3 Sheets—Sheet 1.

L. S. HOGEBOOM.
Millstone-Dresser.

No. 197,274. **Patented Nov. 20, 1877.**

Fig. 1.

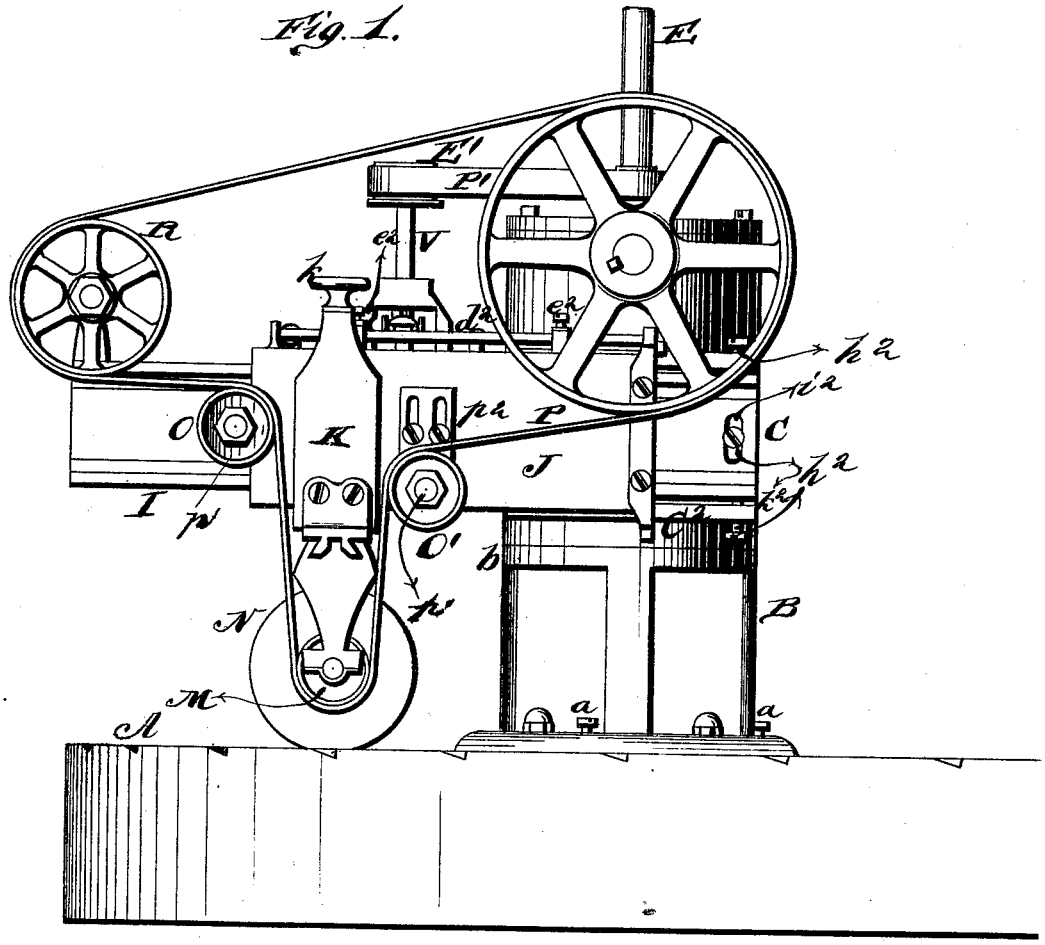
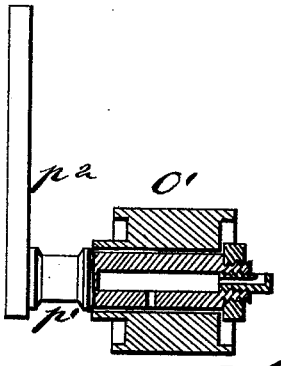


Fig. 2.



WITNESSES

Robert Everett

George E. Upham

INVENTOR.

Levi S. Hogeboom.

Gilmore, Smith & Co.

ATTORNEYS.

3 Sheets—Sheet 2.

L. S. HOGEBOOM.

Millstone-Dresser.

No. 197,274. Patented Nov. 20, 1877.

Fig. 3.

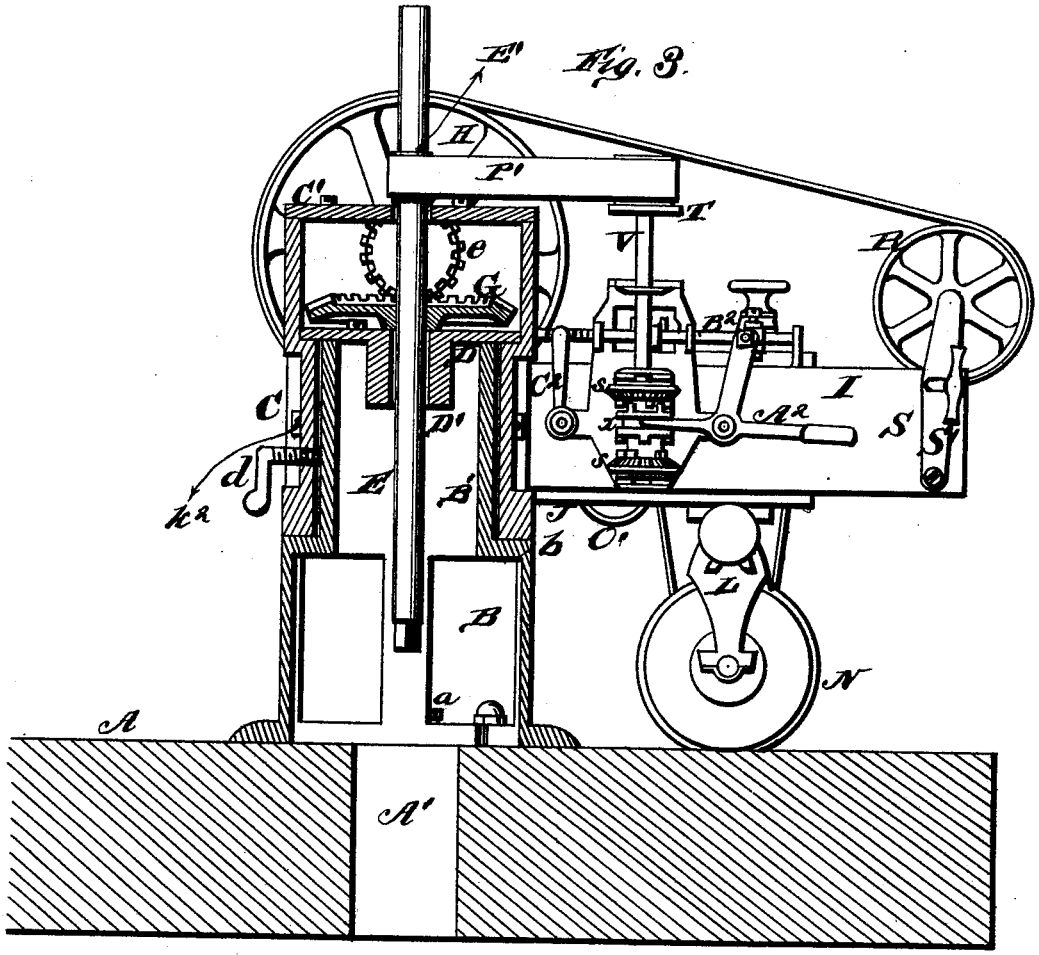
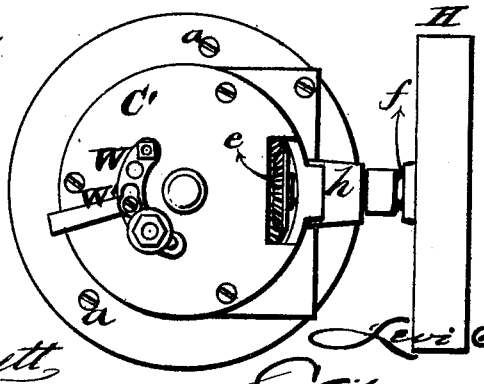


Fig. 4.



WITNESSES

Robert Everett

George E. Upham

INVENTOR.

Levi S. Hogeboom.

Gilmore, Smith & Co.

ATTORNEYS.

3 Sheets—Sheet 3.

L. S. HOGEBOOM.
Millstone-Dresser.

No. 197,274. **Patented Nov. 20, 1877.**

Fig. 5.

Fig. 6.

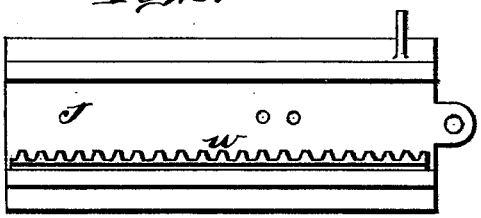


Fig. 7.

Fig. 8.

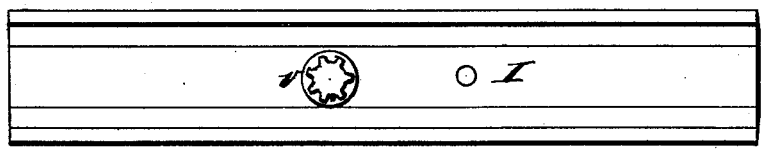


Fig. 9.

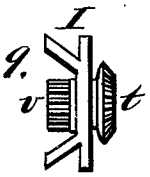


Fig. 10.

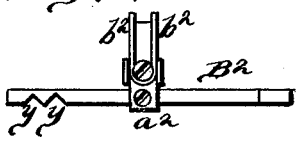


Fig. 11.

Fig. 12.

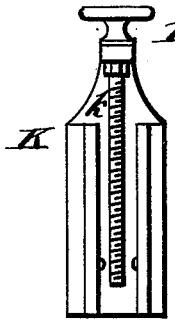


Fig. 13.

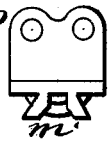


Fig. 14.

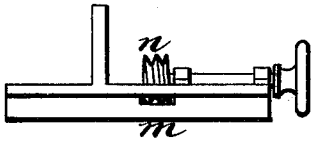
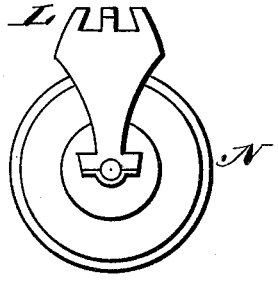


Fig. 15.



WITNESSES.

Robert Everett

George E. Upham

INVENTOR.

Levi S. Hogeboom.

Gilmore, Smith & Co.

ATTORNEYS.

UNITED STATES PATENT OFFICE.

LEVI S. HOGEBOOM, OF THREE RIVERS, MICHIGAN.

IMPROVEMENT IN MILLSTONE-DRESSERS.

Specification forming part of Letters Patent No. **197,274**, dated November 20, 1877; application filed September 8, 1877.

To all whom it may concern:

Be it known that I, LEVI S. HOGEBOOM, of Three Rivers, in the county of St. Joseph and State of Michigan, have invented a new and valuable Improvement in Millstone-Dressers; 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, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a side view of my millstone-dresser. Fig. 2 is a sectional detail. Fig. 3 is a longitudinal vertical sectional view. Fig. 4 is a detail plan view; and Figs. 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, and 15 are detail views thereof.

The nature of my invention consists in the construction and arrangement of a machine for dressing millstones, as will be hereinafter more fully set forth.

The annexed drawings, to which reference is made, fully illustrate my invention.

A represents the millstone to be dressed, provided with the eye A^1, around which, on top of the stone, is secured a frame, B, leveled by means of set-screws *a a*. This frame B is formed with a tubular upwardly-projecting center, B^1, with a shoulder or offset, *b*, around its lower end. Around the center B^1 is placed a cylindrical casing, C, which rests upon the shoulder *b*, and which carries the entire mechanism. The casing C is movable around the center B^1, so as to bring the cutting-wheel to bear upon any part of the millstone by simply turning the casing on its center. The casing is held at any point desired by a set-screw, *d*, passing through the same, and bearing against the outside of the center B^1.

On top of the tubular center B^1 is fastened a plate, D, which extends over an interior shoulder in the top part of the casing, and holds said casing down upon its seat. This plate is provided with a downwardly-projecting hub, D′, to form a guide for a shaft, E, which passes through said hub, and to which the power is applied for running the machine. On this shaft, within the thus formed upper chamber of the casing, is secured a beveled-gear wheel, G, which meshes with a pinion, *e*, on the inner end of a shaft, *f*. This shaft has its bearing in a hollow arm, *h*, projecting from the side of the casing, at or near the top, and on the outer end of the shaft is a band-wheel, H.

From the side of the casing C projects a horizontal arm, I, attached to flanges on the casing by means of bolts, and so arranged that it can be thrown, at a slight inclination, either up or down, if desired.

The arm I is formed with longitudinal grooves in its upper and lower edges, and in the same slides a carriage, J, back and forth, operated automatically by devices, as will be hereinafter described.

On this carriage is an L-shaped arm, K, movable up and down upon guides *i i*, and adjusted by means of a screw, *k*. The horizontal part of the arm K is, on its under side, provided with dovetailed guides *m*, on which slides a frame, L, carrying in its lower portion a pulley, M, and cutting-wheel N.

It will readily be seen that, by the up-and-down adjustment of the arm K, and the lateral adjustment of the frame L, the wheel N can be brought to bear on the millstone at any angle desired, and with more or less pressure, according to the depth of the dress required.

n represents the screw for adjusting the frame L.

The carriage J supports two idle horizontal pulleys O, and O′, the former being mounted upon a stationary stud, *p*, and the latter upon a stud, p^1, projecting from a slotted plate, p^2, which is adjustable up and down upon the carriage to keep the belt P tight.

This belt passes around the band-wheel H, and around a pulley, R, mounted upon an arm, S, attached to the stationary arm or way I. From below these the belt passes over the two idle-pulleys O O′, and down and around the pulley M, by which arrangement the belt will always remain at the same tension when the carriage J moves back and forth.

The carriage is moved by the following means: The shaft E passes up through a covering-plate, C^1, on top of the casing C, and above the same it is formed or provided with a pulley, E′, around which is passed an endless belt, P′, passing around a pulley, T, on an

upright shaft, V, having its bearings in a frame or plates attached to the back of the arm I, on the casing C. The belt P′ is kept taut by means of a belt-tightener, W, arranged on top of the cover C¹.

On the upright shaft V are loosely placed two bevel-gears, *s s*, which are placed one above and the other below, and both meshing with a bevel-gear, *t*, mounted on a short shaft in the arm I. On the other end of this shaft is a pinion, *r*, which gears with a rack-bar, *w*, attached to the back of the carriage J.

Between the two gears *s s*, on the shaft V, is a double clutch, *x*, feathered to the shaft, and movable up and down, so as to be thrown in gear with either one of the said gears, and thus cause the carriage J to be moved in either direction.

The clutch *x* is moved automatically, at the proper time to reverse the motion of the carriage, by means of a T-shaped lever, A^2, pivoted at its center on a stud at the back of the arm J. One of the side arms of the lever A^2 forms a handle for moving the clutch by hand. The other side arm is forked, and straddles the clutch in a circumferential groove thereon.

The center arm of the lever A^2 extends upward, and is pivoted to a horizontally-sliding bar, B^2, moving in suitable guides attached to the arm I. The other end of the bar B^2 is formed with two notches, *y y*, into which takes a spring, C^2, for holding said bar, and preventing the clutch *x* from slipping or accidentally becoming moved from either of its positions.

On the bar B^2 is an adjustable sleeve or collar, a^2, fastened by a set-screw, and from the same project two spring-wire arms, b^2 b^2, which extend over a bar, d^2, fastened on top of the carriage J. This bar d^2 is provided with two adjustable stops, e^2 e^2, to come in contact with the spring-arms b^2.

As the carriage is moving in one direction, and just as it completes the stroke, the stop e^2 strikes the spring-arm b^2, and moves the sliding bar d^2, which shifts the clutch, and the carriage at once returns. At the completion of the return-stroke the other stop e^2 strikes the other arm b^2, and the clutch is again shifted to reverse the carriage.

By adjusting the stops e^2—that is, moving them outward or inward—the amount or extent of movement of the carriage is easily regulated.

The carriage may be stopped by placing the clutch between the gears *s s*, without being in gear with either.

The arms b^2, being made of spring-wire or spring metal, yield a little to the action of the stops e^2, and thus prevent any sudden jar to the machinery.

The arm I, which carries the operating mechanism, is, as stated, adjustable, so as to be placed at an inclination. This is for the purpose of making the furrows deep or shallow at the eye of the stone, as desired, and the adjustment of the bar is accomplished by means of set-screws h^2 h^2 passing through the flanges C^2 C^2 on the casing, between which the bar is placed, said set-screws bearing against the top and bottom edges of the bar at the inner end. The bar is then fastened by a bolt, k^2, passing through a slot, i^2, therein, as shown.

The arm S, which supports the pulley R, is adjustable, so as to tighten the belt, as required, by a screw, S′, passing through a small slot in the lever.

The studs or spindles upon which the pulleys R O O′ are placed are drilled out for oiling, and the end of the bore stopped by a plug; then holes drilled in the bottom of the spindle to conduct the oil to the bearings of the pulleys.

The belt-tightening pulley W, above mentioned, is mounted on an upright spindle projecting from one arm of a lever, W′, which is pivoted at one end, and adjusted by a set-screw in a slot in said lever.

The cutting-wheel N is composed of corundum mixed with rock, millstone, or other hard substance.

It will be noticed that the machine is made so as to reverse and work on furrows with left-hand draft as well as right-hand.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a millstone-dresser, the arm I, supporting the entire operating mechanism, held between flanges C^2 on the rotating casing C, and made adjustable by means of set-screws h^2, substantially as and for the purposes herein set forth.

2. The combination of the reciprocating carriage J, vertically-adjustable arm K, and the laterally-adjustable frame L, carrying the emery-wheel N, substantially as and for the purposes herein set forth.

3. The arrangement of the band-wheel H, the stationary idle-pulley O, adjustable idle-pulley O′, and pulley M on the emery-wheel N, said three pulleys moving with the carriage J, and the adjustable pulley R on the arm I, substantially as and for the purposes herein set forth.

4. The combination of the clutch *x*, lever A^2, notched sliding bar B^2, spring C^2, spring-arms b^2, and the adjustable stops e^2 on the carriage J, substantially as and for the purposes herein set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

LEVI S. HOGEBOOM.

Witnesses:
DEPU P. NEVINS,
G. W. BUCK.