

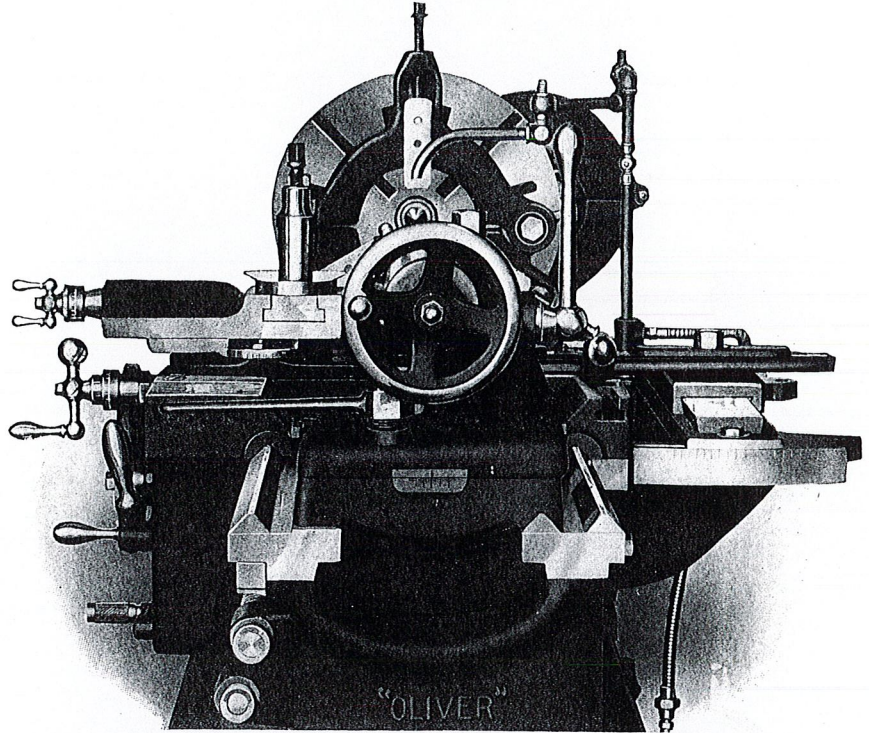


*"Every User  
Is a Booster"*

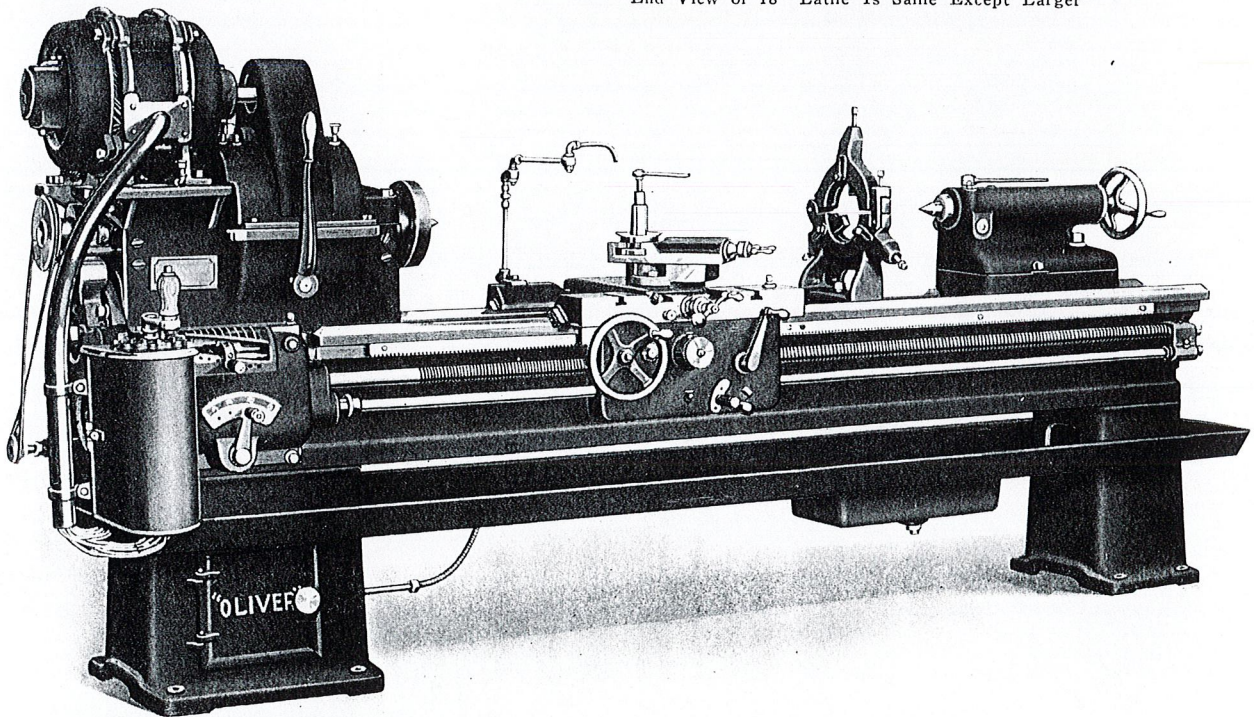
# "Oliver" 16 and 18 Inch Heavy Duty Engine Lathes

Also Tool Room Type

*"Oliver" Quality  
Is Guaranteed By  
The Fact That  
"Oliver" Employees  
Have For Years  
Produced Nothing  
But The Best In  
High Grade Tools*

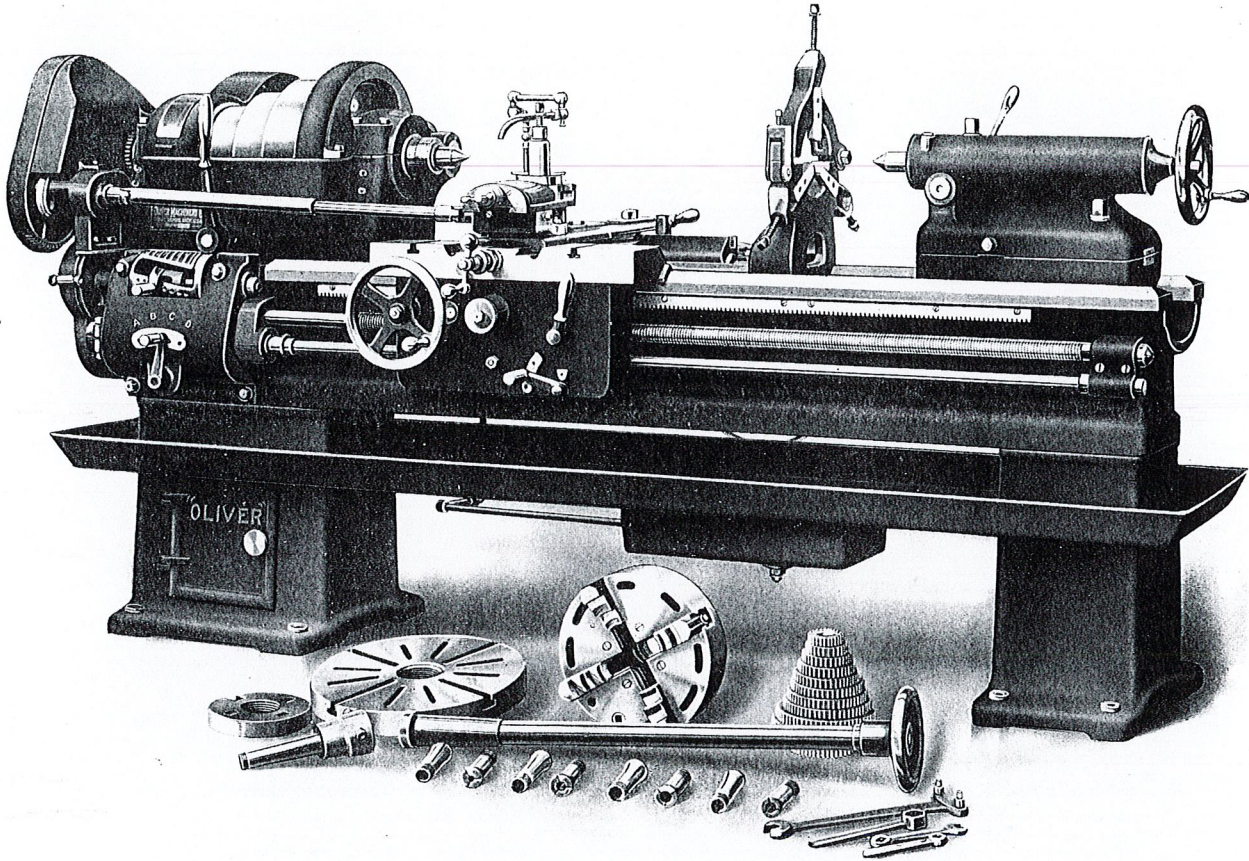


End View "Oliver" 16" Engine Lathe with Taper Attachment  
End View of 18" Lathe Is Same Except Larger



"Oliver" 18"x10' Bed Engine Lathe with A. C. Motor Drive

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"OLIVER" 16 AND 18-INCH HEAVY DUTY AND TOOL ROOM ENGINE LATHES



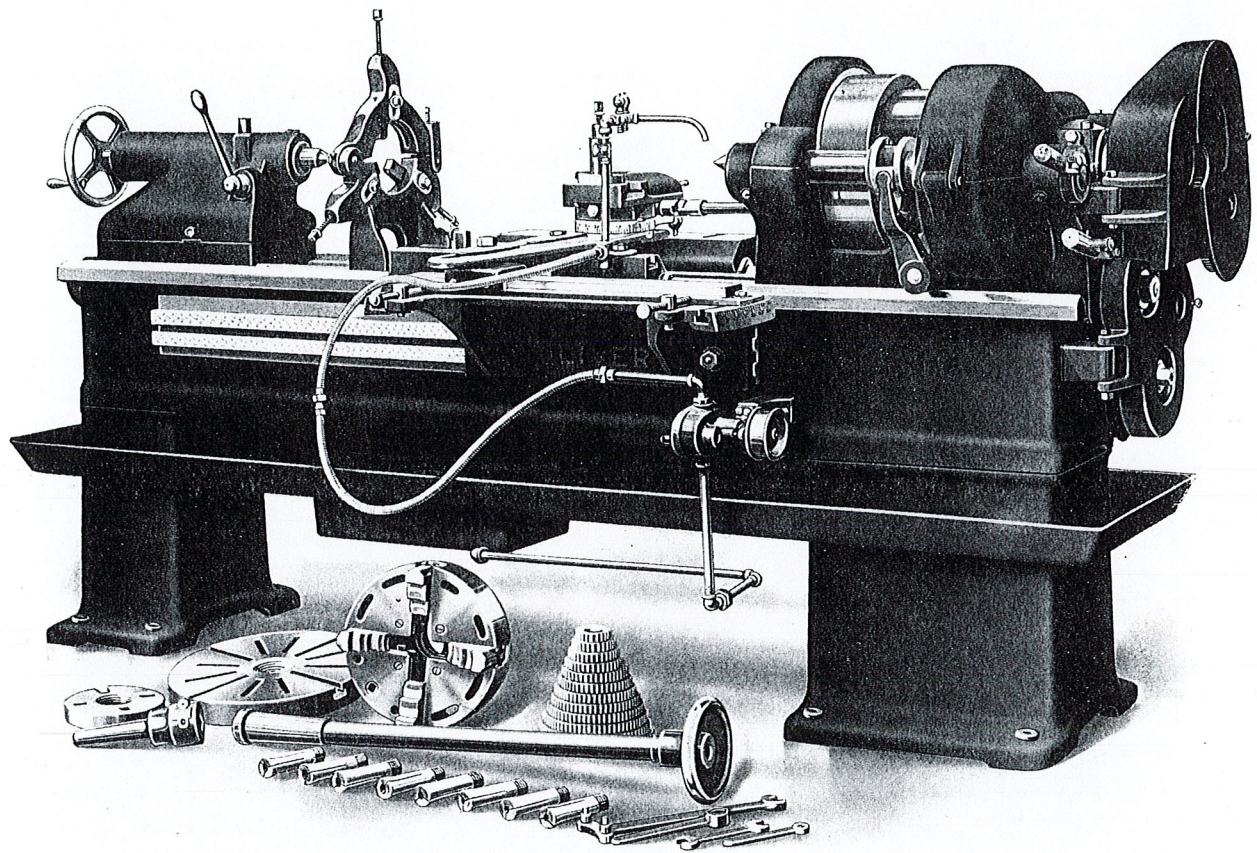
"Oliver" 18"x8' Engine Lathe with Relieving Attachment, Steel Pan and Pump

The "Oliver" 16 and 18-Inch Engine Lathes embody in their construction the newest ideas in design. They are built with ample power and are rigid enough for heavy and fast cuts; at the same time they are built with the same precision found in all "Oliver" tools.

The above is apparent upon inspection of the lathes and the accompanying specifications and cuts. All parts of these lathes are jig machined whether they be large or small and all parts are fitted to templets, thus interchangeability of parts and accuracy are assured. The materials are the best obtainable and the workmanship unexcelled. Spindle bearings are adjustable and replaceable bronze. Each piece undergoes rigid inspection and the complete machine is given a long running test.

Lathes are of massive, heavy duty, double back geared type with three step cone using wide driving belt. The headstock column is provided with a door and corner brackets for shelving inside. All gears are guarded and where necessary for oiling or purposes of inspection, the guards are hinged to permit of quick access. Extra heavy case hardened cap screws secure the main spindle caps in place and throughout the machine wherever desirable case hardened studs and nuts are employed.

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"OLIVER" 16 AND 18-INCH HEAVY DUTY AND TOOL ROOM ENGINE LATHES



Rear View of "Oliver" 18"x8' Engine Lathe with Taper and Relieving Attachments, etc.

*Headstock*

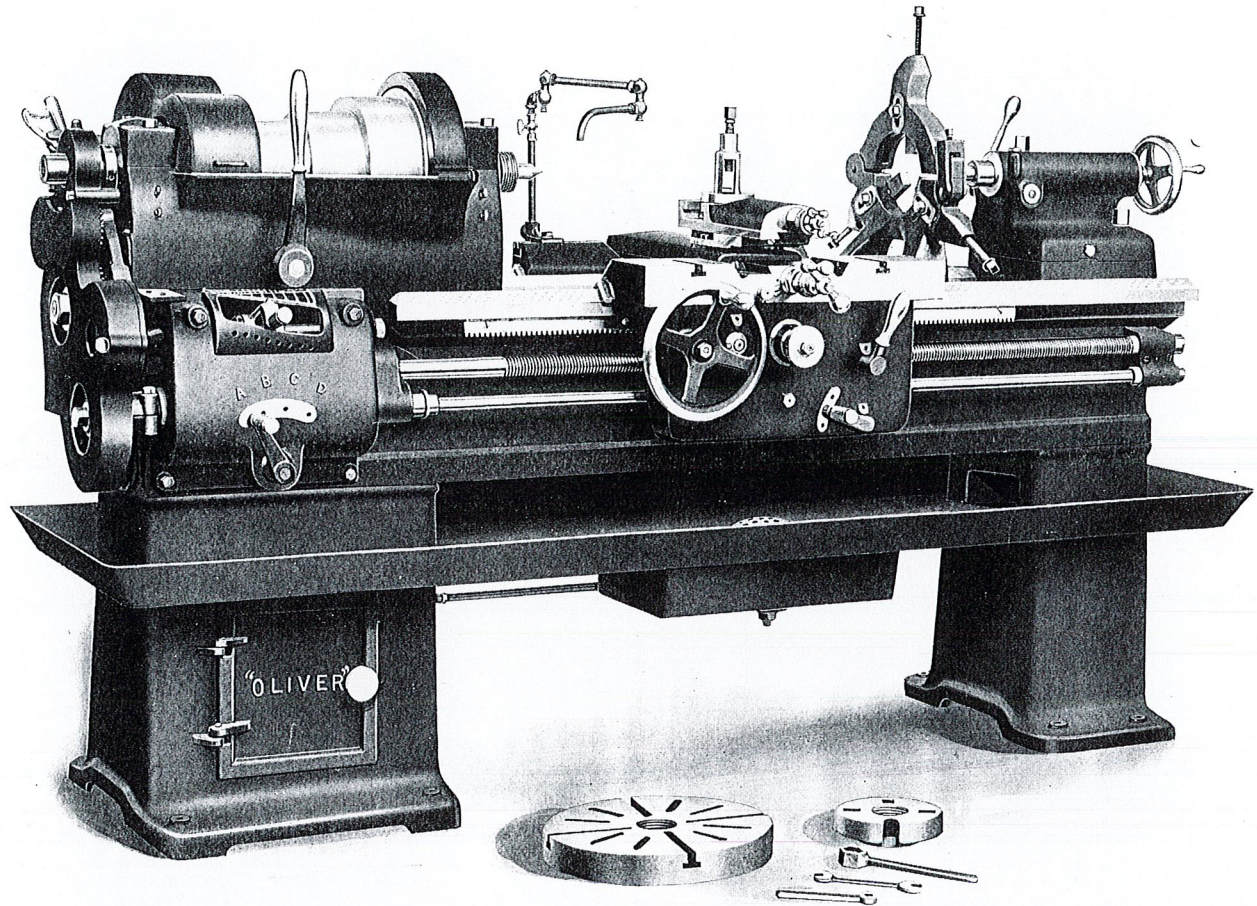
Is of three step double back geared type. The spindle is large in diameter with long bearings lubricated by means of felt wipers feeding from large pockets. Spindle is of special high carbon steel accurately ground. The cone pulley is so designed as to carry a large oil reservoir which provides lubricant at all times. The drive pinions for the back gears are one solid forging made of special high carbon steel and pressed into the cone pulley keyed on and re-inforced by three filister head screws. A replaceable bronze bushing gives the proper bearing for the spindle in these gears. Thrust is taken against the front end of the rear bearing housing on hardened and ground steel collars.

*Bed and Carriage*

The bed is unusually deep and strong, re-inforced by boxed sections. The supporting columns are so placed as to allow no overhang at the end of the bed and they are made wide so as to shorten the span of the bed between the columns. The bed is 13" deep x 15" wide, any length desired.

Saddle carrying cross slides to the post and apron is unusually heavy and generous in its measurements. It is 7" wide at the bridge with a  $24\frac{1}{2}$ " bearing on the shears. Cross slide and compound slide are both provided with taper gibs to take up wear and both screws for this slide are indexed to read to .001 inch. The Power Cross Feed is of the positive geared type, driven from large friction in apron. Provision is made for taking up all lost motion in lead screw.

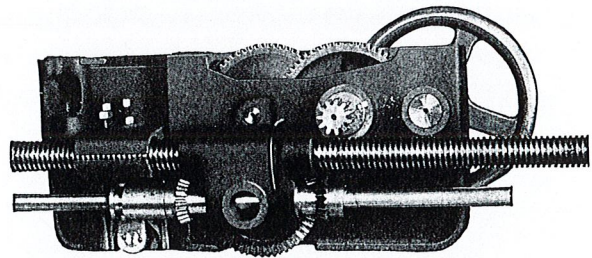
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 "OLIVER" 16 AND 18-INCH HEAVY DUTY AND TOOL ROOM ENGINE LATHES



"Oliver" 16"x7' Bed Engine Lathe—Regular Belt Driven Type with Pan, etc.

*Apron*

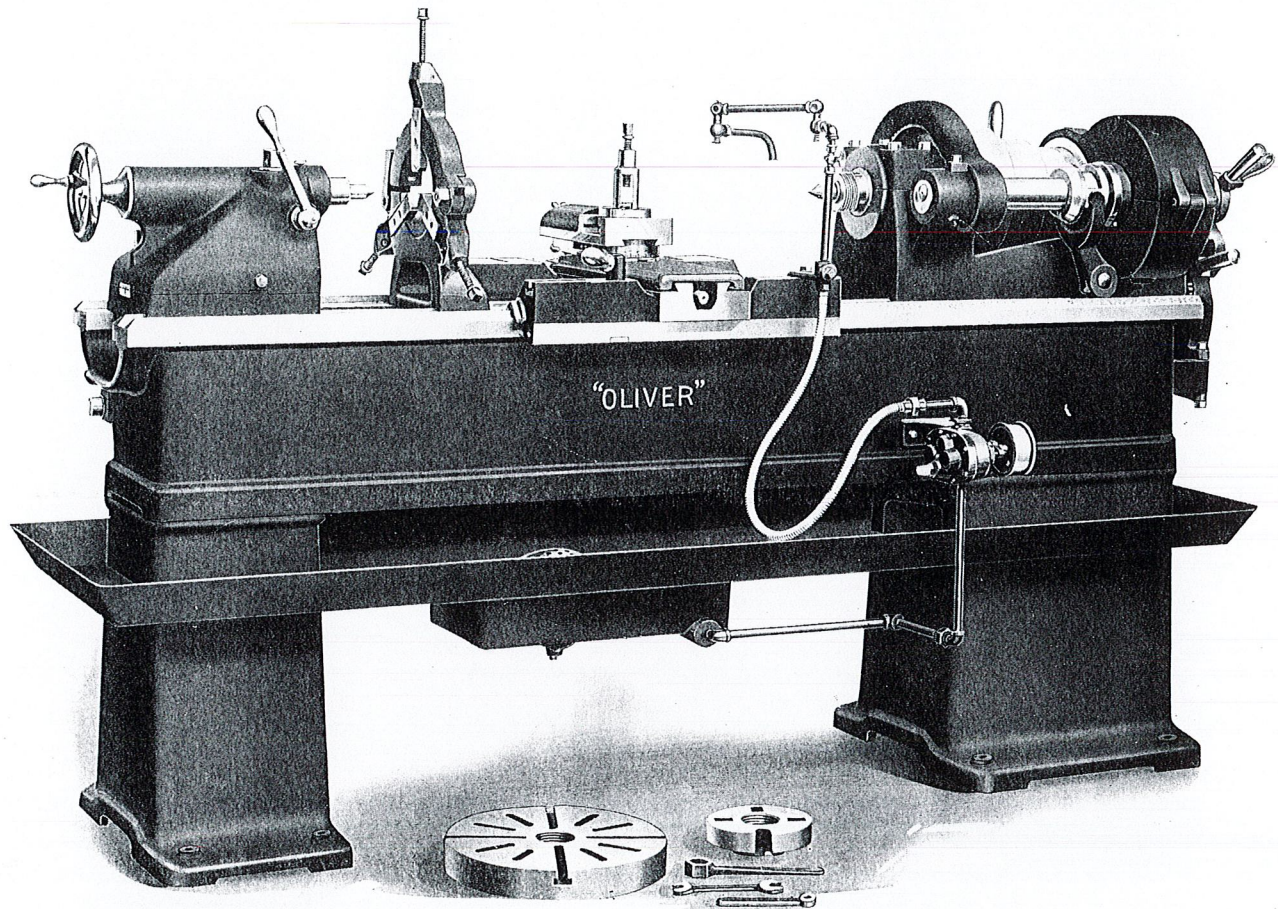
This is cast in one piece giving double bearings to all gears. The nut is of bronze, double sliding type actuated by a cam and is so arranged that it is impossible to throw in the feed when the lead screw is in operation or to throw the lead screw in when feed is in operation. This is a very desirable feature. The friction feed has a large gripping surface which gives plenty of power. The apron is provided with eccentric bushings for adjusting the gear with the rack compensating for wear. The lead screw is unusually large— $1\frac{1}{2}$ " diameter. All details of lubrication are carefully designed. Apron bevel and friction gears are cut from steel forgings.



*Tail Stock*

The tailstock is very powerful and rigid. The spindle is of the same material as the headstock spindle and accurately ground. Tailstock is clamped to the bed by means of a single heavy cast iron clamp operating the whole length of the tailstock and secured by two bolts diagonally placed which secures a most perfect locking device. Tailstock casting is not split but the spindle is locked by means of a clamping lever acting on double nuts machined to fit perfectly to tailstock spindle.

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"OLIVER" 16 AND 18-INCH HEAVY DUTY AND TOOL ROOM ENGINE LATHES



Rear View "Oliver" 16"x7' Bed Engine Lathe—Regular Belt Driven Type with Pan, etc.

**Lubricating  
Outfit**

A pressed steel pan is furnished as extra when desired. It is arranged to drain to a large cast iron tank which is connected with a rotary pump. A copper screen prevents chips from being drawn into the oil or cutting lubricant and thus clogging up the pump. An ample flow of lubricant is assured, regardless of speed of spindle.

**Motor Drive**

A very compact motor drive can be furnished using about 3 to 5 H. P. motor, about 500 to 1500 R.P.M., placed above the headstock and geared to the spindle by a non-metal pinion. The double friction back gear is retained.

**Gear Box**

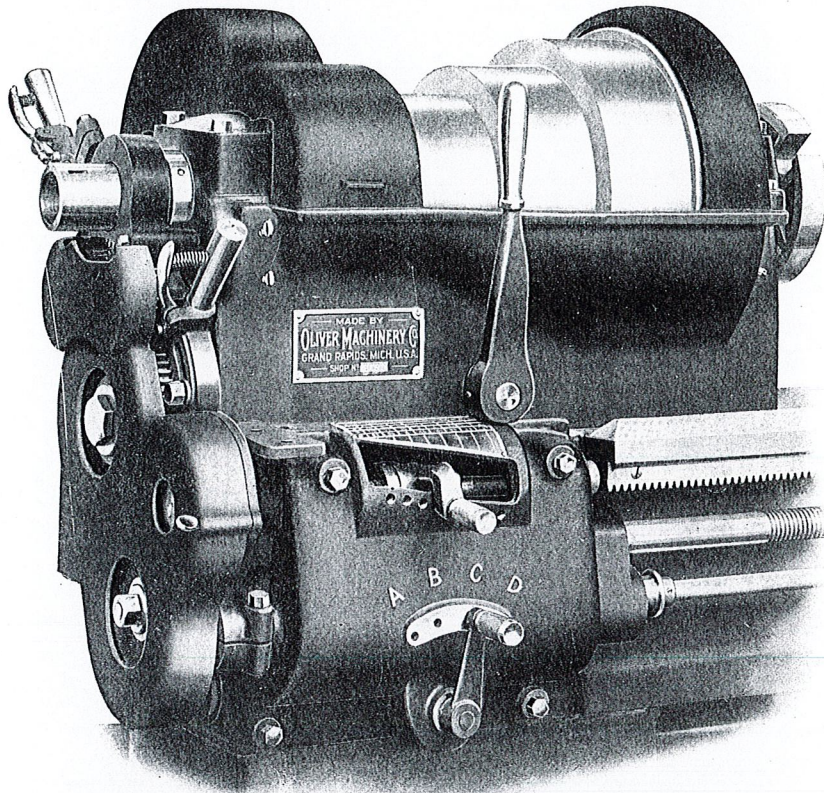
The gear box for the quick change gears is very compact requiring only two levers to obtain the thirty-two threads ranging from three per inch to forty-six. Feeds, thirty-two in number range from .0076" to .111" per revolution of spindle. All gears and shafts in the gear box are lubricated from but two oil cups and there is no multiplicity of oil holes to become clogged with dirt. Gears are all steel machine cut. The gear box is so arranged that part of the box extends into the bed and projection beyond the front of the bed is reduced to a minimum making a very compact drive. All shafts in the gear box are bronze bushed.

**Taper  
Attachment**

The Taper Attachment is particularly rigid and heavy. It is usually carried on the back of the carriage; but, if desired, may be carried on the bed in a heavy T slot relieving the carriage of all extra weight. This permits free and accurate operation of the carriage. The bracket is graduated at one end in eighths up to 4" per foot. Screw adjustment is provided. After the taper is set the slide is secured by a clamp fastened to the bed in a very rigid manner.

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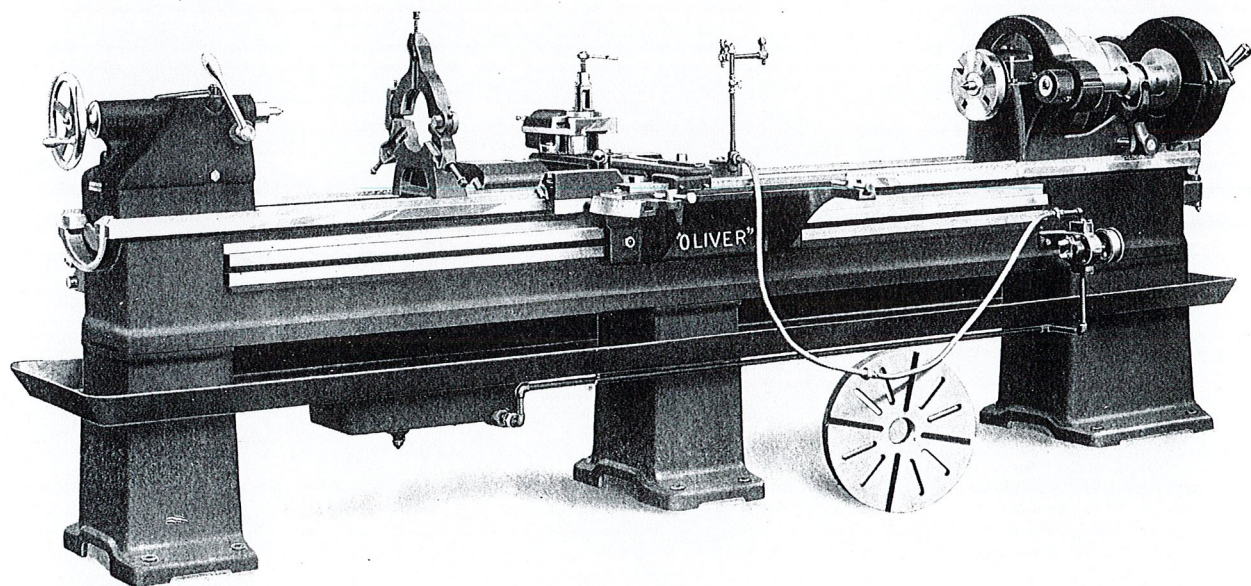
"OLIVER" 16 AND 18-INCH HEAVY DUTY AND TOOL ROOM ENGINE LATHES



Among the many users of "Oliver" Engine Lathes the following names are here listed with pride:

Manitowoc Shipbuilding Co., Manitowoc, Wis.  
Chicago Bridge & Iron Works, Washington Heights, Ill.  
Bates Valve Bag Co., Chicago, Ill.  
Reliance Motor Truck Co., Appleton, Wis.  
Middleton Car Co., Middleton, Pa.  
Atchison, Topeka & Santa Fe Railroad Co.  
Cadillac Motor Co., Detroit, Mich.  
Pennsylvania Railroad Co.  
Michigan Stove Co., Detroit, Mich.  
Ford Motor Co., Detroit, Mich.  
Detroit Pressed Steel Co., Detroit, Mich.  
American Steam Pump Co., Battle Creek, Mich.  
International Shipbuilding Co., Orange, Tex.  
Regal Gasoline Engine Co., Coldwater, Mich.  
Westinghouse Machine Co., East Pittsburgh, Pa.  
American Steel Foundries, Franklin, Pa.  
City Fire Department, Grand Rapids, Mich.  
Alberger Pump & Condenser Co., Newburgh, N. Y.  
The Falk Co., Milwaukee, Wis.  
Rex Machine Tool Co., Jackson, Mich.  
Greensburg Coal Co., Greensburg, Pa.  
Wheeling Mold & Foundry Co., Wheeling, W. Va.  
Oil Well Supply Co., Blackwell, Okla.  
Remington Arms Co., Eddystone, Pa.  
The Willys Overland Co.  
The Norton Co., Worcester, Mass.  
Fairbanks-Morse Co., Beloit, Wis.  
Pittsburgh Steel Co., Monessen, Pa.  
Cleveland Milling Machine Co., Cleveland, O.  
Homestead Valve Mfg. Co., Homestead, Pa.  
Carnegie Steel Co., Youngstown, Ohio.  
American Car & Foundry Co., Detroit, Mich.

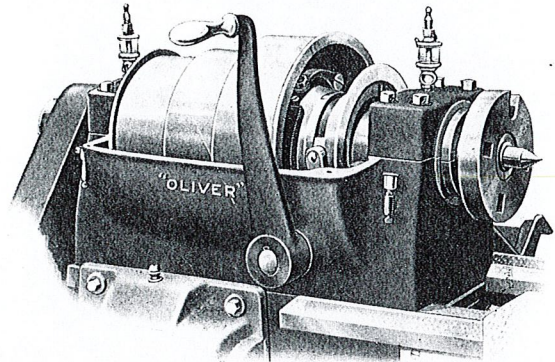
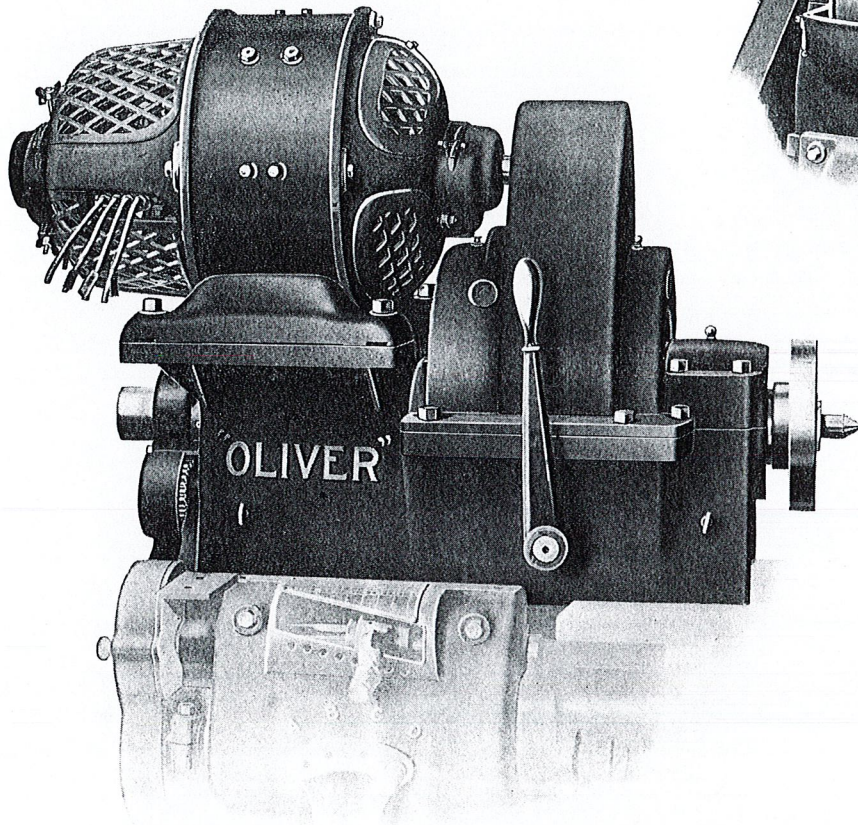
Three Step Cone, Double Friction Back Gear, Headstock and Quick Change Gear Box as Regularly Furnished on "Oliver" 16" and 18" Engine Lathes



"OLIVER" 18"x16' BED ENGINE LATHE

Rear View Taper Attachment of Bed Mount Type is Shown But Usually Carried-On-Carriage Type Is Furnished

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 "OLIVER" 16 AND 18-INCH HEAVY DUTY AND TOOL ROOM ENGINE LATHES



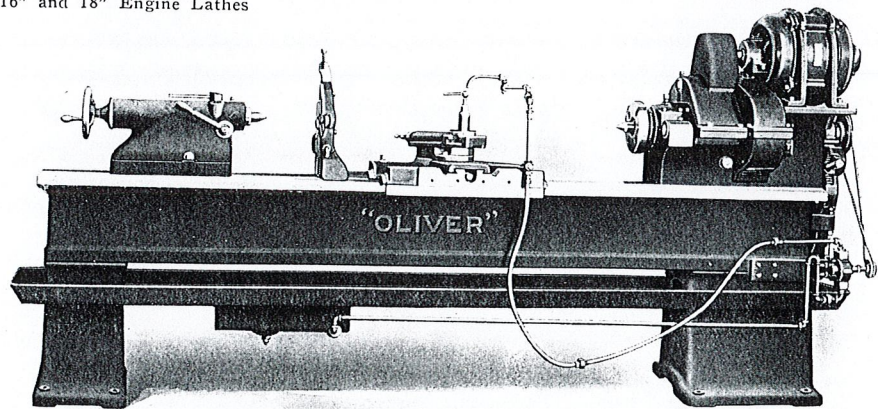
Headstock of "Oliver" 16"x7' Rapid Production Engine Lathe with Guard Removed to Show Clutch and Break Mechanism Working Inside of the Three Step Cone Which Has No Back Gears But Uses Wide Belt.

Double Back Geared Headstock Arranged with Geared Self-Contained Variable Speed Motor Drive On "Oliver" 16" and 18" Engine Lathes

THREAD CUTTING

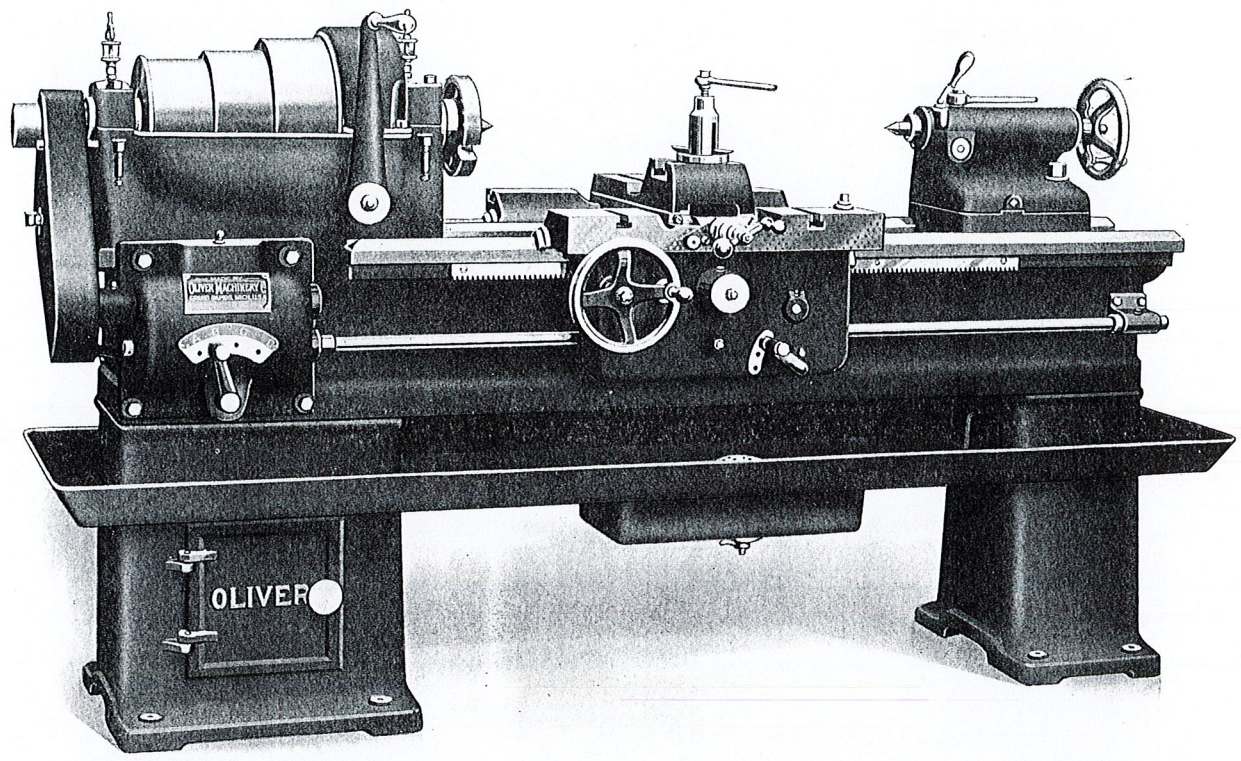
On the "Oliver" 16" and 18" Engine Lathes as regularly furnished, the following 32 different threads per inch may be cut. We will arrange for cutting any other threads desired without additional charge.

3, 3¼, 3½, 4, 4½, 5, 5½, 5¾, 6, 6½, 7, 8, 9, 10, 11, 11½, 12, 13, 14, 16, 18, 20, 22, 23, 24, 26, 28, 32, 36, 40, 44, 46.



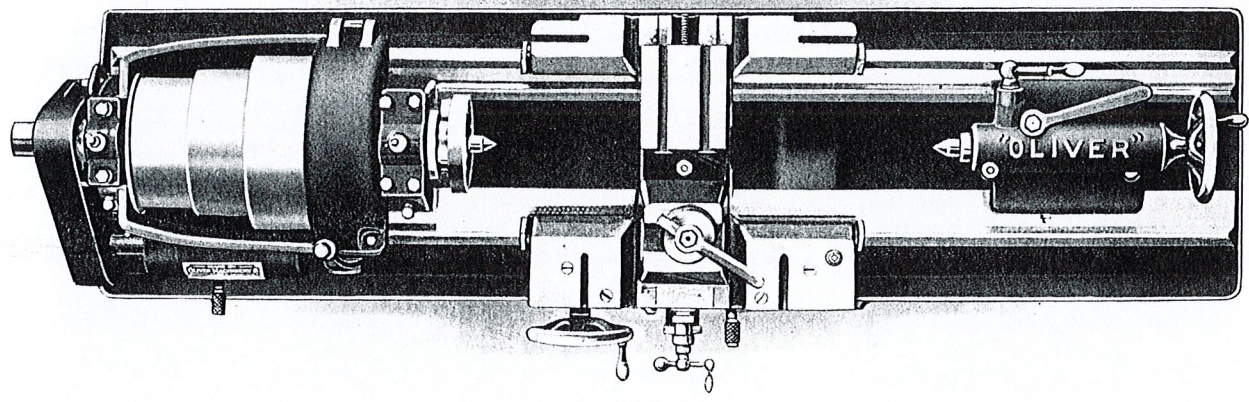
Rear View "Oliver" 18"x10' Engine Lathe Motor Driven  
 Note How Back of Carriage Is Always Ready to Receive Taper Attachment Without Machining

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 "OLIVER" 16 AND 18-INCH HEAVY DUTY AND TOOL ROOM ENGINE LATHES



"OLIVER" 16"x7' RAPID PRODUCTION LATHE

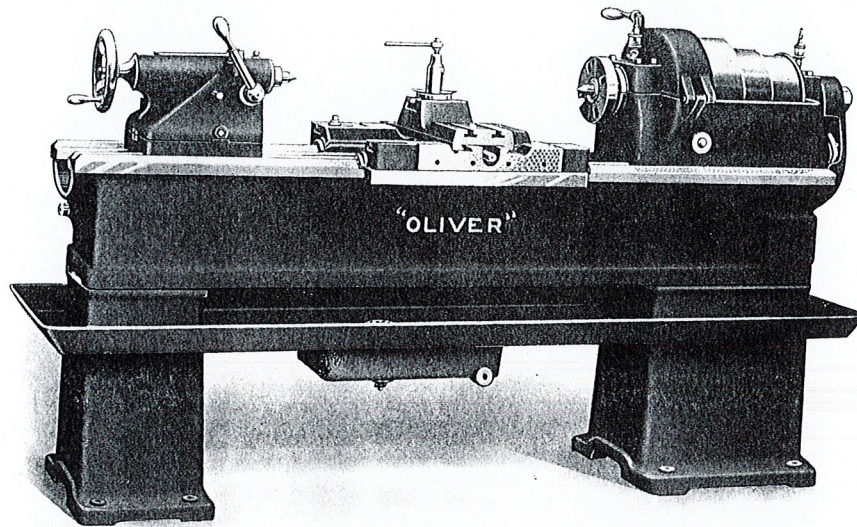
With Three Step Cone Open Belt Headstock With Clutch and Break. Note That the Change Gear Box Is a Quick Change Four-Feed Type and That Thread Cutting Parts Also Compound Rest Are Omitted and Special Cross Slide Is Furnished



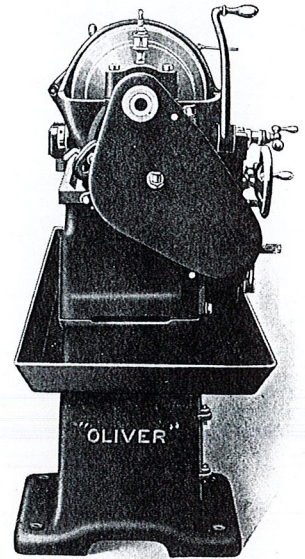
Top View of "Oliver" 16"x7' Bed Rapid Production Lathe Without Back Gears



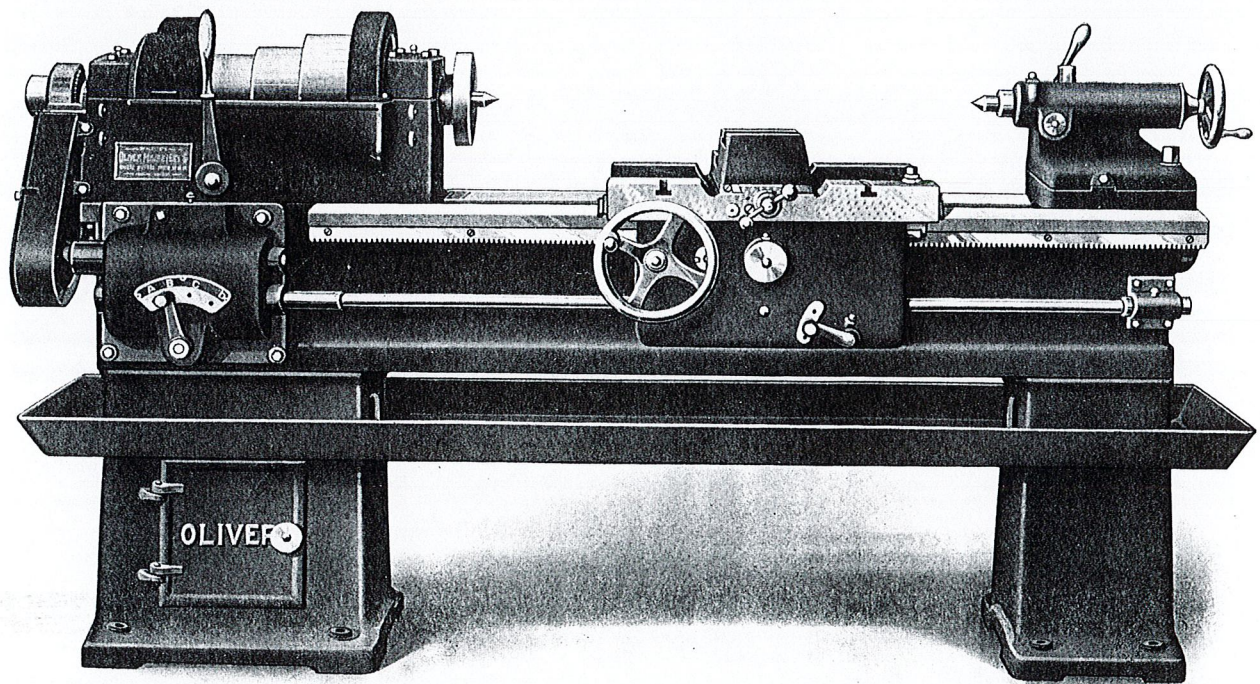
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 "OLIVER" 16 AND 18-INCH HEAVY DUTY AND TOOL ROOM ENGINE LATHES



Rear View of "Oliver" 16"x7' Bed Rapid Production Lathe Without Back Gears  
 See Opposite Page for the Front View

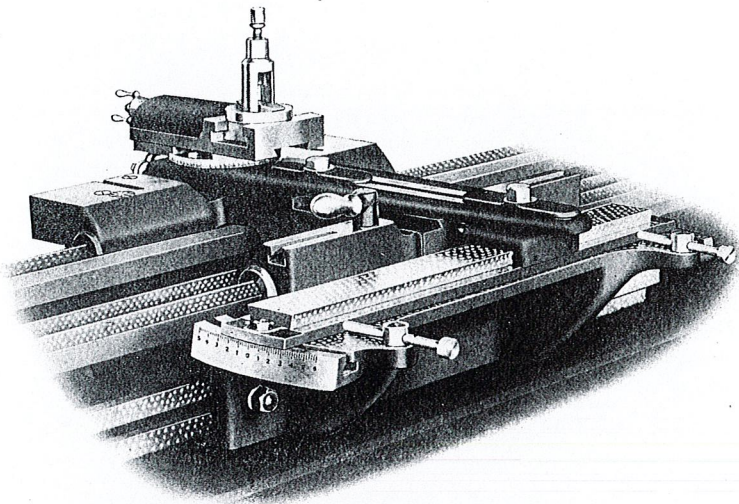


End View of "Oliver" 16"x7' Rapid Production Lathe



"Oliver" 16"x7' Production Lathe with Three Step Cone, Double Friction Back Gears, Four Feed Quick Change Gear, Plain Cross Slide with T Slots for Front and Rear Tool Posts—A Production Lathe with Ample Power

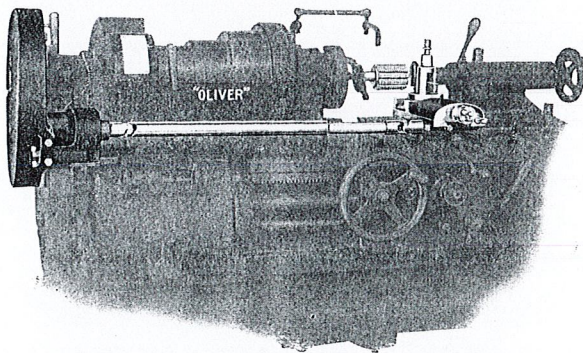
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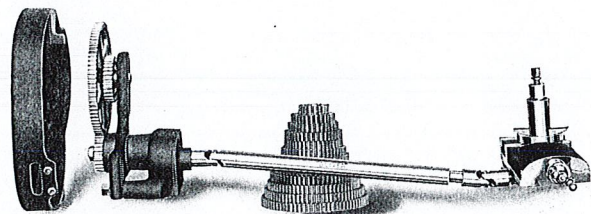
Taper Attachment as Used on "Oliver" 16" and 18" Engine Lathes. Usually It Is Mounted Back of the Carriage But May Be Mounted on the Bed as Shown

| TOOTH OR SPACING | COMPOUND     |                   | GEAR ON STUD |
|------------------|--------------|-------------------|--------------|
|                  | SPINDLE GEAR | WITH SPINDLE GEAR |              |
| 2                | 64           | 32                | 20 80        |
| 3                | "            | "                 | 30 "         |
| 4                | "            | "                 | 40 "         |
| 5                | "            | "                 | 25 40        |
| 6                | "            | "                 | 30 "         |
| 7                | "            | "                 | 35 "         |
| 8                | "            | "                 | 40 "         |
| 9                | "            | "                 | 45 "         |
| 10               | "            | "                 | 50 "         |
| 11               | "            | "                 | 55 "         |
| 12               | "            | "                 | 60 "         |
| 13               | "            | "                 | 65 "         |
| 14               | "            | "                 | 70 "         |
| 15               | "            | "                 | 75 "         |
| 16               | "            | "                 | 80 "         |
| 18               | "            | "                 | 45 20        |
| 20               | "            | "                 | 50 "         |
| 22               | "            | "                 | 55 "         |
| 24               | "            | "                 | 60 "         |
| 26               | "            | "                 | 65 "         |
| 28               | "            | "                 | 70 "         |
| 30               | "            | "                 | 75 "         |
| 32               | "            | "                 | 80 "         |

Table Furnished with Relieving Attachment

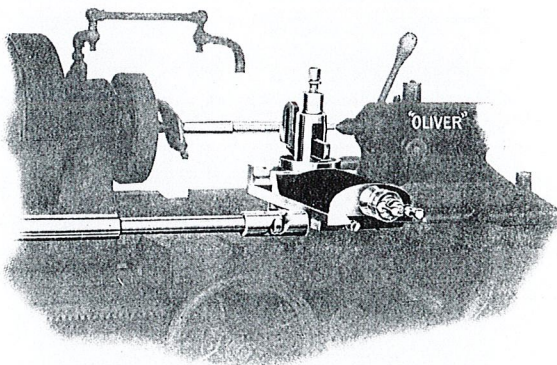


Relieving a Hob

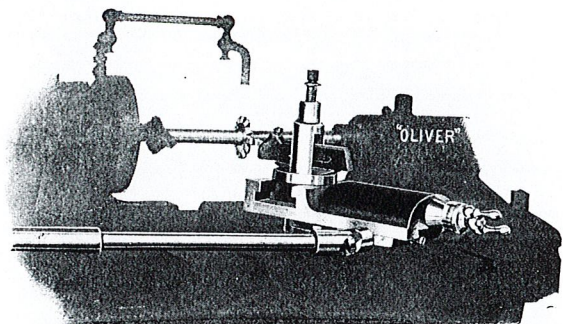


Parts Constituting the Relieving Attachment

"Oliver" Relieving Attachment as Shown Above May Be Furnished Either with These Lathes at the Time of Shipping the Lathes or May Be Ordered Later with the Assurance That They Will Fit

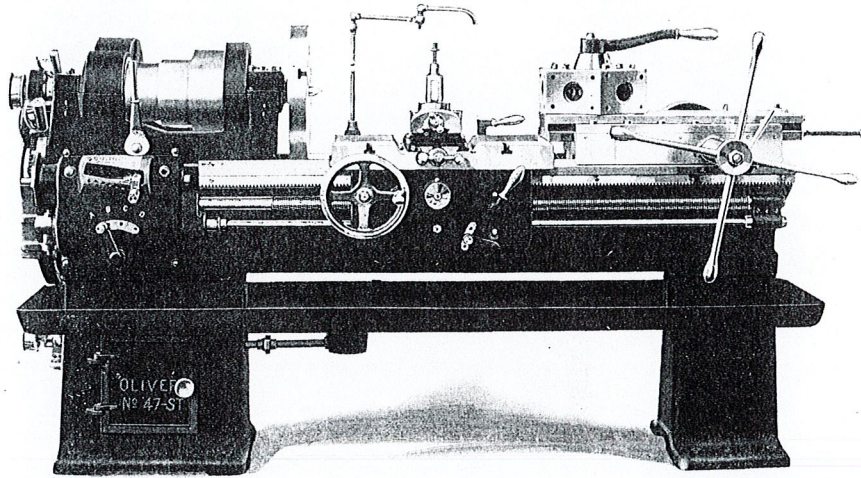


Relieving a Tap

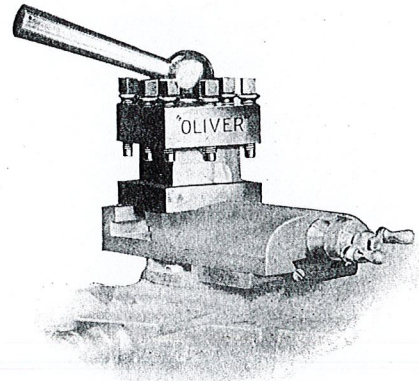


Relieving a Milling Cutter

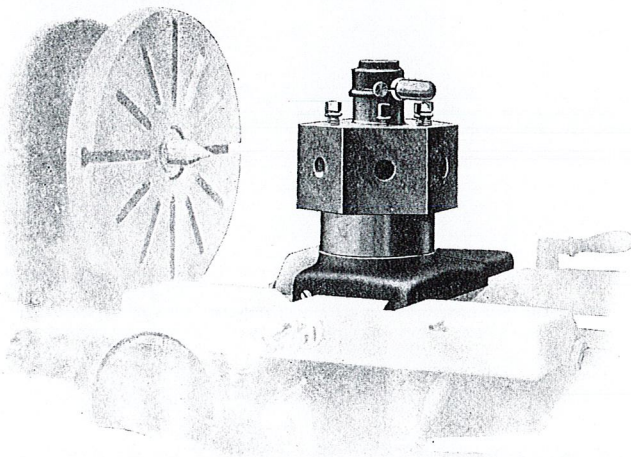
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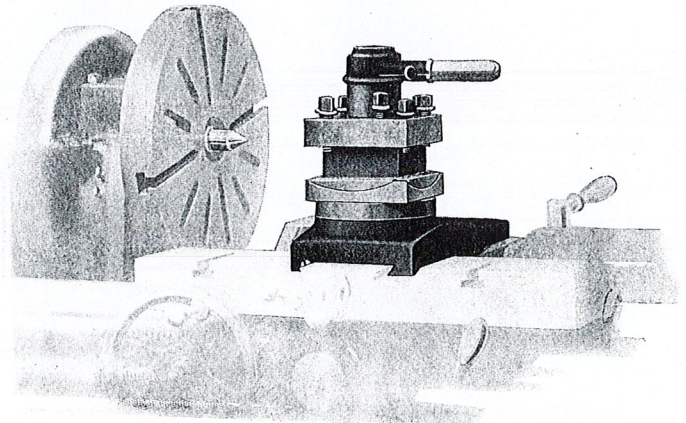
"Oliver" 16" Engine Lathe with Turret Attachment on the Bed in Place of Tail Stock



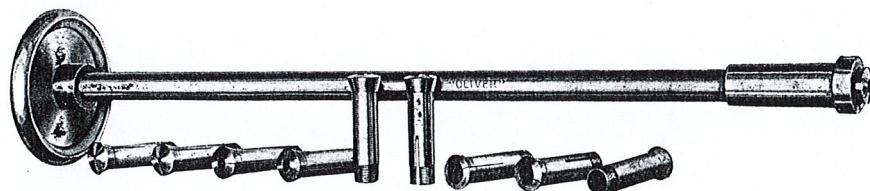
European Square Tool Post for "Oliver" 16" and 18" Lathes



Hexagonal Indexing Turret Tool Post Mounted on the Cross Slide



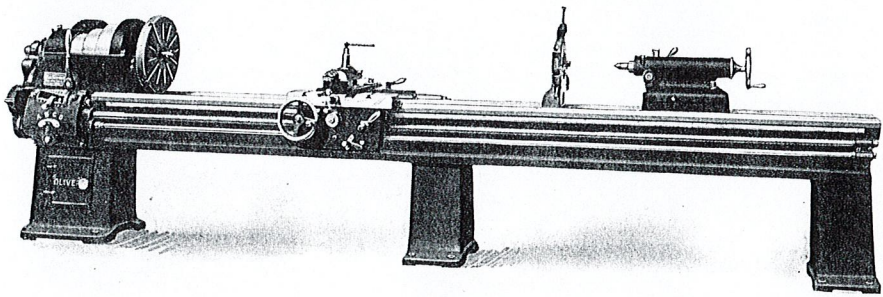
Square Indexing Turret Tool Post Mounted on the Cross Slide



Draw-In Attachment Shown with Various Sizes of Collets Either for 16" or 18" Lathes

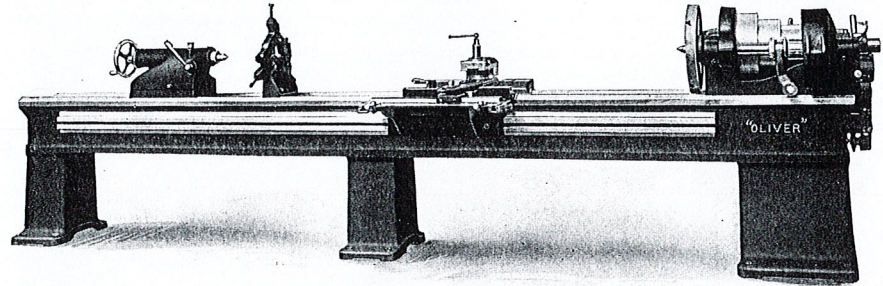
**OLIVER MACHINERY COMPANY**  **GRAND RAPIDS, MICHIGAN, U.S.A.**

"OLIVER" 16 AND 18-INCH HEAVY DUTY AND TOOL ROOM ENGINE LATHES



Front View of "Oliver" 18"x16' Bed Engine Lathe

Note the center leg used as extra support for beds longer than 12 foot.



Rear View of "Oliver" 18"x16' Bed Engine Lathe

Note that the Taper Attachment on this lathe is supported on the bed but as regularly furnished they are supported back of the carriage.

**SPECIFICATIONS OF "OLIVER" 16 AND 18-INCH HIGH GRADE ENGINE LATHES**

| SPECIFICATIONS                               | 16"                 | 18"              | SPECIFICATIONS                        | 16"       | 18"       |
|--|---------------------|------------------|---------------------------------------|-----------|-----------|
| <b>CAPACITY:</b>                             |                     |                  | <b>TAILSTOCK:</b>                     |           |           |
| Swing Over Bed, actual.....                  | 17 1/2"             | 19 3/4"          | Base Length.....                      | 12"       | 18"       |
| Swing Over Carriage, actual.....             | 10 1/2"             | 12"              | Amount of Set-Over.....               | 1"        | 1"        |
| Length between Centers, tailstock flush..... | 38"                 | 41"              | Spindle Diameter.....                 | 2 1/8"    | 3"        |
| Threads, all standard threads, Range.....    | 3 to 46             | 3 to 46          | Spindle Movement.....                 | 8"        | 12"       |
| Feeds, range per revolution.....             | .007" to .111"      | .007" to .111"   | Center Size, Morse Taper No.....      | 4         | 6         |
| <b>HEADSTOCK:</b>                            |                     |                  | <b>CARRIAGE:</b>                      |           |           |
| Base Length.....                             | 26 3/8"             | 28"              | Length of Saddle on Shears.....       | 24 1/2"   | 24 1/2"   |
| Spindle Length, total.....                   | 34 1/2"             | 36 3/8"          | Bridge Width.....                     | 7"        | 7"        |
| Spindle Speeds (18), cone head.....          | 14 to 335           | 14 to 335        | Compound Rest Travel.....             | 4"        | 4"        |
| Spindle Nose Diameter and Threads.....       | 3", 5               | 3 3/8", 5        | Cross Slide Travel.....               | 14"       | 14"       |
| Front Spindle Bearing.....                   | 3 5/8" x 5"         | 4" x 5 1/2"      | Tool Post (standard) Takes Tools..... | 7/8" x 2" | 7/8" x 2" |
| Rear Spindle Bearing.....                    | 2 3/8" x 3 3/4"     | 3" x 4 5/8"      | <b>THREAD CUTTING:</b>                |           |           |
| Hole Thru Spindle, Diameter.....             | 1 3/16"             | 2 1/16"          | Lead Screw Diameter.....              | 1 1/2"    | 1 1/2"    |
| Center Size, Morse Taper No.....             | 4                   | 6                | Lead Screw Threads Per Inch.....      | 4         | 4         |
| Cone Pulley Diameters.....                   | 7", 8 1/2", 10 1/2" | 9", 11 1/2", 14" | Ratio of Feeds to Threads.....        | 3 to 1    | 3 to 1    |
| Width of Belt.....                           | 3 3/4"              | 4"               | Cuts Threads Per Inch Range.....      | 3 to 46   | 3 to 46   |
| Ratio of Back Gearing, First.....            | 2.9 to 1            | 3.13 to 1        | <b>BED:</b>                           |           |           |
| Ratio of Back Gearing, Second.....           | 9.02 to 1           | 10 to 1          | Standard Length, actual.....          | 7' 2"     | 8' 2"     |
| <b>COUNTERSHAFT (Double Friction)</b>        |                     |                  | Height or Depth of Bed.....           | 13"       | 13"       |
| Friction Pulleys.....                        | 14" x 4"            | 14" x 4"         | Width of Bed.....                     | 15"       | 15"       |
| Speed Recommended.....                       | 180-220             | 160-220          |                                       |           |           |

**Regular Equipment** Belt driven cone head engine lathes are regularly furnished with large and small face plate, steady rest, compound rest, two conical centers, necessary wrenches and double friction countershaft.

**CODE, WEIGHT, ETC.**

| Code   |        | Description                                  | Weight in Pounds Crated |      | Weight in Pounds Boxed |      | Cubic Feet |     |
|--------|--------|--|-------------------------|------|------------------------|------|------------|-----|
| 16"    | 18"    |  | 16"                     | 18"  | 16"                    | 18"  | 16"        | 18" |
|        |        | Kind of Lathe                                |                         |      |                        |      |            |     |
| Rabreh | Racreh | Engine Lathe—3 step cone D. B. G.....        | 3800                    | 4500 | 4200                   | 5000 | 121        | 155 |
| Rabren | Racren | Lathe Equipped for Variable Speed Motor..... | 3900                    | 4600 | 4300                   | 5100 | 130        | 160 |
| Rabrer | Racrer | Rapid Production Lathe No. B. G.....         | 3400                    | 4100 | 3800                   | 4600 | 120        | 150 |
| Rabret | Racret | Production Lathe D. B. G.....                | 3500                    | 4200 | 3900                   | 4700 | 120        | 150 |

**EXTRAS**

We can furnish all desirable extras for above lathes, such as Motor Drive, Taper Attachment, Follow Rest, Gap Bed, Oil Pan, Pump and Piping, Extra Bed Lengths, Milling Attachment, Turret on Carriage, Turret on Bed, Draw-In Attachment, Metric Transposing Gears, Metric Lead Screw, Bench Legs, Chuck Plate, Chucks of any Make, etc.