



January

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2013

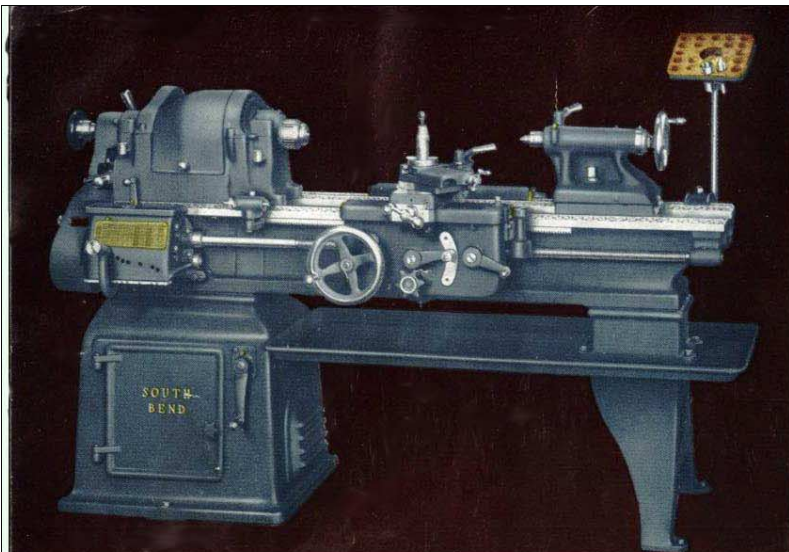
South Bend 9-inch
"WORKSHOP"
Precision Lathes



February

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South Bend 16-inch Toolroom Underneath Motor Driven Lathe

Specifications of Toolroom Lathes

Size of Lathe	16-inch	14½-inch	13-inch
Centers, Morse taper	No. 3	No. 3	No. 3
Collet capacity, maximum	1"	¾"	11/16"
Compound rest top, angular hand feed	3¾"	31/8"	31/8"
Cross slide travel	10½"	10"	81/8"
Feeds, cross (forty-eight)	.0006" to .0312"	.0006" to .0312"	.0006" to .0312"
Feeds, longitudinal (forty-eight)	.0015" to .0841"	.0015" to .0841"	.0015" to .0841"
Headstock spindle hole	1¾"	11/8"	1"
Motor, size required	1½ h.p.	1½ h.p.	1 h.p.
Spindle speeds (eight)	21 to 725 r.p.m.	27 to 800 r.p.m.	34 to 875 r.p.m.
Swing over bed and saddle wings	16¼"	145/8"	131/8"
Swing over saddle cross slide	95/8"	815/16"	8"
Tailstock spindle travel	5¾"	5¼"	4¼"
Tailstock top set over for taper turning	1"	15/16"	15/16"
Thread cutting range—48 pitches			
R.H. or L.H.	4 to 224 per inch	4 to 224 per inch	4 to 224 per inch
Tool holder shank	5/8" x 1¾"	5/8" x 1¾"	1/2" x 1½"

SOUTH BEND
Precision **LATHES**

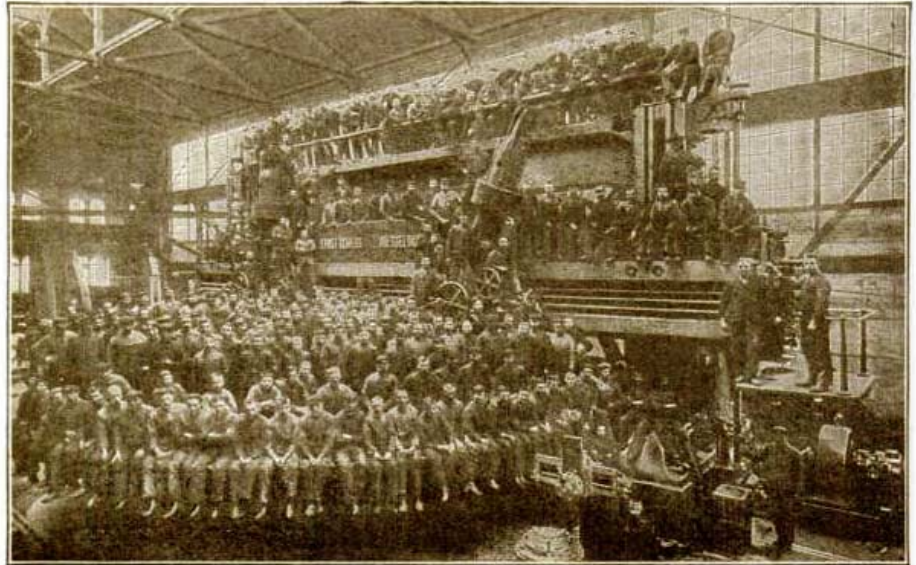
March

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2013

MAMMOTH BORING AND TURNING MILL

This illustration shows the largest boring and turning mill in the world. It was completed recently at Düsseldorf, Germany, and will work upon an object 39 ft. 4 in. in diameter and 11 ft. 2 in. high, the table of the machine itself being 36 ft. in diameter. Some idea of the immense size of the machine can be gained by contemplating for a moment the fact that the illustration shows 227 men standing and sitting upon it. The total weight of the machine is 330 tons. The table, turned by an electric motor, can make four revolutions per minute. The control of the motor, as well as the feed and speed changes, are all effected from devices placed on the traveling tool heads, in order to eliminate the necessity of the operator descending from the table to stop or start the machine.



Group of 227 Men on Huge Boring Mill—In the Foreground Is Shown the Smallest Boring and Turning Mill Built by the Firm

April

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2013

TAP DRILL SIZES

TAP SIZE	APPROX. TAP DRILL SIZE			TAP SIZE	APPROX. TAP DRILL SIZE			TAP SIZE	APPROX. TAP DRILL SIZE		
	75%	70%	60%		75%	70%	60%		75%	70%	60%
0-80	56	56	3/64	8-32	30	29	28	1/2-13	.425	.430	7/16
1-64	54	54	53	8-36	29	29	28	1/2-20	29/64	29/64	.461
1-72	54	54	53	10-24	25	24	22	9/16-12	31/64	31/64	1/2
2-56	51	51	50	10-32	21	20	19	9/16-18	33/64	33/64	.519
2-64	50	50	49	12-24	17	16	14	5/8-11	35/64	35/64	.554
3-48	48	47	46	12-28	15	14	12	5/8-18	.575	.575	37/64
3-56	47	46	45	1/4-20	7	6	4	11/16-16	.631	.631	41/64
4-40	44	44	43	1/4-28	3	3	2	3/4-10	21/32	21/32	43/64
4-48	43	42	3/32	5/16-24	F	G	H	3/4-16	11/16	.693	45/64
5-40	39	38	37	3/8-16	5/16	O	P	7/8-9	49/64	.774	.788
5-44	38	38	37	3/8-24	Q	R	11/32	7/8-14	.805	13/16	.819
6-32	36	35	33	7/16-14	U	3/8	.382	1-8	7/8	.886	29/32
6-40	34	33	32	7/16-20	W	25/64	X	1-12	29/32	59/64	15/16

PIPE TAP SIZES

NOMINAL PIPE TAP SIZE	TAP DRILL		NOMINAL PIPE TAP SIZE	TAP DRILL		NOMINAL PIPE TAP SIZE	TAP DRILL		NOMINAL PIPE TAP SIZE	TAP DRILL	
	TAPER NPT	STRAIGHT NPS		TAPER NPT	STRAIGHT NPS		TAPER NPT	STRAIGHT NPS		TAPER NPT	STRAIGHT NPS
1/16-27	D	1/4	1/4-18	7/16	29/64	1/2-14	23/32	47/64	1-11-1/2	1-5/32	1-3/16
1/8-27	R	S	3/8-18	37/64	19/32	3/4-14	59/64	15/16	1-1/4-11-1/2	1-1/2	1-33/64

METRIC TAP DRILL SIZES

To achieve the theoretical 77% of thread

NOMINAL SIZE & PITCH M/M	TAP DRILL SIZE M/M	NOMINAL SIZE & PITCH M/M	TAP DRILL SIZE M/M	NOMINAL SIZE & PITCH M/M	TAP DRILL SIZE M/M	NOMINAL SIZE & PITCH M/M	TAP DRILL SIZE M/M
M1.6x0.35	1.25	M6x1	5	M16x2	14	M27x3	24
M1.8x0.35	1.45	M7x1	6	M16x1.5	14.5	M27x2	25
M2.0x0.4	1.60	M8x1.25	6.75	M18x2.5	15.5	M30x3.5	26.5
M2.2x0.45	1.75	M8x1	7	M18x1.5	16.5	M30x2	28
M2.5x0.45	2.05	M10x1.5	8.5	M20x2.5	17.5	M33x3.5	29.5
M3.0x0.5	2.5	M10x1.25	8.75	M20x1.5	18.5	M33x2	31
M3.5x0.6	2.9	M12x1.75	10.25	M22x2.5	19.5	M36x4	32
M4.0x0.7	3.3	M12x1.25	10.75	M22x1.5	20.5	M36x3	33
M4.5x0.75	3.75	M14x2	12	M24x3	21	M39x4	35
M5x0.8	4.2	M14x1.5	12.5	M24x2	22	M39x3	36

Standard Tolerances for Press Fits

Light Press Fit		Heavy Press Fit	
Dia. of Hole, in inches	Shaft Dia. More Than Hole, in inches	Dia. of Hole, in inches	Shaft Dia. More Than Hole, in inches
Up to 1/4	+0.0004 to +0.0006	Up to 1/4	+0.0005 to +0.001
1/4 to 1	+0.0005 to +0.0010	1/4 to 1	+0.001 to +0.003
1 to 2	+0.00075 to +0.0020	1 to 2	+0.002 to +0.004
2 to 3	+0.0015 to +0.0030	2 to 3	+0.003 to +0.006
3 to 4	+0.0020 to +0.0040	3 to 4	+0.005 to +0.008
4 to 5	+0.0020 to +0.0045	4 to 5	+0.006 to +0.010
5 to 8	+0.0030 to +0.0050	5 to 6	+0.008 to +0.012

Standard Tolerances for Running Fits

Speeds up to 1000 r.p.m.		Speeds over 1000 r.p.m.	
Dia. of Hole, in inches	Shaft Dia. Less Than Hole, in inches	Dia. of Hole, in inches	Shaft Dia. Less Than Hole, in inches
Up to 1/4	-.0005 to -.0010	Up to 1/4	-.0005 to -.0010
1/4 to 1	-.00075 to -.0015	1/4 to 1	-.0010 to -.0020
1 to 2	-.0015 to -.0025	1 to 2	-.0020 to -.0030
2 to 3	-.0020 to -.0025	2 to 3	-.0025 to -.0035
3 to 4	-.0025 to -.0030	3 to 4	-.0030 to -.0040
4 to 5	-.0030 to -.0035	4 to 5	-.0035 to -.0045
5 to 8	-.0035 to -.0040	5 to 6	-.0040 to -.0050

Standard Tolerances for Push Fits

Dia. of Hole, in inches	Shaft Dia. Less Than Hole, in inches
Up to 1/4	-.00025 to -.00075
1/4 to 1	-.0005 to -.0010
1 to 2	-.0005 to -.0015
2 to 3	-.0005 to -.0015
3 to 4	-.00075 to -.0020
4 to 5	-.00075 to -.0020
5 to 8	-.00075 to -.0020

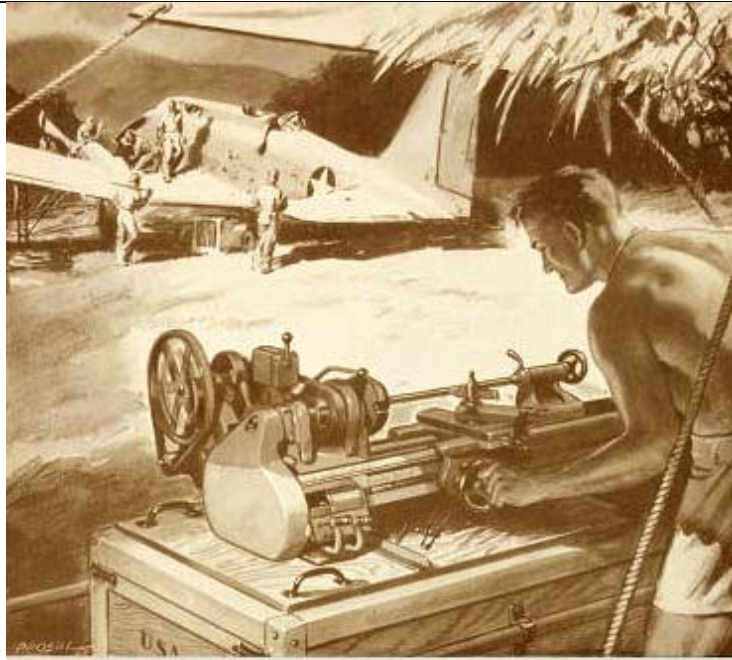
Standard Tolerances for Sliding Fits

Dia. of Hole, in inches	Shaft Dia. Less Than Hole, in inches
Up to 1/4	-.0005 to -.001
1/4 to 1	-.00075 to -.0015
1 to 2	-.0015 to -.0025
2 to 3	-.0020 to -.0030
3 to 4	-.0025 to -.0030
4 to 5	-.0025 to -.0035
5 to 6	-.0025 to -.0040

May

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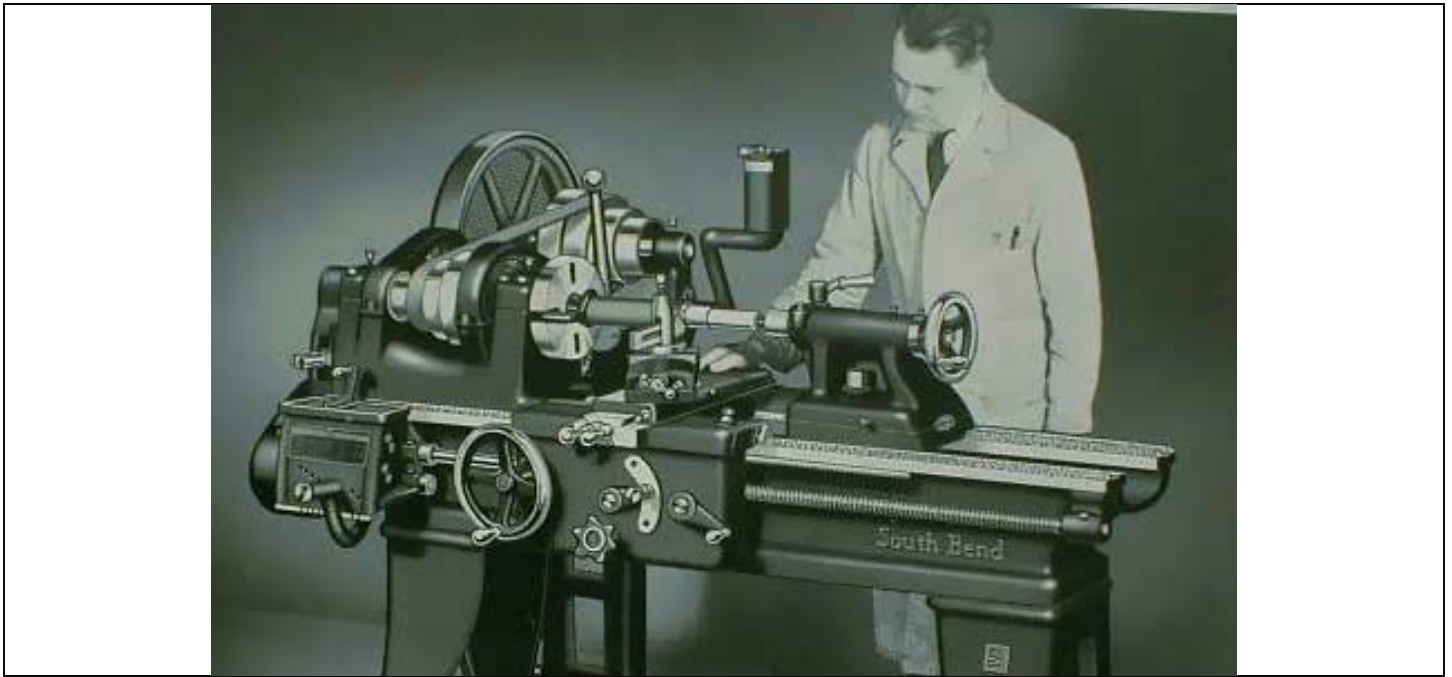


The Flying Lathes of the Air Corps

June

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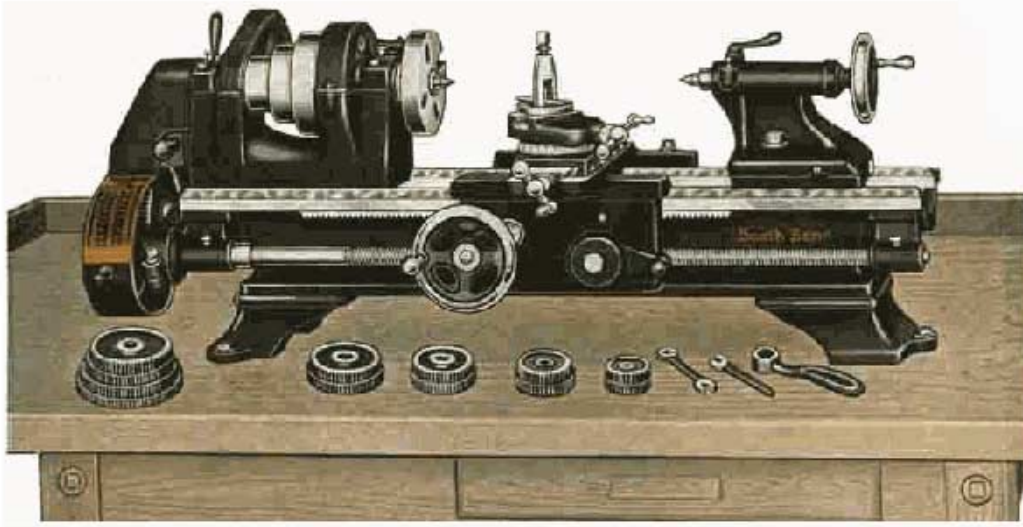
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July

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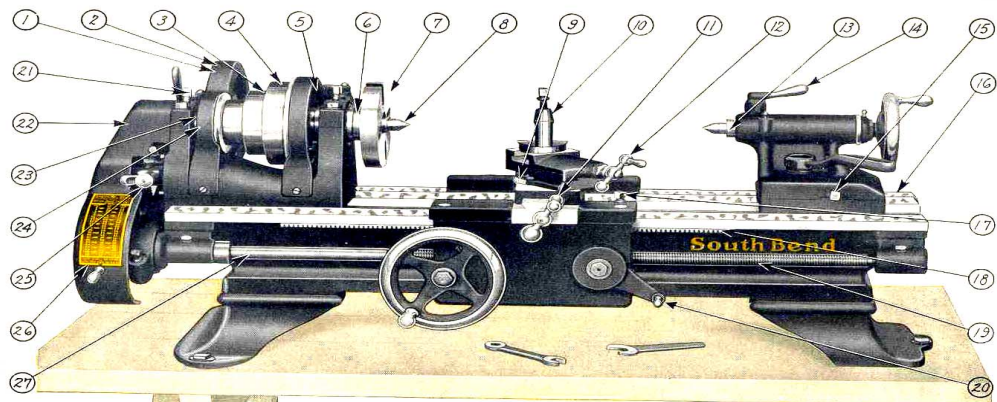


8 x 30 Junior Bench Lathe with Compound Rest — Countershaft Drive
New South Bend Junior 8-inch Bench Lathe
 A Back-Geared, Screw Cutting, Precision Lath , \$100 and Up

August

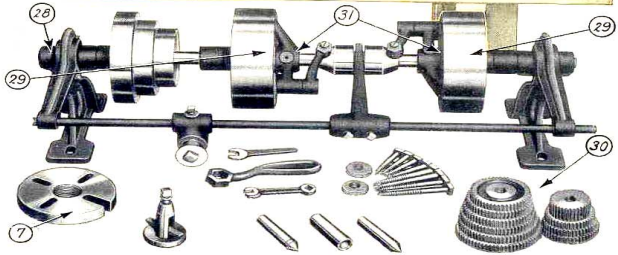
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2013



31 Features of the 9-Inch Junior New Model South Bend Back Geared Screw Cutting Lathe

The improved features of the 9-inch Junior Lathe are indicated in the above illustration by arrows and numbers. These features apply to all 9-inch Junior Lathes, countershaft and Motor Drive types shown in this catalog.



- 1—Back Lathe for Facing
- 2—Back Lathes with Turned
- 3—Turns Cone Shims and Spindle
- 4—Male 1 1/2" wide
- 5—Metric Ball Gear Chain
- 6—Fluorine Bronze Bearings for Spindle
- 7—Smooth Face Plate
- 8—Lead and Tail Centers, Carbon
- 9—Crated Compound Rest, 180 de-
- 10—Graded Steel Adjustable Tool Post
- 11—Protractor Collar on Cross Feed
- 12—Aluminum Collar on Compound
- 13—4 1/2" Ball Bearing Spindle
- 14—Collared Spindle for easier turn-
- 15—Reverse Ballstock for easier turn-
- 16—Standard Seasoned Lathe Bed
- 17—Carriage Lock for Facing
- 18—Steel Blank for Lathe and Power
- 19—Precision Lead Screw, Acme Thread
- 20—Half-Nut Lever for Thread Cutting
- 21—Patent Oil Cup keeps oil clean
- 22—A. L. Taylor's Lubricator for working
- 23—Hardened and Ground Steel Thrust
- 24—Phosphor Bronze Bearing for Spindle
- 25—Metric and Imperial Change
- 26—Index Plate for Threads and Feeds
- 27—Automatic Power Feed (See Lathe
- 28—Double Friction Countershaft
- 29—Countershaft Friction Clutch Pul-
- 30—1/2" A
- 31—Change Gear for Cutting Standard
- 32—Change Gear for Cutting Standard
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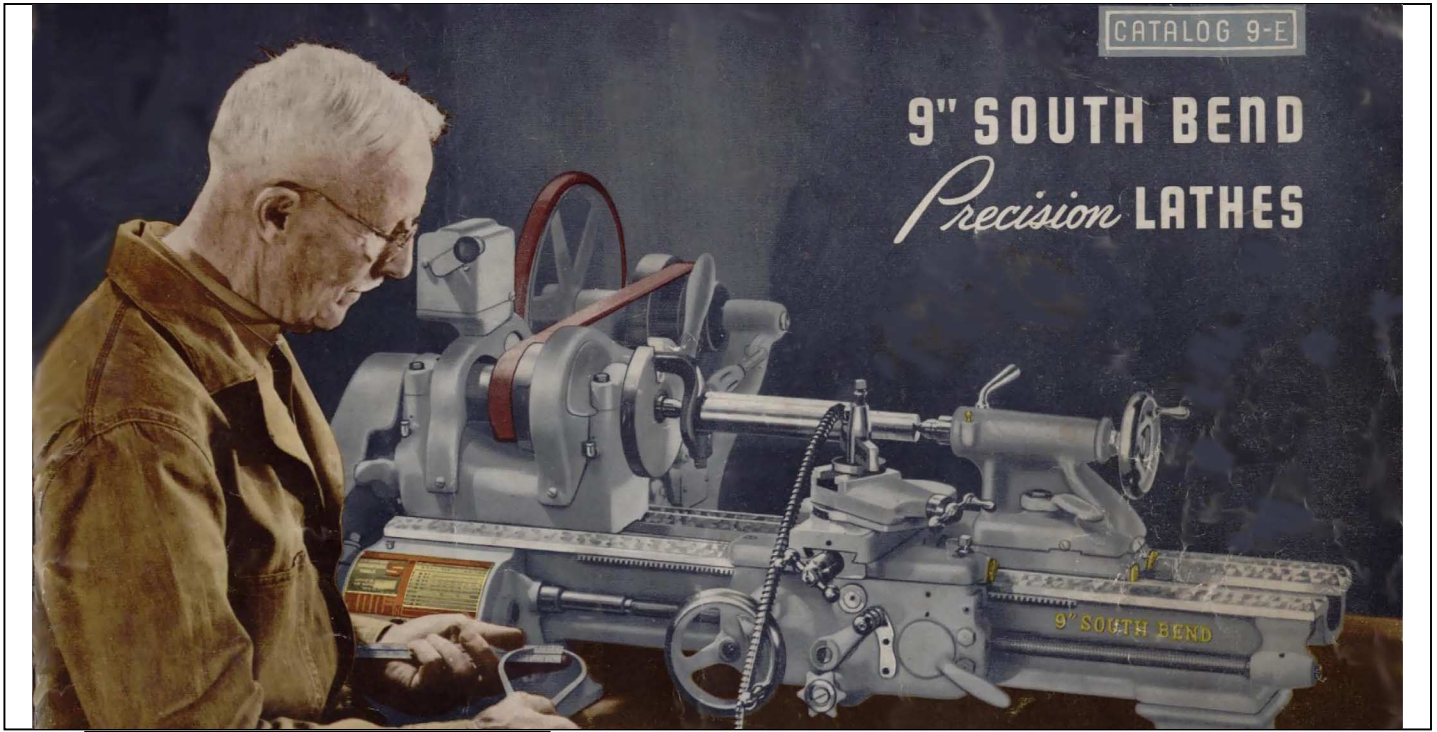
September

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2013

CATALOG 9-E

9" SOUTH BEND *Precision* LATHES



October

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2013



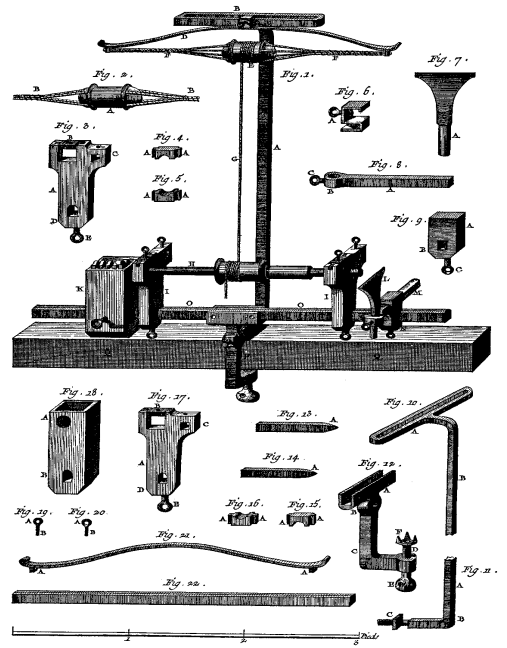
November

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2013



Hand brake for the mid 1800's



Lathe in the 1776 made iron bronze and wood

December

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2013



Sad to say Scorpio Billy Smith past way September 28 2012 @ 7:35 PM of old age at the Age 98 (14 years)
 Survived by his wife Wendy Yorkey Smith and his adopted son Jaxs R. T. Smith.
 Born in 1998 in Pennsylvania move to a Ranch in Sanger California in 1999 where Scorpio work as a chef inspector for Smith Hangar Door till retiring in 2004 in move to city Clovis California 2004. Hobbies machine work watching, Pass time watching Birds, spending by the fireplace with his wife and son. Enjoyed life with ever one and having steaks and ribs.

January

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2014