

**WHERE WINKLEY
ARTIFICIAL LIMBS
ARE MADE**

Where Winkley Artificial
Limbs Are Made



Where Winkley Artificial Limbs Are Made

Winkley Artificial Limb Company

Jepson Brothers

Sole Owners

1326-1328-1330 Washington Avenue North

Minneapolis, Minnesota

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Jepson Bros.
Minneapolis, Minn.

TH E purpose of this book is to present, in as clear and interesting a manner as possible, a description of our new building, its many advantages and conveniences for ourselves and customers, and to explain the process of manufacturing the Winkley Artificial Limbs.

The frontispiece gives a very good idea of our building which is located at Washington and Fourteenth Avenues North, Minneapolis. It may be reached by any street car going North on Washington Avenue.

The rest of the illustrations are made from photographs taken during regular working hours, without any preparation, the workmen being at their usual places and engaged in their ordinary occupations.

From a very small beginning in 1888, our business developed so rapidly that we are now by far the largest manufacturers of artificial limbs in the world.

In order to handle our present business and provide for future growth, it was found absolutely necessary to erect a building especially planned for our needs. The result is that we now occupy the finest and best equipped structure in the world devoted solely to the manufacture of artificial limbs.



Arch Leading to Court



Main Entrance



Information Desk

Let us suppose that you are a visitor at our factory. We will conduct you through the offices and various departments, showing you all points of interest and explaining the process of manufacture as we go along.

The first thing you will notice is the handsome arch on Washington Avenue opening into the court which leads to the main entrance on the side of the building.

Immediately inside the doorway is the information desk where you meet Mr. Frank N. Jepson, vice-president of the company. Years of contact with our thousands of visitors and patients enables Mr. Jepson to quickly ascertain the needs of callers and he then conducts them to the proper department.



Correspondence Department

In making a tour of the building it is customary to go at once to the reception-room, but in this case we will step in through the gate at Mr. Jepson's left and inspect the offices which are in the front.

The first feature that impresses you is the fire-proof construction; the fire-proof plaster, the cement floors, the solid brass thresholds, marble base-boards and window sills, steel window sash and frames and fire-proof "wire glass."

Here is handled the immense correspondence, some idea of the volume of which may be realized when we tell you that we keep in close touch with over thirty thousand former patients and wearers of artificial limbs.

The regular daily correspondence involves the writing of hundreds of letters to doctors and patients for whom we are making Winkley limbs.



Bookkeeping Department

A great many of our patients are accurately fitted from measurement and plaster casts without leaving their homes.

The bookkeeping department, in which all clerical work is done, furnishes employment for the large force shown above.

On the left of the picture you will notice the dummy elevator which conveys orders and other information between the office and the factory on the second floor.

Just to the right of the dummy elevator shaft, the door of the telephone booth is shown open. We have long distance connection over the Northwestern line.



Mailing Section

As we leave the bookkeeping department we pass into the mailing section and find a large force of clerks busily engaged in sending out the daily mail. All advertising matter and catalogues are addressed by the automatic addressing machine which is shown in operation on the extreme left. The boy on the right is starting for the postal station with a tray of letters. Under the table you will see a large basket of catalogues ready for mailing.

We will now step into the adjoining office and meet the Hon. Lowell E. Jepson, president and active manager of the company. Mr. Jepson has held many positions of responsibility and honor in the city and state. During the past eight years he has represented the City of Minneapolis in the State Senate and is still serving in that capacity.



The President's Office

After many years of experience, he was granted the degree of Master of Science by his Alma Mater, for practical and scientific study and investigation concerning amputations, the treatment of the stump, the fitting of artificial limbs and the invention of mechanical improvements.

Mr. Jepson enjoys the personal acquaintance and confidence of the leading physicians and surgeons throughout the Northwest, who show their appreciation of his marked ability and success in fitting artificial limbs by sending their patients to him.



Main Hall

Leaving the president's office we return to the main hall. In the foreground on the left are storage cases for stump stockings. The first three doors on the left are entrances to the men's fitting rooms, the fourth is the door to the bath-room and the fifth to the toilet.

On the right the first door is one of the entrances to the reception room, the second is the door to the back-parlor and the last two are the entrances to the ladies' fitting rooms.

The door at the end opens into the rear hall which leads to the shipping and storage rooms. The staircases to the factory floor and basement are in this hall, which leads to the employes' entrance on Fourteenth Avenue North.



Reception Room

We will now go into the reception room, the main entrance to which is directly across the hall from the information desk. Through the open door in this picture you will see the back parlor which is shown in the illustration on the opposite page.

These rooms are provided especially for our patients, who are invited to make their headquarters with us while in Minneapolis.

They are furnished with easy chairs, writing-desk, reading tables and supplied with current magazines, newspapers, etc. with the idea of making the patients' stay as pleasant as possible.

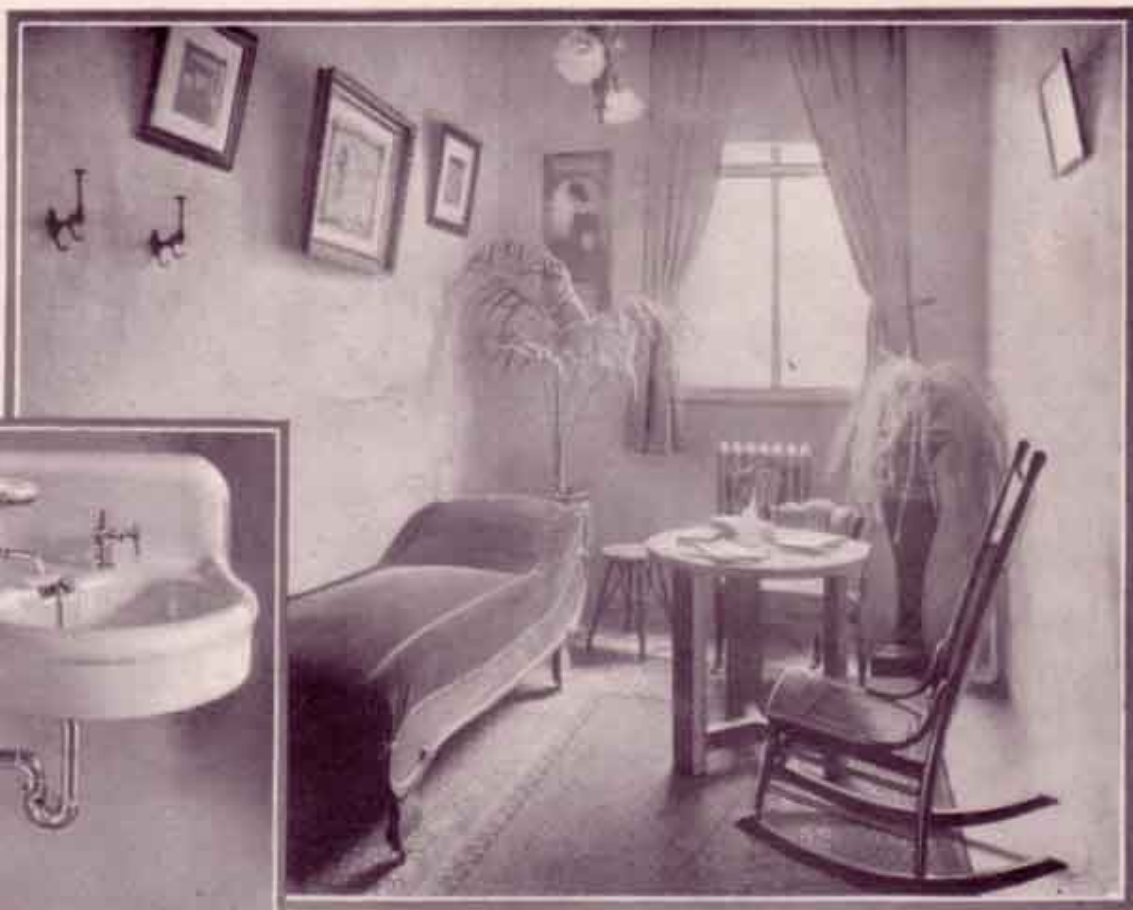


Back Parlor

You will be interested in the exhibits of Winkley limbs shown in the various styles of construction in these rooms.

If patients will notify us when they will arrive in the city and upon which train or wire us when within two or three hour's ride of Minneapolis, we will be glad to meet them at the depot and take them directly to our factory.

There are numerous good hotels, private boarding houses, furnished rooms and restaurants near by, at which patients can secure comfortable accommodations at various and reasonable prices while waiting to have their limbs made and fitted.



Ladies' Fitting Room

Immediately in the rear of the back parlor and reached through the main hall are the two fitting-rooms for ladies, which insure absolute privacy. We have lady attendants, who are thoroughly acquainted with the various departments of our business, whose duty it is to assist our lady patients.

Each room is completely furnished, tastefully decorated and provided with a lavatory and all conveniences.

The fitting department is under the especial charge of Mr. Frank N. Jepson, which assures the same courteous and professional treatment that would be expected from your home physician.



Men's Fitting Room

Directly across the hall from the ladies' fitting-rooms are three for men, which, as the picture shows, are provided with every convenience and comfort.

A heating-plant, independent of the one that heats the building, furnishes hot water at all times for the lavatories in these rooms.

Next to the Double Slip Socket, it is to the extreme care used in fitting that the wide popularity of the Winkley limbs is to be credited. The operations of measuring, making plaster casts, and the fitting are conducted in these rooms.





A Fitting Room Scene

The above illustration represents a daily scene in our fitting-rooms. On the left Mr. Jepson will be seen engaged in taking the preliminary measurements for an amputation below the knee.

On the right, one of our expert fitters is trying on a partially completed thigh socket. After securing an accurate and comfortable fit in this manner, if the patient does not care to stay longer—he may return to his home and we will complete the limb and send it to him by express.

That this method is perfectly safe and satisfactory is proved by the fact that very few limbs are returned to us for alteration, even in cases where the limb has been made from measurements furnished us by a patient whom we have never seen. Only about five in every hundred persons come to the factory to be fitted.

We advise, however, that when patients do come to the factory, that they arrange to stay for a preliminary trial of the limb.

Many of our friends come to us from considerable distances, and, as in most cases, we have been advised of their coming, we meet them at the depot; they go directly to the factory and, after a long trip by rail, they find a warm bath very refreshing.

In order to avoid the loss of time and the annoyance of having to go to a hotel, we have provided the complete and modern bath-room shown on this page.

These conveniences are provided especially for our patrons' exclusive use, and we want everyone to feel free to take advantage of them at any time.

This is only one of the many facilities enjoyed by our patrons.

The Modern
Bath-Room





Mr. J. Harry Jepson at his Desk in the Factory

Having seen all points of interest on the ground floor, we will now go to the second floor which is entirely occupied by our manufacturing departments, under the personal supervision of Mr. J. Harry Jepson, secretary of the company. After completing his Academic education, Mr. Jepson spent one year at the University of Minnesota in the study of anatomy and surgery, preparing for his present work, in which he has now been engaged for over thirteen years.

Mr. Jepson's desk is in the middle of the factory floor so that every detail of construction is at all time under his careful direction.



A General View of the Factory

This is a general view of the factory floor, giving a good idea of the light, clean and airy surroundings enjoyed by our workmen. We will now make a tour of this floor following the regular course of a limb from the rough plaster cast to the finished article.

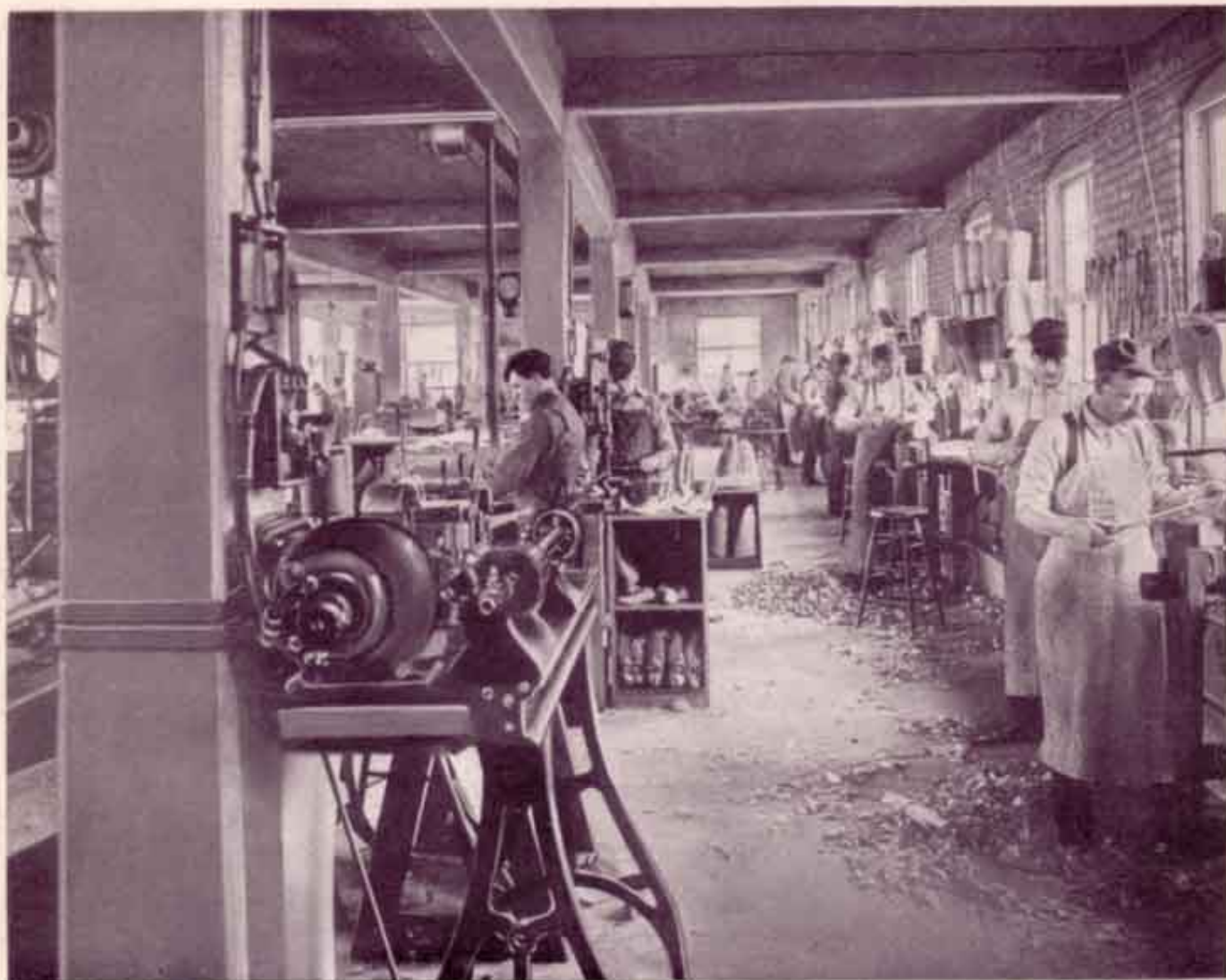
As we pass down the long line of machines you will notice that each one is driven by an individual Crocker-Wheeler electric motor.

All the necessary electric wiring for the lights, power and the house telephone system is carried in steel conduits running through the concrete floors. This explains the absence of the usual and objectionable overhead wiring found in almost all factories.



South Side of Factory

We are now looking down the South side of this floor, and you will observe that this comprises part of the wood-working department. The foundation of our legs is the best selected English willow, especially prepared for our use, perfectly seasoned and absolutely free from all checks and other imperfections. The wooden parts are hollowed to obtain lightness and they conform to the shape of the natural leg. This wooden shell is covered with tightly stretched rawhide, put on while damp, which, when dry, gives great strength and furnishes a smooth surface which is completed by a flesh tinted enamel or a brown water-proof shellac, as preferred by the wearer.



North Side of Factory

On the North side of the room we find more of the wood-workers and some of the leather-workers.

Immediately in the fore-ground is clearly shown one of the individual electric motors previously referred to.

All of our leathers are oak tanned expressly for us from the choicest hides and are of superior quality and durability.

The fact that the rawhide covering of Winkley limbs is so transparent that the grain of the wood is plainly seen through it, is convincing proof of the excellence of both.



The Cast-Maker at Work

Here you see fifty-eight casts made from stumps amputated below the knee, including three for the use of prominent physicians and surgeons. Every cast represents an actual order for a limb under construction at the time the photograph was taken, an advance payment having been made on each.

Before taking the plaster of paris shell all prominent bones and sensitive spots are marked on the stump with an indelible pencil. These markings are transferred to the shell and then reproduced on the cast as clearly shown in the illustration.



Making Sockets

Three of the shells from which the casts are made are seen in the receiver on the left of the picture on the preceding page. The casts made from these shells are exact duplicates of the stumps.

Guided by the pencil marks already referred to, the workman in the center of this picture is building up with leather, those parts of the casts corresponding with the prominent bones and sensitive spots of the stump.

On the high shelf beside the window are four casts of knee amputations, which are very rare. Directly below them are the sockets made from these casts.

The man on the left in the preceding illustration is making slip sockets, a number of which, in the completed state are seen on the shelves above his head.

After the sockets are completed and before being removed from the casts they are put into the oven that appears in the lower right hand corner of the picture, where they are thoroughly dried.

This man is assembling the different parts of several legs that were made for amputations below the knee, and setting them up.



Setting up Limbs

Every wearer of an artificial limb knows that much of the comfort and satisfaction of a leg depends upon its being scientifically set up.

His position before the large window is typical of the entire factory, practically every working bench being in front of a window, thus insuring the best possible light and air.

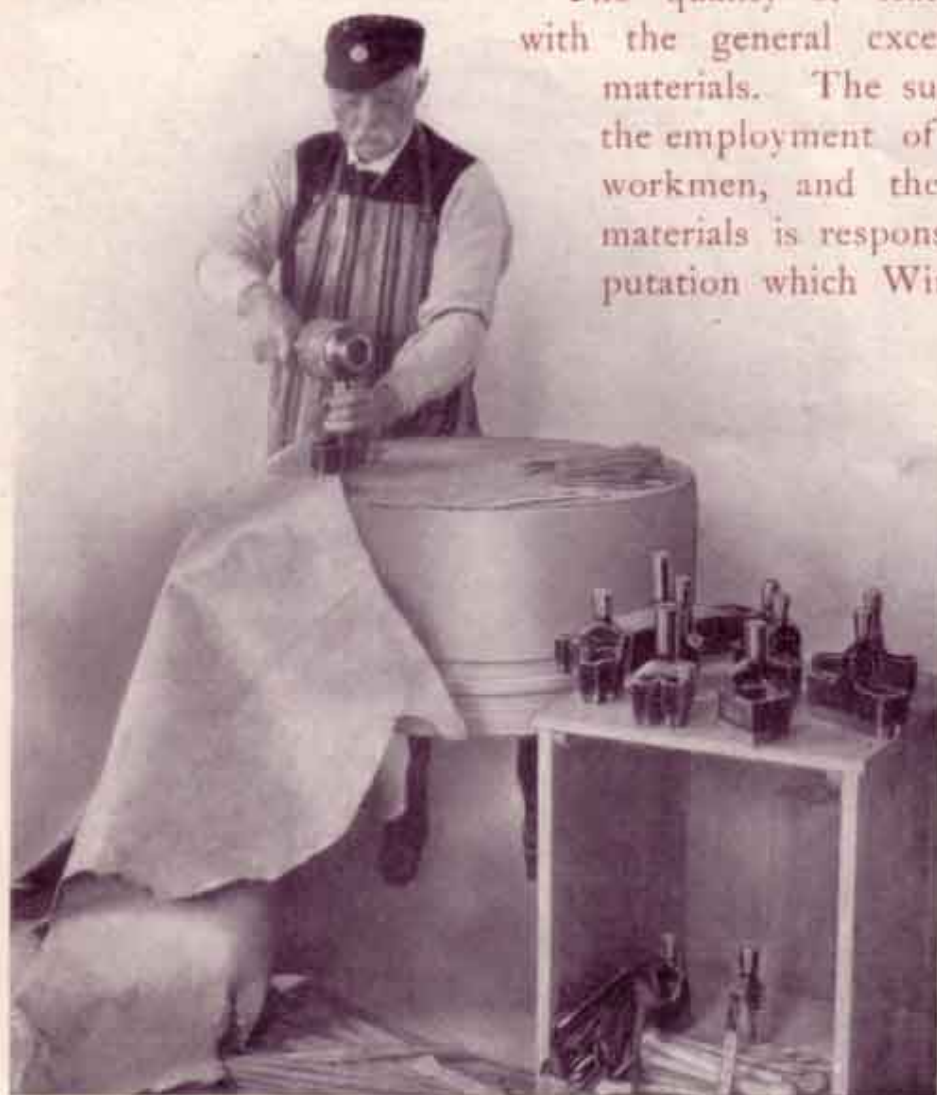
Your attention is called to the drying oven for the casts in the lower left hand corner of the picture on the opposite page.

The various leather parts that enter into the construction of Winkley Artificial Limbs are cut by heavy steel dies from the best quality of leather, Oak tanned especially for us.

All the leather fittings, straps, etc. are prepared in large quantities and kept constantly on hand so that when a certain piece is needed, the workman can get it without delay.

A large supply of all parts that do not need to be made to order for each limb is kept on hand ready for immediate use. This enables us to guarantee prompt delivery.

The quality of leather used is in harmony with the general excellence of all the other materials. The superiority of our patents, the employment of skilled and experienced workmen, and the use of only the best materials is responsible for the national reputation which Winkley limbs have gained.



Cutting Leather
with Steel Dies

As the hides vary in thickness, it is necessary to run them through the splitting machine, seen at the bottom of this page, to secure the desired uniform thickness.

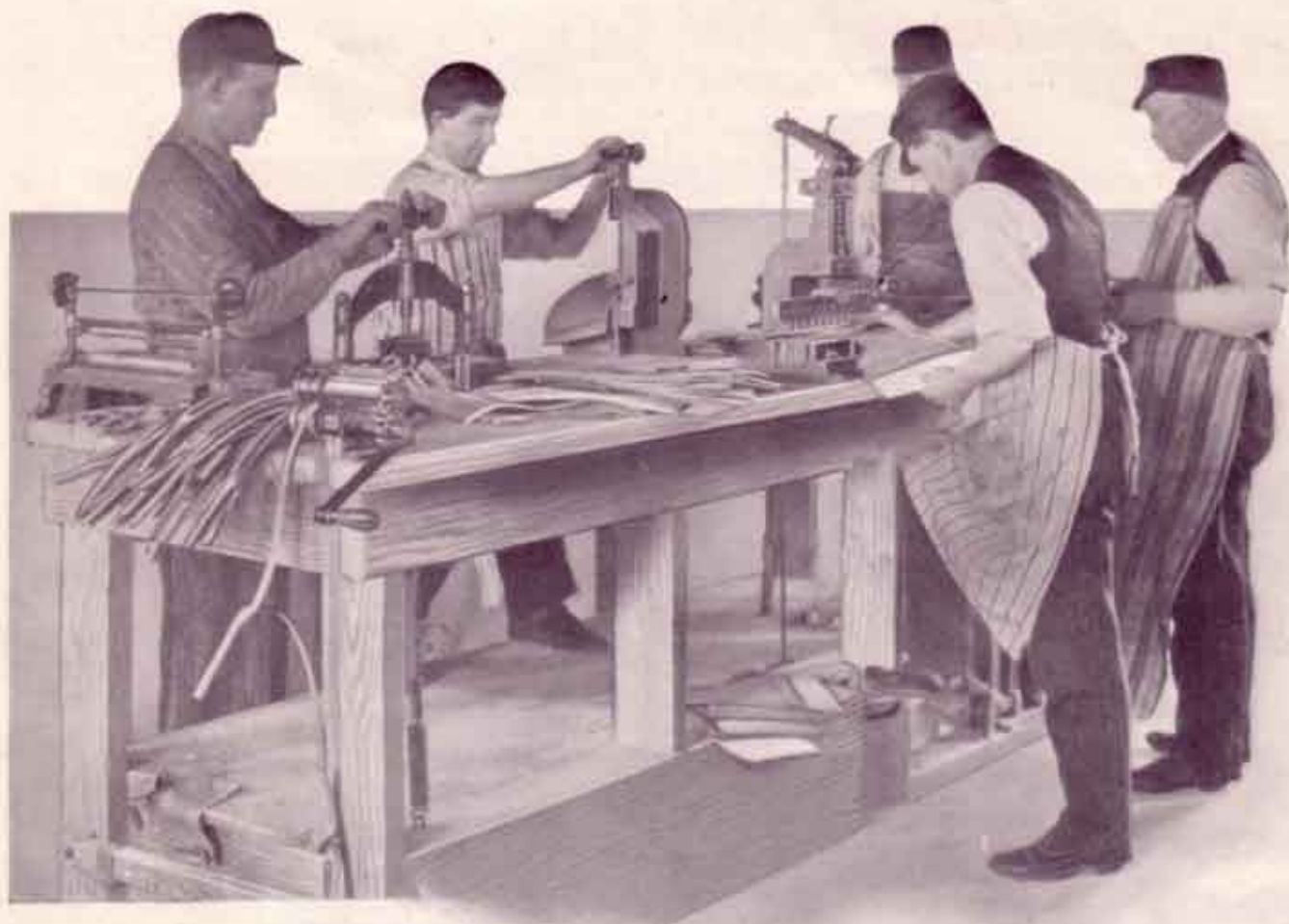
When the straps are cut to the required shape, they are creased by the small machine with hand crank shown on the front corner of the table on the opposite page. The straps seen near the machine are for the lower or leather part of the suspender.

The workman back of the table on the left, makes the leather bushings for the ankle joints. The process consists of pressing wet pieces of leather into a steel die.

It might be explained that the bushing forms a noiseless and durable cushion on which the steel joint works. This absolutely prevents the annoying rattle frequently found in ordinary ankle joints.

The Leather
Splitting Machine





Leather Workers

Every leg has its individual number so that it can be identified at all stages of manufacture. The second man behind the table is stamping this number on the outer socket.

The workmen at the farther end of the table are operating the beading and lacer-hook machines, while the man immediately in the foreground is punching eyelet holes along the edge of the thigh lacer.

Many of the machines on this floor cannot be found in any other artificial limb factory, as they are controlled exclusively by us.

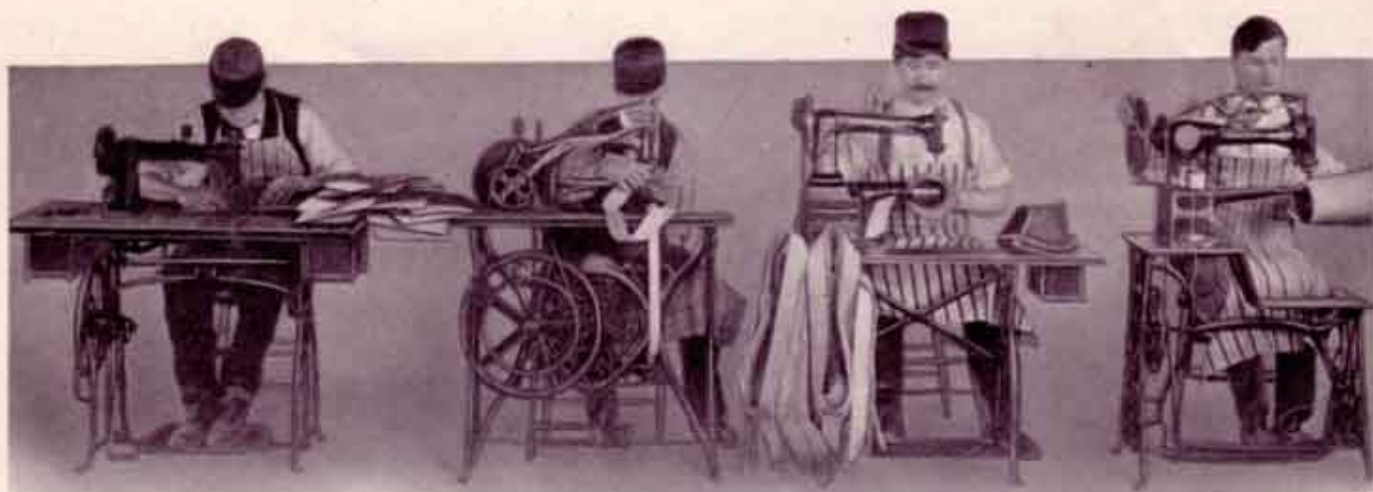
We are now looking at the interesting eyeleting and riveting machines, all of which are automatic self-feeders, the eyelets and rivets dropping into position as rapidly as the machine operates. Each of these machines is capable of more and better work in thirty minutes, than an expert can do by hand in a whole day.

You will be surprised to know that the workman on the right operating the eyeleting machine is wearing a Winkley Double Slip Socket artificial limb and that it is with this leg that he is doing the work.

This is a striking demonstration of the naturalness and adaptability of the Winkley limbs. Many wearers of our limbs are able to ride bicycles, dance, skate and indulge in other exercises.



Eyeleting and Riveting Machines



Especially Designed Sewing Machines

From the eyeleting and riveting machines we pass to the next section where you will be asked to examine a row of handsome Singer sewing machines, differing greatly in style and construction, each of which is manufactured especially for our use and is correctly designed for the work which it performs.

The operator at the left is stitching thigh lacers for amputations below the knee. On the next machine suspenders are being manufactured. The operator on the right is stitching an inner socket for an amputation above the knee and the man on his right is working on an outer socket for a below the knee amputation.

As an example of the extreme care given to every detail of the manufacturing of Winkley Artificial Limbs, it may be mentioned that in apparently so small a matter as thread we use a prime silk thread of double weight, especially made to our order.



Shaping the Feet

This man's entire time is employed in shaping the foot to fit the shoe which we require every patient to send us at the time his order is placed. This enables us to make the artificial foot correspond exactly with the natural one. A lace shoe is always preferable, the lighter the better.

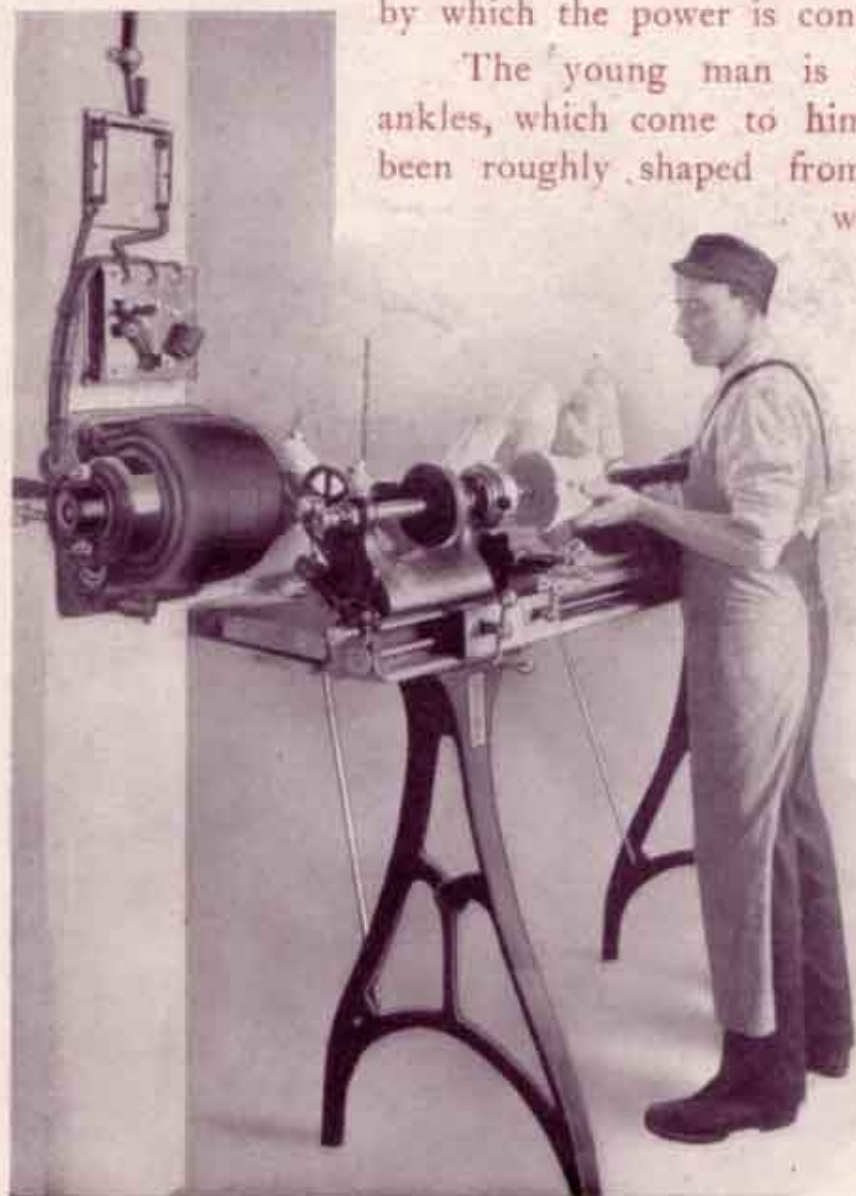
The shoes for the particular lot that this man is working on can be seen in the rack on the right, ticketed, numbered and arranged alphabetically, so that any one may be readily found.

The workman already referred to has been in our employ for many years and during the most of his time has done nothing but make artificial feet, so that he has become an expert in his line. You will be surprised at the rapidity and apparent ease with which he transforms a rough block of wood into a strong and shapely duplicate of the natural foot.

This picture shows very clearly the manner in which every machine in our establishment is run by an individual motor.

The motor is attached to the concrete pillar, and above it is the switch by which the power is controlled.

The young man is engaged in boring out the ankles, which come to him in solid blocks that have been roughly shaped from pieces of English willow which are naturally adapted to stand the strain that comes on this part of the leg.



Boring out
Ankle Pieces

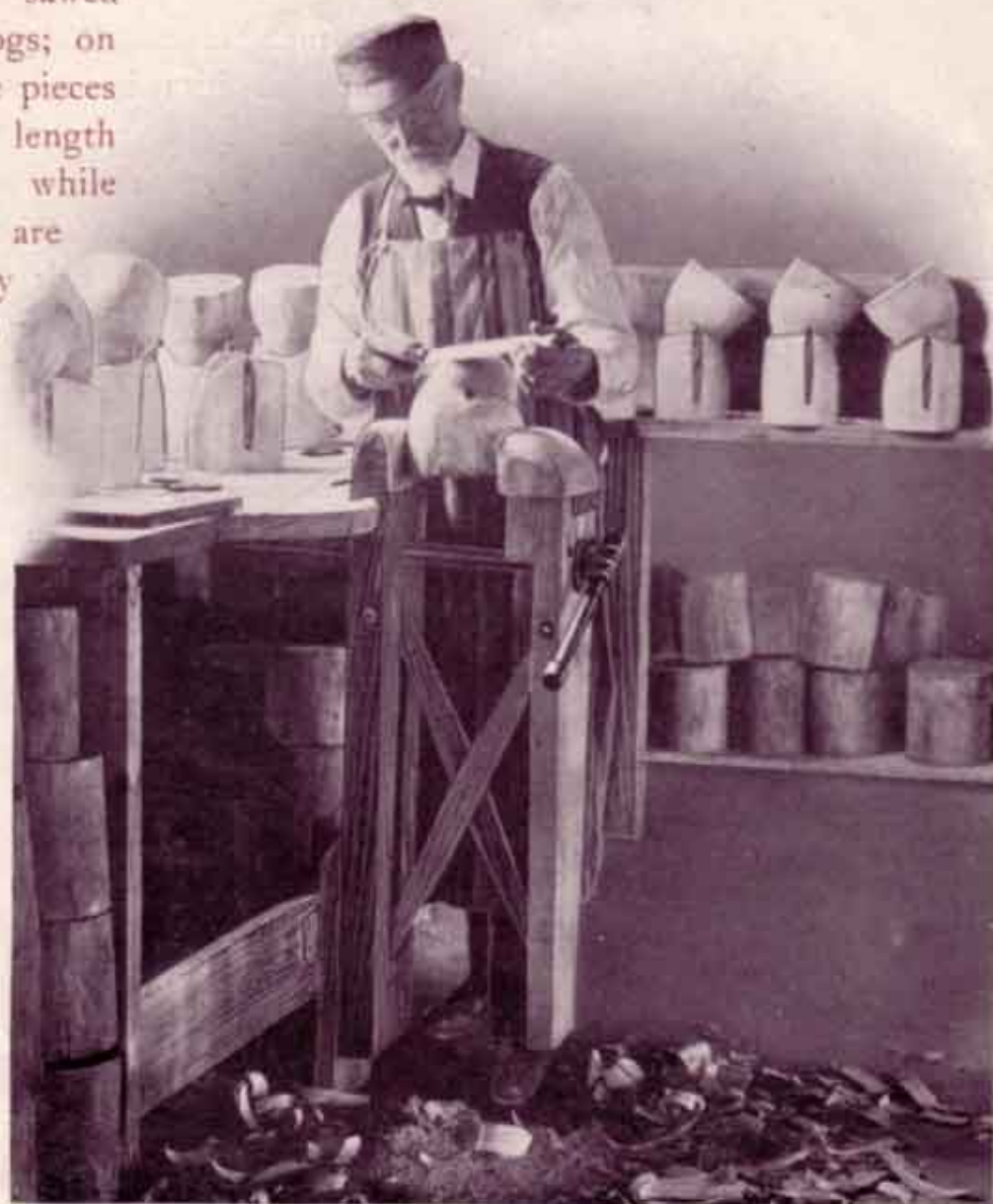
Continuing our inspection of the wood-working department, we come to this interesting corner where the knees are made and connected with the lower part of the leg.

This requires great skill and long experience so as to give to this important part of the limb the desired life-like appearance and strength.

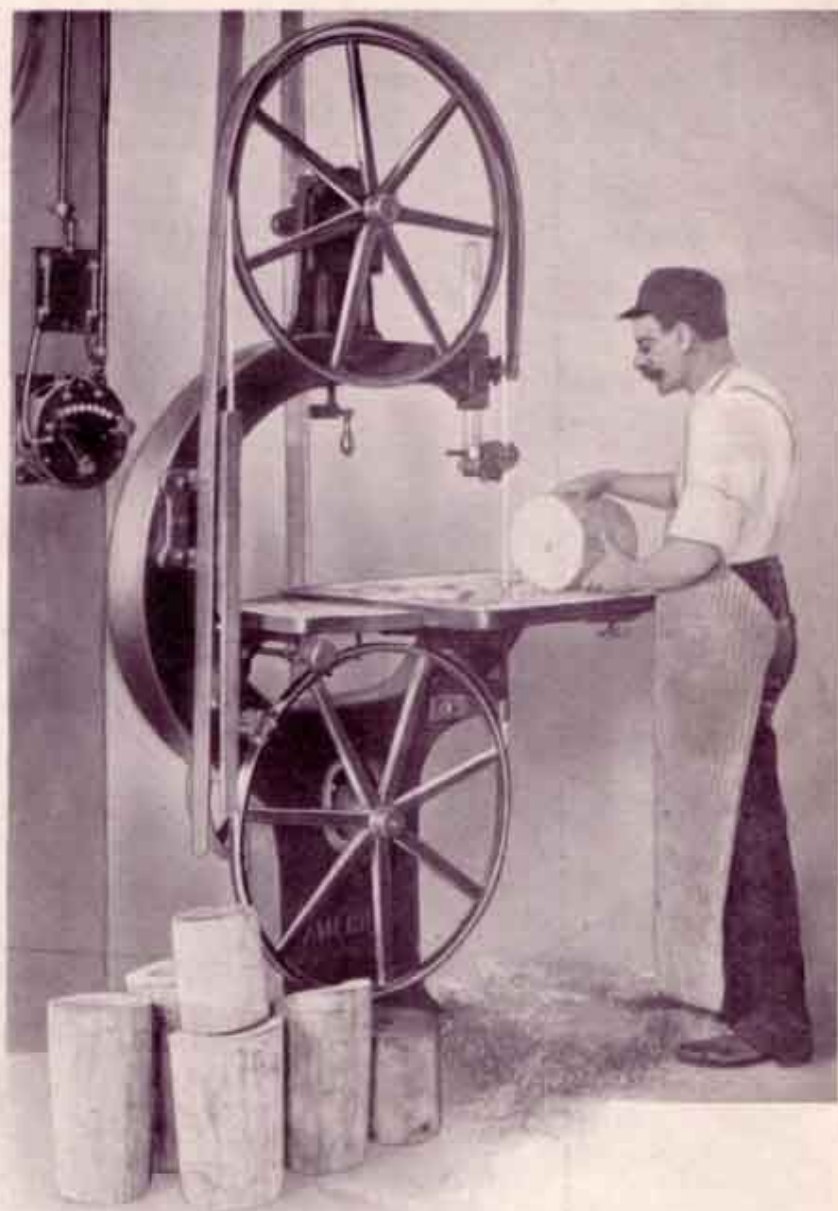
The natural and easy action also depends upon the proper fashioning of the knee.

On the left of the picture you will notice piles of the rough knee pieces as originally sawed from the willow logs; on the lower shelf are pieces cut to the required length for certain limbs, while on the top shelf are finished knees ready to be connected to the other parts on the legs.

Shaping and
Fitting Knees



Sawing
Thigh Pieces

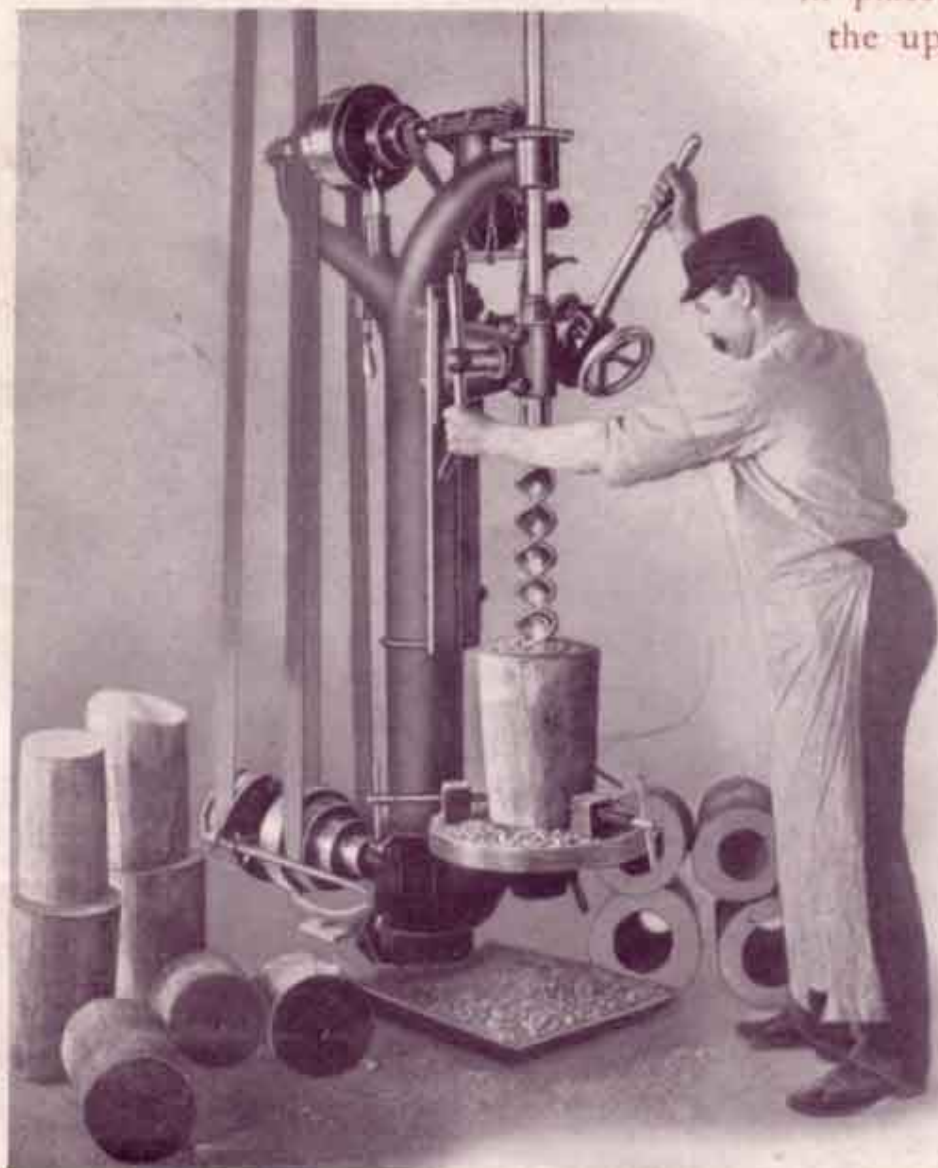


The thigh pieces come to the band saw shown in the accompanying picture where they are trimmed down to the required length, the top end being sawed at the proper angle to fit the stump and the lower end square to make the joint at the knee. While this is apparently a simple operation, it is one that calls for extreme care and accuracy, so as to insure correct proportions and the strongest possible connection with other parts of the leg.

This peculiar looking machine is used to bore out the roughly shaped English willow thigh pieces. On the left are the blocks as they come to the machine and on the right are four of the thigh pieces that have been hollowed out.

This is the first step in shaping the inside of the thigh sockets, after which each one is carefully and scientifically shaped by hand to fit the individual stump. An absolutely perfect and comfortable fit is thus assured every wearer of a Winkley limb.

After the straight hole has been bored, a tapering reamer is inserted in place of the auger to enlarge the upper end of the socket.



Boring Out
Thigh Pieces



Limbs Set up in the Rough

Here the different parts of the legs are assembled and mounted preparatory to the preliminary trial. Although it is not absolutely necessary to have this preliminary trial, we prefer that when the patient visits the factory, he try the leg in our fitting-rooms at this stage so that we may be certain that it is right in every respect before it is completed.

After a satisfactory fit is assured, the leg is taken apart and sent to the various departments to be finished before being finally put together for delivery.

After the leg has thus been taken apart, it goes to this machine, where the rough outer surface is removed by emery-covered felt rollers.

This process gives a perfectly natural shape to the leg and largely determines its weight, which is governed by the age, sex, occupation and preference of the wearer.

By using the highest grade materials and skilled and painstaking workmanship, a limb can be made extremely light weight and at the same time strong and durable.

As shown by the photograph, two men can work at one time on this machine. The man on the left is smoothing a foot while the one on the right is working on a part of the leg below the knee.

After the heaviest part of the work has been done on these coarse emery rolls, the limb goes to the unusual machine shown on the next page.



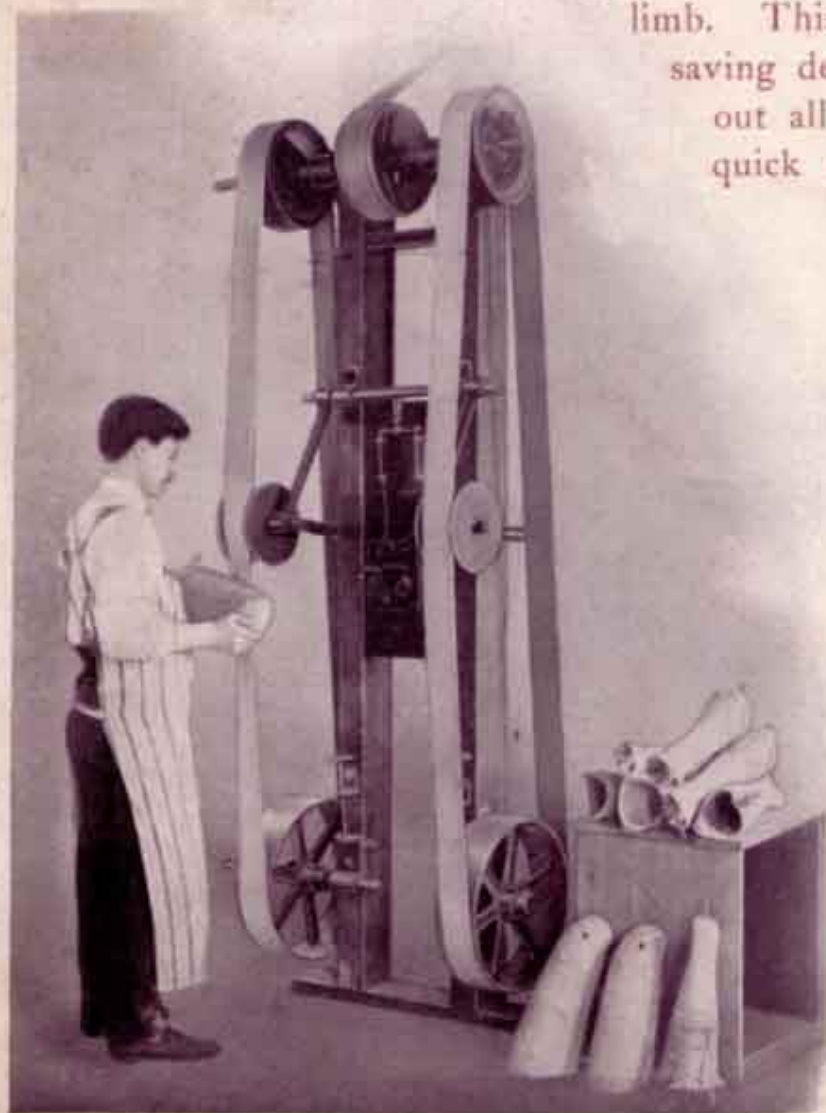
Smoothing on
Emery Rolls

We want to call particular attention to this machine, as it was designed by us and built by the workmen in our factory, and, so far as we know, is the only one of its kind in existence.

The operating part of the machine consists of two belts, the one that the man is working on being a coarse sanded belt, while the other, which produces a glassy smoothness, is covered with fine granite dust.

To get the benefit of the entire width of the belts, each wheel at the middle has a rounded face which prevents the edges of the belt from curling up. The tension is regulated by the adjustment of these wheels.

This unique machine places us in an especially favorable position to produce the highest possible finish upon a limb. This is one of our many labor-saving devices that enable us to turn out all work promptly and guarantee quick delivery.



Final Smoothing
of Wooden Parts

Although the wood with its rawhide covering is amply strong for all ordinary purposes, the upper ends of all wooden parts of the Winkley limbs are wound with strong copper wire, which is then soldered into one solid band. This is, of course, before the rawhide covering is applied, and in the picture the man on the left is seen cutting the groove in which the wire is wound.

The value of this method of strengthening a limb will be appreciated when you recall the fact that one of the latest and most modern types of heavy cannon is constructed entirely of wire wound around a steel tube.

The man on the right is enlarging and smoothing the inside of a thigh socket.

In this machine is clearly illustrated our principle of the economy of space and power by using one machine for as many operations as possible. The four arms of this machine are fitted to hold various tools and four men can work on it at one time.

A Four
Man Machine

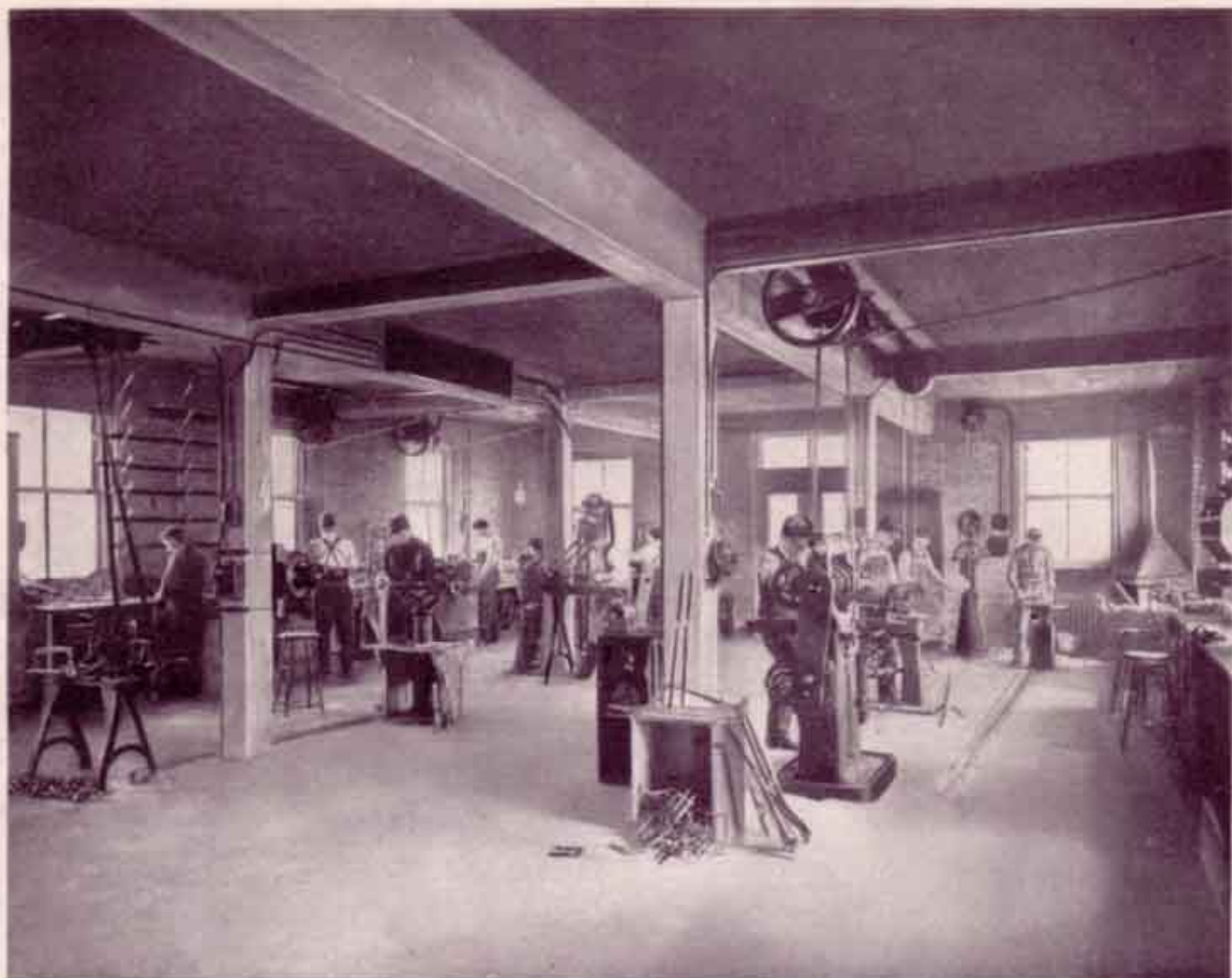




Rawhiding and Finishing Section

In the interesting picture above is shown the department in which the rawhiding and finishing is done. After being dampened until it is soft and pliable, the rawhide is securely fastened around the wooden shell. In drying, the rawhide contracts so as to fill every curve and hollow, furnishing the strongest and best possible covering. The limbs are then returned to the machines already mentioned where the rawhide cover is smoothed preparatory to the application of flesh-tinted enamel or waterproof brown shellac.

Calf parchment (the raw-skin of calves) is used exclusively for covering Winkley limbs. Although it costs much more than the skin of grown animals, its light weight and great strength make it desirable.

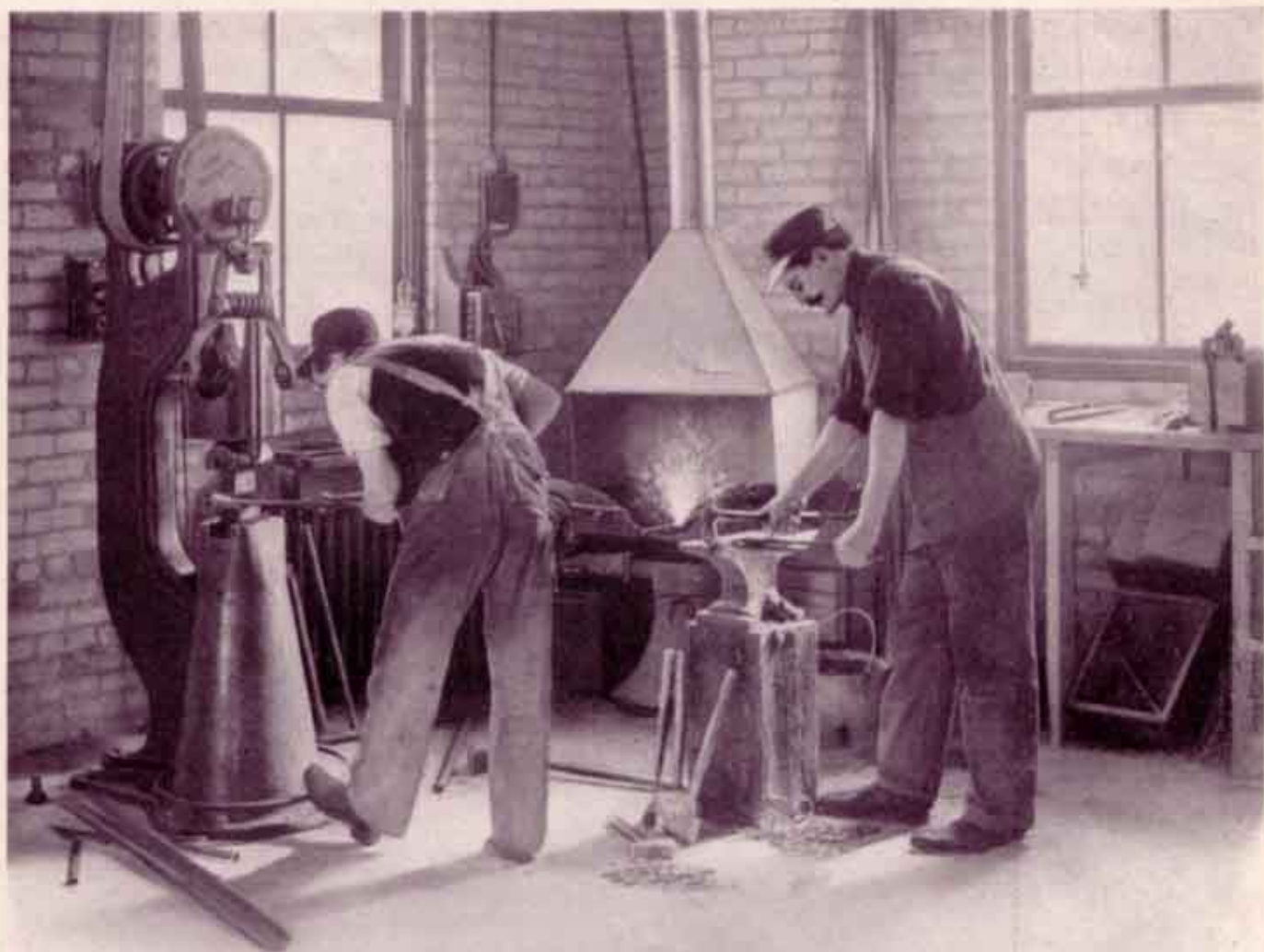


Metal Working Department

This is a general view of the machine shop in the rear of the second floor. Here are made all the metal parts entering into the construction of our limbs.

Your attention is called to the fact that no cast steel fixtures or joints of any kind are used in making Winkley limbs. All are hand forged and pounded out of the finest quality of 30 carbon rolled steel.

The metal forging and tempering demands greater scientific skill and experience than any other part of our manufacturing process.



Trip-hammer and Forge

We are safe in saying that this department is undoubtedly equipped with the finest machinery and appliances that modern inventive genius has devised.

The forge in the corner as shown above is run and regulated by a direct-connected electric blower of the latest improved pattern.

The trip hammer seen on the left rests on a solid column of masonry extending to the basement. By the use of this hammer, striking 225 strokes a minute, as much steel can be drawn out to the required shape in thirty minutes as could be produced by one man during ten hours of hard labor. The more the steel is pounded and worked in the process, the tougher and better it becomes.

Our joints are forged and pounded out of the finest quality of especially prepared 30-carbon rolled steel, instead of being drop forged or cast as is commonly done.

Another striking improvement that we use is the curved knee joint, the head being set back of the center and the joint curved above and below. This curve can readily be seen by examining the knee joints which are shown leaning against the bench in the illustration on the following page.

The advantage of this curve is that in a standing position, with the full weight on the artificial leg, no muscular effort is required to prevent the knee from bending forward, and the joint is less perceptible through the trousers.



Emery Wheels for
Smoothing Metal Parts

These curved joints cannot be successfully applied to any single socket style of leg.

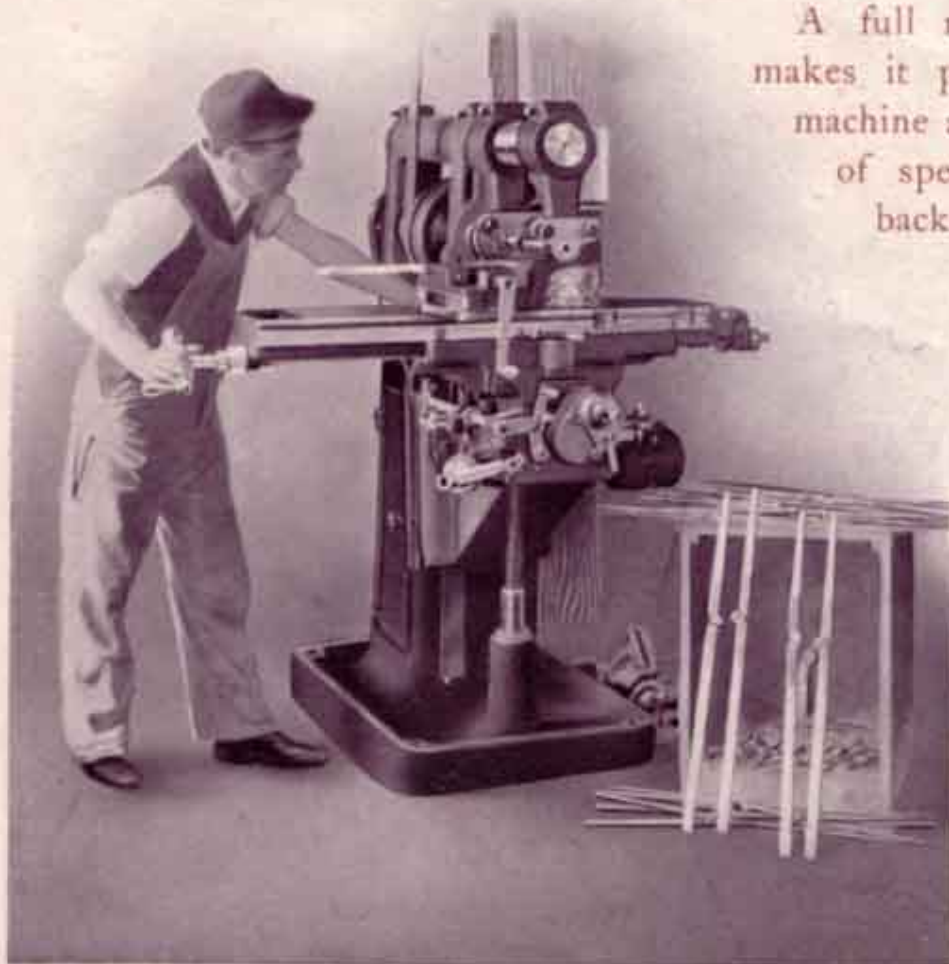
From the trip-hammer the rough joints come to the emery wheels shown on the preceding page, where the roughness left by the forge and hammer is removed by grinding on emery wheels of varying degrees of fineness.

After being smoothed on the emery wheels, the joints go to the milling machine seen below, where the hinge slots are cut, and the heads are shaped.

A force pump pours a stream of lard oil over the part being milled. This enables us to make a smoother cut and do it with greater ease.

This machine is capable of the most delicate and accurate adjustment. By means of a micrometrical dial it can be set to one thousandth part of an inch.

A full reverse drum controller makes it possible to operate the machine at forty different degrees of speed, either forwards or backwards.



Milling Machine

A final polish is necessary, however, before the joints are ready for the plating tanks. This polishing is done on the buffing machine, illustrated on this page.

To secure a perfect plating of nickel it is essential to have an absolutely smooth surface on the metal parts. While this may appear a superficial and somewhat unnecessary operation, we have found from experience that it not only adds greatly to the appearance but to the durability of our limbs.

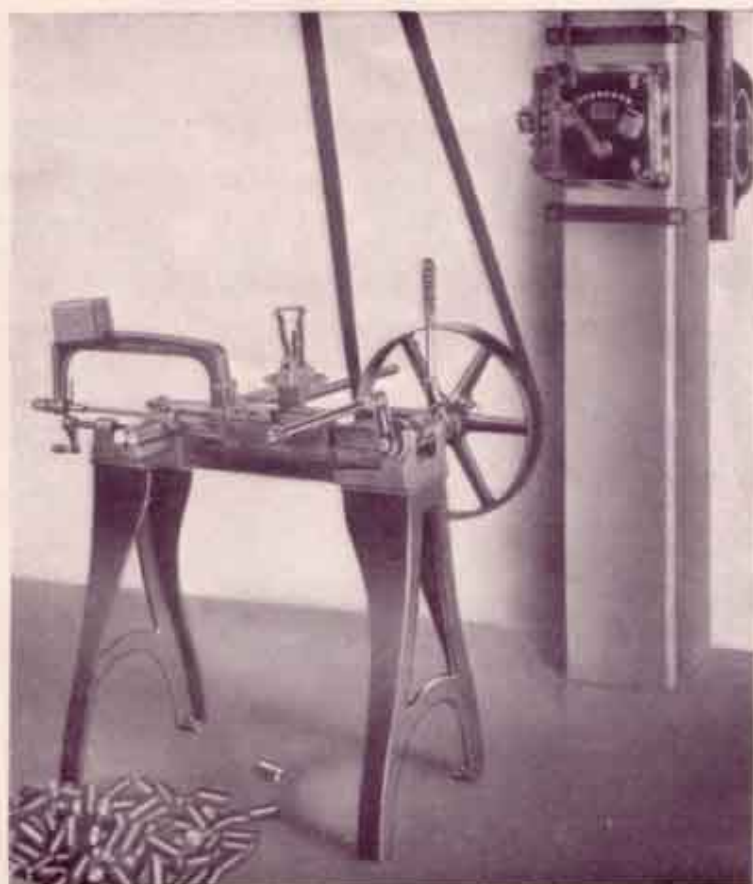
The buffing wheels consist of especially prepared felt, held in position by parallel steel sides, and are revolved at high speed by means of the electric motor seen in the picture.

In conjunction with the buffing wheels, a polishing paste is used to impart the high finish necessary for the nickel plating.

It is on these wheels also that the final polish is given the parts after the plating has been done.



Polishing and
Buffing Lathe



Sawing Steel Bars

This picture shows a hack-saw which is used to saw off solid steel bars into pieces of the required length for ankle joints and knee bolts. Four bars are sawed at one time. The bars are made of the right diameter, and the steel is specially tempered for this purpose.

The ankle joint is specially constructed to secure simplicity, strength, lightness, durability and natural motion, and in each of these points it is admitted to be superior to all other joints now on the market.

We have devoted years of thought and experiment to the construction of artificial feet, and have five leading styles; our willow foot, articulating at the ankle; our sponge rubber foot, with stiff ankle or articulating at the ankle; our felt foot with either stiff or articulating ankle.

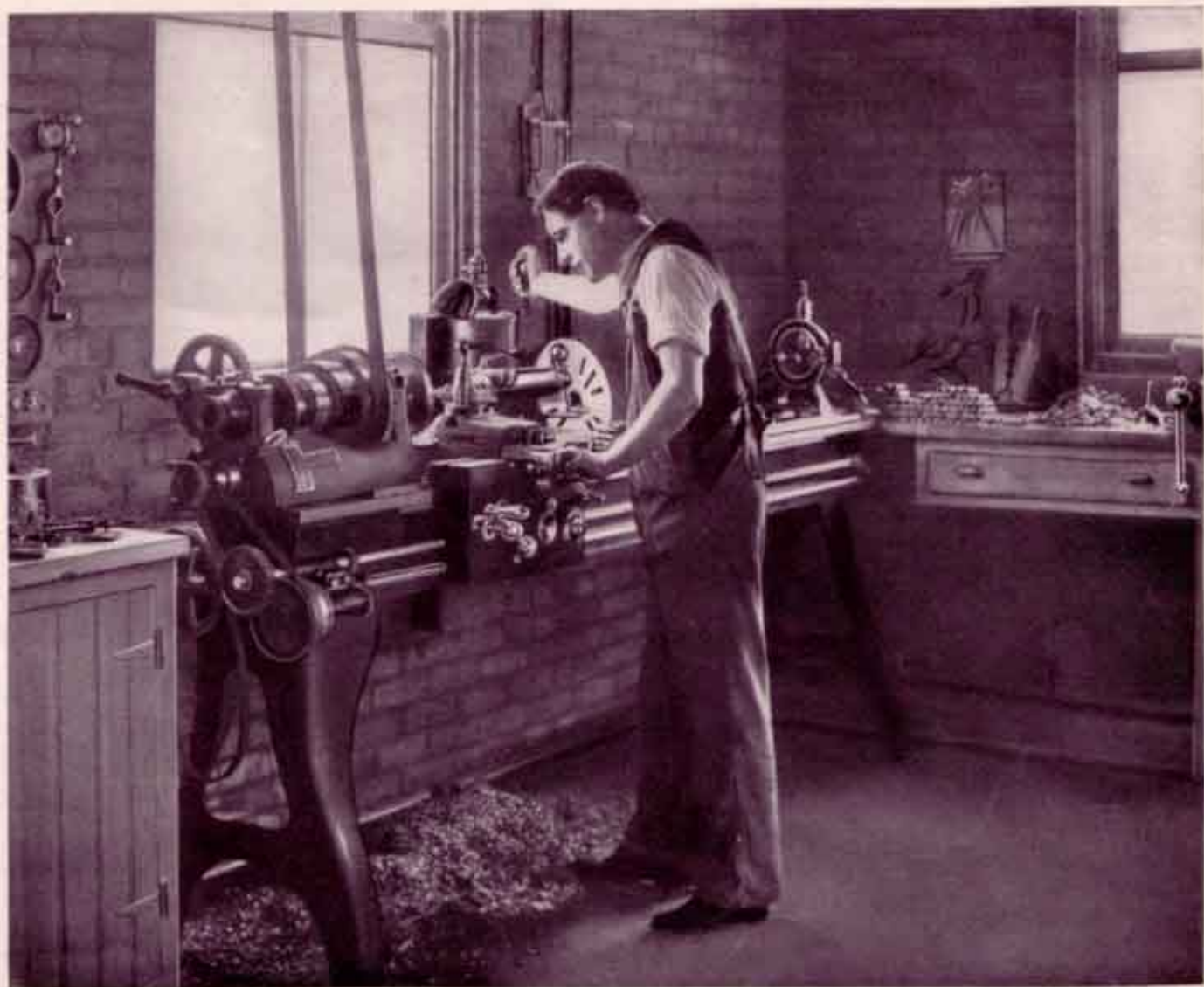
Our own experience and observation inclines us to favor the natural ankle motion, for we believe that most persons walk more easily and naturally with an ankle motion than is possible with a stiff ankle. At the same time we admit that rubber and felt stiff-ankle feet both possess good and strong features.

Both ankle joints and knee bolts are made up in large quantities and kept on hand so that our workmen always have a supply ready for use when needed.

From the hack-saw shown on the preceding page the ankle joints come to the machine illustrated below, where the centers are bored out, leaving light, strong steel tubes.



Drilling out
Ankle Joints



Lathe for Shaping Metal Fixtures

The tubes are then taken in charge by the operator shown above who, with this powerful lathe, cuts away certain portions of the surface leaving the flanges which maintain the foot and leg in their proper lateral position.

This tube is fastened to the lower part of the leg and forms the axis upon which the foot moves.

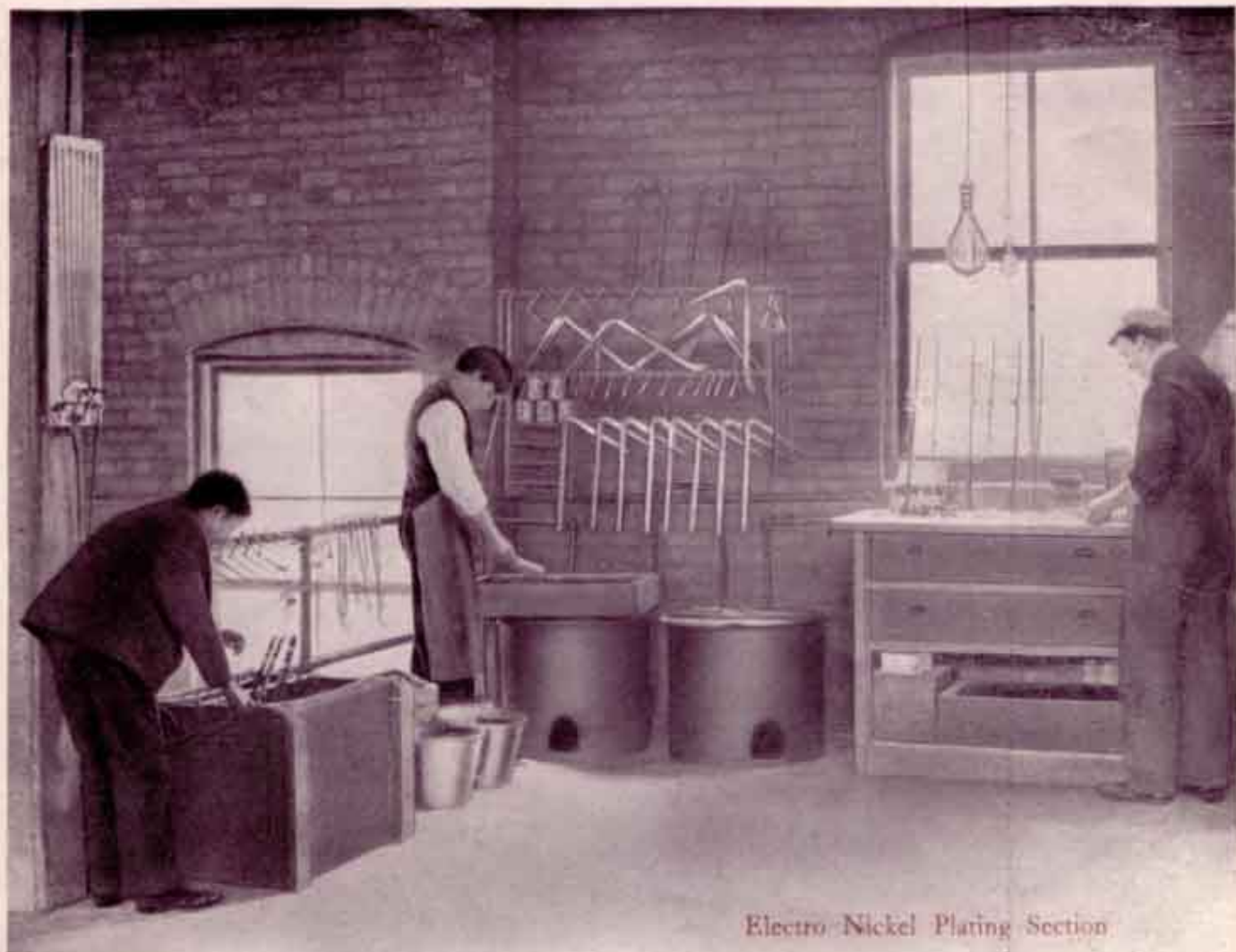
We feel confident that after you have examined the construction of our foot and ankle, you will understand why it surpasses others in strength, lightness, durability and natural motion.

The illustration does not do justice to this compact piece of machinery, which is known as a turret lathe. The central part of the machine consists of a revolving turret, which is made to hold six different tools. This turret is controlled by the wheel which appears at the man's right and enables the workman to instantly bring any desired tool into position for use.

On this machine are shaped many of the metal fixtures that enter into the construction of our limbs.



The Turret Lathe



Electro-Nickel Plating Section.

One of the points of superiority of the Winkley limbs is that all metal parts are heavily nickel plated. This is unusual, but we are willing to go to this extra expense because it adds so much to the appearance and durability of the limbs.

The metal parts are first polished upon the buffing lathe, and are then cleaned of grease and dirt by the use of hot lye and a muriatic acid bath, after which they are thoroughly rinsed and suspended in a solution of nickel in the plating tanks shown on the left.

The nickel is deposited on the fixtures by means of an electric current which is passed through the solution and graduated in strength by the regulator attached to the post.

Anyone who has worn an artificial limb appreciates the importance of perfect fitting stump stockings. They must be made with the greatest of care, of proper texture and material. To meet these demands the fullest regard must be given to the method of knitting and the material used. In order that our customers may feel sure that they are getting the most suitable and durable stockings that can be made, we have installed our own knitting department, sparing neither pains nor expense in perfecting it.

This general view of the knitting corner shows several young ladies employed in making the stockings.



The Knitting Corner



Winding the Yarn on Spools

The yarn used is especially prepared for us and is spun with just sufficient twist to produce the desired elasticity, durability and absorbent qualities. The yarn comes from the mills in long, loose skeins, and must be prepared for the knitting machines by being wound on spools by the winding machine shown above.

A sufficient number of spools is wound to provide for one day's work of the knitting machines, as the elasticity of the yarn is destroyed by remaining on the spools over night.

These knitting machines were made to our special order and designed solely for the manufacture of seamless stump stockings, so as to properly shape them.

Heretofore this work was done on ordinary round knitting machines, running the same number of stitches the full length of the stocking, the shaping being imperfectly secured by shrinking each stocking over a form.

Stockings made in the old way lose their shape after being worn a short time, becoming large and baggy at the end, which causes serious dis-

comfort. Our stockings being knitted to shape, thoroughly washed and shrunken, retain their form until fully worn out.



One of the
Knitting Machines



The Fleecing Machine

The final process in the manufacture of the stump stocking is to turn it inside out and run it through the fleecing machine shown in operation on this page. This machine produces an even, smooth and soft surface on the inside of the stocking, making it comfortable and easy on the stump.

You can easily understand how seams, knots and uneven places, or a coarse and harsh inside surface, would irritate the stump, and a loose or ill shaped stocking would inevitably wrinkle and cause blisters.



Cases for Stump Stockings

Here is a good view of the cases on the main floor in which are kept a complete assortment of every desired shape, size and quality of stump stocking. This enables us to accurately fit all patients quickly and also to ship all mail orders on day of receipt.

The stock is classified according to the place of amputation, length and circumference of the stump, so that any desired size and shape can be readily found.

The Shipping Room



Only those to whom we have sent limbs by express, fully appreciate the extreme care used in packing. This is the work of our shipping department, a view of which is shown on this page.

We are able to guarantee the perfect condition of a shipment on arrival at its destination, because our system is perfect and our packers are men of long experience in this particular work.

The shipping-room is conveniently located in the rear of the building at the end of the hall which leads to the Fourteenth Avenue entrance.

As soon as a limb is completed, the customer is notified just when it will be shipped and by which express company.



Express Wagons Waiting for Afternoon Shipment

While the photographer was taking some of the photographs that illustrate this book, it happened that the wagons of five express companies arrived for their regular afternoon collection. This fortunate circumstance resulted in our securing a picture which shows more clearly than words the volume and extent of our business.

Our New Fire Proof Building

Now, a few words about the construction of the building in which the Winkley Artificial Limbs are made, as described in the preceding pages.

This building was designed with a view to provide for our special needs, was built entirely by day labor and was occupied by us in January, 1906.

As to dimensions, it is 158 feet long and 55 feet wide, two stories and full basement. Was built according to the latest and most modern fire-proof methods. The floors, pillars, ceilings and roof are of concrete, reinforced with steel rods.

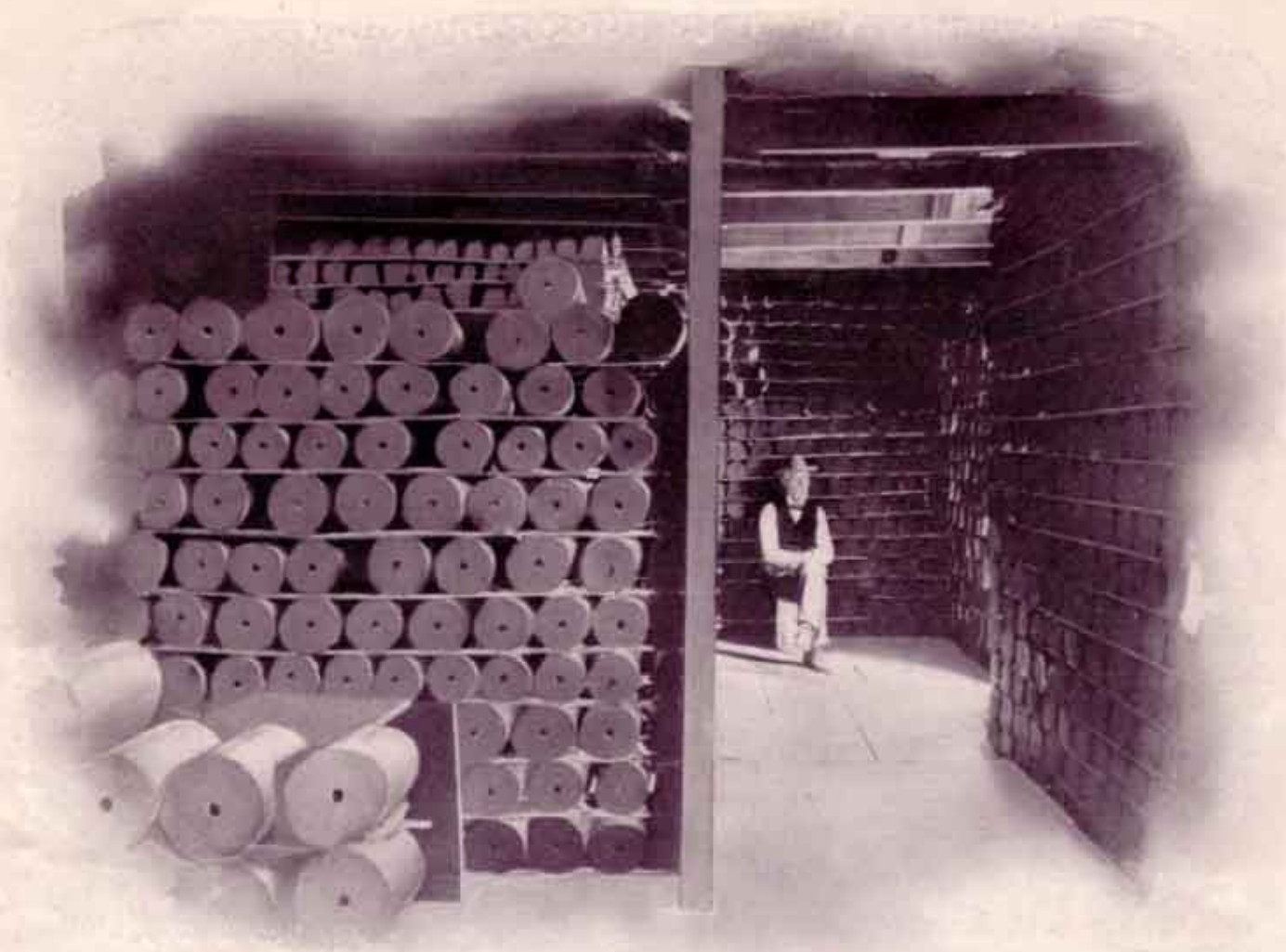
The walls are of red pressed brick, trimmed with white cut stone. All doors, door frames, window frames and sash are of pressed steel. The partitions are of fire-proof brick. The basement and factory floors are of reinforced concrete as stated, while the main floor is of marble, with marble base boards. Thresholds are of solid brass, and all window sills are of marble. Not one timber or piece of wood was used in its entire construction. Every window light in each of the seventy-three large windows in the building is fire-proof wire-glass.

The building is steam heated and electric lighted in all parts.

On the first floor are the offices, reception rooms, fitting rooms, storage and shipping rooms.

The entire second floor is occupied by the factory.

We have by far the largest and most complete establishment of its kind in the world.



A Section in One of Our Drying Houses

The Preparation of Willow Wood

This process requires almost as much skill, experience and supervision as the making of the limbs.

As only the best quality will stand the hard usage given an artificial leg, extreme care is exercised in the selection.

When a tree is cut down, the desirable parts are sawed into four-foot lengths and both ends painted to prevent checking. These lengths are shipped to us in car-load lots.

Each piece is carefully examined to determine which part of the leg it is best adapted for and is then worked up in the rough, the ends being given several coats of paint as soon as possible, to prevent exposure to the air. Foot and ankle blocks, shin and knee pieces, and thigh sockets are made thus and when needed for a particular leg, are cut to the required lengths.

Our willow is as carefully seasoned as hops or tobacco. It is corded up in separate weather proof drying-houses, on dry pine strips, no two pieces touching. Daily attention must be given to ventilating these drying-houses, as too much air on a dry day will season-check the wood, and too little on a damp day will mould and discolor it.

The wood is never used until it is from three to five years old, which is governed by the size of the piece, the smaller ones being seasoned first.

We have especially arranged moisture-proof rooms in which the wood is warmed before being worked upon, during most of the year. This is not necessary during the hot months of the summer.



IN conclusion, we would say that if this book has aroused your interest in the Winkley Limbs and you would like to know more about the detailed construction of them, we should like very much to have you write for our catalogue and examine the many styles shown in it. You will find every detail of our limbs carefully and accurately illustrated and accompanied by a minute description.

We are always pleased to correspond with a wearer or a prospective purchaser of an artificial limb. So do not hesitate to write us if you are interested.

JEPSON BRO'S.

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