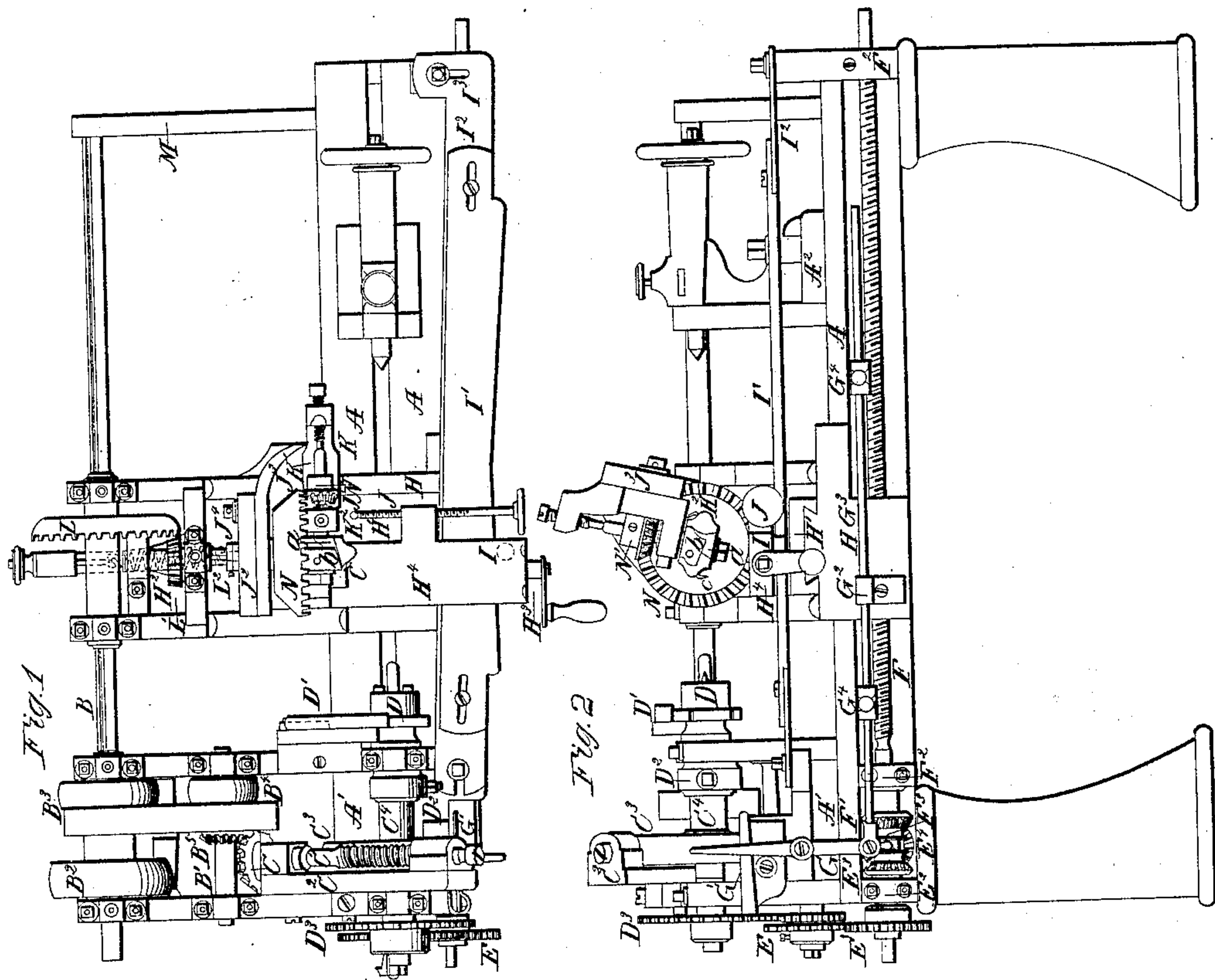


A. Basse,
Gage Lathe.

N^o 58,758

Patented Oct. 16, 1866.



Witnesses:
Wm. H. Hurdaway
Wm. H. Hurdaway

Inventor:
August Basse
By his Attorney J. D. Dennis Jr.

UNITED STATES PATENT OFFICE.

AUGUST BASSE, OF QUINCY, ILLINOIS.

IMPROVEMENT IN WOOD-TURNING LATHES.

Specification forming part of Letters Patent No. 58,758, dated October 16, 1866.

To all whom it may concern:

Be it known that I, AUGUST BASSE, of Quincy, Adams county, State of Illinois, have invented certain new and useful Improvements in Machines for Turning or Cutting Regular and Irregular Forms; and I do hereby declare the following description and accompanying drawings are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention or improvements, without further invention or experiment.

The nature of my invention and improvements consists in the combination and arrangement of devices described and claimed in the following specification and referred to in the drawings.

Figure 1 of the drawings is a plan or top view of my improved machine. Fig. 2 is an elevation of the front side.

In the accompanying drawings, A A are the ways of the frame, on which the head-stock A¹ and the tail-stock A² are fastened, the latter being arranged to traverse when required. The head-stock A¹ extends back from the ways to form journal-boxes for the shafts B and B¹, as shown in the drawings. The pulley B² is fastened to the shaft B for a belt from some moving power to operate the machine. The pulleys B³ are also fastened to the shaft B for a belt to turn the pulleys B⁴ and shaft B¹, which carries a bevel-gear, B⁵, by the pulley B⁴, to turn the gear C and screw C¹, which turns in the stand C², fastened to the head-stock A¹ for that purpose. The screw C¹ drives the gear C³, which is fastened to the spindle C⁴, which turns in the head-stock A¹ and carries the post or other article which is to be cut or turned. The center D of the spindle C⁴ is fitted to turn in the spindle, and may be held still to cut straight grooves by the pawl D¹, which catches into the notches of the collar on the center. By turning the screw D² the center D may be locked to the spindle so as to turn with it and cut spiral grooves when required.

The rear end of the spindle C⁴ projects beyond the rear of the head-stock, and has the gear D³ fastened to it to turn the small stud-gear fastened to the gear E, which turns on a stud fastened in the rear of the head-stock, which gear E drives the gear E¹, fastened to a hollow shaft which turns on the end of the

screw F in the box E², and carries the bevel-gear E³ to turn the stud-gear E⁴ behind the screw-shaft, which gear turns the gear F¹ on the screw, which screw turns in the boxes F² fastened to the ways A. The gears are all arranged to turn loose on the screw, and locked to the screw by the clutch-box F³, between the gears E³ and F¹ on the screw F. This clutch-box has a groove in the inside fitted to a spline in the screw, on which it traverses to lock either gear to the screw and turn it in the direction required. The clutch-box may be moved to lock either gear to the screw, or release them both, by the lever G, which forks into a groove around the clutch-box, and is held in the required position by the spring G¹, which is notched for that purpose.

The screw F turns in a nut fastened to the carriage H, to traverse it on the ways A A, to which the carriage is fitted. The stand G² is fitted to traverse on the rod G³ fastened to the lever G, and the stand, being fastened to the carriage, is carried by it against the stops G⁴ G⁴, which may be adjusted at proper places on the rod to be moved by the stand to release the clutch-box from the gear and stop the carriage when required.

The carriage H has an upper carriage, H¹, fitted to traverse at a right angle to the ways A, and is drawn to the rear by the spring H², and is drawn forward by the screw H³, which turns in the slide H⁴, which slide has the roller I turning on a stud in its under side and working against the guide-rail I¹, which governs the movement of the carriage H, the roller I being drawn against the guide-rail by the spring H². The guide-rail I¹ is curved inward, as shown in the drawings, and is fastened to the top of the guide-rail I², which is straight, and has slot I³ across the end, by which it may be set to turn or cut straight or tapering, as may be required, when the guide-rail I¹ is removed. A guide-rail that is serrated, waved, or of other form may be substituted for the guide-rail I¹, to turn or cut the form required.

There is a projection on the side of the slide H⁴ for the adjusting-screw J to turn in and stop the motion of the carriage H¹ toward the guide-rail at the desired point to turn or cut a given size when required, the point of the screw striking the stud J¹. The rear end, J²,

of the carriage H stands perpendicular, to form a seat for the vibrating stand J³, which is made in the form shown, with a hollow hub on its back side fitted to a hole in the end J², on which hub the stand J³ vibrates from a horizontal to a perpendicular position, and may be fastened in the position desired by the screw J⁴, which passes through a curved slot in the end J² and screws into the stand J³, which stand has the stand K bolted to it for the cutter-shaft K¹ to turn in, which carries the cutter-head K², which may be made in the form desired, with such a number of knives or cutters as may be preferred or found necessary.

The rear of the carriage H extends back and rises up to form seats or journal-boxes for the hubs of the bevel-gear L, which is fitted to turn in it, which gear has the shaft B passing through it to turn it by a groove in the shaft fitted to a spline in the gear, so that the gear may traverse on the shaft with the carriage H and be turned by the shaft. The right-hand end of the shaft B turns in the stand M fastened to the ways A. The gear L turns the gear L¹ and shaft L², which turns in boxes arranged on the rear of the carriage H, which shaft extends into the hub of the gear N, and there is a groove in the shaft fitted to a spline in the hub of the gear, so that the shaft turns the gear and allows it to traverse on the shaft as the carriage H is moved. The gear N is made concave, to allow the cutter-head K² to project into it, and the hub of this gear extends through the hub of the stand J³, and is secured by a collar beyond the end of the hub of the stand. The gear N turns the gear N¹ and cutter-shaft K¹ with the cutter K², to cut or turn the post or other article wrought or worked in the machine. The cutter-head K² has two or more scores, like *a*, with two or more knives, like *b*, one on each side of the cutter-head, extending a little past the middle of the periphery thereof. The edges of

the knives *b* are inclined to the radii and axis of the cutter, as shown in the drawings, and the edges of the knives are set so near the edges of the scores in front of the knives that there is just room for the chip or shaving cut to pass in, like it does in a plane, which makes the work very smooth and perfect; and to cut fancy grooves a third knife, like *c*, Fig. 1, may be added.

It is apparent from the foregoing description that the gearing is arranged to turn the feed-screw either way, and traverse the carriage in either direction on the ways, and that cutter and its shaft may be set at any angle between a perpendicular and horizontal line, so as to cut right or left hand spirals or screws, as may be required; and by locking the center D straight grooves may be cut, and by changing the guide-rail the cutter may be made to cut straight, tapering, waving, undulating, jagged, or zigzag, or such other form as may be devised that is susceptible of being cut by a rotating cutter.

By putting two or more knives on the cutter-head and inclining their edges to the radii and axis of the cutter-head, or making the edges of the knives spiral, with a very small opening in front of the knife for the shaving to pass into the groove, I can make very smooth and perfect work.

Having described my improvements, I claim—

The arrangement of the carriage end J², stand J³, and stand K, for the purpose of supporting the cutter-shaft K¹, and permitting it to be set and fastened at such a position or angle as may be desired, when constructed and operating substantially as described.

AUGUST BASSE.

Witnesses:

HENRY KERPOHL,
WM. J. ALTHANS.