

T & M Bairstow

**Worsted Spinners
& Manufacturers**

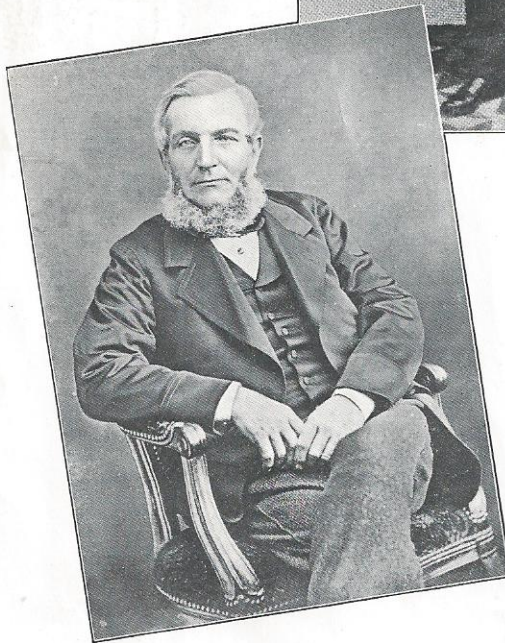
**Sutton Mills Crosshills
N^o Keighley**



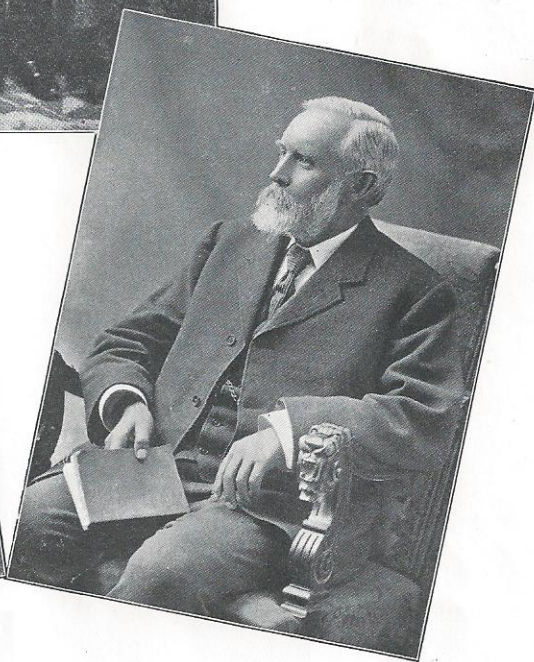
B

T. & M. BAIRSTOW
Worsted Spinners and Manufacturers
Sutton Mills, Cross Hills
Nr. Keighley

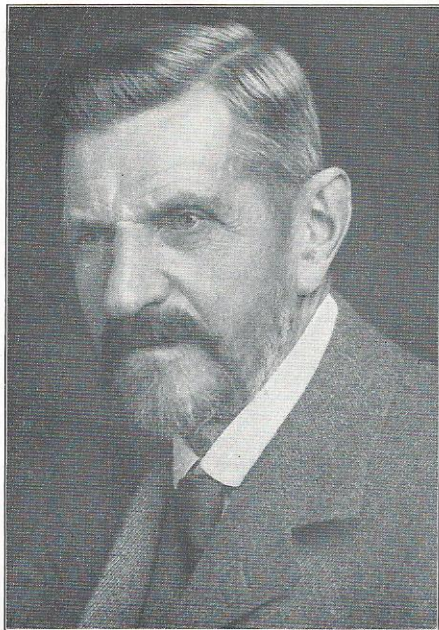
The late Mr. Thomas Bairstow



The late Mr. Matthew Bairstow



The late Mr. John B. Spencer



Mr. JAMES BAIRSTOW

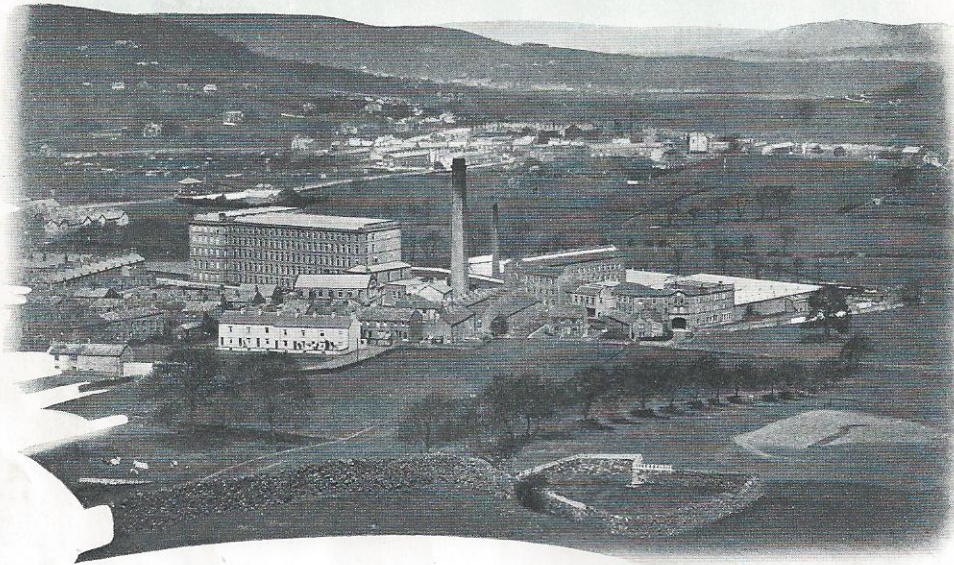


Lieut.-Col. C. M. BATEMAN,
D.S.O., T.D.

Foreword

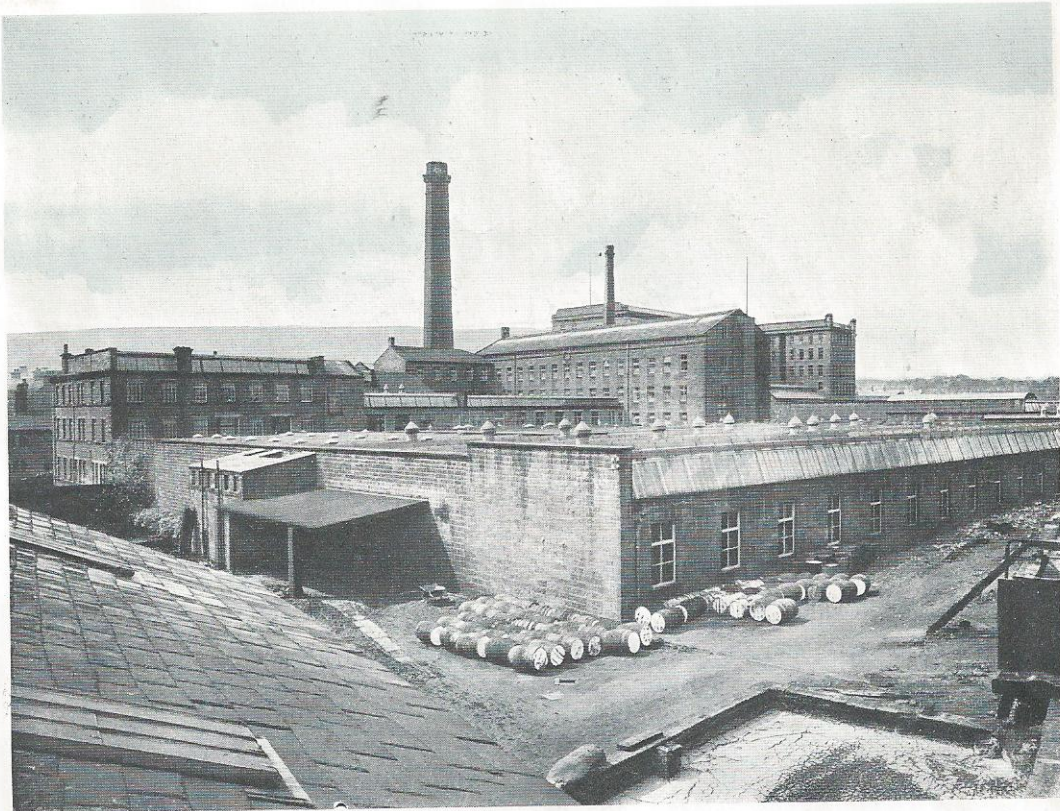
EIGHTY-TWO years have elapsed since the foundation of the firm in 1838; we feel therefore we are justified in issuing this booklet, because during all these years we have never made public the growth and character of the business which now we place on record and we think they may be of interest to our various friends. The views and portraits only give a very slight idea of the Mills, but naturally owing to lack of space we could not show everything; we think, however, we may claim that they are fairly representative.

T. & M. BAIRSTOW.



VIEW OF SUTTON MILLS AND SURROUNDING COUNTRY.





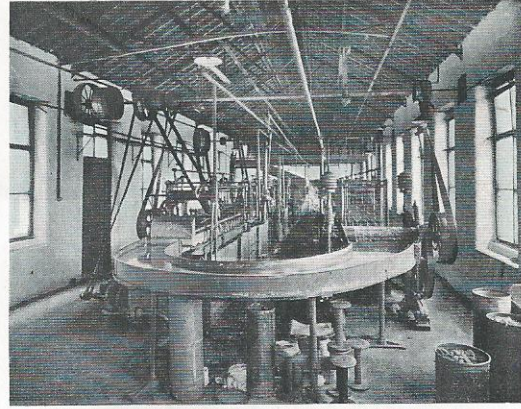
ANOTHER VIEW OF THE MILLS.

LONG before the industrial revolution swept over England in the first half of last century, and in the days when water was the chief consideration in choosing a factory site, the business of Corn Milling was carried on at Sutton Mill. The early proprietors of that industry have in many cases left sufficient evidence for us to trace their identity from the time of Henry VIII.

In the year 1809 the old Corn Mill and adjoining land first passed into the hands of the Bairstow family. The property was acquired at that date by John Bairstow, Grandfather of the present Mr. James Bairstow. The business of Corn Milling was continued until 1838, when the grinding of Corn gave way to the rising industry of the Spinning and Weaving of Wool.

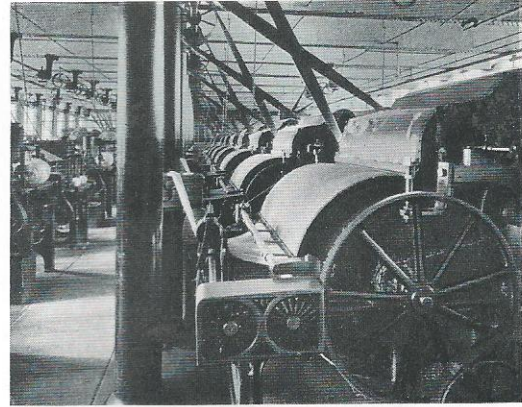


WOOL SORTING.



WASH HOUSE.

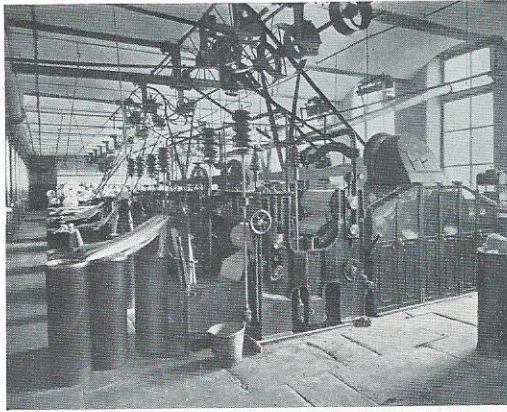
In that year the existing firm came into being. The founders were Mr. Thomas Bairstow, who died in 1867, and Mr. Matthew Bairstow, who retired from the business in 1880, and died in the following year. Mr John Bairstow Spencer was also associated for many years with the business. He was made a partner in 1868, and took an active share in the affairs of the firm until his death in 1900.



CARDING MACHINES.

At the present time the firm is in the hands of Mr. James Bairstow, only son of the late Matthew Bairstow, together with his nephew, Lieut.-Colonel C. M. Bateman, D.S.O., who has just recently been made the junior partner in the firm. Mr. James Bairstow was born in 1852 at the Knott, near Eastburn, and received his early education at Oxenhope Parsonage, under the Rev. J. B. Grant, and afterwards concluded his studies at Thorparch Grange, Tadcaster. He commenced his business life with his father while still in his teens, and went through all the details of spinning and manufacturing, and was made a partner in 1874.

Under his supervision the firm has grown considerably, until to-day it



BACKWASHING MACHINE.

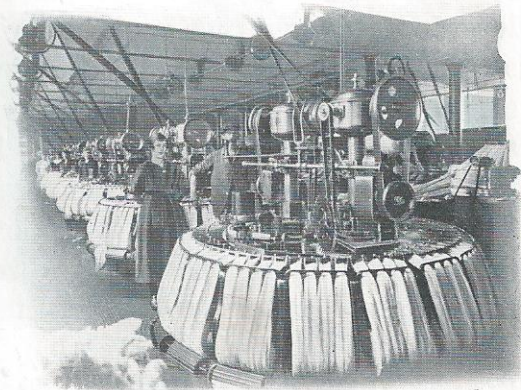


WOOL WAREHOUSE.

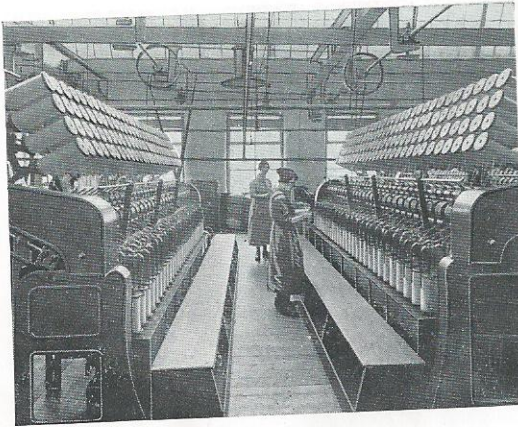
occupies one of the chief positions among the spinners and manufacturers, not only in the North of England, but in the whole of England itself. Taking into consideration the large number of similar businesses in the North of England it is no mean achievement to have gained such a prominent position.

The description that follows, which owing to lack of space is very inadequate, will afford ample proof that this statement is not an idle boast, but is substantiated by actual facts.

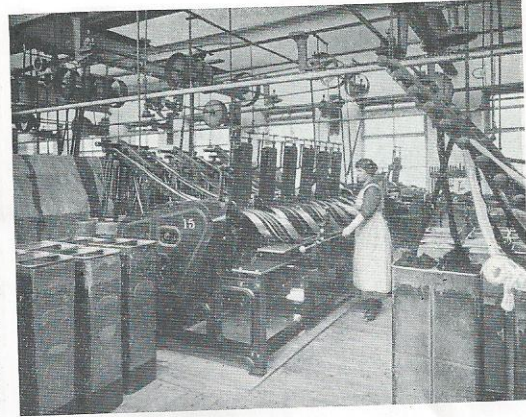
The firm is noted for the manufacture of Ladies' Suitings, Serges, Worsted Coatings, Trouserings, Linings and cloths suitable for Waterproofing, the quality and finish being fashioned on a standard of excellence laid down in their youthful days, a standard which has not since been departed from. At the present time there are about 450 looms and 20,000 spinning and twisting spindles; upwards of 700 hands constitute the average staff of the firm, the number being scattered over each of the departments, all being under careful supervision.



WOOL COMBING.



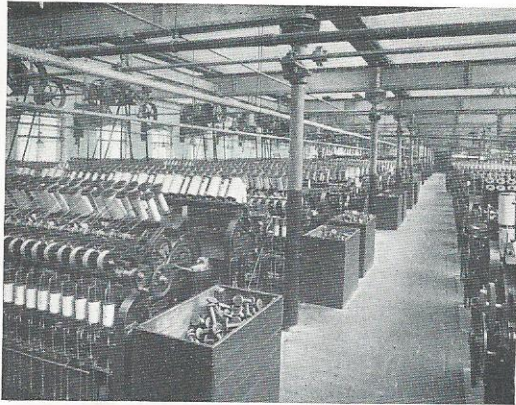
DRAWING.



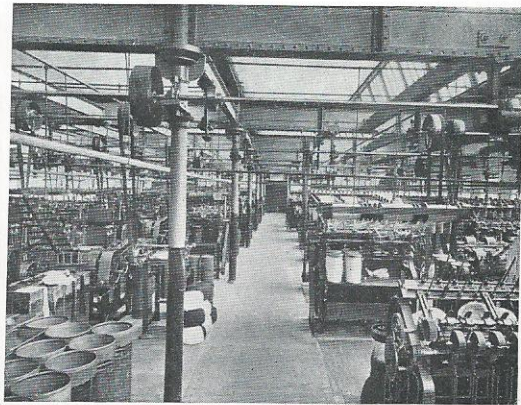
MIXING GILL BOX.

In this connection it may be placed on record that the relations between employers and employed have always been of a friendly nature, and as a testimony of this fact, one can point to the large number of employees who have worked the greater part of their lives at the mills, and in particular to ten who have completed over fifty years in the employment of the firm.

The firm took a leading position in the manufacture of fancy stuff fabrics in connection with the Bradford trade between the years 1850 and 1875, and since the revolution in the trade everything has been altered in structural and internal arrangements, in order to keep abreast of the times. A new mill was completed in the year 1888. It is of great extent, being 180 ft. long, 60 ft. wide, and five stories in height. This building is one of the finest structures of its kind in this district; it is constructed of stone, and stands on an elevated platform of ground whence a protracted view of the surrounding country is obtained; the building is in close proximity to the old mills. The machinery and plant have been chiefly supplied by the eminent firm of Messrs. Prince Smith & Son, of Keighley. The old works are also of considerable area, the machinery in this portion being principally supplied by Messrs. Geo. Hattersley & Sons, Ltd., Keighley. The London Offices are situated at 16, Watling Street, E.C.; the firm have also an office in Bradford, 6, Commercial Street, Canal Road. In Glasgow they are represented by Messrs. John Stewart and Co., of 57, Miller Street, and in



ROVING.



DRAWING.

Manchester by Messrs. W. Bennett and Co., of Piccadilly.

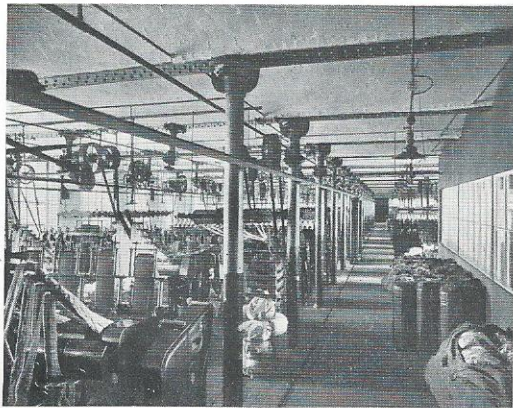
The entire process of manufacturing, with the exception of dyeing and finishing, is carried on at Sutton Mills.

The term Manufacturing is here used in its fullest sense, and does not only imply weaving, but means the converting of the raw wool into pieces of cloth ready for making into garments.

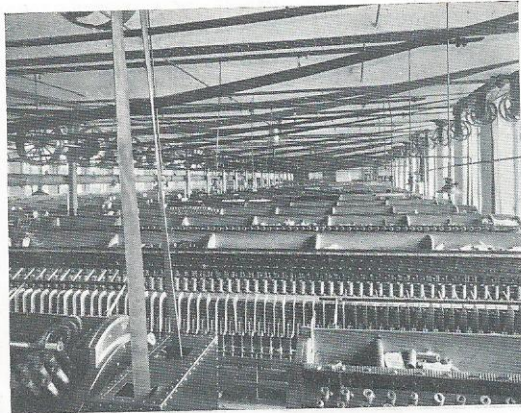
The raw material used by the firm for the production of their goods consists almost entirely of the best grades of Australian and New Zealand wool. The wool is received at the mills in bales of about 3 cwts. each, the weight varies

somewhat according to the quality and condition of the wool. These bales are packed and made up on the sheep stations at the close of the shearing season each year, and with the exception of being opened for inspection prior to being sold by auction, they are not opened again until they reach the sorting room.

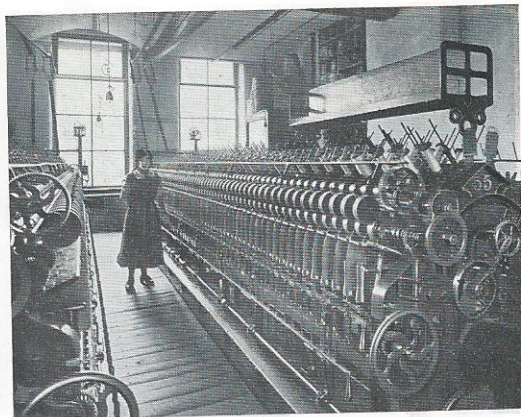
Wool sorting consists of breaking up the fleeces, and where necessary classifying the



DRAWING.



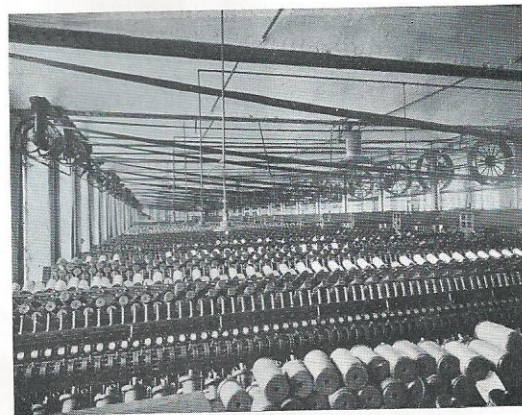
TWISTING.



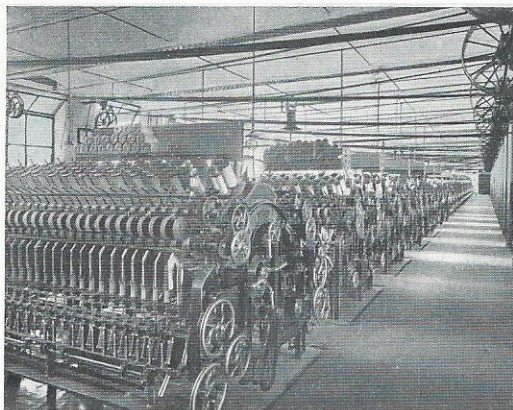
SPINNING.

wool according to quality and length of fibre. Each different quality that is made in the sorting room is handled separately, and it is from these various grades of the raw material that the different qualities of the finished cloth are made. The wool, which chiefly comes straight from the sheep's back, by that is meant wool which has not been scoured after clipping, is very rich in natural grease, and frequently contains a large proportion of vegetable matter. The grease has to be extracted before the wool is ready for working in any way, and this is done by a washing process, in which the wool is carried by mechanical means through a series of bowls containing soap and hot water. Washing effectively removes the grease, but cannot cope with the vegetable matter found in the wool and this has to be dealt with in the subsequent operations.

The washed wool is now ready for combing, which may be regarded as the first distinct process of manufacture. The object here is to open the matted wool fibres, extract the very short wool and vegetable matter and leave the



SPINNING.



SPINNING.



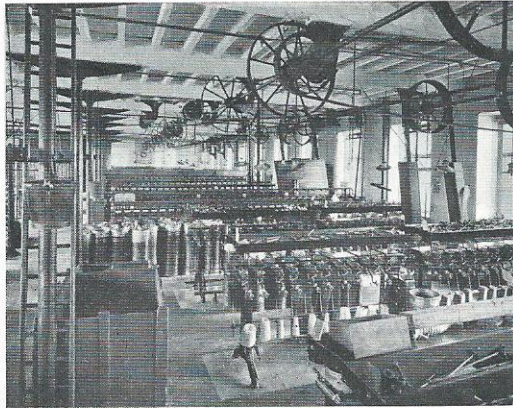
TWISTING.

remaining fibres of long wool in a continuous soft rope-like form, which is technically termed a "sliver." The finished product of the combing department is known in the trade as a "top," and consists of a large ball some eighteen inches in diameter of closely wound sliver, and it is in this form that combed wool is stored, or taken forward to the next operation.

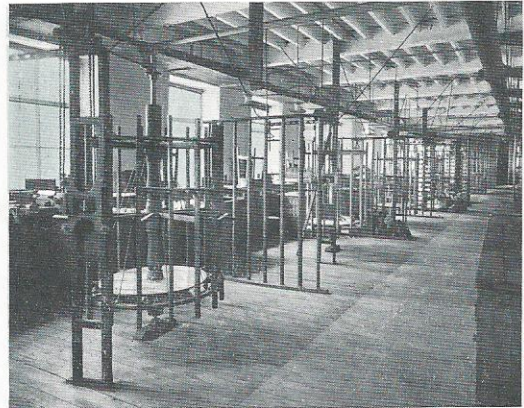
A proportion of the tops are now sent away to dye to the various colours necessary for the production of the extensive range of fancy worsted fabrics which are manufactured by the firm. After the tops have been through the dye vats it is necessary for them to be recombed, to ensure that they can be easily worked in the subsequent processes.

All tops, whether dyed or the natural colour of the wool, are now put through the operation of drawing. Here a set of machines through which the tops pass draw out the sliver finer and finer, and at the same time impart sufficient twist into the fine end of wool, so as to hold it together, and make it strong enough to stand the necessary handling. The top has now been turned into what is known as a roving, and it is from this roving that the yarn is made. A roving is the name given to the finished product of the drawing, and is merely a bobbin of softly twisted wool ready for the spinning frame.

Spinning and twisting are the final processes in the manufacture of yarn. The object of spinning is to make the present fine end known as the roving finer again, until in some cases it almost approaches a gossamer appearance. This is attained on the many high travelling frames which are used for this



WINDING.



PATTERN WARPING.

purpose, on some of which the spindles are running at 6,000 to 7,500 revolutions a minute.

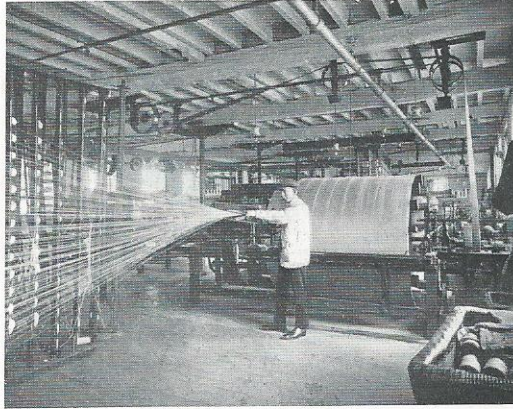
It is often necessary to twist these fine single threads together to give them sufficient strength to stand the strain of being woven into cloth, and at the same time to impart solidity and wearing properties to the finished fabric.

For convenience of subsequent handling the yarn which is to be employed in the making of warps is now wound firmly on tubes of about six inches in length, and when filled these tubes very much resemble a small cheese, and in fact are generally known by that name.

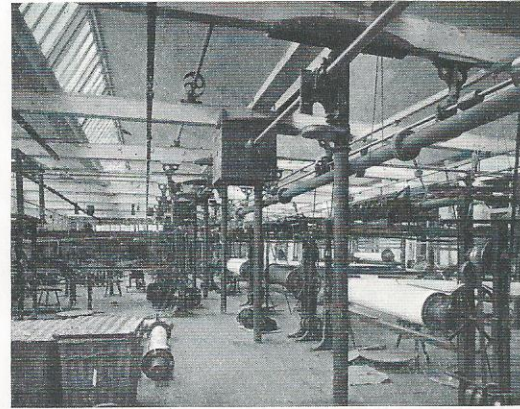
The entire production of the mills, together with a large quantity of other yarns, now passes forward to the process of manufacturing the cloth. The term here is used in its broadest sense, as the output of the weaving comprises an infinite variety of fabrics, of which Worsted Coatings, Trouserings, Serges for both men and women's wear, Fancy Costume Cloths, and Linings, are the most numerous.

It is somewhat difficult in this brief space to describe clearly the many intricacies of weaving cloth. Before the yarn is ready for the loom, a warp, or, as our grandfathers termed it, a web, has to be made.

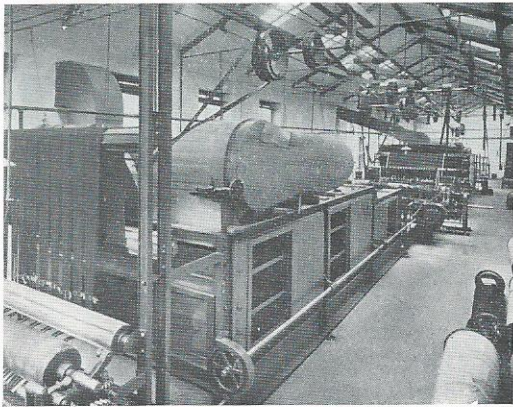
The principle underlying the construction of woven fabrics is to pass an end of yarn backwards and forwards between other ends of yarn, which regularly change their horizontal position. The ends which are raised and depressed after they have been crossed by the shuttle are termed the warp,



WARPING.



WARP DRESSING.



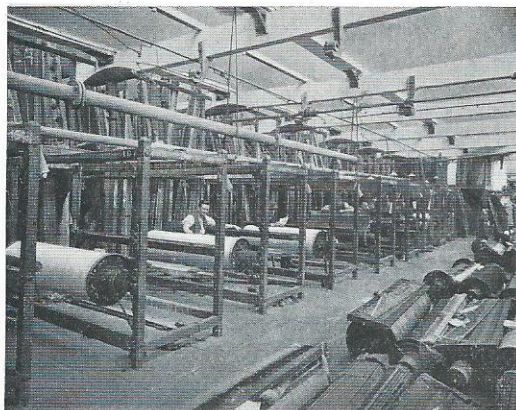
SIZING.



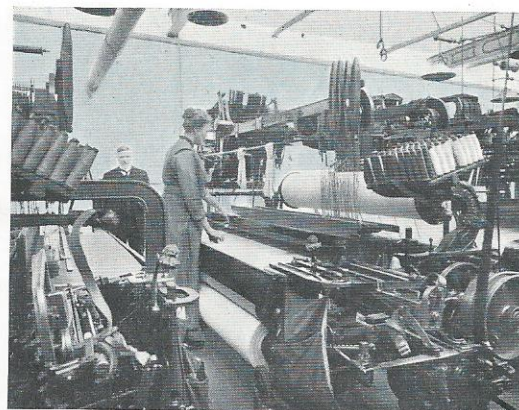
BOBBIN STORE.

and the contents of the shuttle is the weft. The warp ends of course run the entire length of the cloth. The weft is continuous inasmuch as when one bobbin empties itself another is immediately put into the shuttle to take its place. The changing of the position of the ends of warp holds the preceding pick of weft securely in its place. The process of crossing the warp ends goes on *ad infinitum*, and as at each change another end of weft is admitted, a cloth is speedily built up.

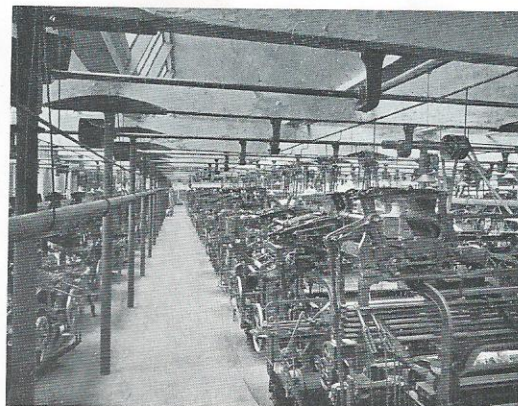
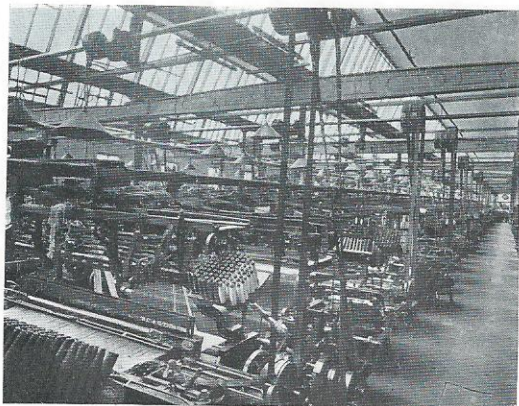
The yarn for the warp has to be arranged prior to its going to the loom. The warp is a collection of the necessary ends of yarn arranged in accordance with the scheme of the design, and for convenience of



WARP TWISTING.



WEAVING CLOTH.

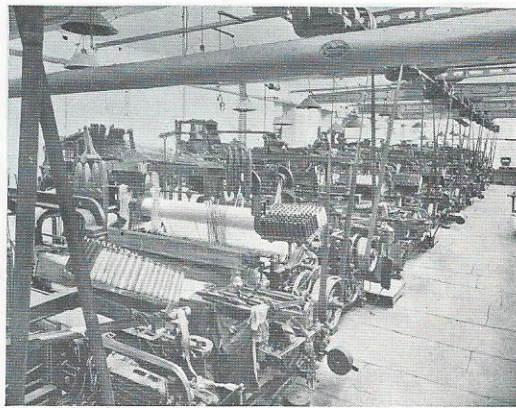
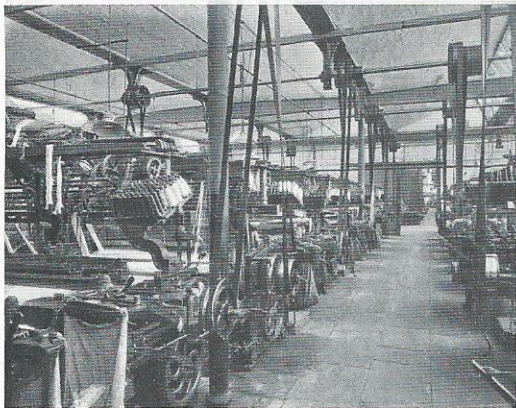


IN THE WEAVING SHEDS.

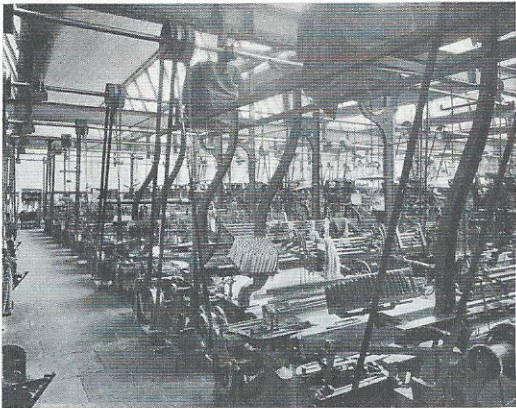
handling the ends are wound on to wooden rollers, termed beams, of approximately the same width as the woven cloth. This roller is taken to the back of the loom, and remains there until the warp is finally turned into cloth.

There is hardly any limit to the variety of designs and colouring which can be produced from the large assortment of looms, but the restraining hand of fashion is the factor which controls the designer's imagination.

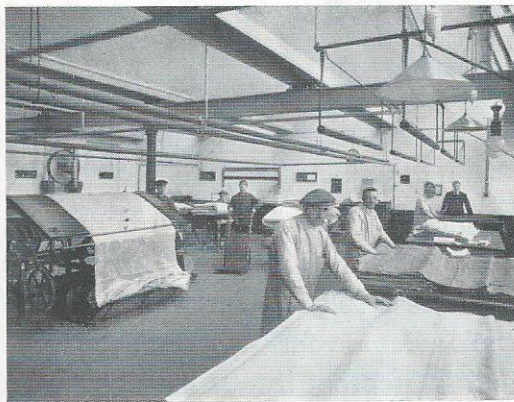
The cloth which comes from the loom is by no means ready for wear. It has next to go through the mending room, and it is here that all imperfections of manufacture have to be corrected. Girls skilled in the task are exclusively



IN THE WEAVING SHEDS.



WEAVING.

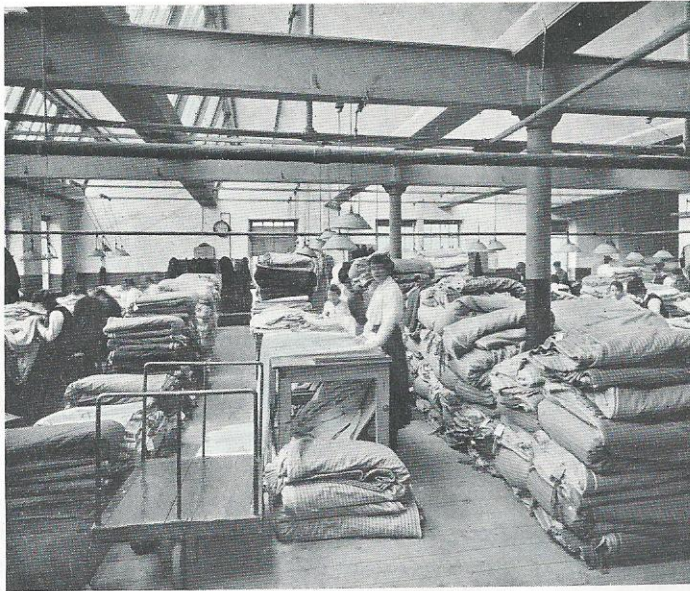


EXAMINING PIECES.

employed in this department. It has to be finished next, and in many cases has yet to be dyed. Serges and materials of one colour are usually manufactured in the natural colour of the wool, and dyed to the required shades after they are woven.

The finishing, which is a specialist's task, is not done at the mills. In this last act the pieces are scoured, cropped, raised or brushed, according to the nature of the fabric, and are finally pressed.

Before the goods reach the hands of our customers they are carefully examined, and rolled on to boards, and it is in this state that they are familiar to the general public.



THE
BURLING ROOM.

The mills and weaving sheds, which cover about 6 acres of ground, are divided in two portions, communication being made by a long covered gangway. The "New Mill," as it is termed, and to which allusion has already been made, is a solid structure, built of local stone, and is a prominent feature of the landscape for many miles around. The building consists of five stories, and is fireproof throughout. It is well equipped with modern machinery, and is justly regarded as an example of high-class mill construction.

The ground floor is devoted to Carding and Combing, whilst the remainder of the building is filled with Drawing, Spinning, and Twisting Machinery.

At right angles to this block, and communicating with it at each floor level, is a five-storied Warehouse, comprising a total floor space of 40,000 sq. ft., which area is almost entirely devoted to the storage of Wool, Tops, Noils and Rovings.

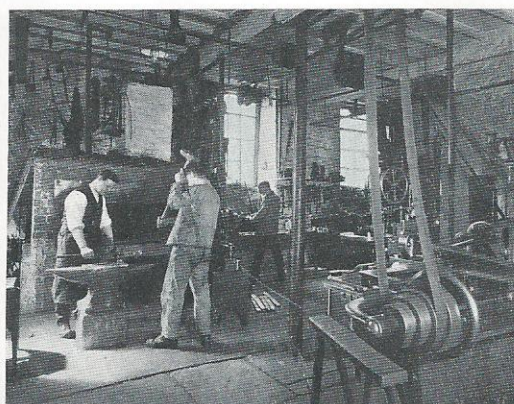
The Weaving and Dressing Sheds, which have been built at different periods in the firm's history, cover some 75,000 sq. ft.

As the Mills are in a somewhat isolated position, adequate provision is made for executing repairs to buildings and machinery, and a staff of highly-trained mechanics and joiners are employed by the firm for this purpose.

Here the workpeople work in large roomy sheds with plenty of pure



JOINERS' SHOP.



MECHANICS' SHOP.

sunshine and air and when they leave their work they pass out of the Mills right into the heart of the country.

Not only do the firm provide healthy and airy accommodation for its workpeople during working hours, but there are facilities for recreation and enjoyment during their leisure hours in the neighbouring Institute, several views of which are shown. We also refer on other pages to the new Hostel which

has been built; this also provides a considerable amount of recreation and comfort for the young girls working in the Mills.

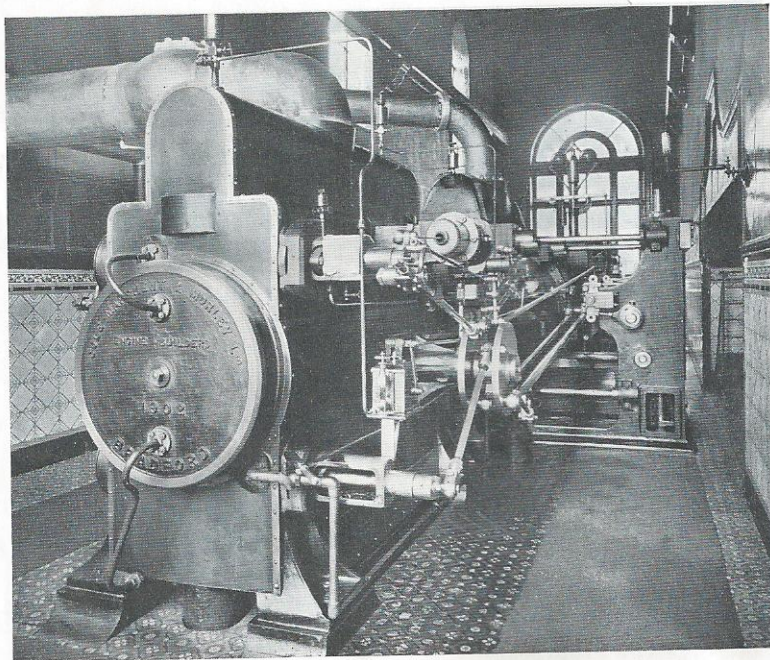
Now that we have given a description of all the processes, in conclusion it may not be out of place to say a word or two regarding the locality in which the mills are situated. They stand just off the main road almost equi-distant between the towns of Keighley and Skipton.

Sutton Mills are on the fringe of the Industrial Area of the West Riding and consequently enjoy or suffer, as the case may be, many of the advantages of a country district. The scenery is typical of Craven, as the locality is named and possesses strong



OXY-ACETELYNE WELDING.

characteristics of its own. The lowland is rich and fertile and it is in these valleys that the manufacturing towns and villages lie. In addition to the manufacturing, there is an active agricultural population. When you leave the valleys and mount the hillside, you reach ere long the moors for which Yorkshire is so famous, and a few miles from the mills there is most charming wild scenery.

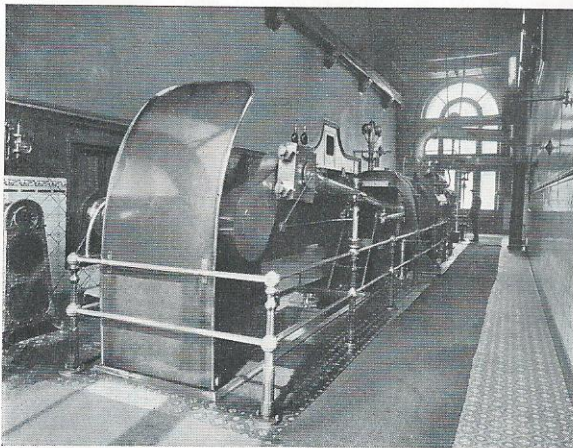
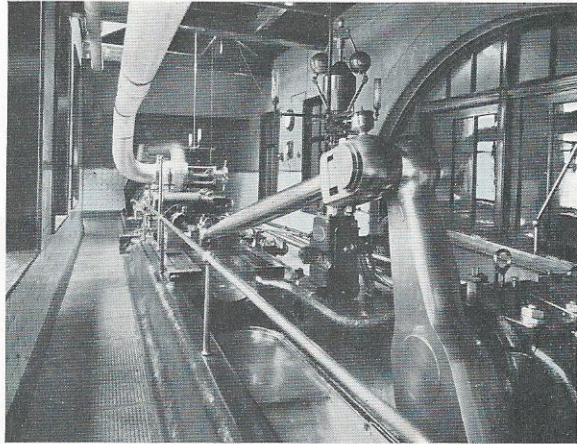


ENGINE, NEW MILLS.

The Engine House

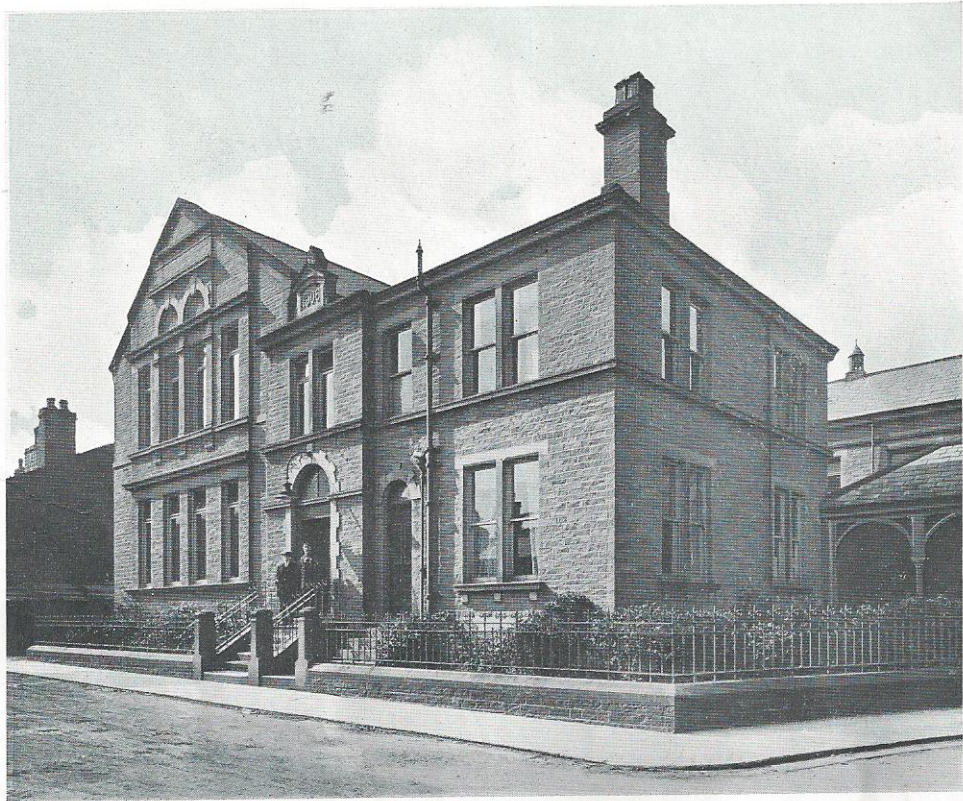
THESE few views of the Engine House will give some idea of the engines employed for driving the mills and weaving sheds. It will be realized that the driving of spinning machinery necessitates not only high power, but absolute steadiness of running. To meet these requirements two powerful steam engines are employed—one

ENGINE, OLD MILL.



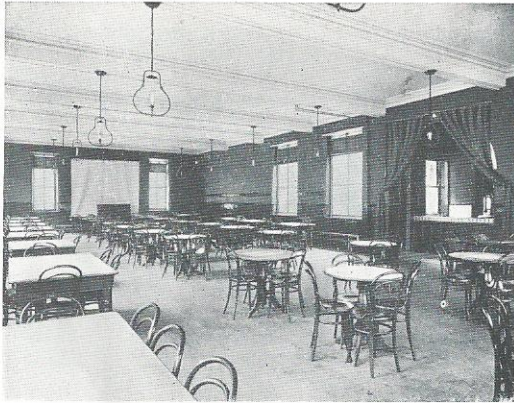
ENGINE, NEW MILL.

of 800 I.H.P. and the other 400. In addition to this source of power, the water supply, which originally fixed the site of the mill, is again brought into play, and augments the steam power of the engines, although in summer time its assistance is indeed small.



THE
INSTITUTE.





DINING ROOM.



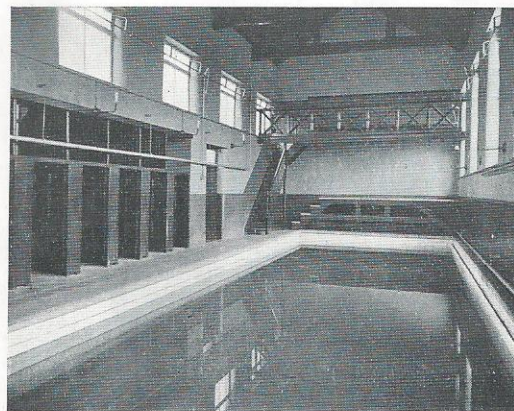
READING ROOM.

The Institute

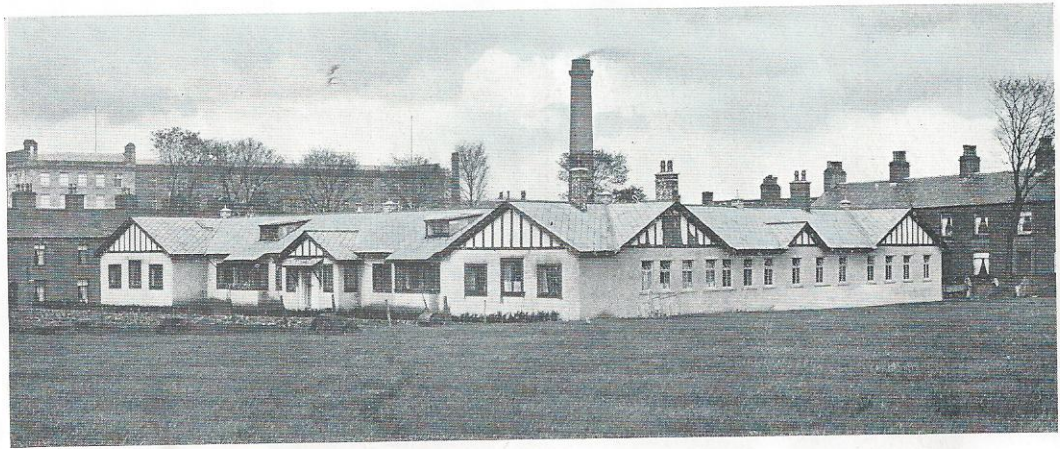
THE institute, of which we give a few views stands within a stone's throw of the Mills and is well fitted with modern and up-to-date recreation rooms. There is a large dining room which provides accommodation for over two hundred people, who live at some considerable distance from their work. In addition to this there are a billiard room with two billiard tables, a reading room, in which the latest periodicals, etc., can be seen during leisure moments, and a large swimming bath, fitted with dressing rooms, balcony and diving apparatus ; in fact, everything is provided for the comfort and welfare of the workers after their labour.



BILLIARD ROOM.



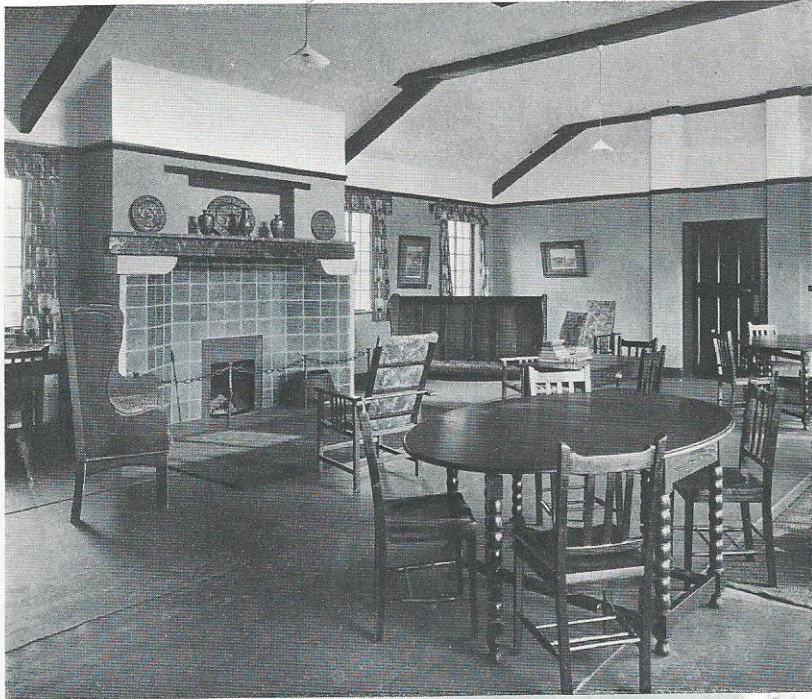
SWIMMING BATH.



The Hostel

DURING the latter period of the War, and from then onwards, the firm found its productive capacity most seriously impaired by the great shortage of female labour. In order to meet this shortage, a large hostel to hold fifty girls was completed in the Spring of this year. Here, girls, many of whom come from a considerable distance, live under most agreeable and healthy conditions. The building itself is on the bungalow plan, and comprises over thirty bedrooms, seven bathrooms, large dining-room, and adequate recreation rooms.

The girls' interests and well-being are most assiduously studied by the Matron. Concerts, classes and other forms of recreation are organized to fill up the many leisure hours the girls enjoy. Two tennis courts are now in course of construction.



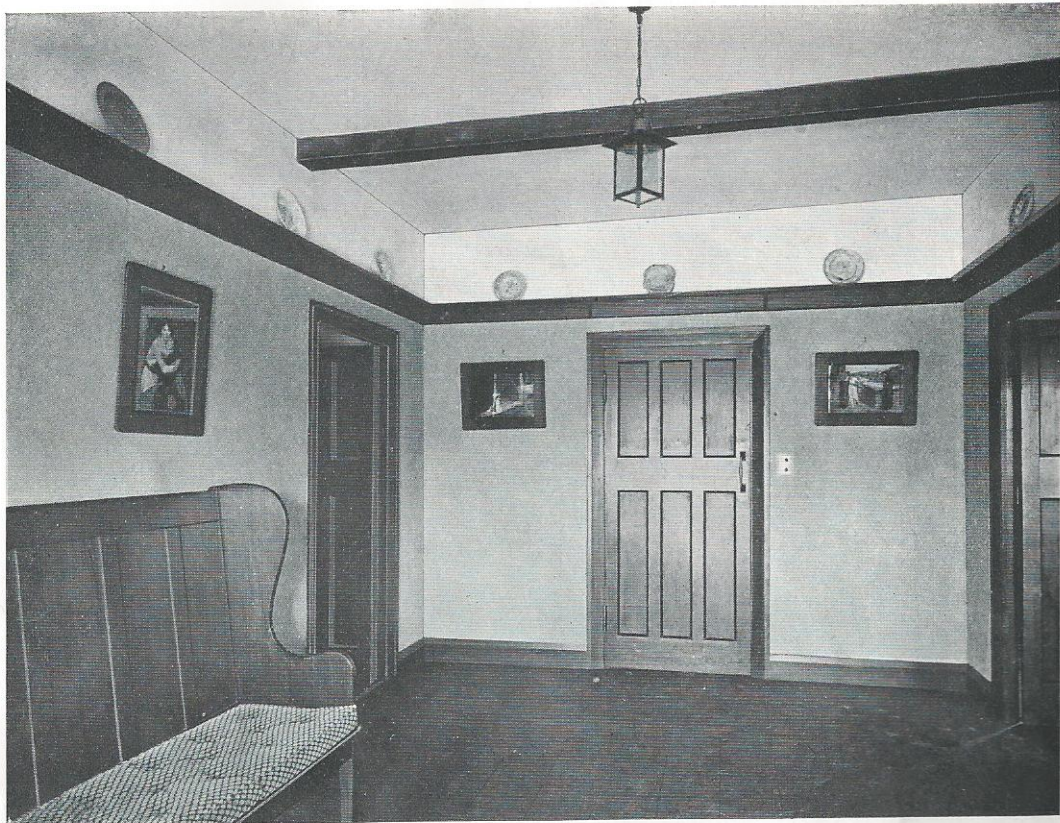
RECREATION ROOM,
The Hostel.



DINING ROOM,
The Hostel.



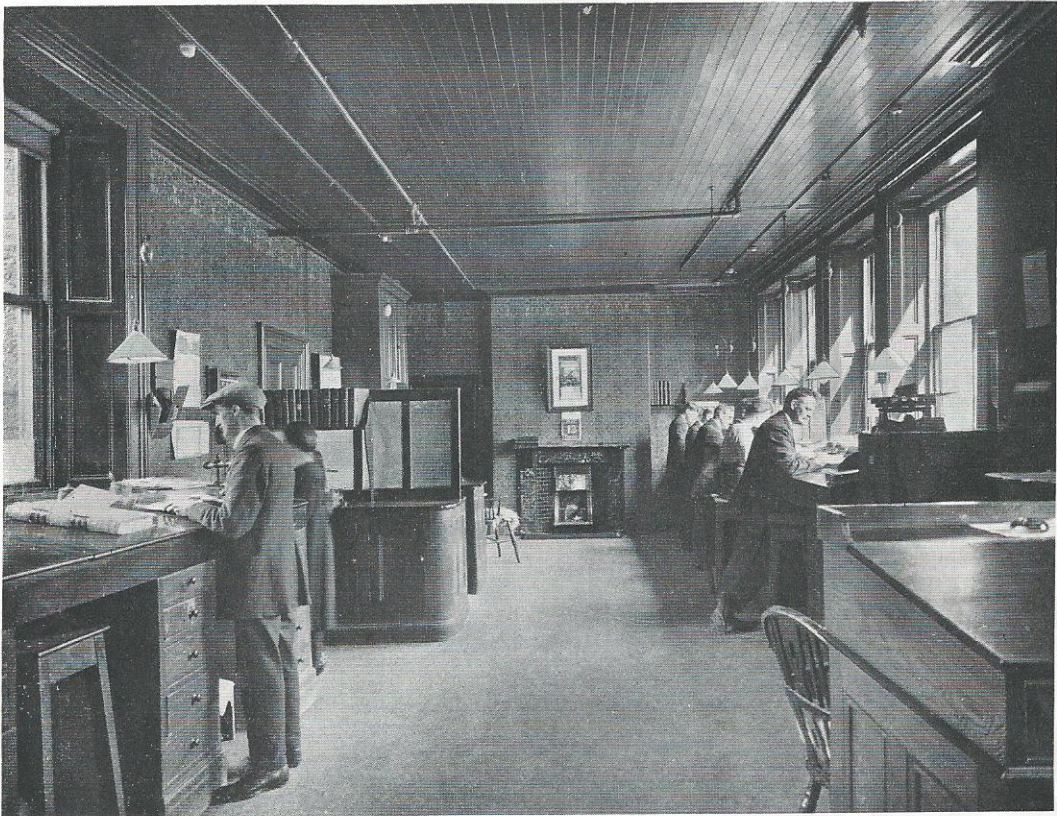
KITCHEN,
The Hostel.



ENTRANCE HALL, THE HOSTEL.



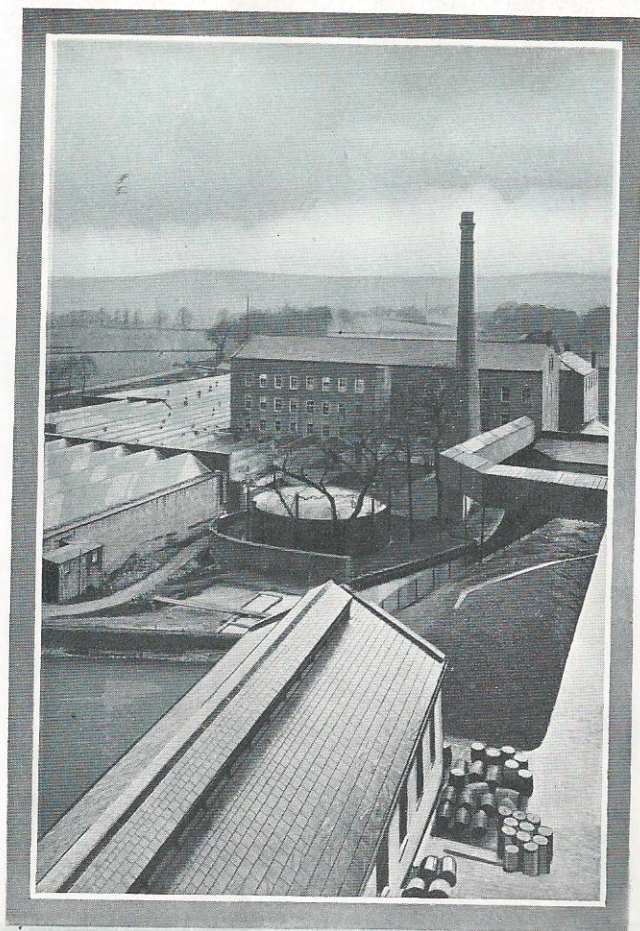
BEDROOM, THE HOSTEL.



GENERAL OFFICE.



LEAVING WORK.



TWO VIEWS OF THE MILLS.

Designed, Photographed and
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Percy Lund, Humphries & Co.,
Ltd., The Country Press,
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