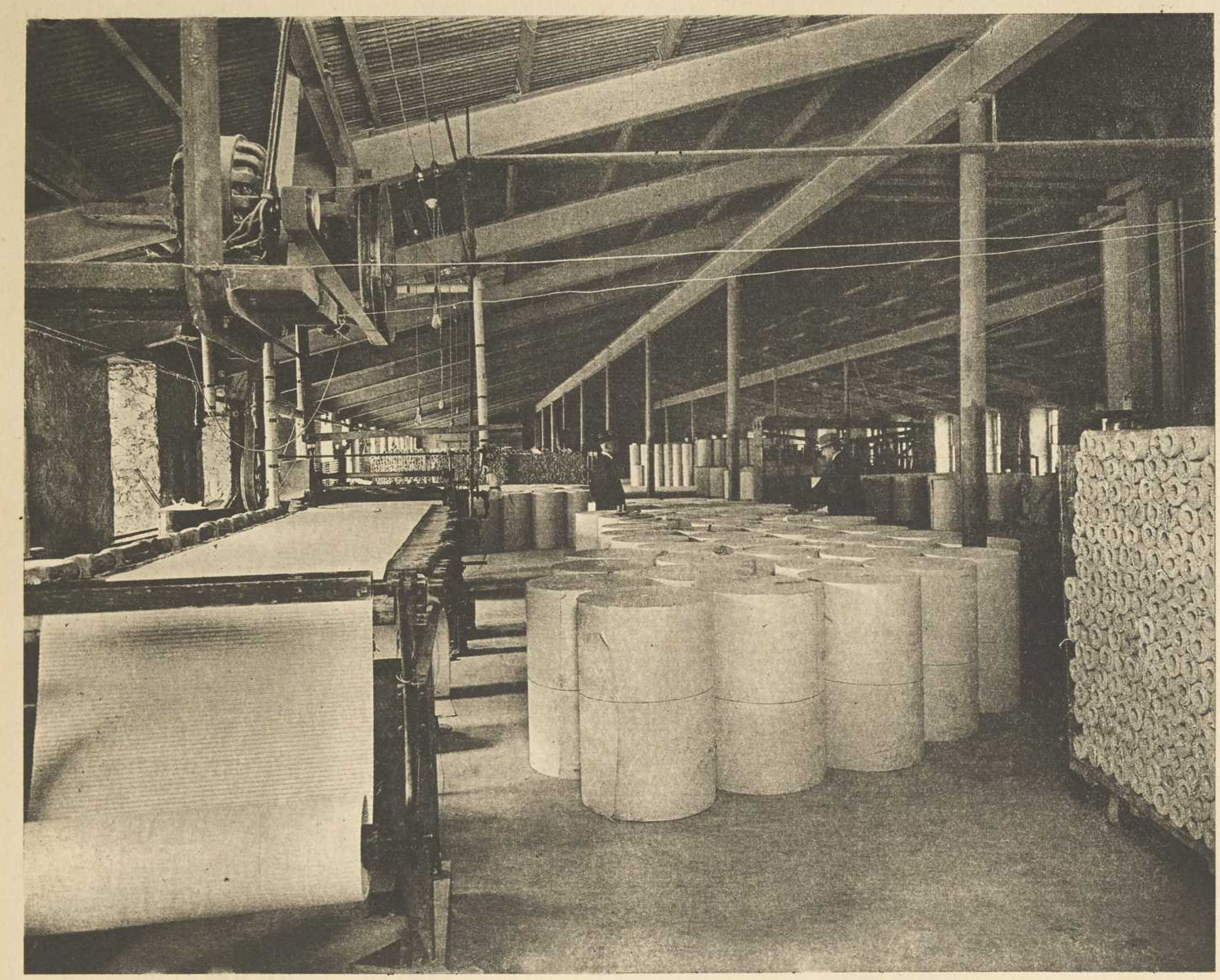


PLATE XLV

Modern asbestos paper-making machine, with finished asbestos paper which is made in various widths and thicknesses.

PLATE XLVI

Air cell department of an asbestos manufacturing plant, with a machine for corrugating asbestos paper and air cell pipe covering made of corrugated asbestos paper.



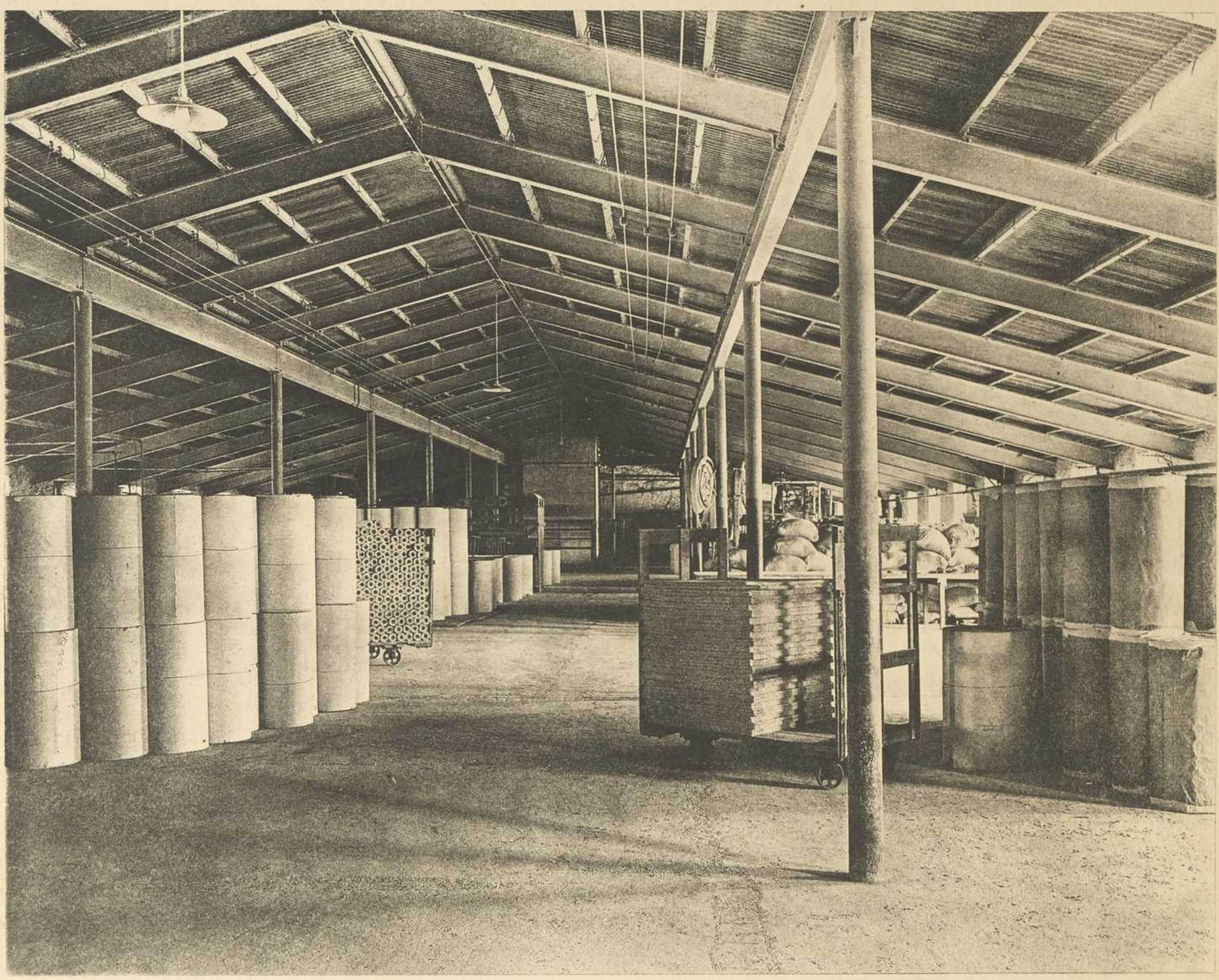


PLATE XLVII

The shipping department of an asbestos manufacturing plant. This view shows corrugated asbestos paper pipe covering and sheets. The roof of this building is constructed entirely of corrugated asbestos lumber.

PLATE XLVIII

Asbestos stockroom devoted to eighty-five per cent magnesia pipe covering for high pressure pipe lines. The stock is shown in two states, before receiving its application of canvas, and finished sections on trucks ready for the packing department.

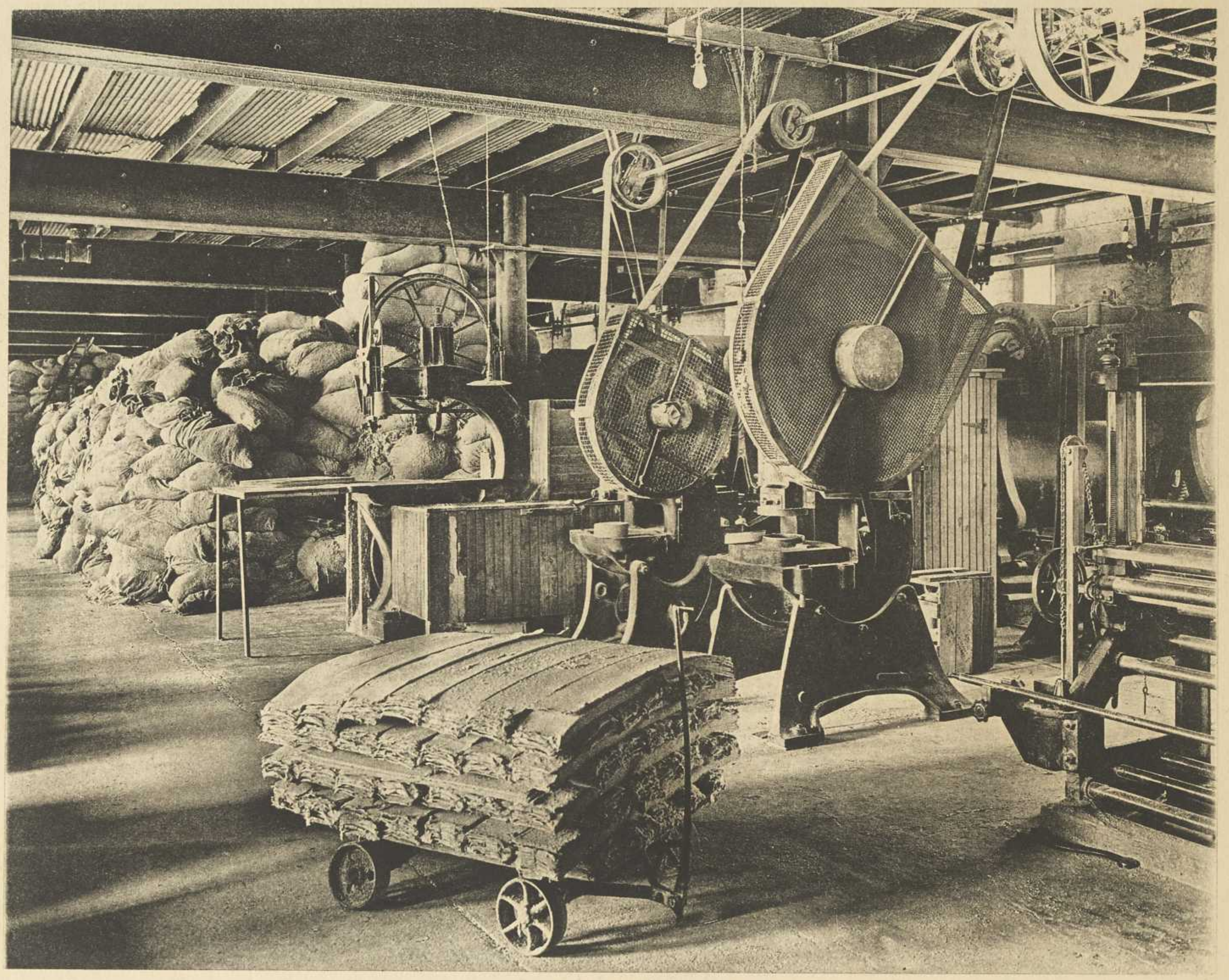
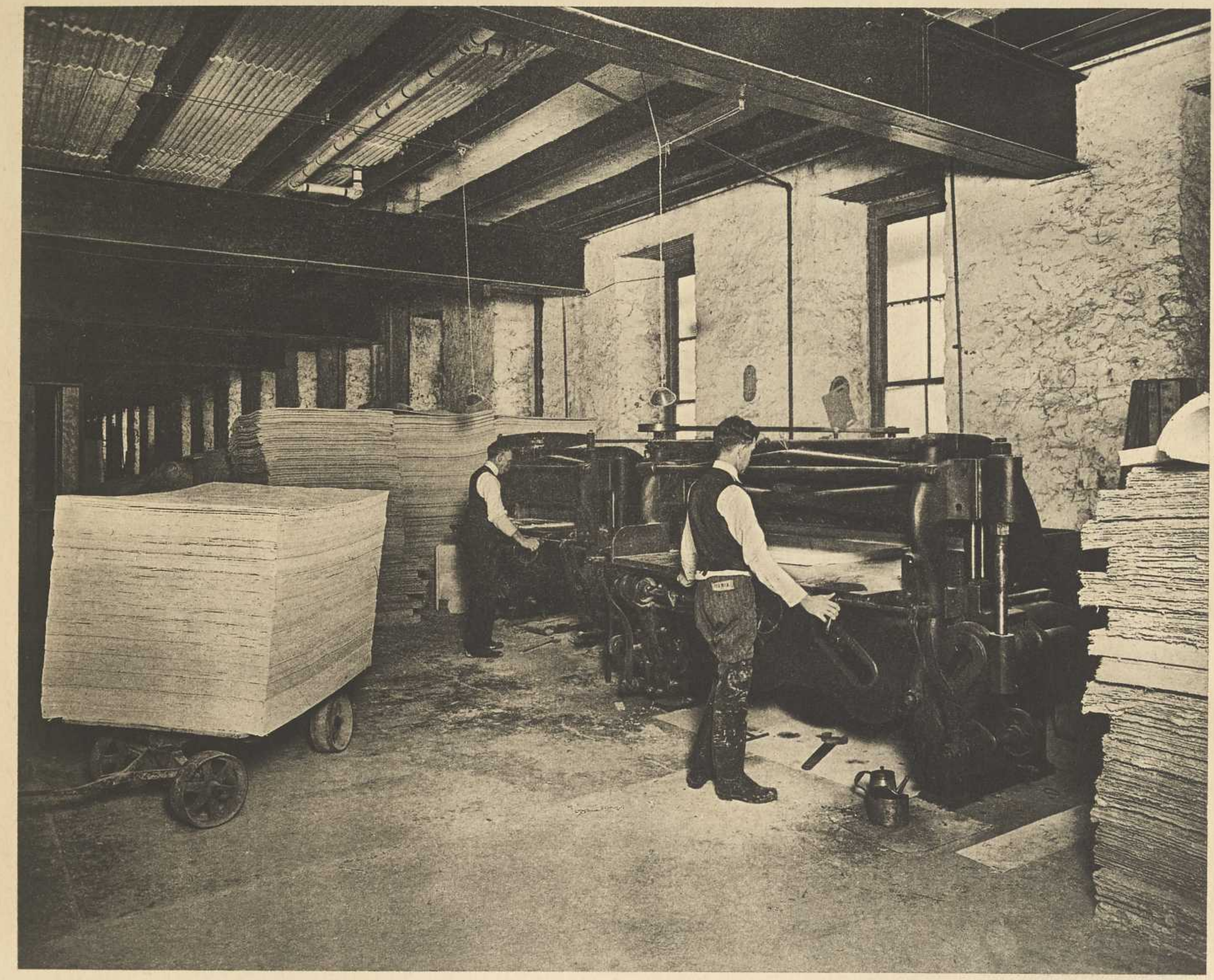


PLATE XLIX

In this view of the interior of an asbestos manufacturing plant are shown fire felt blocks and band saws for finishing the edges. The material is used largely for locomotive lagging.

PLATE L

Guillotines for cutting edges of asbestos millboard. The material is here shown before and after the edges are trimmed.



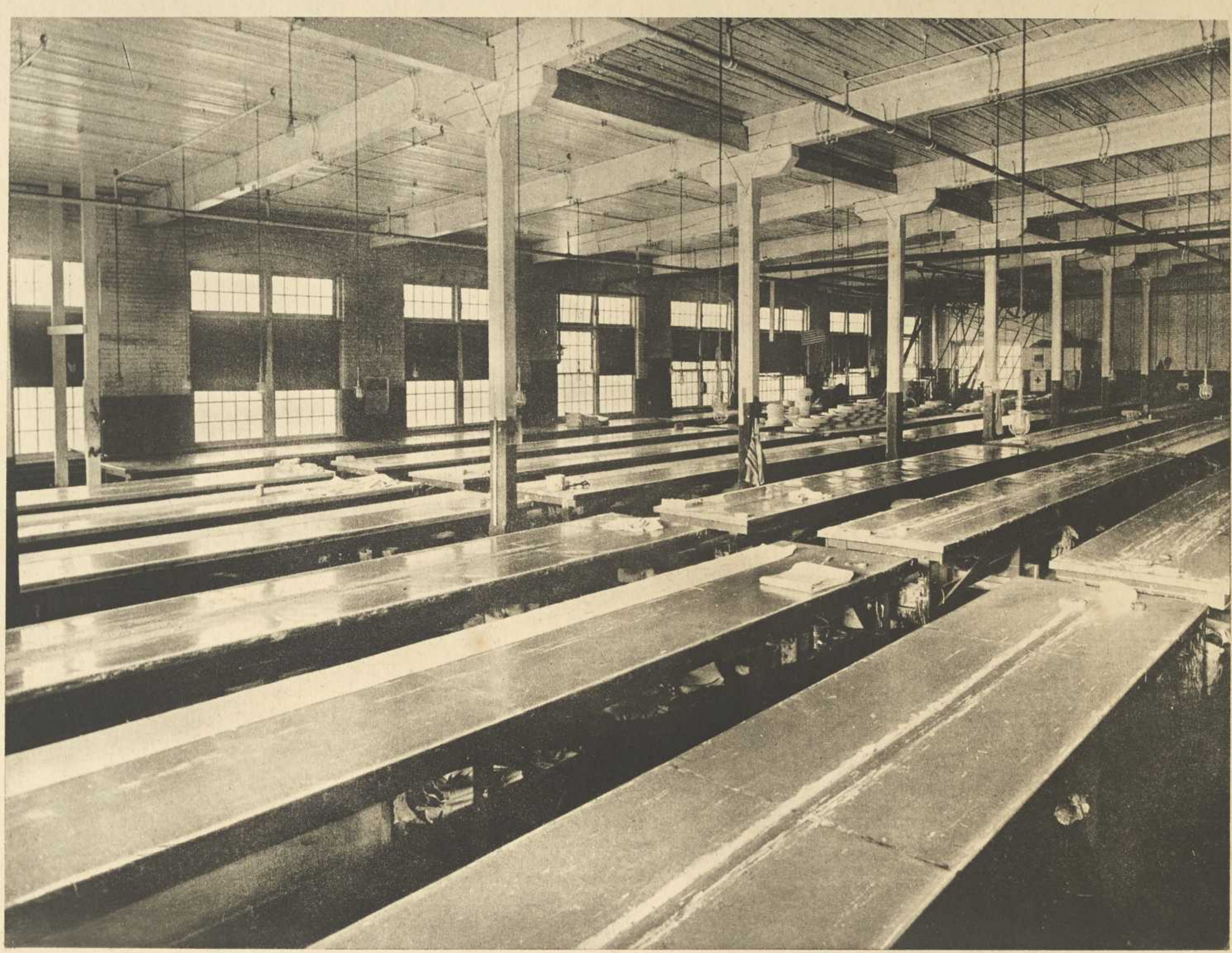


PLATE LI

This view of an asbestos textile plant (packing department) shows a table on which asbestos cloth made of Canadian crude is cut and rolled into packings and gaskets.

PLATE LII

Brake-lining department in an asbestos textile plant showing machines for weaving yarns into brake band lining of various widths. This brake lining is afterwards treated and waterproofed, after which it is ready for actual use on automobiles.

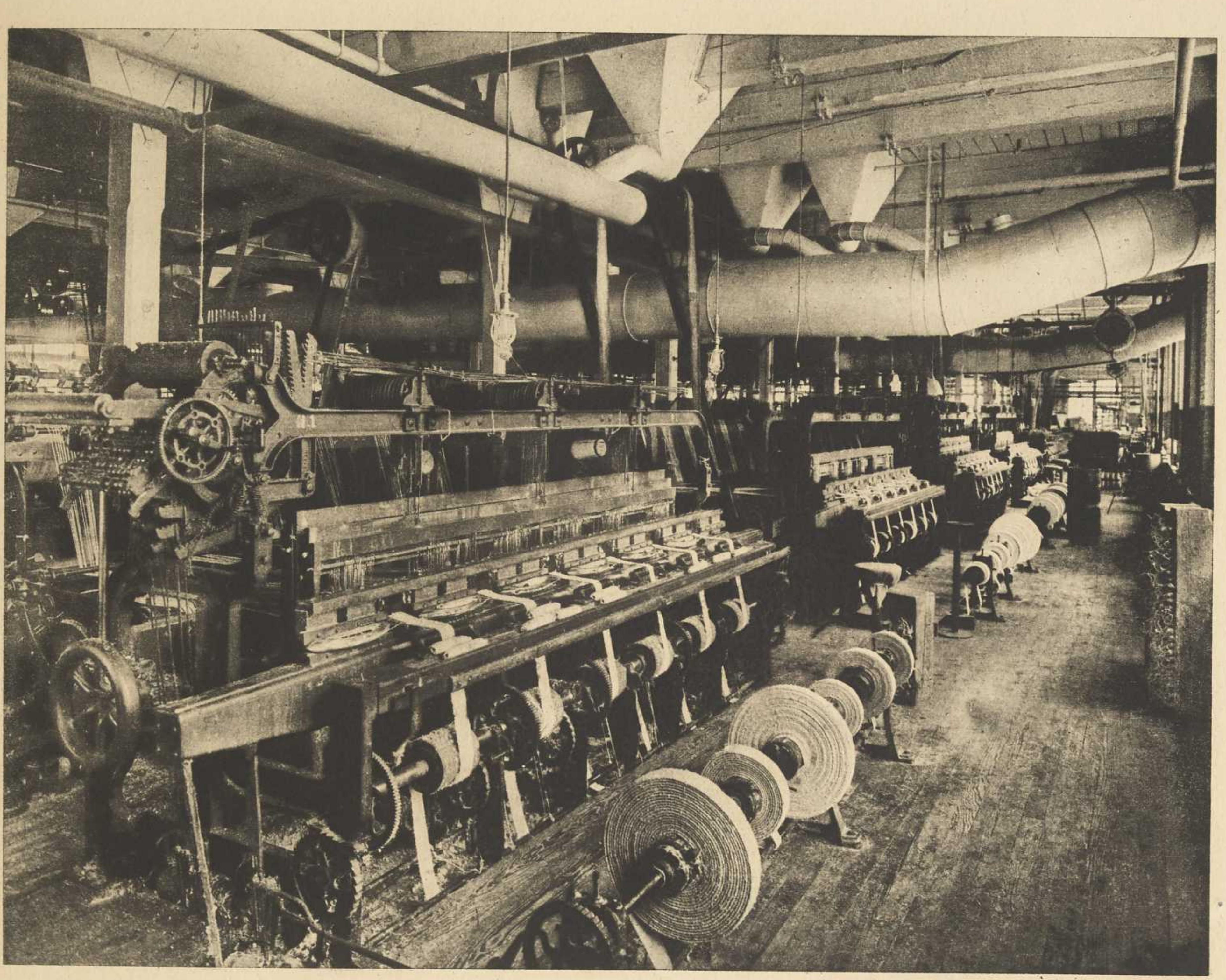


PLATE LIII

Interior of an asbestos textile plant. Here, asbestos roving, made of Canadian crude asbestos, after coming from a carding machine, is being put on bobbins.

PLATE LIV

An interior view of an asbestos textile plant showing asbestos yarn on spools ready to be taken to machines for manufacturing brake lining.

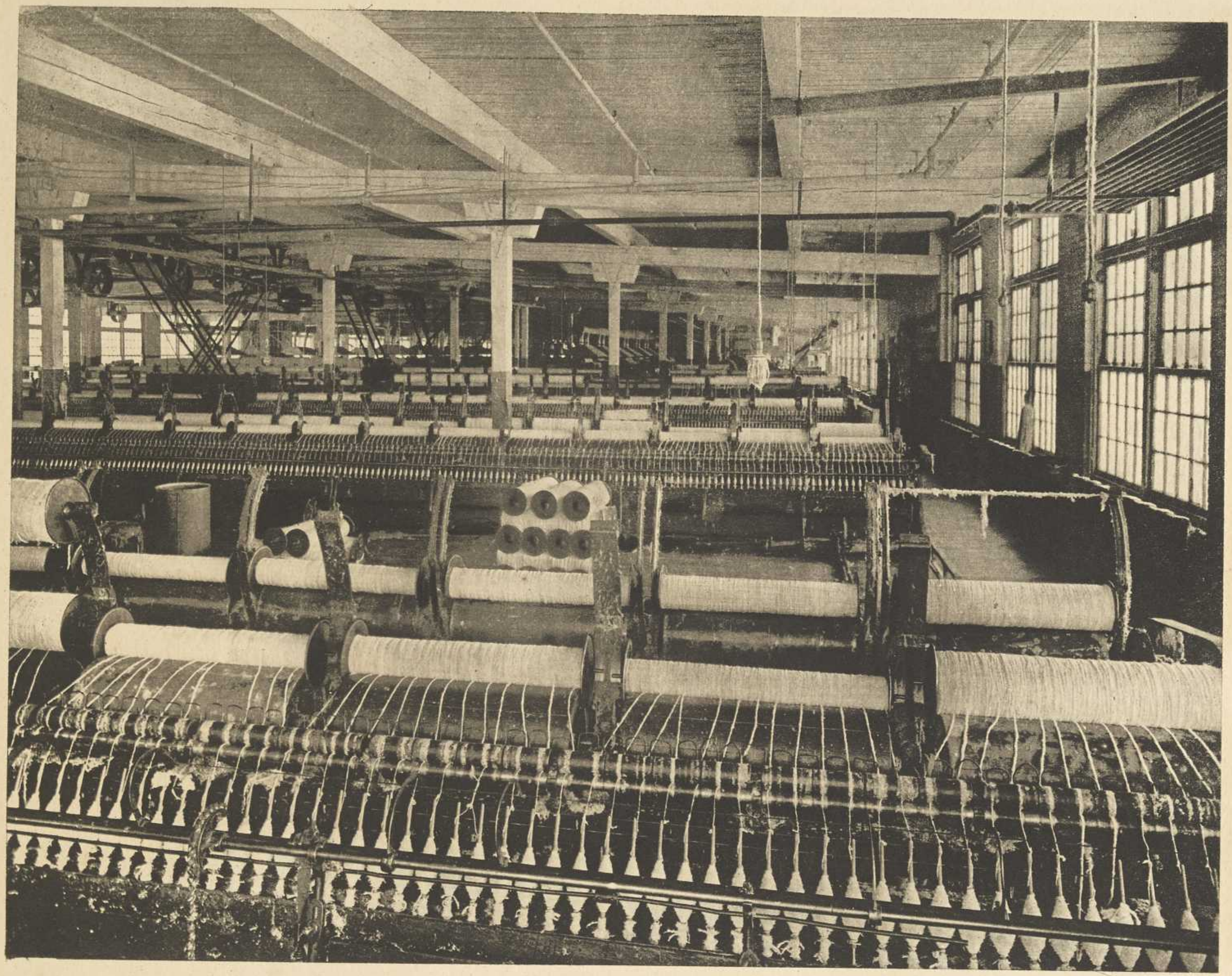
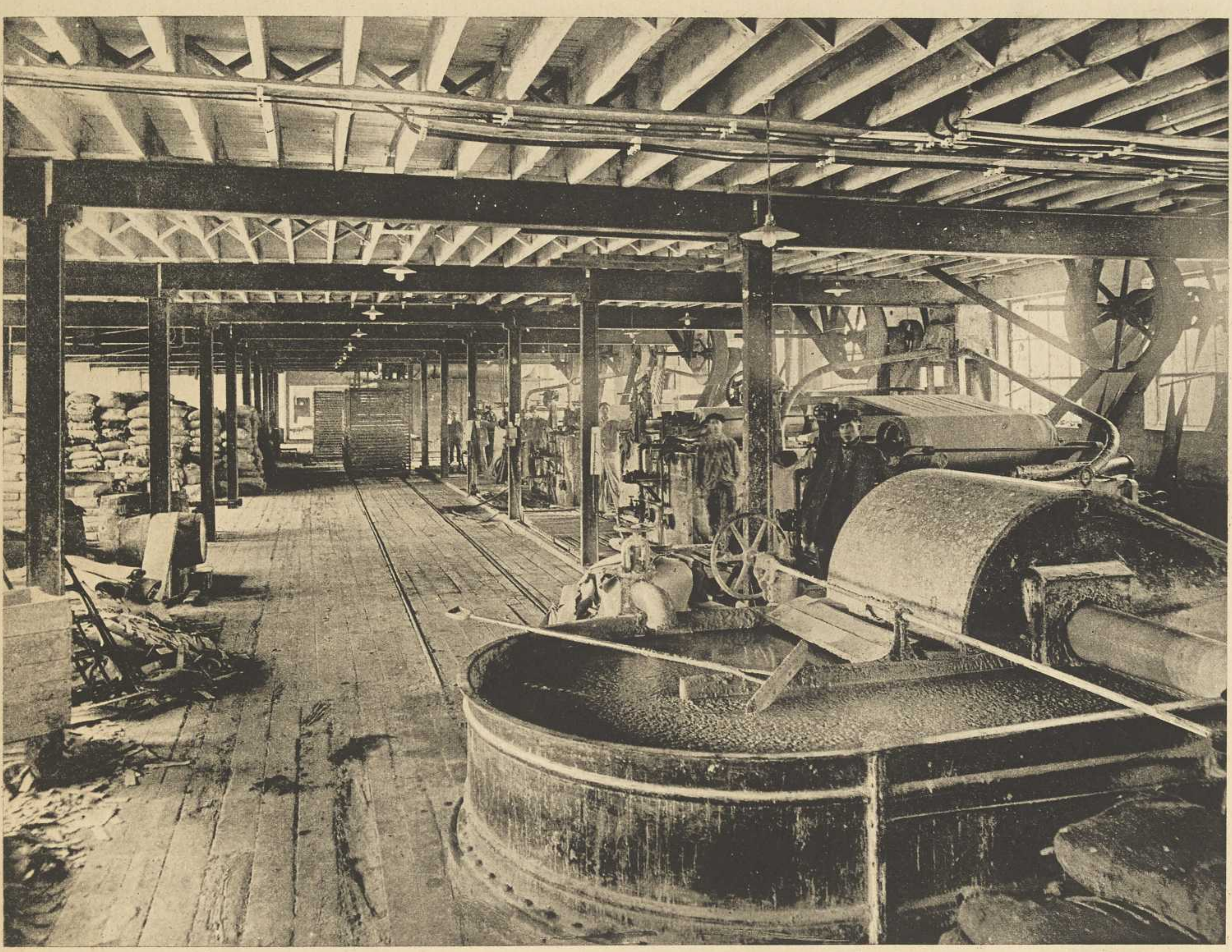


PLATE LV

Bird's-eye view of an up-to-date textile plant in the United States. This plant is one of the largest of its kind.

PLATE LVI

View of a digestor in which asbestos fibre is mixed with other ingredients for making asbestos paper and millboard. On the right-hand side may be seen a millboard machine, and on the left-hand side the raw stock before it is mixed. In the center may be seen the trucks on which the millboard sheets are taken before drying and pressing.



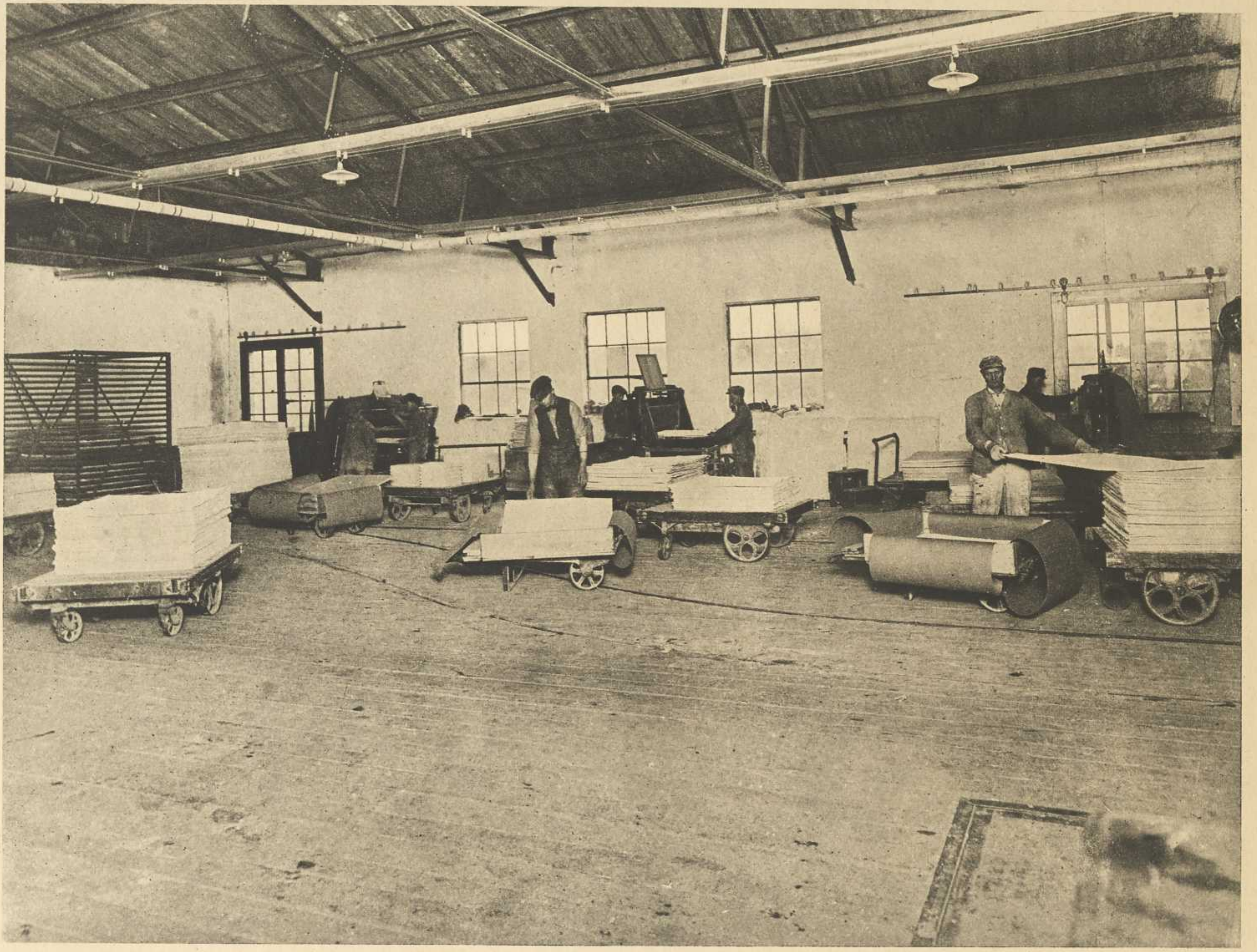


PLATE LVII

Millboard after it has been dried and pressed. The edges are being trimmed and sheets packed in crates previous to shipping.

PLATE LVIII

Interior view of an up-to-date asbestos paper-making plant. On the right-hand side may be seen a paper-making machine which is one of the largest of its kind. Asbestos paper in rolls thirty-six inches wide is shown in the foreground, and on the left-hand side may be seen a felt-making machine which is largely used in connection with asbestos paper for making fireproof roofing.

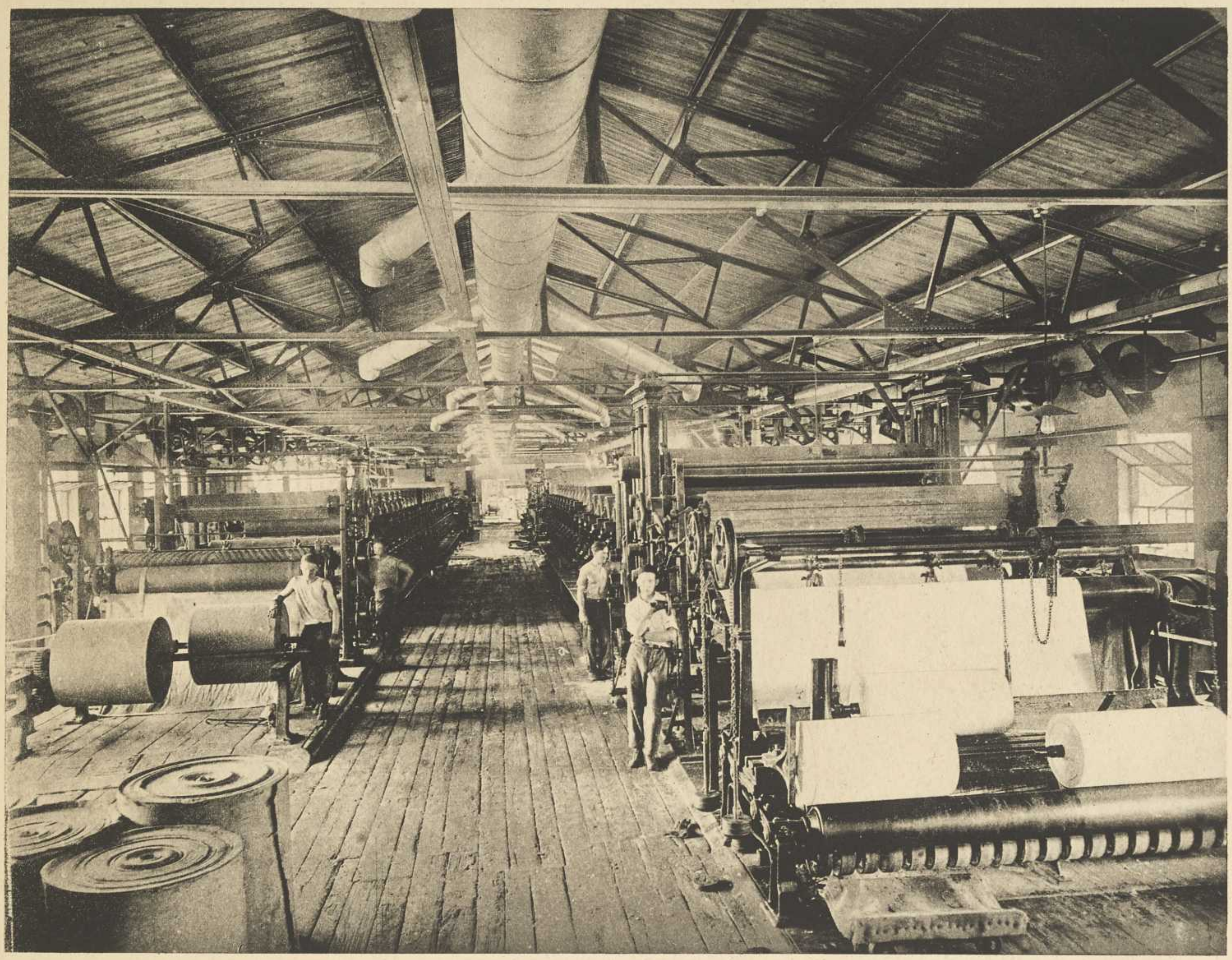


PLATE LIX

A machine for coating felt paper with a composition and for applying asbestos paper to the felt for making asbestos roofing of felt and asbestos combined—produced as in Plate LVIII.

PLATE LX

View of a battery of sewing machines that are used for stitching asbestos millboard and canton flannel of which the well-known household utensils, such as table-pads and table-doilies, are made.

ASBESTOS AND MINERAL CORPORATION

NEW YORK

THIS company is recognized as the world's largest, dealing exclusively in Asbestos Crude and Fibre. Officers of the company have given unremitting attention to the subject for the past fifteen years. In that period, by invitation, mines in every quarter of the globe have been inspected, and rare and unusual specimens have been accumulated to form the most comprehensive private collection known.

Every book of Asbestos value has been secured to enrich the company's New York Office Reference Library, which is open to customers and guests.

Maintaining a selling organization that covers the entire American continent, the company also operates foreign branch offices for the benefit of its customers in the export field. These foreign offices are supervised and frequently visited by its executive officers.

From its circulation department a monthly letter is sent gratis to customers and others interested to keep them advised on market conditions.

The company specializes in raw Asbestos from Thetford Mines, Black Lake, East Broughton and Robertson, Canada, and also in African Blue, White and Brown.

[SEE PAGE 194]

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