(No Model.) 4 Sheets—Sheet 1.

C. SEYMOUR.

LATHE.

No. 501,470. Patented July 11, 1893.

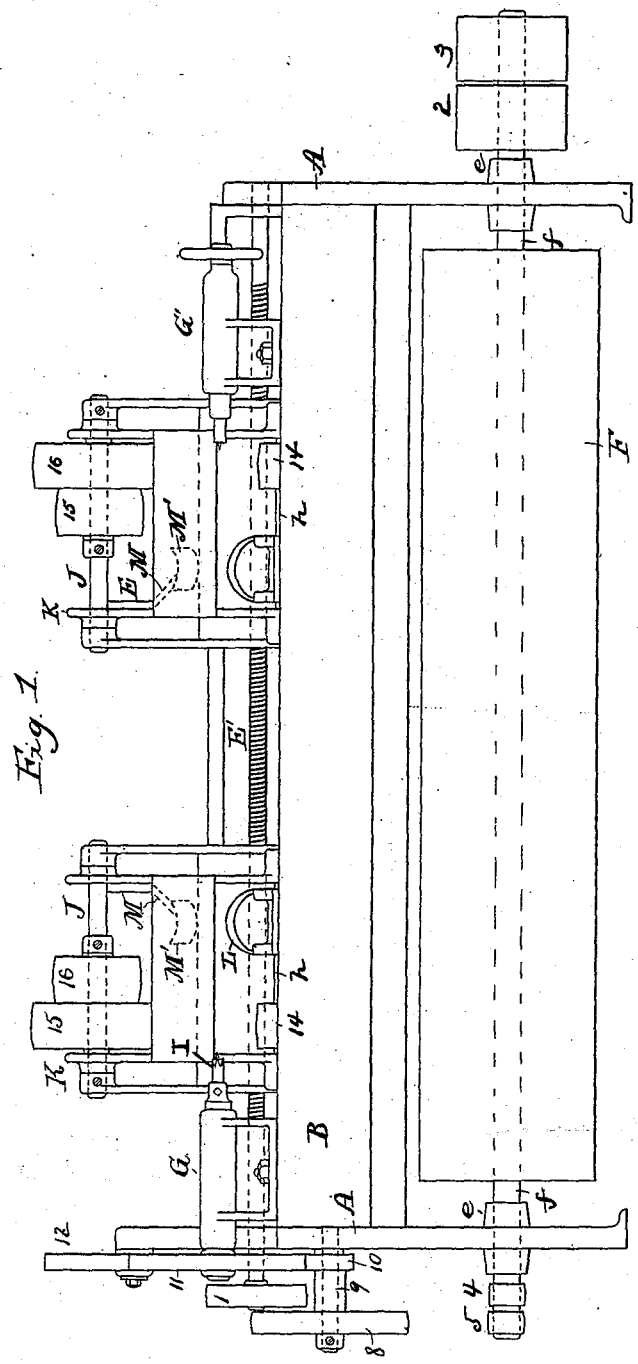

Fig. 1.

Witnesses:
G. F. Downing.
Harry B. Arnes.

Inventor
Charles Seymour
By Leggett & Leggett
Attorneys

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C. SEYMOUR.

LATHE.

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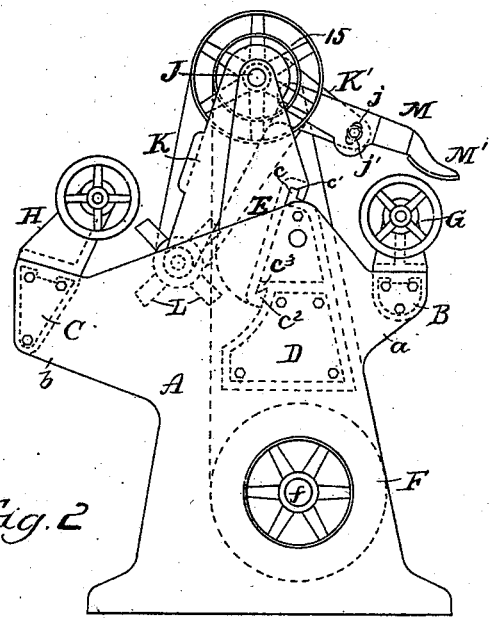

Fig. 2

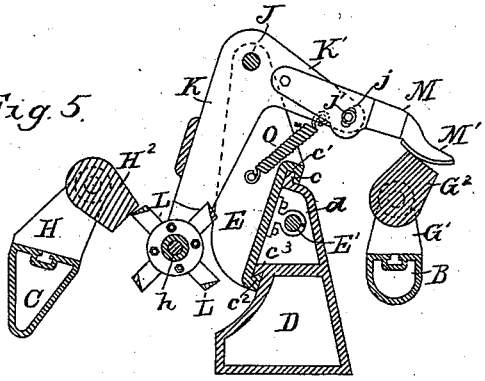

Fig. 5.

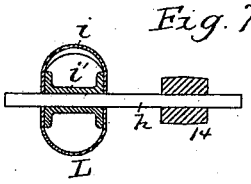

Fig. 7.

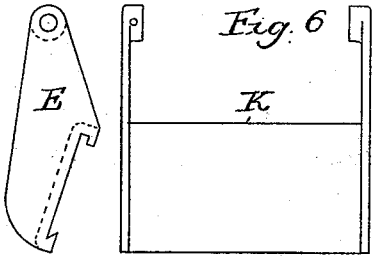

Fig. 6

Witnesses
G. F. Downing
Andy Rawlings

Inventor
Charles Seymour
By Leggett and Leggett
Attorneys

(No Model.)

4 Sheets—Sheet 3.

C. SEYMOUR.

LATHE.

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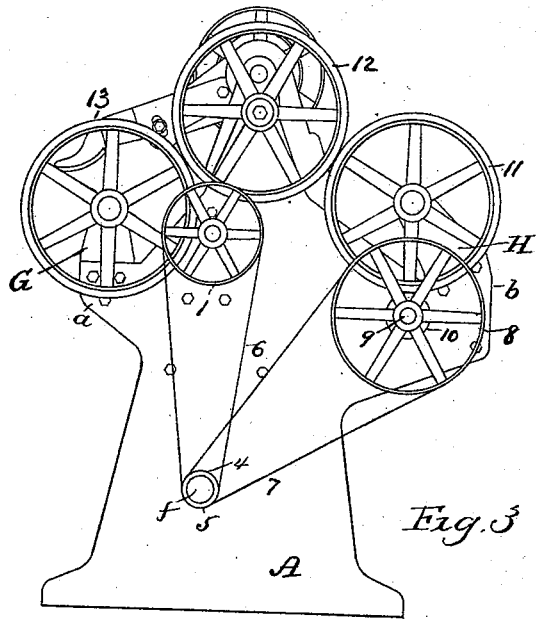

Fig. 3

Witnesses
G. F. Downing.
Harry B. Arnes

Inventor
Charles Seymour
By Leggett & Leggett
Attorneys

(No Model.) 4 Sheets—Sheet 4.

C. SEYMOUR.

LATHE.

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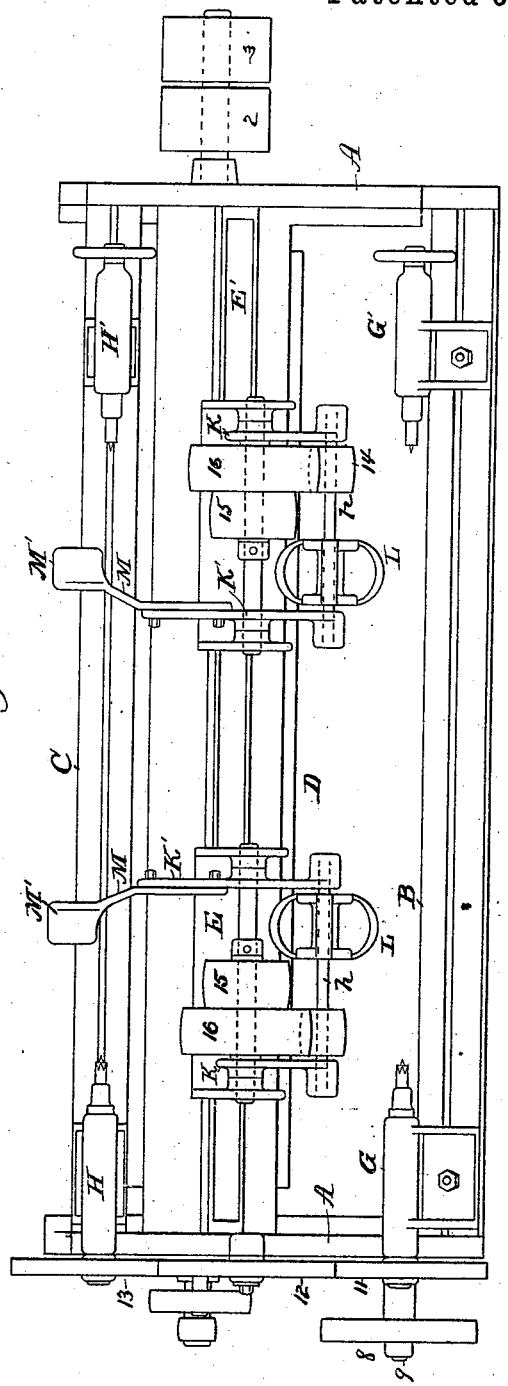

Fig. 4.

Witnesses
G. F. Downing.
Harry B. Arnes.

Inventor
Charles Seymour
By Leggett & Leggett
Attorneys

UNITED STATES PATENT OFFICE.

CHARLES SEYMOUR, OF DEFIANCE, OHIO, ASSIGNOR TO THE DEFIANCE MACHINE WORKS, OF SAME PLACE.

LATHE.

SPECIFICATION forming part of Letters Patent No. 501,470, dated July 11, 1893.

Application filed July 29, 1892. Serial No. 441,632. (No model.)

To all whom it may concern:

Be it known that I, CHARLES SEYMOUR, a resident of Defiance, in the county of Defiance and State of Ohio, have invented certain new and useful Improvements in Lathes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in lathes, and more particularly to such as are employed for turning irregular forms, such as wooden wagon axles, bolsters, "sand boards," ax handles, shoe lasts, ox yokes, gun stocks, and other irregular forms,—the object being to construct the machine in such manner that it shall be of compact arrangement and substantial.

A further object is to provide simple and efficient means whereby to automatically govern the action of the cutter head or heads in conformity with the pattern employed.

A further object is to construct and arrange the machine in such manner as to admit of a space for the downward discharge of chips, &c., and render easy the disposal of said chips, &c., by means of a suitable exhauster.

A further object is to locate the article to be turned and the cutter heads in such relative positions as to secure immunity of the operator from danger by the cutter heads.

A further object is to construct the bed plates in such manner as to secure strength and rigidity.

With these objects in view the invention consists in certain novel features of construction and combinations and arrangements of parts as hereinafter set forth and pointed out in the claims.

In the accompanying drawings: Figure 1 is a front elevation of the machine. Fig. 2 is a right hand end elevation. Fig. 3 is a left hand end elevation. Fig. 4 is a plan view. Fig. 5 is a sectional view. Fig. 6 is a view illustrating the sliding portion of the carriage. Fig. 7 is a sectional view of a cutter head, shaft and pulley.

A, A, represents the end plates or uprights of the machine, and are connected by means of bed plates B, C, D, each of which is made or cast hollow. The bed plate B is preferably made U-shaped in cross section and is secured between the arms *a*, of the end-plates. The bed plate C is preferably made V-shaped in cross section and is secured between the arms *b* of the end plates or uprights. The bed plate D is located between the bed-plates B and C and is secured to the end plates or uprights as shown in Figs. 2 and 4. In general shape in cross section the bed plate D is smaller at its upper edge than at its bottom, and at its upper edge is made with a flange *c* which enters a groove or recess *c'* of a carriage E. The base of the carriage is disposed in a diagonal position as shown in Fig. 5, and at its lower end is provided with a dove-tailed flange c^2 which embraces a similarly shaped flange or projection c^3 projecting from the bed plate D. Thus it will be seen that by mounting the carriage E on the bed plate D in this manner, said carriage may have a sliding movement imparted to it. Several carriages may be employed, and each is provided with a bracket or nut *d* (preferably made in halves) which is screwthreaded for the accommodation of a screw E' which passes through it, said screw passing through the bracket or nut of each carriage and extending the full length of the machine, being provided at one end with a pulley 1.

Mounted in suitable boxes *e* carried by the end plates or uprights A, is a shaft *f*, on which is secured, between the end plates or uprights A, a long drum F. The ends of the shaft *f* are extended beyond their bearings, and on one end fast and loose pulleys 2, 3, are mounted, for the reception of a suitable strap or belt from any convenient source of power. On the other end of the shaft *f*, two pulleys 4, 5, are secured. A strap 6 passes over the pulleys 4 and 1, whereby to transmit motion to the screw E'. A strap 7 passes over the pulley 5 and also over a pulley 8 mounted on a shaft 9 projecting from one of the uprights or end plates A, a pinion 10 being also mounted on said shaft and adapted to rotate with the pulley 1 for a purpose hereinafter explained.

At one end of the bed plate B a head stock G is secured, and at or near the other end of said bed plate B, a tail stock G' is secured, between which stocks the pattern G^2 is held.

Secured at one end of the bed plate C is a head-stock H and in proximity to the other end of the bed plate C a tail stock H′ is secured and between the stocks H, H′, the material H^2 is held. The head stocks G, and H have rotating spindles I driven in correspondence of time by means of a train of gears 11, 12, 13. The train of gears is impelled by the pinion 10 on the shaft 9 above alluded to.

In the upper part of each carriage E a shaft J is located on which an oscillatory bracket K is hung. In the lower end of each bracket K a shaft *h* is mounted and carries a cutter head L, and a pulley 14. The cutter head L (shown in section in Fig. 7) consists of four U-shaped knives *i*, held to a hub *i′* by means of suitable bolts. From this construction and arrangement of parts it will be seen that the cutter heads will be disposed between the bed plates C, D, where they are not likely to conflict with or injure the operator.

Two pulleys 15, 16 are mounted loosely on each shaft J and are adapted to rotate together. Motion is imparted to the pulleys 15 by means of a suitable strap or belt from the long drum F and motion is imparted from the pulleys 16 to the pulleys 14 on the cutter shafts *h* by means of suitable belts. To the laterally and downwardly projecting arm K′ of each bracket K, an arm or lever M is pivotally connected and provided at a point between its ends with an elongated slot *j* in which a pin *j′* projecting from the end of the arm K′ projects. The free end of the arm or lever M is provided with a curved shoe M′, adapted to bear on the pattern G^2, being maintained properly in contact with said pattern by means of a spring O attached at one end to the arm K′ of the oscillatory bracket K and at the other end to the carriage E.

By constructing the machine as above described the material to be turned, is operated upon by the cutters at such an angle as to discharge the chips downward through the space between the bed plates C, and D, thus falling upon the floor in a limited area from which they may be easily gathered by a fan exhauster or other means. In turning sticks of considerable length, as for instance, an ox yoke, the cutter of one carriage may be started into operation at the middle of the stick, and the cutter of the other carriage at the end of the stick; both feeding in the same direction horizontally, either toward the right or toward the left, as desired. When shorter pieces are turned, one carriage alone may be employed.

Various slight changes might be made in the details of construction of my invention without departing from the spirit thereof or limiting its scope, hence I do not wish to limit myself to the precise details of construction herein set forth, but,

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a lathe, the combination with end plates, and a series of bed-plates, of a movable carriage supported by the central bed-plate, cutting and operating mechanism mounted on said carriage, and devices supported solely on each of the side bed plates respectively for supporting the pattern and work, substantially as set forth.

2. The combination with two end plates, of a hollow bed plate secured between said end plates, a sliding carriage carried by said bed plate, a cutter carried by the carriage, and located and operating between two of the bed plates hollow bed plates at each side of and removed from the first-mentioned bed plate and head and tail stocks supported solely on each of said side bed-plates respectively, substantially as set forth.

3. In a lathe, the combination with end plates, of two bed plates, arranged a distance apart, devices carried by one of said bed plates, and a cutter supported by said devices between the bed plates, substantially as set forth.

4. In a lathe, the combination with end plates, of two bed plates secured thereto, a carriage on one of said bed plates, a bracket pivotally supported by said carriage and projecting downwardly between said bed plates; a cutter at the lower end of the bracket and devices carried by the other bed plate for supporting the work, substantially as set forth.

5. In a lathe, the combination with end plates, of two bed plates secured thereto, a carriage carried by one of the bed plates, a bracket pivotally connected to the carriage, a cutter carried by one arm of the bracket and located between the bed plates, a bracket located in position to swing the bracket and devices carried by the other bed plate for supporting the work, substantially as set forth.

6. In a lathe, the combination with a bed plate a carriage mounted thereon and a cutter carried by said carriage, of a bed plate located to one side of the cutter, head and tail stocks carried by the last-mentioned bed plate, said bed plates being so arranged relatively to the cutter, that the latter will operate between them and discharge the chips, &c., downwardly between said bed plates without coming into contact with them, substantially as set forth.

7. In a lathe, the combination with two bed plates, of a carriage carried by one of said bed plates, stocks carried solely by the other bed plate for supporting the material to be acted upon, a bracket carried by said carriage, and a cutter carried by said bracket and disposed between the bed plates in such manner as not to be in the way of the operator, substantially as set forth.

8. In a lathe, the combination with three bed plates, of a carriage carried by the central bed plate, means for moving said carriage, head and tail stocks carried by the two side bed plates, one pair of said stocks being for the reception of the material to be acted upon and the other pair for the pattern, an oscillatory bracket carried by the carriage

one end of the bracket projecting between two of the bed plates and supporting a cutter, in proximity to the material to be acted upon, and a pivoted arm or lever carried by said bracket and adapted to bear on the pattern, substantially as set forth.

9. In a lathe, the combination with a series of hollow bed plates separated from each other, of a carriage carried by the central bed plate, means for moving said carriage, head and tail stocks carried by the two side bed plates, one pair of said stocks being for the reception of the material to be acted upon and the other pair for the pattern, an oscillatory bracket carried by the carriage one end of the bracket projecting between two of the bed plates and supporting a cutter, in proximity to the material to be acted upon, a pivoted arm or lever carried by said bracket and a shoe carried by said arm or lever and adapted to bear on the pattern, substantially as set forth.

10. In a lathe, the combination with three bed plates, of a carriage carried by the central bed plate, means for moving said carriage, head and tail stocks carried by the two side plates, one pair of said stocks being for the reception of the material to be acted upon and the other pair for the pattern, an oscillatory bracket carried by the carriage, one end of the bracket projecting between two of the bed plates and supporting a cutter in proximity to the material to be acted upon, an arm or lever pivotally connected to said bracket and having a limited vibratory movement, a shoe carried by said arm or lever and adapted to bear on the pattern and a spring attached at one end to the carriage and at the other end to the oscillatory bracket, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

CHARLES SEYMOUR.

Witnesses:
GEO. W. DEATRICK,
MAY E. FISHER.