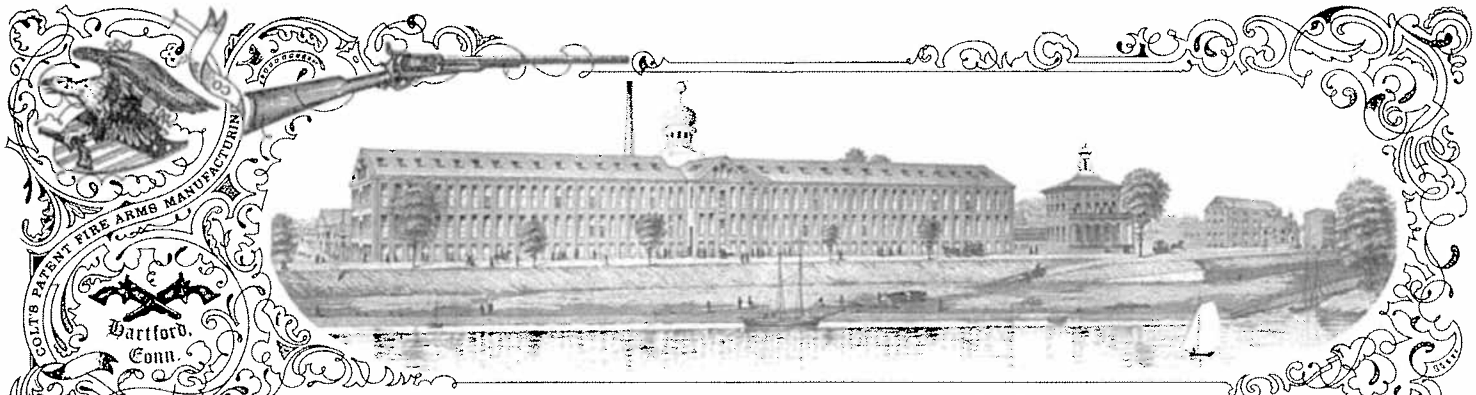

Colt's Manufacturing Company, LLC

Past Historians

Arthur Ulrich 1903-1941 | Charles Coles 1950-1965 | Martin Huber 1972-1993
Harold Hart 1942-1945 | Ron Wagner 1957-1972 | Kathleen Hoyt 1988-2009

April 6, 2010

Dear Sir:

Colt, by the means of this letter, is proud to authenticate the manufacture of the Colt firearm with the following serial number:

COLT LIGHTNING MAGAZINE SLIDE ACTION RIFLE
"Small Frame"

Serial Number:	*2930*
Caliber:	*.22 Rimfire*
Barrel Length:	*24", Octagon configuration*
Finish:	*Blue*
Type of Stock:	*Wood*
Shipped To:	*Wm. Lyman*
Address:	*Middlefield, Connecticut*
Date of Shipment:	*August 18, 1888*
Number of Same Type Guns in Shipment:	*11*

We trust you will find the historical information, retrieved from the original Colt shipping records, to be of interest.

Sincerely,

Beverly Jean Haynes
Historian

Office of the Historian, Colt Archive Properties LLC P. O. Box 1868, Hartford, CT 06144

Lyman Gun Sight Corporation, Middletown.

Title main	Lyman Gun Sight Corporation, Middletown.
Subject	Firearms Factories
Subject	Middletown (Conn.)
Subject	Lyman Gun Sight Corporation
Category	Livelihood Infrastructure
Description	Multi-story brick building with sign painted on side on far side of paved street. Automobile, telephone pole, field and street in foreground.
Description notes	Title supplied by cataloger.
Date created	1948.
Format extent	1 photographic print ; 13 x 18 cm.
Format medium	image/jpeg
Identifier	Accession number UC1-0638 File name IMG0014-0402
Source	Thomas J. Dodd Research Center, University of Connecticut Libraries
Relation isPartOf	Southern New England Telephone Company Records.
Rights	Copyright restrictions apply to the use of this image. For more information or to obtain a photographic reproduction of this image, contact the Thomas J. Dodd Research Center, University of Connecticut Libraries.
SeqNum	3104
ObjCol	Photographs

American Machinist

Volume 57 NEW YORK, AUGUST 24, 1922 Number 8

Some Unique Operations in the Manufacture of Gunsights

Delicate Parts Involve Special Machines and Methods—Fixtures and Tools Developed for the Work—Automatic "Digging" Machine Rivals Milling Cutter

SPECIAL CORRESPONDENCE

AS EVERY mechanic who has ever "toted" a rifle or shotgun is aware, the little device known in gun parlance as the "sight" is a very important adjunct to a gun, for without it the user of the gun would be unable to hit the object at which he aimed. These gunsights are made in many forms, adapted to all kinds of guns, and many of them are provided with very accurate means of adjustment for elevation and windage, comparing very favorably with some of our split-thousandth measuring instruments.

The manufacturers of gunsights are few in number, as the field is somewhat narrow. Their shops, however, contain many ingenious and effective machines and devices designed to perform operations that are perhaps without counterpart in other lines of industry. One such shop, from which a few examples will be cited, is that of the Lyman Gunsight Corporation, located in the little Connecticut village of Middlefield.

The founder of this business, William Lyman, was himself an expert marksman with a world-wide reputation for accurate target shooting, and the business grew out of his early efforts to perfect sights for his own guns. He started nearly fifty years ago in a little wooden building that now appears in Fig. 1 as a very insignificant part of the modern factory.

His first product was practically all hand made, for at that time there was little machinery available for performing the many special operations required by the nature of the work. As the business grew, the necessity for production machinery to replace the slow and tedious hand operations became apparent, and with true Yankee ingenuity he set about designing, and in most part constructing, many of the machines and tools that are here illustrated.

A few of the completed sights may be seen in Fig. 2, which will serve to give the reader an idea of the number and special nature of the parts required. To describe all the fixtures used and operations performed in their making would fill a volume and, therefore, only a few of the more interesting will be attempted.

The part shown in Fig. 3, and in successive operations in Fig. 4, goes upon the outer end of a gun barrel. Though others of similar appearances are adjustable, this one is not and it is made in one piece. It is of importance that the small bead be located exactly in the center of the ring.

The stock from which it is made is received at the factory in bars drawn to the exact section, shown at *a* Fig. 4, and the piece therefore requires no machining or other operations except polishing upon its outer contour. The first step is to cut off the pieces to length in an automatic screw machine, which at the same time produces the counterbore to be seen at *b* in the same figure.

The problem of continuing this counterbored recess to make a through hole, round and true, without disturbing the metal at the center that is later to form the little bead and its slender support is one that requires considerable study. Drilling, punching, broaching, milling and shaving are some of the operations that contribute to its making.

Most of the special tools are shown in Fig. 5, where, beginning at the left of the picture, is the jig by means of which the piece is drilled as shown at *c*, Fig. 4, preparatory to punching out the remainder of the stock. In Fig. 5 the jig is shown inverted and open ready for loading. The work is placed over the central plug of hardened steel in which are the guide holes for the drill,

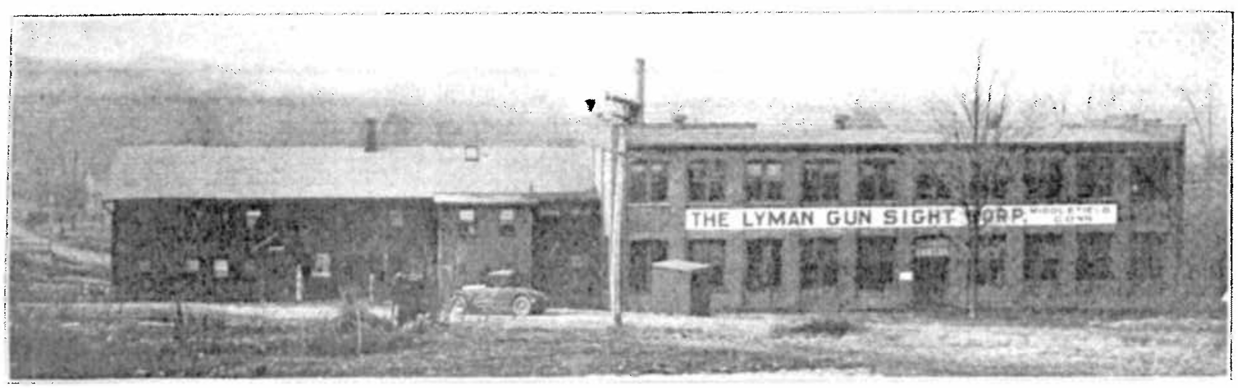

FIG. 1—FACTORY OF THE LYMAN GUNSIGHT CORPORATION AT MIDDLEFIELD, CONN.

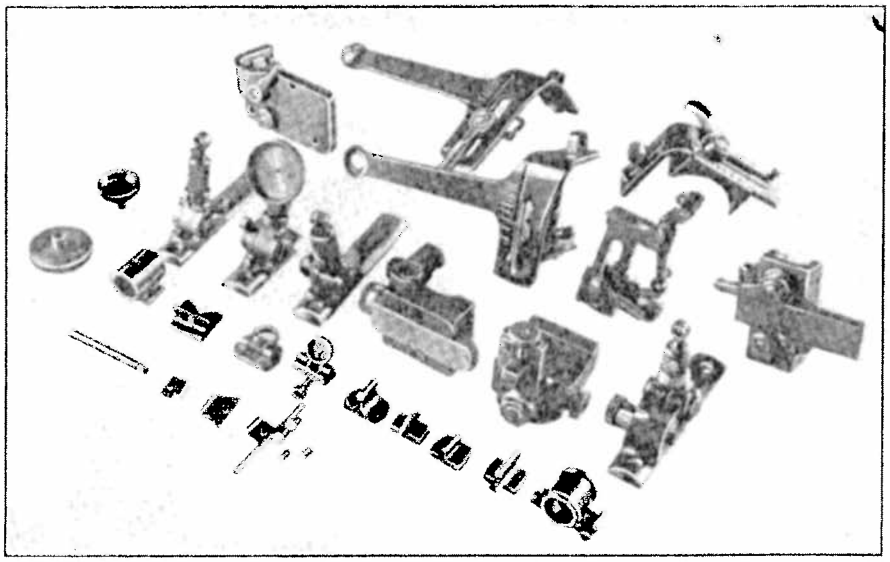

FIG. 2—SOME OF THE MANY FORMS OF GUNSIGHTS

round hole has been broached to size. The broaching tools are shown at *D* and *E* in Fig. 5. The work is placed in the holder *D* and the loose broach is pushed through by a plain piece of round stock held in the punch holder of the press. The broach passes clear through the work and is caught by the operator as it falls away from the under side of the bolster after passing through the holder.

The tool shown at *F* is the shaving die which reduces the bead to its finished form as shown at *g* in Fig. 4. The work is placed over the projecting stud (in this case a die) and is pushed into it by the round punch *G*. The operation is somewhat unique in that no formed punch is used.

At this stage the rough bead is still flush on one side with the surrounding ring of metal. As the work lies upon the die a small punching of soft iron, shown at *h* in Fig. 4, is laid upon it. As the press gate comes down the work is pushed into the shaving die, while the small amount of scrap removed is swaged into the soft punching as the latter is squeezed between the punch and die. A punching is needed, of course, for every piece shaved, and these punchings are produced at small cost upon an automatic press.

The reason for doing the shaving in this peculiar manner instead of with a formed punch is that in no other way that has been tried is there assurance that the fragile bead will not be distorted or twisted out of its proper relation to the surrounding ring. If such twisting occurs it would be a difficult matter indeed to correct it. The first action of the punch is to force the soft punching partly into the hole, the harder metal of which the work is made forming a partial impression of the bead in the soft iron of the punching, which thus supports the bead on all sides as it passes into the die.

This method could hardly be depended upon to produce clean, sharp edges, but they are not necessary. The following operation, shown in Fig. 6, mills away a part of the bead, leaving it about $\frac{1}{64}$ in. below the surface of the ring and bringing the corners up sharp.

The machine for milling is a special one made somewhat like a bench drill press, but holding a very small end mill. The manner of holding the work by the bead

and it is clamped by turning over the latch handle *A*, in the outer end of which is a small cam lever to apply the clamping pressure. The operator now turns over the jig so that it rests upon the ends of the four posts, and drills the five holes shown at *c* in Fig. 4.

The drilled piece next goes to a punch press where the tools shown at *B* and *C* in Fig. 5 punch out the stock at the bottom of the recess without disturbing the metal at the center, leaving the piece as at *d* in Fig. 4. The usual position of the die and punch is reversed in this operation, the punch *B* being attached to the bolster plate and the die *C* held in the press gate. The scrap passes up through a curved hole in the stem of the die and falls out at the back of the gate.

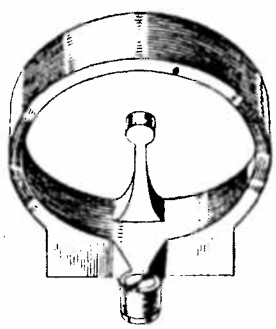

FIG. 3—A SPECIFIC FORM OF GUNSIGHT

On the punch *B* will be noticed two small pins projecting from the shoulder, parallel to the punch. These are ejectors for the purpose of lifting the work off the punch; and, together with a third ejector lying within the slot in the punch, are operated by means of the handle in front of the tool.

This punching operation may be termed "roughing out," for the resulting hole is not to size nor is the bead finished. As will be noticed in parts *d*, *e* and *f* in Fig. 4, there is still considerable metal to be removed from the bead before it reaches its final shape. Because of its slender nature, it would not be practicable to finish it until all the other machining operations were completed. It is shown in the finished stage at *g* in this picture.

Between stages *d* and *e* there are several milling operations which will be described later. The transformations are slight and difficult to show by means of a photograph. The difference between *e* and *f* is that the

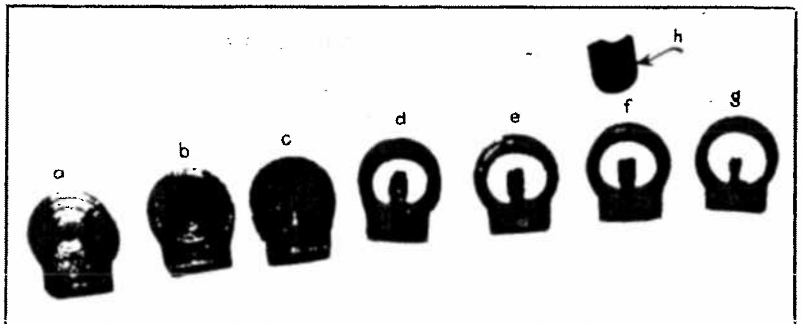

FIG. 4—PROGRESSIVE OPERATIONS ON PART SHOWN IN FIG. 3

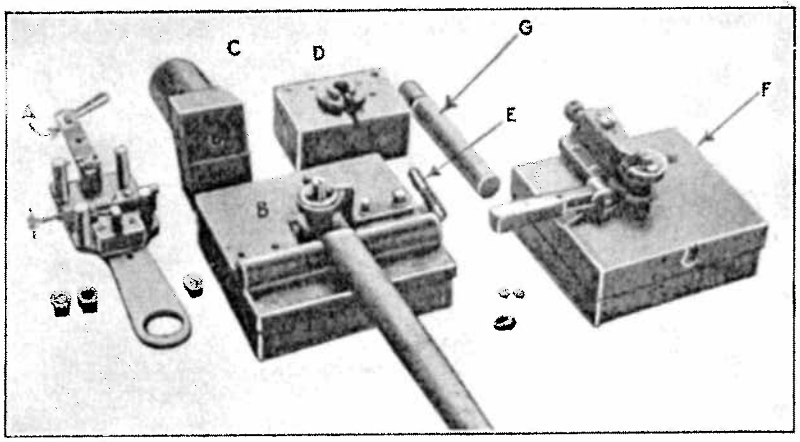

FIG. 5—TOOLS USED IN PRODUCTION OF SIGHT

is clearly shown in the illustration. The jaws of the holding device are in the form of a split stud, the periphery of which fits the round hole, and the two parts of this stud are pinched together upon the bead by means of a cam operated by the small lever. The spindle of the machine is then lowered to a stop and the work fed forward to the cutter by the lower handle.

The milling of the rounded tang to be seen on the last three pieces to the right in Fig. 4 might be thought to be a job for a straddle mill, but it is not so made. The work is done in a device, much used in this shop, called a "flop-over" fixture. Such a fixture is used on many other small parts that must be parallel or definitely tapered. One of the fixtures is shown in Fig. 7 set up for milling a dovetail.

The vise in which the work is held may be considered a two-jawed chuck, as both jaws are moved in unison to and from the center of rotation by means of a right-and-left-hand screw. False jaws are fitted to adapt the device to various shapes of work. The vise, or chuck, in mounted on the end of a spindle that may be rotated 180 deg. and held in either position by means of the toggles, one of which may be seen in action in the picture. There is a similar toggle on the other side of the fixture for holding the spindle in the opposite position, and also an index pin for holding the spindle at the 90-deg. angle if desired. This pin may be seen in Fig. 8, which is the rear view of the same fixture.

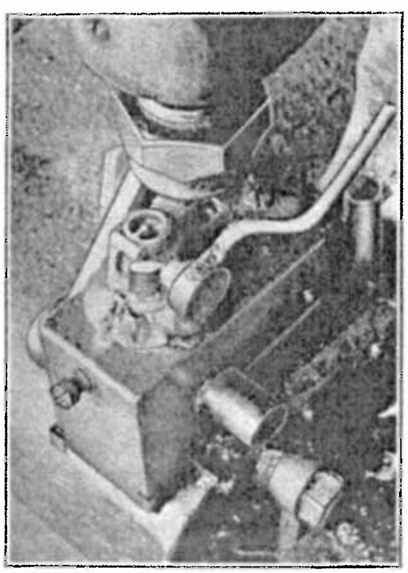

FIG. 6—A DELICATE MILLING OPERATION

The lever *A* Fig. 7, rests in either extreme position upon an adjustable anvil so that though the normal range of movement is 180 deg., this may be varied slightly and by definite amounts by turning an adjusting screw when it is desired to produce slight tapers, as in the case of dovetails that are to be driven to place. The fixture is here shown mounted upon a hand milling machine. It is a very versatile device, however, and is used in this factory in many other places where a reliable three-position indexing fixture is needed. It has proved its worth by continuous service.

Continuous milling fixtures and devices have in recent years become quite common. That the principle is not a new one is indicated by the fact that it is applied in the machine shown in Fig. 9, which has been in service for many years milling parts of gunsights. One of the pieces may be seen at *A* in this figure. A portion of the contour at each end of the piece has been rounded to conform to the curvature of the gunstock of which it is to become a part. In this machine a slowly revolving central spindle carries a mandrel to which the parts to be milled are successively attached by means of countersunk-head screws.

Two cutter spindles carry gangs of formed cutters that may be arranged to suit the size and shape of the

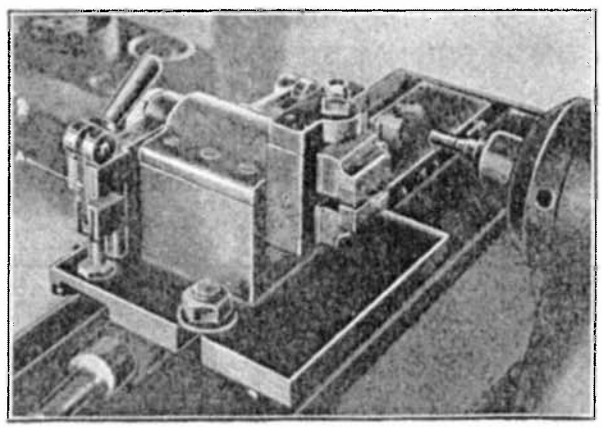

FIG. 7—A "FLOP-OVER" FIXTURE

work in hand. The center distances of the cutter spindles are adjustable with relation to each other and to the work spindle. The milling is continuous, as many pieces as the mandrel will hold being completed at each revolution of the latter. As each piece reaches the top position it is taken off and another one substituted.

In Fig. 10 is a drawing of an elevating screw used in many of the sights, and upon which some of the operations are performed in an unusual way. For instance, the part that looks like a small rack is in reality a portion of a square thread. If this thread were continuous any toolmaker would at once suggest that it be cut with a die upon a screw machine; but because of its lack of continuity, this method would seem to be out of the question. That it may be so cut, despite its peculiarities, the little machine shown in Fig. 11 amply demonstrates.

In the chuck of this machine is mounted an ordinary single-piece die of square shape and proper thread characteristics, while held stationary within the spindle, just back of the die, is a bushing fitted to the stem of the

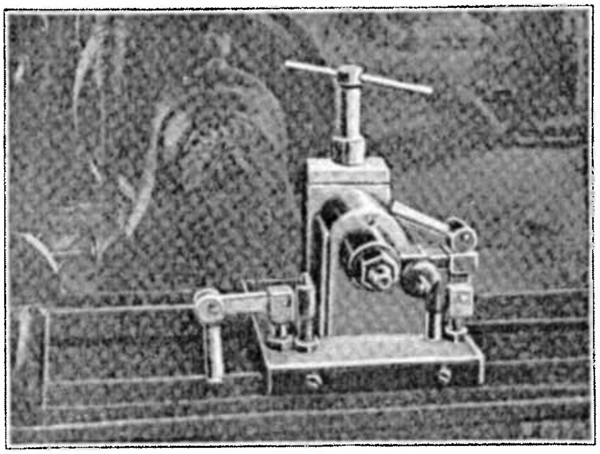

FIG. 8—REAR VIEW OF SAME FIXTURE

screw and having a slot or keyway to allow the threaded part to pass. Geared to the spindle and extending under the slide in which the work is held is a left-hand lead screw of the same lead as the die. A split nut, operated by the thumb-nut *A*, may be closed upon the lead screw at the will of the operator.

With one of the parts gripped in the holding clamp the operator moves the slide forward until the round stem of the screw has entered the bushing, then closes the split nut upon the lead screw. The slide is thus

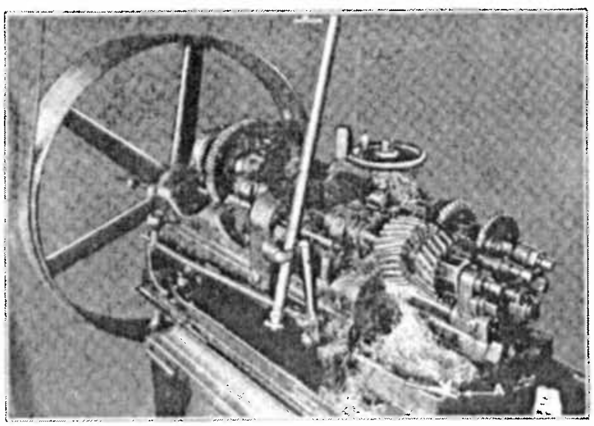

FIG. 9—A CONTINUOUS MILLING MACHINE

carried forward at the same rate of advance as if the die were cutting, until the spline to be threaded has passed clear through the die, the thread being cut thereon in its passage. The machine is now stopped, the spindle turned by hand to bring one of the clearance spaces of the die opposite the threaded spline, the split

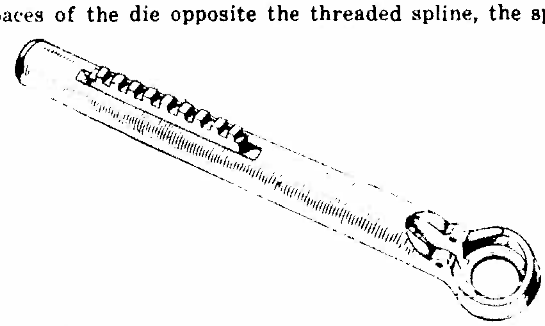

FIG. 10—DRAWING OF ELEVATING SCREW

nut released, and the work withdrawn. The whole operation takes no more time than would be required to thread a complete screw by running the die on and off.

In the drawing Fig. 10 it will be noticed that the cross-hole passing through the round head of the screw is recessed from both sides. This would seem to be a job for an ordinary counterbore or a hollow mill, but these tools have been tried and discarded in favor of the little machine shown in Fig. 12, in which the work is done by a single-point tool.

The piece to be counterbored is slipped over a short stud arbor in the spindle of the machine and is backed up by a cup center in the tail spindle, which is brought to bear upon the work by means of the cam lever *A*. The driving is done by the pin which extends from the face of the driver parallel with the arbor, and against which the work is shown resting.

Another pin extending radially from the periphery

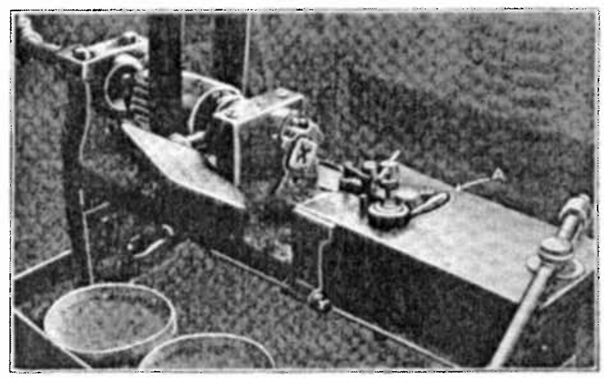

FIG. 11—THREADING THE SCREW

of the driver engages the short studs in the face of the small wheel *B*, which thus becomes a sort of crown gear driven by a one-tooth pinion. This wheel is mounted by means of a spring-adjusted friction upon a short shaft that is geared to what may be termed the lead screw of the tool slide *C*

When the machine spindle is revolved the wheel *B* revolves, though intermittently, and through the friction device turns the screw forward to feed the formed

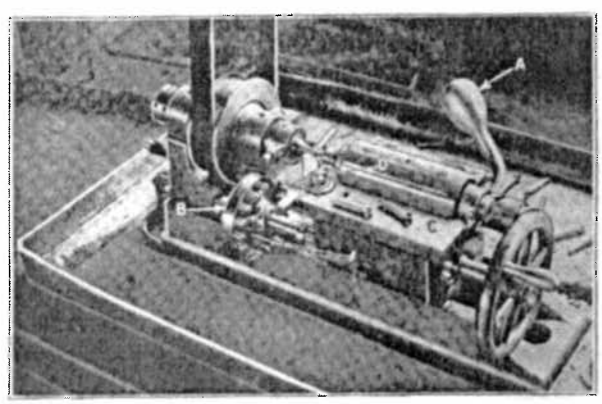

FIG. 12—A SPECIAL COUNTERBORING MACHINE

cutting tool *D* into the work. The forward movement of the tool slide is limited by a stop which regulates the depth of the cut and makes all parts alike as regards depth of the recess. When the limit is reached the wheel *B* continues to turn as long as the machine is

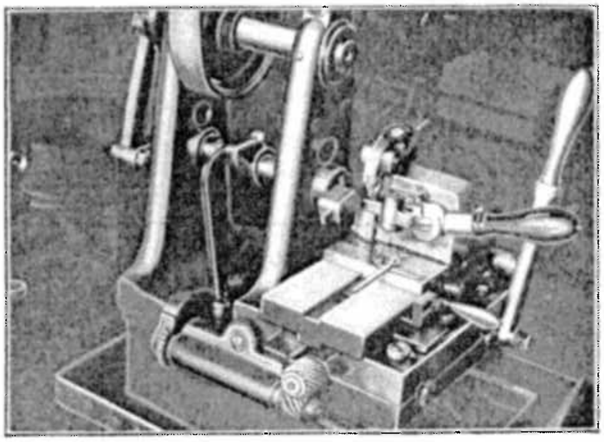

FIG. 13—"DIGGING OUT." A METHOD THAT COMPETES WITH MILLING

running, but because of the slippage of the friction no turning movement is imparted to the screw.

Should the tool become dull and refuse to cut as fast as it ought, the friction slips and adjusts the feeding pressure to accommodate the reduced efficiency of the tool. The feeding will continue, however, until the established depth of recess has been reached and the

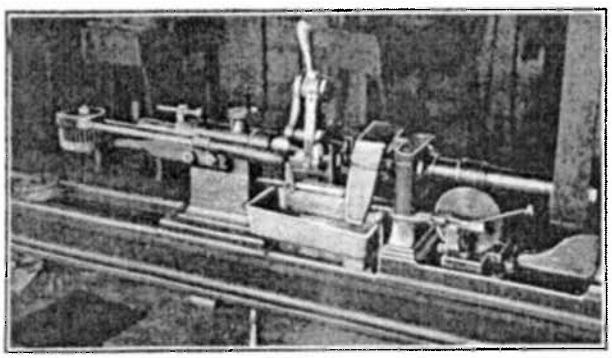

FIG. 14—OLD MACHINE FOR KNURLING

stop engages, which point is indicated by the stoppage of the handwheel at the right which is keyed to the screw. The tool may be withdrawn from the cut at any time by turning back the handwheel, slight effort being required to overcome the resistance of the friction drive.

If Whitney cutters could have been purchased fifty

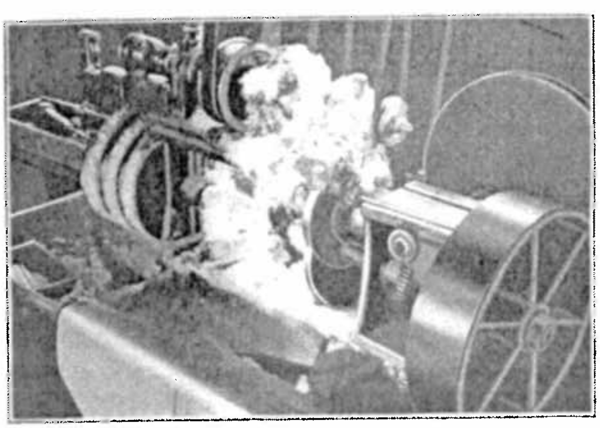

FIG. 15—HARTFORD AUTOMATIC PRODUCING IVORY BEADS

years ago at present-day prices, the machine shown in Fig. 13 probably never would have been built. As they could not, and as the small groove that cuts radially into the deeper recess in Fig. 10 had to be made, this machine was designed to do the work.

Except for unloading and reloading, the machine is automatic in its movements. The work (the piece, Fig. 10) is clamped upright in the vise with the deeper recess facing the tool held in the cutter head *A*. This cutter is ground as an ordinary parting tool, and the head gives it a peculiar rocking motion actuated by two pitmans, one of which may be seen at the left and the other between the housings, both being driven from the horizontal shaft above. The forward movement of the tool is analogous to the action of a fly cutter, or single-toothed milling cutter. Reaching the end of its stroke

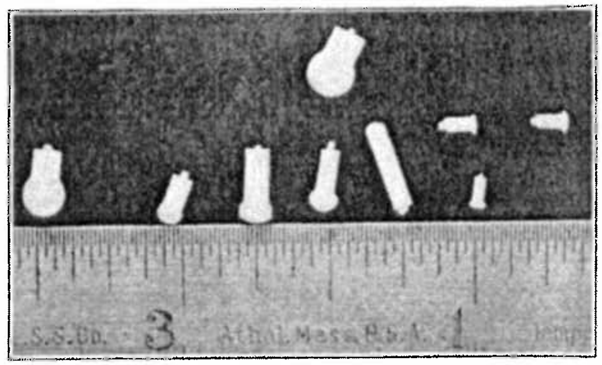

FIG. 16—SOME OF THE BEADS PRODUCED

it is withdrawn slightly, rotated backward, and again advanced to the cut. The cross-slide and work is in the meantime moving slowly and continuously forward toward the tool until the pre-determined depth of cut is reached, when it unlocks and recedes.

The machine is very rapid in its action; so rapid in fact that the eye cannot follow it. If the job were up today for consideration, a special milling machine using

FIG. 17—A VETERAN EMPLOYEE

Whitney cutters would doubtless be selected; but to make the change now would involve the design and construction of an entirely new machine which, when completed, would neither increase production nor produce better work. It is on that account, therefore, that this ingenious device remains on the job.

One part of certain gunsights requires a small carefully knurled handle and, contrary to usual practice, four knurls are used to produce it. These knurls are mounted upon the compound lever compensating device shown in Fig. 14 on the tail spindle of the machine. With the work held in the chuck the knurls are brought forward by means of the lever-operated rack and pinion, the compensating levers are brought together by the small handle at the top, while at the same time the "nut" on the slide *A* is pressed into engagement with the constantly turning scroll.

The slide is, of course, attached to the tail spindle and draws the knurls forward over the work until the length desired has been knurled, when the knurlholder is automatically released and the nut thrown out of the scroll. This machine is also a rapid producer and, despite its age, it would be difficult to design a machine to beat it.

Making Ivory Beads On a Screw Machine

In Fig. 15 is shown a machine that appears to be operating under a snow drift. This machine has no special claim to distinction as it is one of the early Hartford automatics and has many counterparts still at work throughout the country. It is doubtful, however, if any of the others are handling the same kind of material, for the product is some one of the many small beads shown in Fig. 16, and the material is ivory.

The ivory comes to the machine in the form of short round rods, some of which may be seen in the little pan on the base of the machine. These rods are fed through the hollow spindle, one pushing another, by means of the usual form of wire feed. When a short end is reached it is either thrown out of the collet or is knocked out by the cutter, the result being only that the machine makes one idle cycle. Some of the tools used are the same as would be employed upon similar parts of steel, but all the forming is done by revolving cutters.

The machine is entirely automatic in its action and its attendant has many other duties to perform while "keeping his eye on it." One of the things that he does *not* do, however, is to clean off the chips. Ivory readily absorbs, and is discolored by, oil. The chips are therefore allowed to collect and thus act as a protection to the product by catching up any stray drops of oil that may be thrown off by the revolving parts of the machine.

Besides veteran tools, the company has some veteran employees. Though the founder of the business has long since passed away, several of his early associates are still on the job. One of them may be seen in Fig. 17 at the work in which he has been engaged for nearly half a century. He is "going to die right on this stool; but not for a long time yet;" as he himself says.

Testing Gears by Micrometer Measurement —Discussion

By Fred Ross Eberhardt
Gear Department Manager, Newark Gear Cutting Machine Co.

In an article under the above heading on page 195 of *American Machinist*, S. O. Gordon gives some interesting formulas for use in making micrometer measurements of gears over plugs. We wish to compliment Mr. Gordon on his mathematics, although we question the value of gear measurements made in this manner. Some of the worst running gears that the writer has seen have passed a careful inspection of this kind.

An involute gear, as such, has only two unchangeable characteristics; namely, the number of teeth, and the diameter of the involute base circle. The pitch diameter depends entirely upon the mating gear and the center distance. This fact being the case, it is clearly impossible to measure the pitch diameter of any one gear by itself. Suppose a certain pitch diameter is assumed arbitrarily. If the teeth should be cut 0.001 or 0.002 in. too thin they would still be within the limits required for most work, but a measurement over plugs would seem to indicate that the pitch diameter was undersize. Of course, this would be erroneous.

The only gear test of value is some sort of a running test, which may be supplemented by a micrometer measurement of each tooth if desired. The gears should be mounted on true running spindles set at the same center distance at which the gears will actually operate and should be run at a fairly high speed under load. A good testing speed is approximately 1,000 ft. per min. pitch line velocity. This velocity may be roughly calculated as being equal to $\frac{1}{4}$ r.p.m. × pitch diameter (in inches). A load may be applied by means of a brake, a stick of wood or a piece of belting.

The gears should be run in both directions. Any inaccuracy in tooth spacing, as well as an eccentricity, thick teeth, or gear running out, will be shown up at once by the noisy operation. An incorrect tooth form will also be apparent, from the noisy operation and from an examination of the bearing area on each tooth. When the gears are on the centers, tests for backlash may be made by shaking one gear while the mating gear is firmly held.

If it is not convenient to make a power test as outlined, the gears may be mounted on spindles set at the correct center distance and revolved by hand. This test should be accomplished by turning one gear very slowly, and resisting the movement with the other gear. If no delicate rumbling or bumping is felt as the teeth are engaged and disengaged, and if a satisfactory bearing is shown, it is likely that the gears will not operate noisily because of any inaccuracy in the teeth.

It is very difficult, if not impossible, to test any one gear by itself, and to be certain that the gear will run satisfactorily. Every gear is one of a pair or a train, and has no properties of its own, so that one would hardly know what to measure on a single gear. The correct way should be to make up a mate, and test the pair. If this could not be done, perhaps the best alternative would be to make a clay mold, using the gear as a core, and to cast a lead form. Testing the gear in every different position of the lead form shows up any inaccuracy in spacing as well as the variation in tooth form and tooth thickness. Any of these errors would prevent the gear from fitting the lead form except in certain positions and yet in spite of these errors the gear might operate perfectly.

Where there are many gears to be tested, a testing machine may be used, with a hardened and ground master gear. Variations in the center distance, as well as backlash and thick and thin teeth will be noted at once without a running test. If quietness is desired, a running test, or at least a hand test of feeling for any rumble, is necessary.

X
X
X

1878

Lyman History

The proud tradition and history of Lyman Products began simply in the late 1800's when William Lyman, an avid outdoorsman and inventor, created a product that resolved problems with gun sights of his day. The No. 1 Tang Sight, patented in 1879, represented a great improvement over the existing vernier sights of the time. While they were adequate in optimal conditions, Lyman wanted a sight that would work as well in adverse lighting. His innovative design launched the Lyman Gun Sight Company, and today, the Lyman tang and receiver sights still utilize the same principles originated over 130 years ago to enhance both the sight picture and the speed of aiming.

Through the years, Lyman has continued to develop innovative products for shooters and reloaders, carrying on the legacy of William Lyman. In 1925, the Lyman family purchased Ideal reloading products, which included the well-known Ideal reloading handbooks. Today, Lyman reloading handbooks are still the reloader's most respected and sought out source of data. In addition, Lyman has expanded and innovated a broad range of reloading and bullet casting tools and accessories.

In 1970, Lyman was purchased by the Leisure Group, a conglomerate which had been buying up well-known outdoor companies including High Standard Firearms, Ben Pearson Archery and Sierra Bullets, among others. In spite of the corporation's tight money situation, Lyman generated some significant improvements, which continue to enhance the company today. The most notable among these were the development of the Universal Trimmer, the early introduction of a quality black powder firearms line, The Expert Reloading Kit containing all the tools needed to start reloading in one package and a dramatic expansion of Lyman's respected publications line.

On the eve of Lyman's 100th anniversary in 1978, James F. "Mace" Thompson engineered the purchase of Lyman from the Leisure Group and brought the company under private ownership again. Immediately, significant changes were instituted to improve both manufacturing and product development ushering in the current era of company growth. Using input from both the trade and consumers as well as the expanded ballistics laboratory, regular new product introductions contributed to Lyman's growth and success. Larger and more innovative presses like the Crusher and T-Mag were introduced. Improved 20 lb. bullet casting furnaces were also developed.

With the introduction of the Turbo Tumbler vibratory case polishers, Lyman revolutionized the way reloaders prepared fired cases. Handbooks have also been expanded and updated regularly. While adding innumerable handy accessories, Lyman also harnessed advanced digital technology to create a series of Digital Powder Systems that dispense and weigh powder automatically. Today, in addition to the world's fastest powder system, the Lyman DPS3, a pair of fast, accurate digital scales and a digital trigger weight gauge are also offered.

In addition to developing new products for the reloader, Lyman continued to expand the stable of Brands That Perform. In 1990, Peterson Instant Targets was added, now known as the TargDot line of adhesive targets. 1996 the world-renowned Pachmayr brand came on board bringing leadership in recoil pads and handgun grips. Shortly after, in 1997, TacStar was added, featuring tactical shotgun accessories for military, law enforcement and home security use. Butch's Bore Shine products were purchased forces in 2000. A-Zoom's hard anodized snap caps were added in 2002. Then, in 2003, the most respected leader in clay target throwers since the 1950's, Trius Traps was added. The newest Lyman brand is the Uni-Dot line of fiber optic sights continuing Lyman's commitment to leadership in top quality and affordable sighting.

National Associations Leading the Fight for Shooters Rights

Lyman is proud to support and promote recognition of both the National Rifle Association and the National Shooting Sports Foundation. In fact, Lyman supports the NRA's "Round Up" program letting customers "add a buck" to their order to go directly to the NRA/ILA Endowment for the Protection of the Second Amendment. In addition, Lyman is also a long standing member of the NSSF and was a proud participant in the foundation's Heritage Fund during it's

WILLIAM WORCESTER LYMAN

8. Significance

Period / **Areas of Significance—Check and justify below**

Period				
prehistoric	archeology-prehistoric	community planning	landscape architecture	religion
1400–1499	archeology-historic	conservation	law	science
1500–1599	x agriculture	economics	literature	sculpture
1600–1699	x architecture	education	military	social/ humanitarian
1700–1799	art	engineering	music	theater
x 1800–1899	commerce	exploration settlement	philosophy	transportation
1900–	communications	x industry	politics government	other (specify)
		invention		

Criteria B & C

Specific dates 1859, 1864 **Builder Architect** Russell, Rufus G., New Haven (architect)

Statement of Significance (in one paragraph)

The David Lyman II House has local historical associations with one of Middlefield, Connecticut's prominent agricultural and industrial families, who owned the property for over 230 years (Criterion B). Having established a prosperous farm by the middle of the nineteenth century, David Lyman II helped to develop the Town of Middlefield by founding the Metropolitan Washing Machine Company and the Airline Railroad. In 1863 New Haven architect Rufus G. Russell designed this well-preserved house, one of the finest examples of the Gothic Revival style in the greater Middletown area (Criterion C).[1]

Historical Significance

David Lyman II (1820-1871) was a direct descendant of Richard Lyman, an English immigrant who came to Boston in 1631. In 1635 Richard joined the Reverend Thomas Hooker to found Hartford. His grandson Ebenezer (1682-1762) moved to Durham in 1737 and also purchased land in Middlefield. Ebenezer's fourth son John (1717-1763) and his wife Hope moved to Middlefield in 1741 after buying 165 acres of land that today form the core of Lyman Farms, Incorporated. John's son David (1746-1815) continued to run the Lyman farm, as did David's son William (1783-1869). William married Alma Coe, daughter of another prominent Middlefield family, who bore seven children, one of whom was David II.

David II was appointed trustee of his ancestral homestead at the age of 27 and enlarged the house before 1860 by adding two wings to an original main block built by his grandfather in 1785. In 1863 David II moved the original block to another site at the intersection of Main Street and Reed's Gap Road in Middlefield, where it still serves as a residence. During the same year he commissioned Rufus G. Russell of New Haven to create the present main block of the house.[2] Richard Powell was employed as the stone mason in 1864.[3] According to Lyman's ledgers dating from 1849-1870, Lyman was very involved in the construction and furnishing. In 1864 he reported a total of $18,104.13 in his house account.[4] By 1865 he listed $11,227.71 spent on new house furniture, pianos, and all fixtures.[5] Lightning rods installed cost $26.40.[6]

David Lyman II, like generations before him, continued to operate the 500-acre farm founded by John Lyman. Vegetables and peaches from a small orchard were sold locally to supplement the Lyman income, and at the turn of the century the farm specialized in fruit and breeding sheep. So acclaimed was the farm that in 1899 it was featured in the Eastern editions of the American Agriculturist, the New England Homestead.[7] However David Lyman was not financially dependent on his farm. As a young man he had developed business skills from working with a New Haven merchant and later for the famous New York-West Indies merchants, Alsop and Chauncey. By 1861 he established the Farmers Milling Company and co-founded the Metropolitan Washing Maching Company along with his father William and Moses Terrill. At one time the Metropolitan Washing Machine Company employed about 160 men who manufactured over 400 wringers a day. It utilized six buildings with over 20,000 square feet and a sales office and showroom in New York City.

Lyman's greatest contribution was in founding the Airline Railroad, of which he served as the first president. It ran from New Haven to Middletown, then to Willimantic. Naturally Middlefield's depot was convenient for shipping the products of the Metropolitan Washing Machine Company. Lyman also worked against Hartford interests to charter a railroad bridge across the Connecticut River at Middletown, and he finally obtained the right to bridge the river from Congress.[8] The bridge opened in July of 1871, a few months after Lyman's early death at the age of 51.

Lyman's widow Catharine and sons Henry (1856-1879) and Charles Elihu (b. 1857) continued to operate the farm. His oldest son William (b. 1854) was well-known for his inventions: the Lyman Gun Sights and the Lyman Bow-facing Rowing Gear. His patented scopes and gunsights were supplied to the United States Army during three wars. The Lyman family still owns and manages the home and some 1,100 acres. Produce is sold in the Apple Barrel near the house.

Architectural Significance

The David Lyman II House is an outstanding example of the work of Rufus G. Russell (1823-1896). One of the best-known architects in New Haven, he apprenticed under Henry Austin and soon was recognized as one of "the principal architects of the period . . . mainly identified with the High Victorian Gothic style of the '70s . . . ."[9] He designed numerous buildings in New Haven: the Calvary Baptist Church (1871) on Chapel Street, the New Haven Gas Company (1872) on Crown Street, and the Humphrey School (1877) on Humphrey Street. In 1866 he designed the residence of Nicholas Countryman, one of New Haven's leading builders, which displays features similar to those of the David Lyman II House.

Russell undoubtedly was challenged by Lyman's commission. The architectural evolution of the house reveals that Russell was restricted to the defined space of an earlier building and two adjoining wings. In addition, Lyman wished to retain the Georgian-style form original to the house, yet adorn it with Gothic- and Italianate-style details. Russell utilized post-and-beam construction in the main block, a method outdated by 1860 in New Haven but still prevalent in Middlefield. To the five-bay, two-story house he applied a sophisticated Italianate-style porch and cupola. He dressed the gable and dormer ends with well-crafted vergeboards, finials, and brackets. Well-articulated details were also added to the interior. The perforated and raised, foliated talon and grapevine patterns of the cornice moldings are most unusual to the area. Black and white marble fireplace surrounds further enhance the large rooms.

Most notable is the excellent state of preservation of the house. Modern alterations have been limited to a twentieth-century exterior chimney, a shed-roofed dormer, and the removal of a partition wall on the north side of the main block.

Colt Lightning Small Frame .22 Rimfire
--shipped August 18, 1888 to
William Lyman who started the famous
Lyman gun sight company in
Middlefield, Connecticut