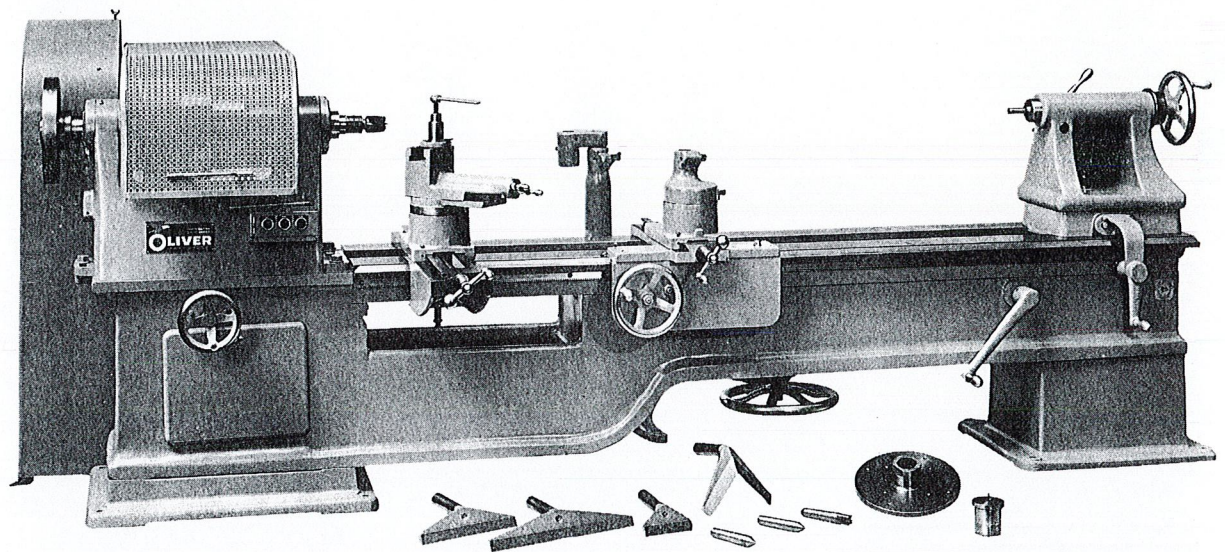


No. 66
PATTERN MAKERS' HEAVY GAP LATHE



No. 66 Heavy Duty Gap Lathe

OLIVER

OLIVER MACHINERY COMPANY, GRAND RAPIDS, MICH. 49502

No. 66 PATTERN MAKERS' HEAVY GAP LATHE

CAPACITY

Stock can be turned 6 feet 6 inches between centers with the gap closed, or 8 feet 6 inches between centers with the gap open. Will swing 30 inches over the ways and 26 inches over the carriage and 24 inches long with a 48-inch diameter in the gap. At the outer end of the spindle stock up to 7 feet diameter will clear the floor. Extra lengths of bed or larger swing diameter can be adapted to this lathe at additional cost. Our engineering department will be pleased to discuss and advise any special problems should our customers require this service.

MAIN BED

A one piece, box shaped, reinforced, semi-steel casting exceptionally heavy and rigid is supported at each end by rugged semi-steel columns with flaring bases affording ample floor support, maintains perfect alignment and substantially supports the component units of the machine.

SLIDING BED

This bed is cast of semi-steel heavily ribbed and slides on a grooved track machined on the top of the main bed. The entire bed can be moved horizontally by means of a hand crank that turns a pinion which meshes with a rack bolted to the front of the bed. This closes the gap and the carriage can be operated up to the head stock in the usual way. When the gap is open the sliding bed increases the capacity between the centers two feet.

HEAD STOCK

The frame is cast of semi-steel, supports two taper roller bearings on which the four speed step cone pulley rotates on a shaft. Opposite the spindle end provision is made for attaching face plates used for turning large diameter stock. The spindle is $2\frac{7}{8}$ inches in the middle and $2\frac{1}{4}$ -inch diameter at the nose, 35 inches long and rotates 64 to 1570 r.p.m. with a two-speed (600 and 1200 r.p.m.) motor.

TAIL STOCK

Moves and locks on the sliding bed and is cast of semi-steel, heavily ribbed of the open side design with "set over" adjustment and is bored for a No. 4 Morse Taper. The spindle is 3 inches in diameter and 14 inches long. The simple reversing of the hand wheel loosens the tail centers.

APRON

Made of semi-steel and is securely bolted to the carriage, both being moved when feeding by means of a hand wheel which turns a pinion meshing with a rack attached to the side of the sliding bed.

CARRIAGE

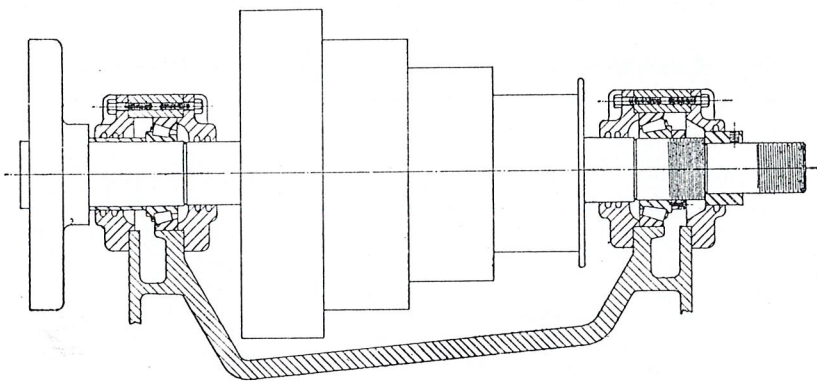
Rests on V shaped ways machined on the top of the sliding bed. This carriage has a cross slide with adjustable gibbed ways and a long traverse. These ways act as a track for the swivel or compound rest, the top of which is dovetailed with an adjustment for correct sliding fit of the tool holder that is moved in horizontal directions by means of a hand lever.

CARRIAGE GRADUATIONS

The old method of "fit and try" has been discarded; graduations are now stamped on top of the bed at the front and back, also on the ways for the carriage cross slide. These enable the operator to turn to definite lengths or depths.

AUXILIARY CROSS SLIDE

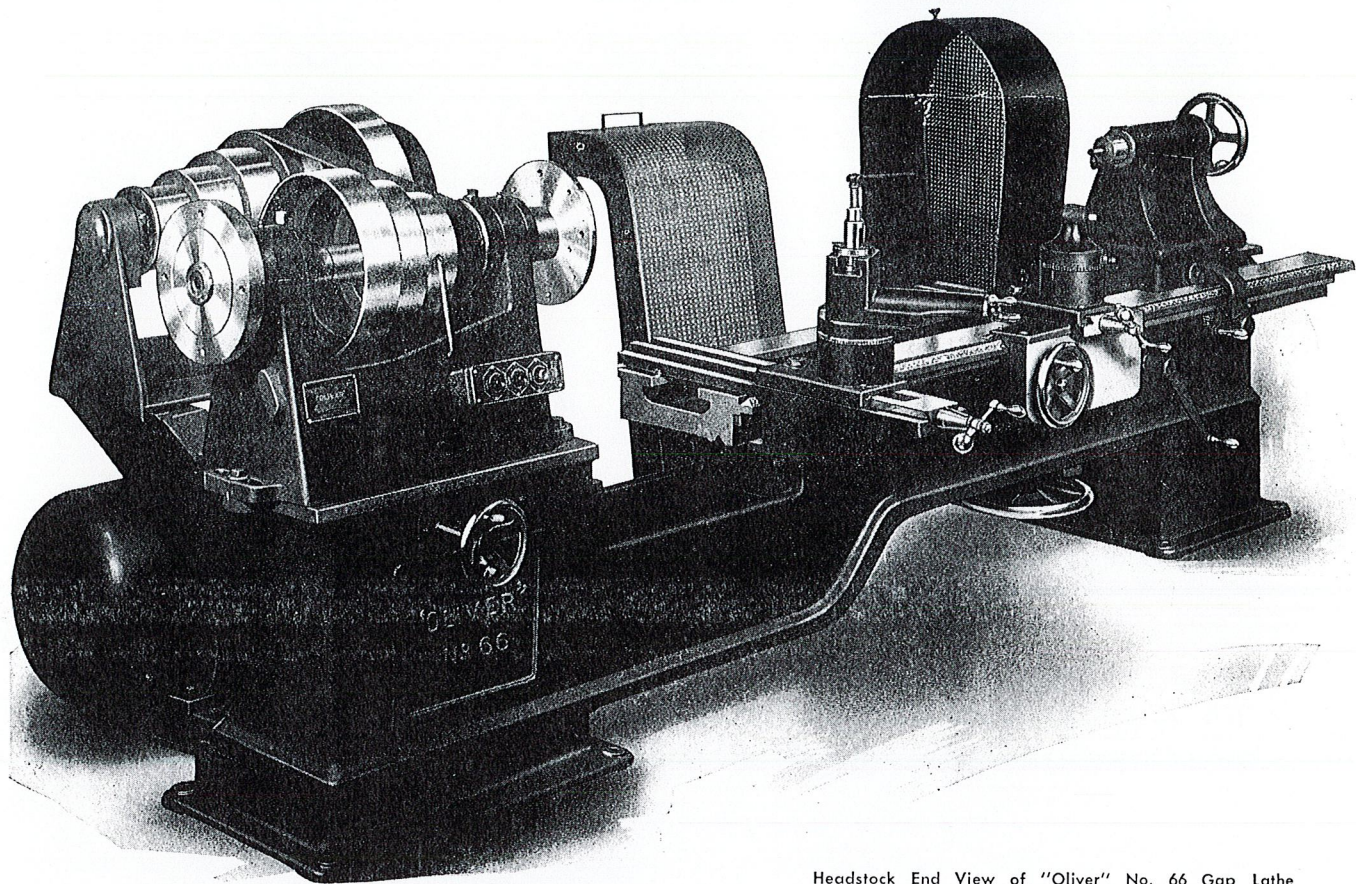
This attachment is secured to the inside end of the sliding table and is of sufficient size to operate upon the full capacity of 48 inches in diameter that may be swung in the gap. It is easily removed, when desired, and carries the compound swivel rest attached to the main carriage. The hand tool rest socket may be substituted for the compound swivel, as illustrated.



Cross Section through Headstock Bearings showing extra heavy frictionless taper roller bearings.

METAL SPINNING

This heavy duty gap lathe is also used for metal spinning operations when modified for this particular type of work.



Headstock End View of "Oliver" No. 66 Gap Lathe with Gap open and Pulley and Belt Guards Removed

COMPOUND SWIVEL REST

This rest is graduated in degrees at the base and supports the regulation tool post. It is easily detached and a socket substituted for carrying the hand tool rest. A clamping device holds the tool rest securely in position after adjustment.

MOTOR DRIVE COUNTERSHAFT

Countershaft frames carry the four step cone pulley supported at each end by taper roller bearings rotating in a bath of oil. Adjustment for the end thrust is made by means of two lock nuts at the end of the countershaft farthest away from the machine. A heavy semi-steel bracket with adjustable gibbed ways for the countershaft frame to slide on is securely bolted to the bed. A hand wheel located at the front of the bed moves the countershaft unit horizontally thereby adjusting the correct tension of the driving belt.

MOTOR

A 5 h.p., 2 speed 600 and 1200 r.p.m. A.C. is recommended, but a constant speed 1200 r.p.m. motor may be used giving less range of speeds. This motor is supported by an adjustable bracket that is hinged to the base and drives the countershaft which is also supported by an adjustable bracket attached to the bed above the motor.

ACCESSORIES

One each spur center 1¼ inch and 2 inches in diameter, one cup center ¾-inch, two conical centers, one 3½ rosette chuck, one each face plates, 12, 24, 30 and 38 inches in diameter, one each tool rests 6, 12, 18 and 48 inches long, two rest holders, one right angle rest 6 inches long, one portable floor stand with off-set rest holder. The floor stand has a three point bearing and rests firmly on the floor.

SPECIFICATIONS

CAPACITY:

Swing, regular.....30 inches x 6 feet 6 inches
 Swing, bed extended.....30 inches x 8 feet 6 inches
 Swing in Gap.....48 x 24 inches

HEADSTOCK:

Spindle.....dia., 2¼-in. at the nose; length, 35-in.
 Size of Morse Taper.....No. 4
 Bearings.....Taper Roller
 Cone, four steps, dia.....14½, 12, 9½, 7 inches
 Width of belt.....3 inches

SPEEDS:

Dependent on motor used.
 Approximate.....64 to 1570 r.p.m.

MOTOR:

5 h.p., two speed 600 and 1200 r.p.m. Totally enclosed fan cooled. 7½ h.p. can be furnished.

TAILSTOCK:

Diameter of spindle.....3 inches
 Length of spindle.....16 inches
 Size of Morse Taper.....No. 4
 Adjusting screw, No. of threads 1 inch 4 R. H. square.

MOTOR DRIVE COUNTERSHAFT:

Overall Length.....33 inches
 Bearings.....Taper Roller
 Cone, four steps, dia.....14½, 12, 9½, 7 inches
 Width of belt.....3 inches

BED:

Length.....8 feet 8¾ inches
 Width inside of carriage way.....15¼ inches
 Depth.....14½ inches
 Height from floor.....27 inches

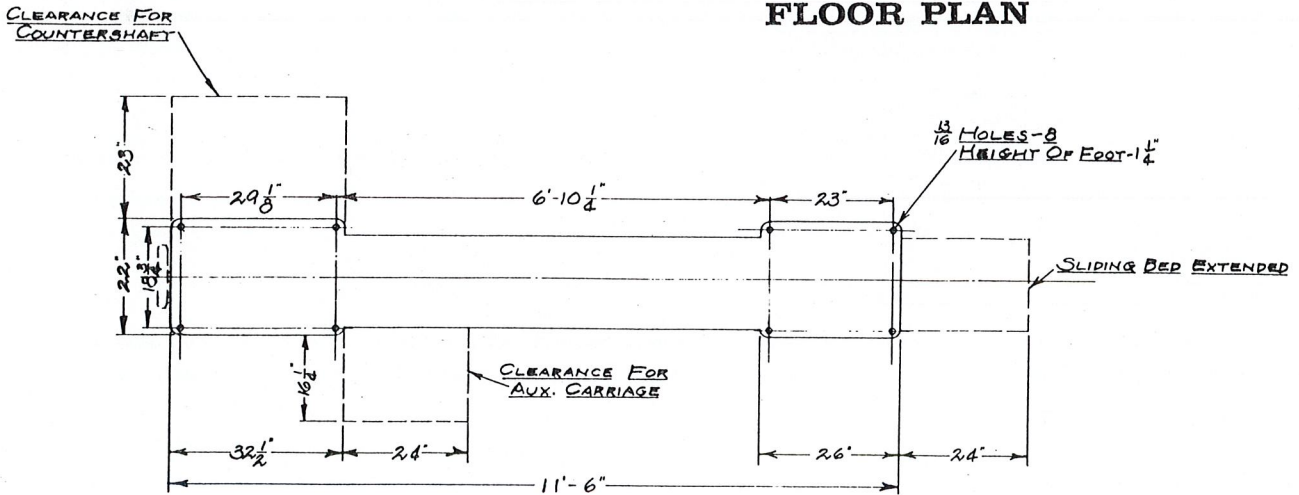
CARRIAGE:

Swing over carriage.....26 inches
 Traverse of cross feed.....13 inches
 Traverse of Compound Feed.....7 inches
 Travel of carriage on standard bed...6 feet 6 inches
 Length of slot in tool rest.....2⅞ inches
 Width of slot in tool rest.....¾ inch

EQUIPMENT:

Single shank rests (3).....6, 12, 18 inches
 Double shank rest.....48 inches
 Rest Holders.....2
 Spur centers (2).....1¼, 2 inches
 Cup center (1).....¾ inch
 Conical centers (2).....1¼ inch
 Face plate, front (1).....12 inches
 Face plates, rear (3).....24, 30, 38 inches
 Right Angle Rest (1).....6 inches
 Floor stand with off-set rest holder.....1
 Hand tool rest socket for use on carriage.....1
 3½" Rosette Chuck.....1

FLOOR PLAN



ALL DIMENSION, EXCEPTING THOSE OF BASE HOLES,
 ARE APPROXIMATE

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