

L. M. LYMBURNER.
 LATHE ATTACHMENT.
 APPLICATION FILED AUG. 9, 1915.

1,188,667.

Patented June 27, 1916.

4 SHEETS—SHEET 1.

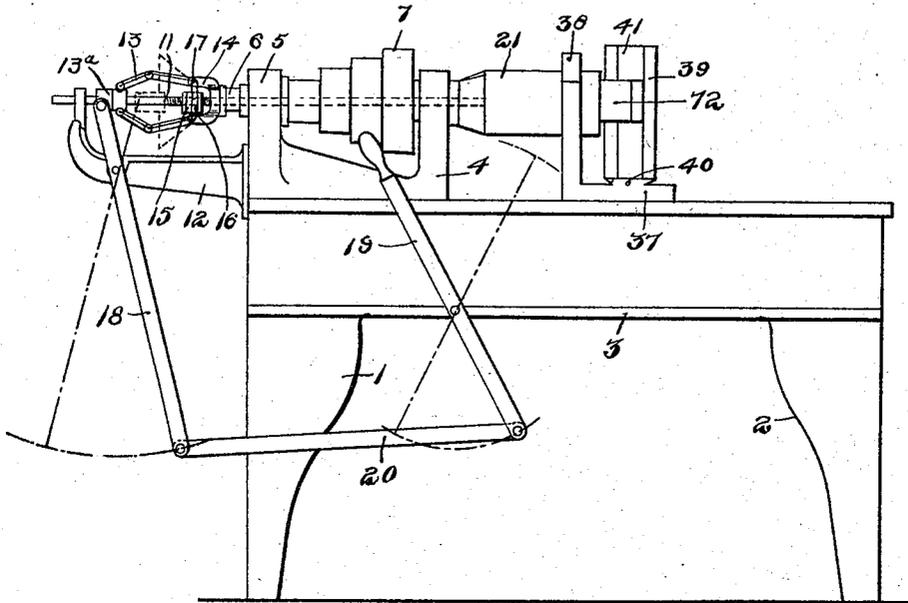


Fig. 1.

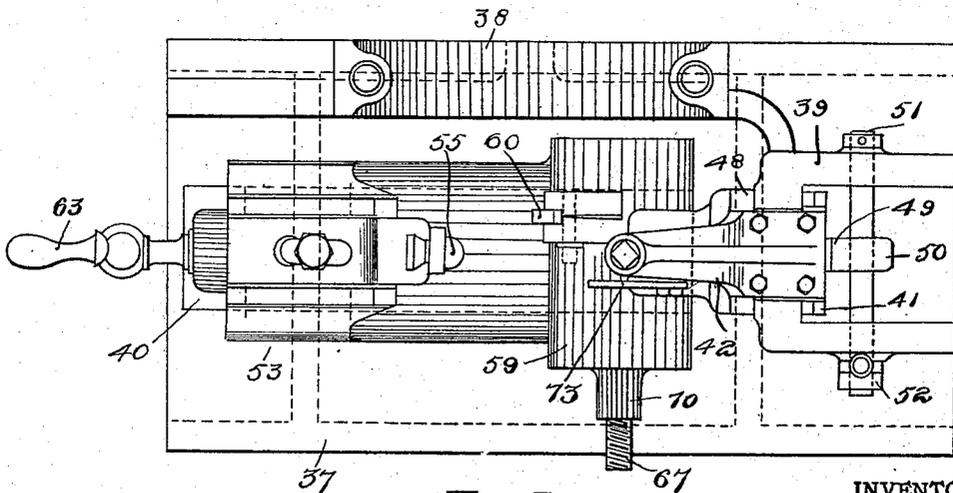


Fig. 3.

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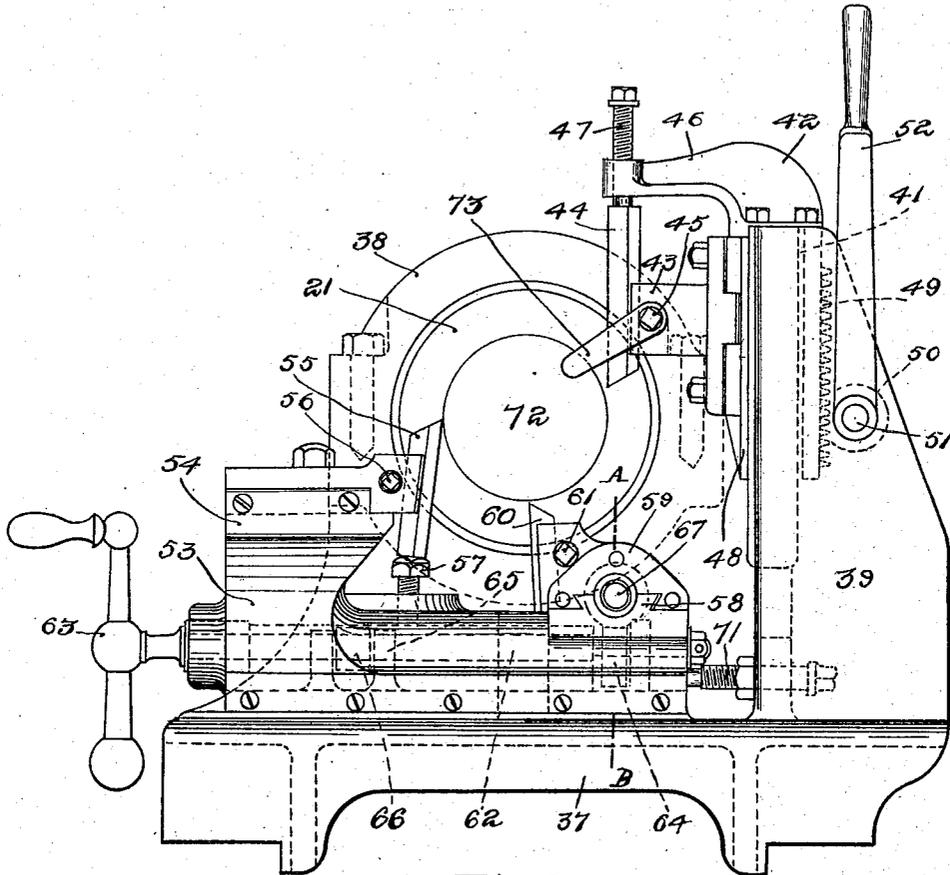


Fig. 2.

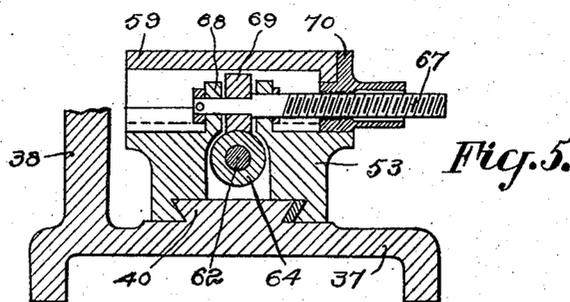
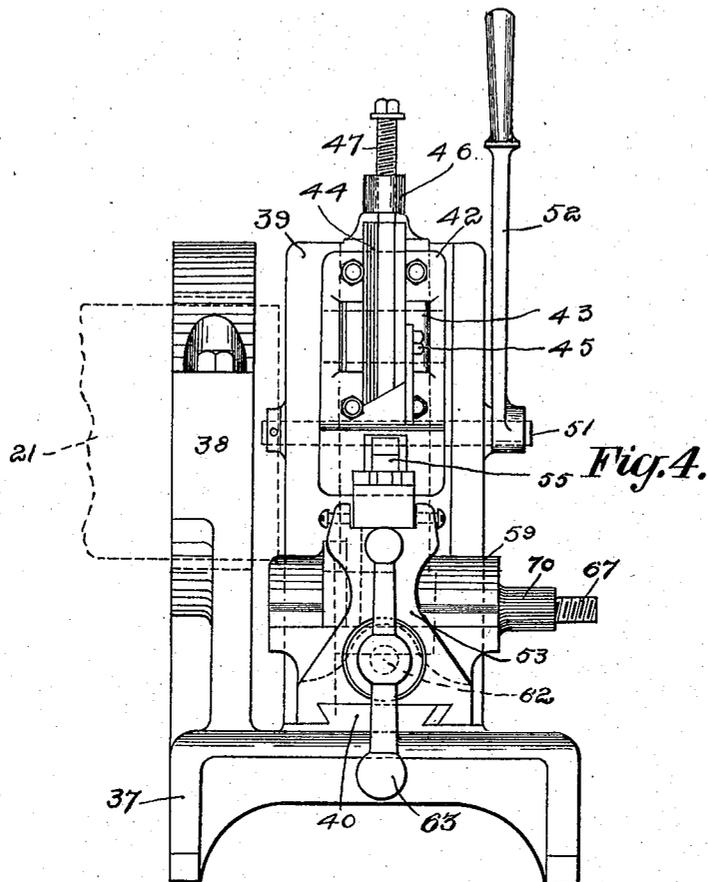
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WITNESSES

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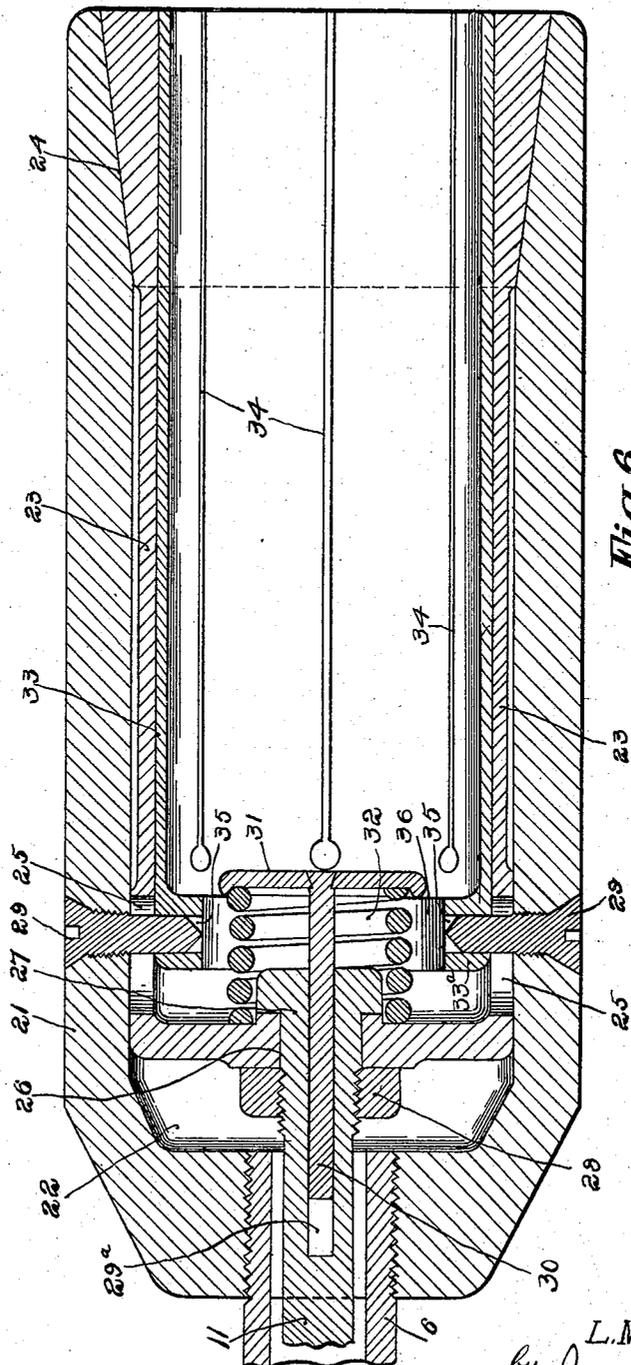


Fig. 6.

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UNITED STATES PATENT OFFICE.

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LATHE ATTACHMENT.

1,188,667.

Specification of Letters Patent. Patented June 27, 1916.

Application filed August 9, 1915. Serial No. 44,484.

To all whom it may concern:

Be it known that I, LOUIS MARCEL LYMBURNER, a subject of the King of Great Britain, and residing in the city of Montreal, in the Province of Quebec, in the Dominion of Canada, have invented certain new and useful Improvements in Lathe Attachments; and I do hereby declare that the following is a full, clear, and exact description of the same.

The invention relates to an attachment to "lathes" and the object of the invention is to devise a machine particularly for the purpose of turning copper bands, brass sockets and the like on shells, rapidly and with accuracy.

A further object is to devise a machine for this purpose, in which it will be practically impossible for mistakes to be made in the turning after the machine has been set. Therefore the machine can be worked by an unskilled person after having been adjusted.

The invention will be fully understood with the aid of the accompanying drawings in which—

Figure 1 is a diagrammatic elevation of the attachment adapted to a lathe. Fig. 2 is a front elevation of the attachment. Fig. 3 is a top view of Fig. 2. Fig. 4 is a side elevation of Fig. 2. Fig. 5 is a cross section view through a portion Fig. 2 at A and B. Fig. 6 is a longitudinal view through the chuck.

Like numerals of reference indicate corresponding parts in each figure.

Referring to the drawings 1 and 2 are the usual standards and 3 is the frame of the lathe.

4 and 5 are brackets forming bearings for a driving spindle 6 upon and between which is fixedly mounted the cone pulley 7. 11 is a shaft loosely mounted in said spindle 6 which is bored centrally to receive said shaft, the outer end of said shaft being supported by the bracket 12 which projects outwardly from the end of the frame 3 and 13 is a well known toggle arrangement pivotally secured at one end to a sleeve 13^a which is loosely mounted on the shaft 11 and at the other end to a bracket 14 secured on the end of the spindle 6.

15 is a sleeve threaded on the shaft 11 having the circumferential groove 16 and 17 are the ends of the toggle arrangement 13 which projects from their pivot point on

bracket 14 and engage the groove 16 in the sleeve 15.

18 is a rod pivotally secured intermediate of its length to the bracket 12 and at its outer end to the sleeve 13^a and 19 is a lever pivotally secured intermediate of its length to the frame 3.

20 is a connecting rod pivotally secured to the lower ends of the rod 18 and lever 19.

To better understand the operation of this toggle attachment, we may say, that when the lever 19 is thrown to the right, the rod 18 which is pivoted, closes the toggles 13 against the bracket 14, which slides the sleeve 15 on the threaded shaft 11 and thereby pulls the said shaft backward.

21 is the chuck fixedly mounted on the end of the lathe spindle 6 which threads through one end and 22 is the interior of said chuck which is adapted to receive an inner sleeve 23 having a tapered outer end 24 corresponding to a similar taper on the inside of the said chuck 21 and 25 are lateral slots in the lower end of said inner sleeve 23, and 26 is an orifice in the bottom through which passes the shaft 11 terminating in a head 27. 28 is a nut secured on the opposite side of said head threading on the thread 28 in the shaft 11 and locking said inner sleeve 23, in order that it may revolve on said shaft 11 with the chuck 21.

29 are locking screws extending through the sides of the chuck 21 and the orifices 25 and projecting therefrom.

29^a is a longitudinal slot in the end of the shaft 11 and 30 is a guide rod sliding therein terminated by the head 31 and 32 is a spiral spring resting between said head 31 and the bottom of the inner sleeve 23.

33 is a sleeve having the inner flange 33^a, said sleeve fitting snugly within the inner sleeve 23 and 34 are longitudinal slots disposed at different intervals around its circumference forming jaws in order that it may grip tightly the shell to be turned and 35 are holes in said flange 33^a in which passes the ends of the screws 29 thereby securing the sleeve to the chuck 21. 36 is a central orifice formed by the flange 33^a in the bottom of said sleeve 33 adapted to receive the head 31 which presses against the end of the shell and keeps it in continuous contact with a gage.

37 is the frame of the attachment formed of the upright brackets 38 and 39, and 40 is

a slideway on said frame 3. The frame 37 is supported by the frame of the lathe 3. The bracket 38 has a central orifice suitably lined with Babbitt metal in which loosely turns the chuck 21 and 41 is a longitudinal slideway provided in the bracket 39 adapted to receive the tool holding frame or carrier 42. 43 is a bracket projecting from said frame 42 to which is secured the molding cutting tool 44 by means of the screw 45, and 46 is an arm overhanging said cutting tool 44 and projecting outwardly from said frame 42, at the outward end of which is threaded the screw 47 against which the said cutting tool rests. 48 are slideways engaging the slideways 41 and 49 is a rack secured on the back of said frame 42 engaging the pinion 50 which is mounted on shaft 51 and 52 is a hand lever mounted on said shaft 51 for actuating said cutter 44. With this lever 52, the cutter 44 may be put into contact or out of contact with the shell by pulling it forward or backward as the case may be. When revolving the pinion 50, the rack engaging said pinion is moved upwardly or downwardly and therefore the frame 42 will be made to travel in the slideways 41.

53 is a carriage traveling in the slideways 40 and 54 is a bracket projecting from the top of said carriage and carries the forming tool 55, said tool being secured by means of the screw 56.

57 is a screw threaded in the carriage 53 and adapted to support the lower end of the cutting tool 55. 58 is a transverse slideway formed at one end of said carriage 53 and 59 is a carriage of smaller dimensions traveling in said slideways 58 and carrying the ripping tool 60 which is fixedly mounted thereon by means of the screw 61.

62 is a threaded spindle carried inside the frame 53, turning on suitable bearings in the frame 53, on one end of which is secured a handle 63 and 64 is a spiral gear secured at the other end.

65 are lugs secured to the frame 37 through which passes the spindle 62 and 66 is a nut threaded on said spindle secured between said lugs 65.

67 is a spindle secured at one end in the bearings 68 on the transverse carriage 59 and 69 is a spiral gear mounted on said spindle 67 between said bearings 68, engaging the gear 64. The spindle 67 is threaded and engages a corresponding thread in the cap 70 which is secured to the end of the carriage 59.

71 is an adjusting screw threaded through the bracket 39 and against which abuts the carriage 53 thereby limiting its travel.

In the operation of the attachment, when the handle 63 is turned, the threaded spindle is revolved thereby carrying the carriage 53 across the frame 3 on the slideways 40. The spiral gear 64 mounted on the spindle 62

engages the gear 69 which revolves the spindle 67. The threads on said spindle 67 being of a more accentuated pitch than the threads on spindle 62, it will readily be seen that the carriage 59 actuated by said spindle will travel faster than the carriage 57 and therefore the cutting tool 60 will come into operation before the tool 55, but in order that time will be saved, it is so adjusted that as soon as the operation on the tool 60 is through, the tool 55 will immediately be in position to start its work. When the tool 55 has completed its work, the handle 63 is turned in the opposite way and the carriages 53 and 59 are brought back in their original places.

72 is the contour of a shell shown in dotted lines and 73 is a gage to keep the shell in the right place as the head 31 in the bottom of the chuck 21 always tends to push out the shell against the stop 73. To release said shell 72 from the chuck, all that is necessary to do is to push forward the hand lever 19 which will push the shaft 11 rearwardly and therefore push the inner chuck 23 out of engagement with the collar 32 therefore unjamming the tapered end 24.

What I claim is:—

1. In a lathe attachment, a frame, a chuck and means for rotating said chuck, a standard fixed on said frame adapted to support one end of the said chuck, a standard projecting from said frame, a finishing tool supported by said standard, means to operate said finishing tool, a carriage adapted to travel on said frame, a tool secured on said carriage, a transversal traveling carriage, a tool mounted on said transversal carriage, and means to operate said tools substantially as described.

2. In a lathe attachment, a frame, a chuck and means for rotating said chuck, a standard fixed to said frame, in which revolves the said chuck, a standard on one side of said frame projecting therefrom, a finishing tool on said standard, means to operate said finishing tool, a carriage adapted to travel on said frame, a tool secured on said carriage, a transversal traveling carriage, a tool mounted on said transversal carriage and means to operate simultaneously said tools substantially as described.

3. In a lathe attachment, a frame, a chuck and means for rotating said chuck at one end of the lathe, an upright standard on said frame in which revolves said chuck, upright standards forming slideways on one side of said frame, a tool carrier slidably mounted in said slideways, means to operate the finishing tool on said tool carrier, a main carriage adapted to travel on said frame, a tool carrier on said carriage, a transversal traveling carriage mounted on said main carriage, a tool carrier on said transversal carriage, means to operate simultaneously

said tool carriers and means to stop the main carriage after traveling a predetermined distance.

4. In a lathe attachment, a frame, transverse slideways in said frame, a chuck supported in a bracket supported on said frame, means to rotate said chuck at one end, said chuck revolving in suitable bearings in said bracket, upright standards forming slide-ways projecting on one side of said frame, a tool carrier slidably mounted on said slideways, means to operate the finishing tool on said carrier, a main carriage adapted to travel in transverse slideways in said frame, a tool carrier mounted at one end on said carriage, transverse slideways on said main carriage, a transverse tool carrier traveling in said transversal slideways, means to operate simultaneously said main and transverse carriages and an adjusting screw threading through the lowermost part of said upright standards against which abuts the main carriage after traveling a predetermined distance.

5. In a lathe attachment, a frame, transverse slideways in said frame, a bracket projecting upwardly from said frame, a chuck revolving in said bracket, means to rotate said chuck, upright standards on said frame, a tool carrier slidably mounted in said slideways, a finishing tool secured on said carrier, an overhanging bracket on said carrier carrying a screw against which the tool rests, a rack on said carrier disposed between the slideways, a hand lever mounted on said shaft secured in suitable bearings in the upright standards, a pinion mounted in said shaft and engaging said rack, a main carriage slidably mounted on the slideways in said frame, a tool carrier on said carriage, transversal slideways on said main carriage, a transverse carriage slidable on said transverse slideways, a threaded main spindle

loosely secured to the main carriage in the slideways in the frame, lugs on said frame between said slideways, a screw engaging the threaded spindle secured between the said lugs, a driving handle at one end of said threaded spindle and a spiral gear at the other end, a transverse threaded spindle in said transverse carriage, said spindle threading through one of the ends of the carriage at one end, and a spiral gear on the other end engaging the gear on the main spindle, and means to stop said main carriage at a predetermined distance.

6. In a lathe attachment, a frame, transverse slideways in said frame, a chuck supported in a bracket supported on said frame at one end, means to rotate said chuck, upright standards on said frame, slideways formed between said standards, a tool carrier slidably mounted in said slideways, means to operate the finishing tool mounted in said carrier, a main carriage slidable in slideways formed on said frame, means to operate said main carriage, a tool carrier on said carriage, a tool in said carrier suitably secured thereto, and a screw threaded in said main carriage against which rests the said tool, transversal slideways, a transverse carriage mounted on said slideway, a tool carrier on said carriage, a tool mounted on said carrier and secured thereto, means to operate said carriage more rapidly than said main carriage, means to stop the main carriage at a predetermined distance, and means to retain the shell in its proper place substantially as described.

Signed at Montreal, Quebec, Canada, this 12th day of July, 1915.

LOUIS MARCEL LYMBURNER.

Witnesses:

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RENÉ A. PIGEUL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."