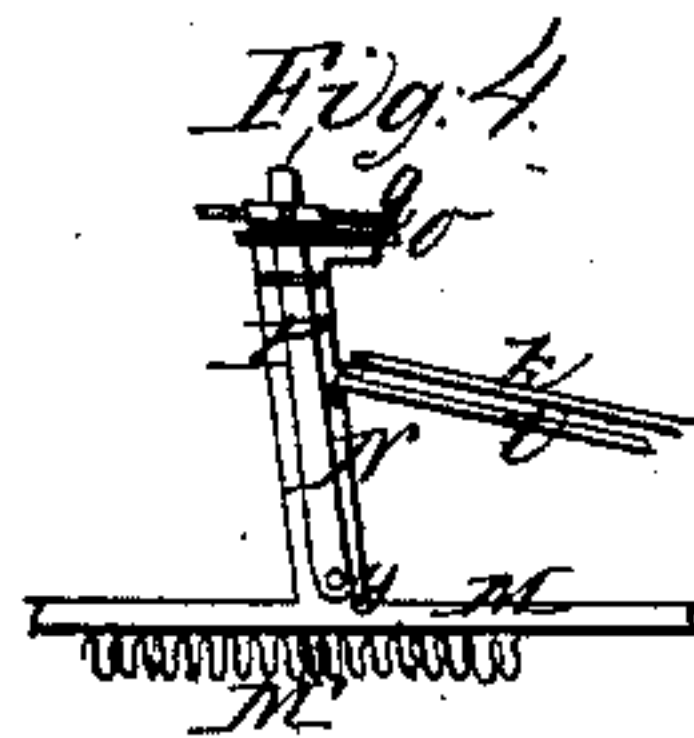
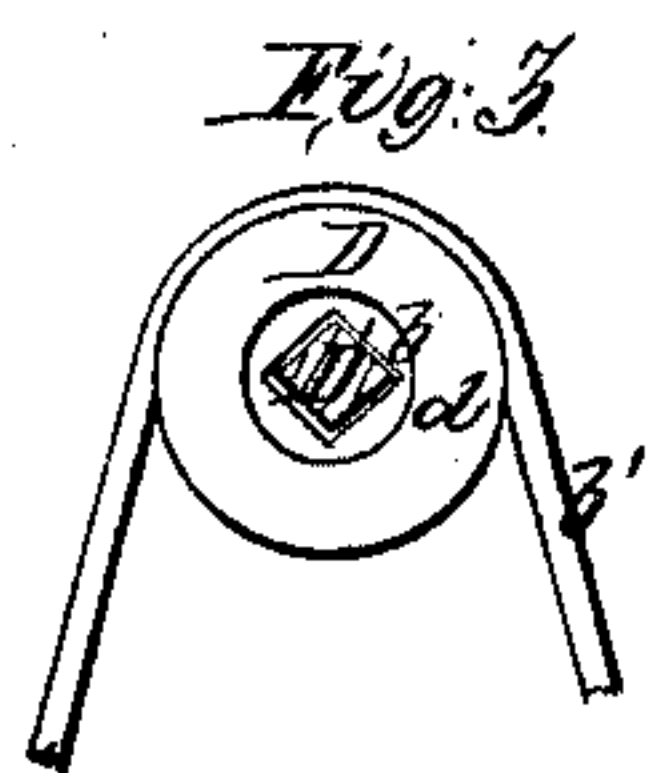
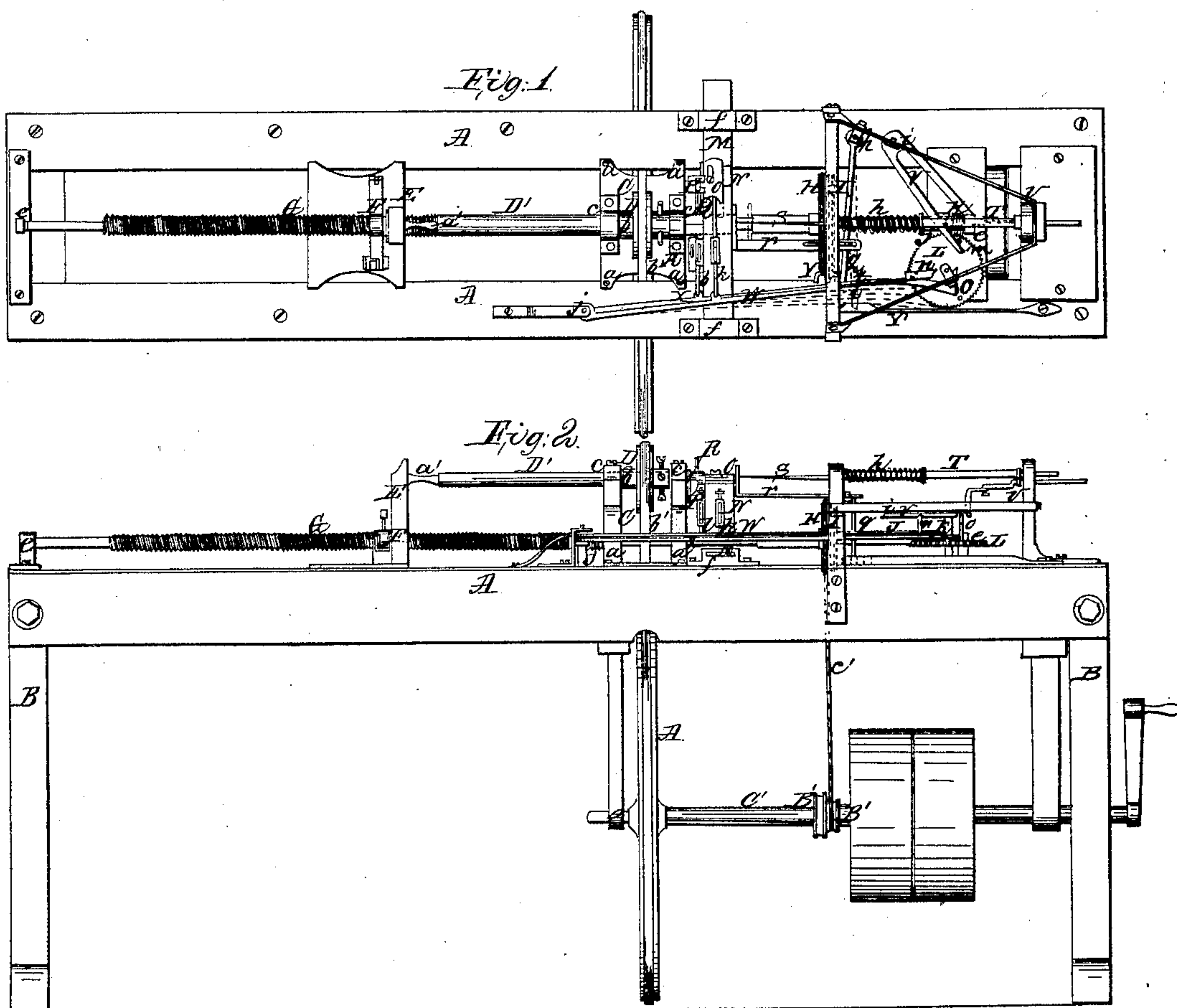


S. Carpenter,

Gage Lathe.

Nº 11,777.

Patented Oct. 10, 1854.



Witnesses:
W. M. Mum
J. W. Hamilton

Inventor:
Saml. Carpenter

UNITED STATES PATENT OFFICE.

SAMUEL CARPENTER, OF FLUSHING, NEW YORK.

MACHINE FOR TURNING HUBS, TOOL-HANDLES, &c.

Specification of Letters Patent No. 11,777, dated October 10, 1854.

To all whom it may concern:

Be it known that I, SAMUEL CARPENTER, of Flushing, in the county of Queens and State of New York, have invented a new and
5 Improved Machine for Turning Hubs, Tool-Handles, &c.; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1, is a plan or top view of my improved machine. Fig. 2, is a side view of ditto. Fig. 3, is a side view of the pulley,
15 which gives motion to the "stuff," and through which pulley the staff is fed to the cutters. Fig. 4, is a side view of the cutter stock.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to a new and useful machine for turning and boring hubs, tool handles, and other articles of a beaded and regular curved form.

25 The nature of my invention consists:

1st. In giving a rotary motion to the "stuff" to be turned and bored, by having the stuff fed to the cutters through the center of a pulley which is driven by a band
30 wheel, said pulley communicating the rotary motion to the "stuff," and allowing it to be fed through its axis at the proper intervals.

2d. My invention consists in the peculiar mechanism devised for operating the cutters, bit or auger, and belt shipper. This mechanism will be fully described hereafter.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

40 A, A, Figs. 1 and 2, represent two horizontal bed pieces, supported by suitable standards, B, B. The above parts may be constructed of either wood or metal.

C, is a stationary head, secured to the bed pieces, A, A, by bolts, (a). On the upper part of the head, C, a pulley, D, is placed, said pulley having its axis, (b) running in suitable bearings, (c), (c), in the head, C. The axis, (b), of the pulley, D, has a square
50 opening, (d), made longitudinally through, as shown in Fig. 3.

E, Figs. 1 and 2, is a movable and sliding head, which works on the bed pieces, A, A; and F, is a nut secured to the lower part of
55 the head, E.

G, is a screw rod, which passes through

the nut, F. The ends of the screw rod, G, work in suitable bearings, (e), (e), one at each end of the bed pieces, A, A. The screw rod running parallel with the bed pieces. 60 On one end of the screw rod, G, there are two pulleys, H, I. One of the pulleys, H, is attached permanently to the screw rod, and the other pulley, I, works loosely thereon, and has a hollow arm, J, with a screw wheel, 65 K, upon it, said screw wheel gearing into a horizontal worm wheel, L.

M, see Figs. 1, 2, and 3, is a transverse sliding bar, which works in suitable guides, (f), (f), see Figs. 1 and 2, on the upper
70 part of the bed piece, A, A.

To the sliding bar, M, there is attached an upright, N, which forms a cutter stock for a finishing chisel, O. To one side of the upright, N, there is attached by a pivot, (g),
75 a cutter stock, P, more particularly shown in Fig. 4.

M', Fig. 4, is a spiral spring underneath the sliding bar, M.

The cutter or finishing chisel, O, has a
80 cutting edge, made to correspond to the desired form of the articles to be turned. The cutter on the upper part of the stock, P, represented by Q, is merely a cutting off tool, with a plain, narrow, beveled edge, as shown
85 clearly in Figs. 1 and 4.

R, is a stationary cutter or gouge attached to the side of the head, C, as shown in Figs. 1 and 2.

S, is a bit or auger attached to the ends
90 of a rod, T, which slides in suitable bearings on the upper part of a frame, U, on the bed pieces, A, A. Around the rod, T, there is a spiral spring, (h), the use of which will be hereafter shown. 95

V, is a bent lever, having its fulcrum at (i), one end of this lever is attached to the outer end of the rod, T, and the other end projects a short distance over the face of the worm wheel, L, see Fig. 1. 100

W, X, are two levers having the same fulcrum, (j),—the outer ends of these levers also project over the face of the worm wheel, L, see Fig. 1. The lever, W, is connected to the upright, N, of the slide, M, by a rod, (k),
105 and the lever, X, is connected to the stock, P, by a rod, (l), see Figs. 1 and 2.

On the face of the worm wheel, L, are three upright pins, (m), (n), (o), all of them are shown in Fig. 1. 110

Y, is a belt shipper attached to a lever, Z, said lever having its fulcrum at (p), see

Fig. 1, and (*q*), is an upright attached to the lever, Z, and having a horizontal arm, (*r*), which is directly in line with the hole, (*d*), in the pulley, D.

5 Y', is a spring catch which secures the lever, Z, in its proper position.

A', is a band wheel, by which motion is given the pulley, D; and B', B', are pulleys on the same shaft, C', as the band wheel, 10 the pulleys, B', giving motion to the pulleys, H, I.

Operation: The "stuff" to be turned, is made of square form by previous sawing, and of such a size as to pass through the 15 square hole, (*d*), in the axis, (*b*), of the pulley, D, see Figs. 1, 2, and 3, the stuff being represented by D'. One end of the stuff is placed within the axis, (*b*), of the pulley, D, and the opposite end is supported

20 by a center point, (*a'*), in the sliding head, E. Motion is then given the shaft, C', and the band wheel, A', gives a rotary motion to the pulley, D, by means of a band, (*b'*), and the pulley of course rotates the 25 stuff. The screw rod, G, also rotates at the same time, by means of a belt, (*c'*), which at this time, passes around the pulley, H, which is attached to the rod, G, see Figs. 1 and 2. The rotating of the screw rod, G,

30 as the nut fits around it, causes the stuff, D', to be moved through the hole, (*d*), in the axis, (*b*), of the pulley, D, and the stationary cutter, R, attached to the head, C, cuts or roughs off the corners of the stuff,

35 and the ends of the stuff, after passing through the axis, (*b*), a requisite distance, comes in contact with the arm, (*r*), and throws back the belt shipper, Y, which of course, throws the belt, (*c'*), from the pul-

40 ley, H, to the pulley, I. The screw, G, now ceases to rotate, and the screw wheel, K, has a rotary motion, and gives motion to the worm wheel, L, and the pin, (*m*), bears against one arm of the bent lever, Y, and

45 thus throws the bit or auger, S, forward, and into the ends of the stuff, D'. The stuff, D', still rotating, but not moving forward through the axis, (*b*). The sliding bar, M, is now moved by means of the pin,

50 (*n*), coming in contact with the end of the lever, W, and the cutters are consequently made to act upon the stuff, the cutter, O, cuts the wood in the desired form, while the cutter, Q, at this time, merely cuts a recess

55 into the stuff to allow the cutter, O, to cut clean at the end. The pins, (*m*), (*n*), having passed the levers, V, W, the bit or auger, S, is forced back to its original position by the spiral spring, (*h*), and the cutter, O, is

forced back sufficiently to clear the stuff by 60 means of the spiral spring, M', underneath the slide, M. The pin, (*n*), now acts against the outer end of the lever, X, and forces forward the cutter, Q, the stock, P, of which 65 works on the pivot, (*g*), and the finished article is cut off, and the slide is forced back to its original position by the spring, M', and the belt shipper, Y, is thrown back, and the belt, (*c'*), is thrown upon the pul- 70 ley, H, by means of a pin, (*t*), on the lever, X, striking a projection, (*v*), on the lever, Z, see Fig. 1. At the next operation, the pin, (*o*), acts against the arm of the lever, V, the three pins forming an equilateral tri- 75 angle on the face of the worm wheel, L.

By the above machine, hubs for wagons, tool handles, and all articles having a regular curved form, may be turned with the greatest facility. The length of each arti- 80 cle turned, will be equal, because the extreme end of the "stuff" acts upon the belt shipper, and shifts the belt, (*c'*), at equal length of the article to be turned, and articles of different lengths may be turned by 85 properly adjusting the arm, (*r*), so as to allow a greater or less length of stuff to pass through the pulley, D, before acting against the arm, (*r*).

I do not claim turning, boring, tapering and shouldering handles either cylindrical 90 or conical by means of hollow cutters, tapering cutters, bits or drills, as none of these devices are new; but

What I claim as my invention and desire to secure by Letters Patent is— 95

1. The use or employment of the pulley D so constructed and arranged as to communicate a continuous rotary motion to the stuff to be turned, and to allow the same to be fed freely through its axis at the proper 100 intervals substantially as described, and for the purposes specified.

2. The arrangement, and combination of the pulleys H, I, screw, and worm wheels K, L, levers W, X, V, and slide M, for the 105 purpose of operating the cutters, O, Q and bit or auger S, substantially as specified, and

3. The arrangement of the belt shipper Y, attached to the lever, Z, and the arm (*r*), attached to the upright, *q*, constructed and 110 operating as herein shown, for the purpose of causing the turned articles to be cut off from the stuff of equal length, as set forth.

SAMUEL CARPENTER.

Witnesses:

O. D. MUNN,

J. W. HAMILTON.