(No Model.)

3 Sheets—Sheet 1.

# F. S. RECHTSTEINER.

## ATTACHMENT FOR LATHES.

No. 502,760. Patented Aug. 8, 1893.

Fig. 1

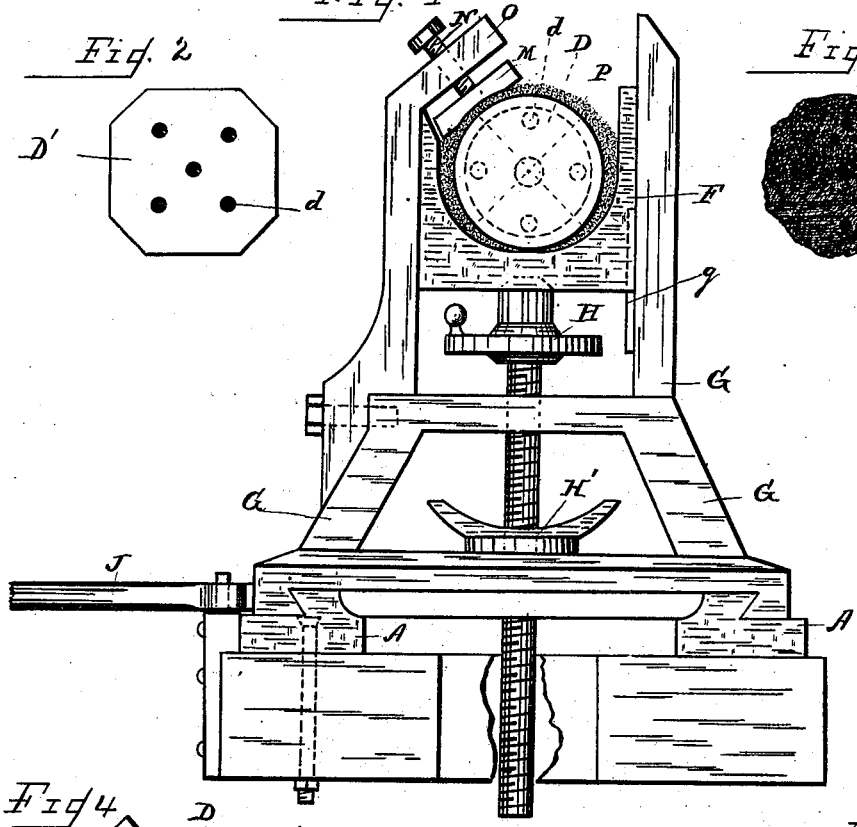



Fig. 2




Fig. 3

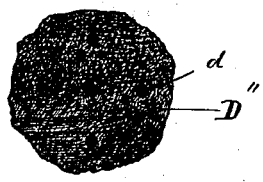



Fig. 4

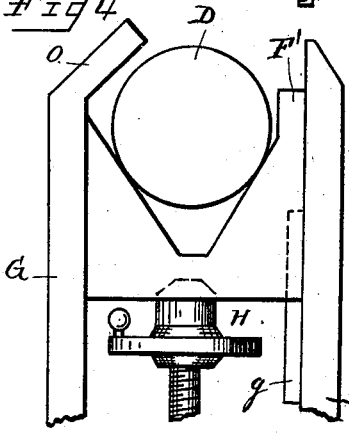



Fig. 5

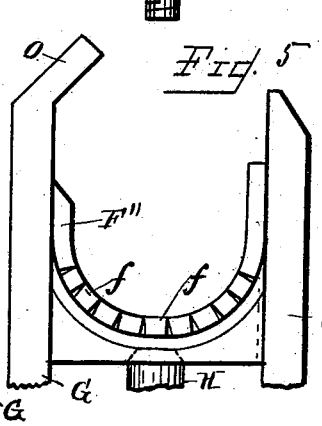
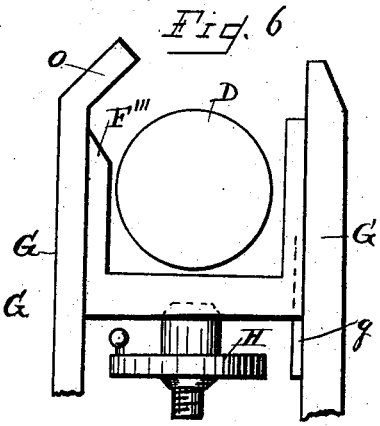



Fig. 6

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(No Model.) 3 Sheets—Sheet 2.

# F. S. RECHTSTEINER.

## ATTACHMENT FOR LATHES.

No. 502,760. Patented Aug. 8, 1893.

Fig. 7.

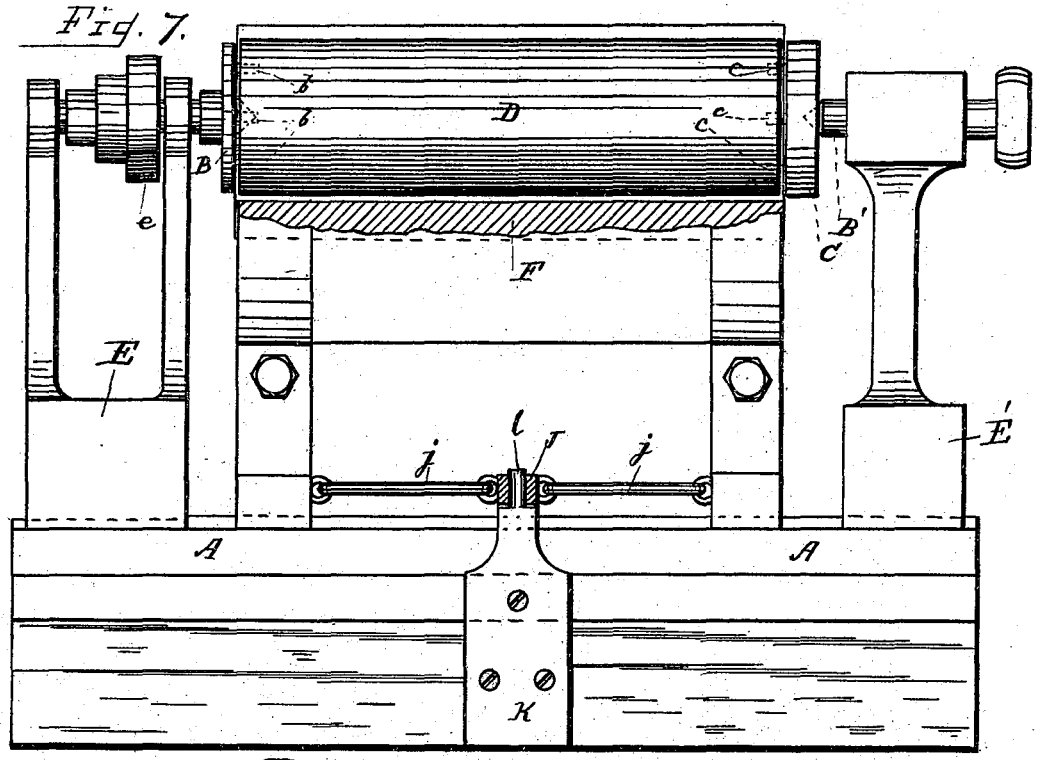
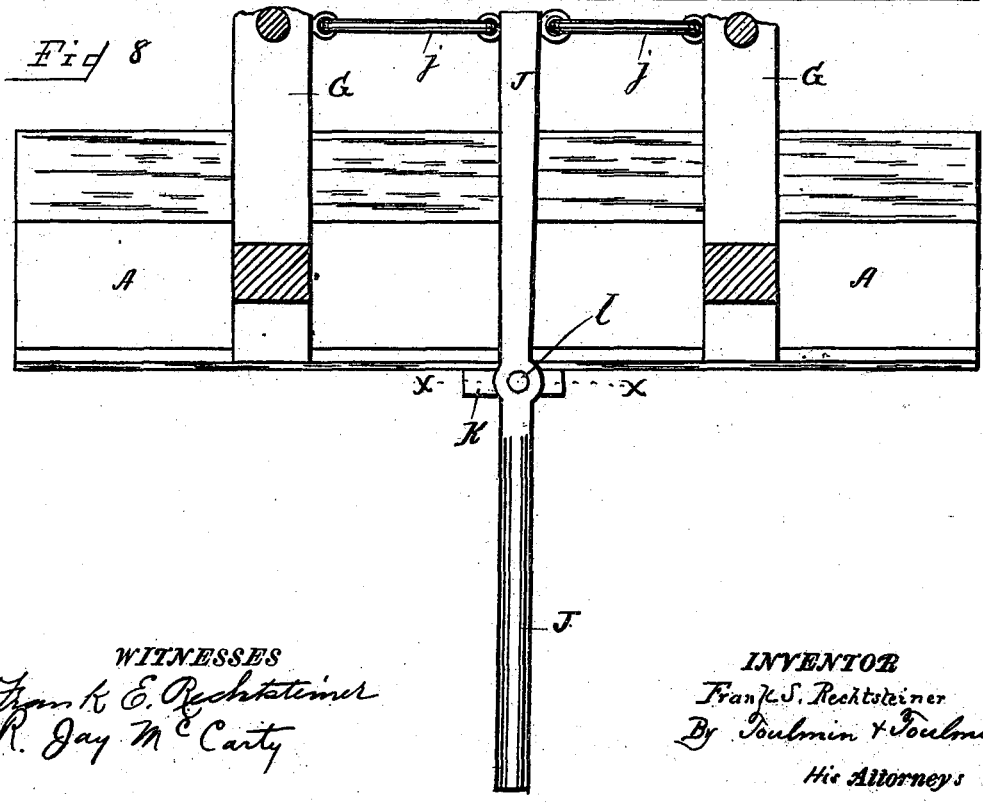



Fig 8

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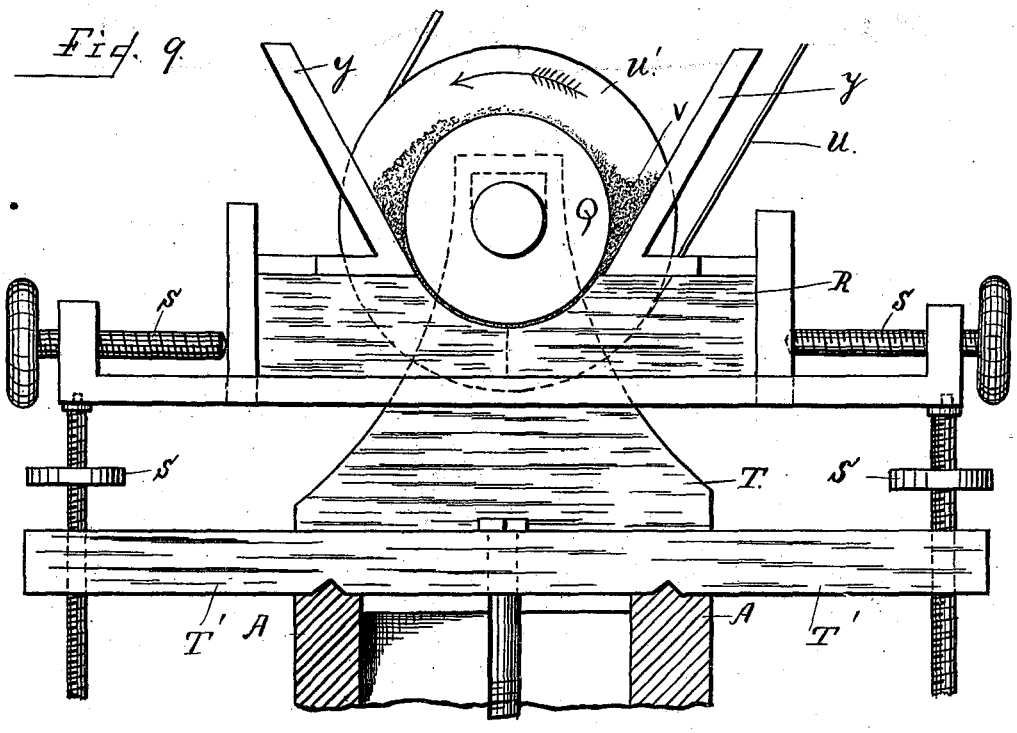
(No Model.) 3 Sheets—Sheet 3.

# F. S. RECHTSTEINER.

## ATTACHMENT FOR LATHES.

No. 502,760. Patented Aug. 8, 1893.

Fig. 9.

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# UNITED STATES PATENT OFFICE.

FRANK S. RECHTSTEINER, OF DAYTON, OHIO.

## ATTACHMENT FOR LATHES.

SPECIFICATION forming part of Letters Patent No. 502,760, dated August 8, 1893.

Application filed April 4, 1892. Serial No. 427,693. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK S. RECHTSTEINER, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Attachments for Lathes, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to improvements in attachments for lathes, and is readily applicable to nearly all ordinary makes of lathes.

The nature and object of the invention are to provide new and useful means for grinding stone, marble or any material of a similar nature, into any desirable length or diameter; of whole, half or quarter columns; of concave, convex or serpentine surface. I also furnish means of executing work of this character in a much quicker length of time, by providing an apparatus which admits of the entire surface of a stone column being abrased or acted upon simultaneously; reducing the same to a more uniform shape. A column of much smaller diameter and greater length can be worked than by the means now in use, all of which will hereinafter be more fully described; attention being directed to the following drawings forming part of this specification, in which similar letters indicate corresponding parts throughout the several views.

Figure 1 is an end view of a lathe showing the attachment embodying my invention. Figs. 2, and 3 are end views of columns of marble, showing different shapes of the same, preparatory to being submitted to the operation. Figs. 4, 5, and 6 respectively present end views of the attachment in modified forms. Fig. 7 is a side elevation of a lathe having my improved attachment applied. Fig. 8 is a detached plan view. Fig. 9 is an end view of my attachment for grinding hollow or concave surfaces.

Letter A represents a lathe having a chuck, B, on the live spindle, provided with two or more prongs *b*.

B′ is the center of the tail stock, and, C, is a plate having a recess in the center, adapted to receive the point of the said center, the said plate being also provided with two or more pins or prongs, C, and is preferably made of brass, such material affording better provision against excessive friction at the point where the center comes in contact with the plate.

D, is a column of marble, the dotted lines indicating a column when divided longitudinally into four sections.

D′, is a solid column of marble and D″, the same in a more roughened and uneven shape, preparatory to being operated upon by my attachment.

*d* is a series of cavities in the ends of said columns, to admit of the insertion of the prongs, *b*, of chuck, B., and pins, *c*, of plate, C, a means serving to hold the column, D, when rotated between the axis of said chuck and center of tail stock.

*e*, is the driving pulley, and, E, the head stock.

F, represents an adjustable trough, which may be made in any desirable length or shape; some of which are shown by letters, F′, F², and F³, in Figs. 4, 5, and 6, of the drawings. There are a variety of modifications into which the trough may be made, without departing from my invention. The said trough may be constructed of any material of sufficient strength and hardness, or it may be constructed with a series of steel ribs embedded in iron at any suitable distance apart as indicated by letter *f* of Fig. 5. I prefer the use of chilled iron or steel in the construction of this trough.

G is a table or the support of the trough.

*g*, is a guide or feather, one end of which is in a slot in the trough, shown in dotted lines, said guide or feather serving to keep the trough from slipping endwise from its support.

H is an adjustable screw by which the trough is lowered or elevated and thereby brought in closer proximity to the rotating column, which is essential to the operation of my device.

H′ is a binding nut which tightens against the table or support G, and prevents the adjustable screw H from slipping backward, while the mechanism is agitated by the rotated column.

J is a hand lever, having a short lateral reciprocating movement, the said hand lever engaging with two rods *j*, attached to the lower portion of the table G, affording means of slightly shifting the trough to the right or

left, an operation which prevents slush forming in ridges around the revolving column. Further reference to this slush will be made.

K is a plate; *l* a bolt pivoting the lever J to said plate, and forming the fulcrum of said lever.

M is a longitudinal grinding plate of any metal having sufficient strength and durability, and of corresponding length to the trough F, adjustable by means of two or more screws to enable its being brought in closer proximity to the rotated column, thereby increasing the area of surface, and affording, with the trough, a more continuous abrasing surface.

N represents binding screws, two or more of which, may be placed at both ends of the grinding plate or midway between the head and tail of the lathe. These screws hold the grinding plate firmly by passing through an inclined extension of the trough support, as shown by letter O.

Various ways may be employed to adjust the trough, and I do not confine myself to any single means of adjusting the same. It will be readily seen that screws, levers, wedges, &c., may be used in this connection.

P represents a quantity of slush in lodgment in, around and between the trough F and the column of marble D; this slush is created by particles of crushed steel or any other abrasive material being commingled with water, and the dust or grindings of the marble, when the same is being rotated in a trough centered between the axis of a chuck and dead center of a lathe, the said slush constantly and symmetrically reducing by abrasion, the column, until the smallest diameter desirable, is attained. I prefer "crushed steel" in various degrees of fineness as the abrasive material to be used in a trough coming in frictional contact with a rotated column either of stone, marble or any other material of a like nature, and do not confine myself to crushed steel alone, as other abrasive material may be used to reduce a column from its roughest form, to a smooth cylindrical shape, first, by the use of coarse-grained material, then to polish and finish the same by the application of a finer grained crushed steel, emery, sandstone, pumice, and lastly, felt, this latter being used to effect a high degree of polish.

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

1. In an attachment to lathes, a trough, having removable extension, consisting of a longitudinal plate, attached thereto, in combination with supporting pieces, having adjusting screws, and a lever whereby the trough may be moved back and forth, in a longitudinal direction, substantially as herein shown and described.

2. An attachment for lathes consisting of a trough adapted to hold abrasive substance, and be adjusted both vertically and laterally beneath a rotated column of stone secured between the centers of a lathe, substantially as described.

3. The trough F, provided with the extension O, and the adjustable grinding plate M, said trough adapted to hold a loose abrading material, and be subjected to a vertical and lateral adjustment, as herein described.

4. The combination with the table G, of a trough provided with the longitudinal ribs (*f*) and adapted to hold a loose abrading material that may be kept in close proximity to a rotating column of stone by means for adjusting said trough both laterally and vertically, and the longitudinal grinding plate M, by means of which the area of abrading surface may be increased or diminished, substantially as herein described.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK S. RECHTSTEINER.

Witnesses:

RICHARD J. MCCARTY,

HARVEY CONOVER, Jr.