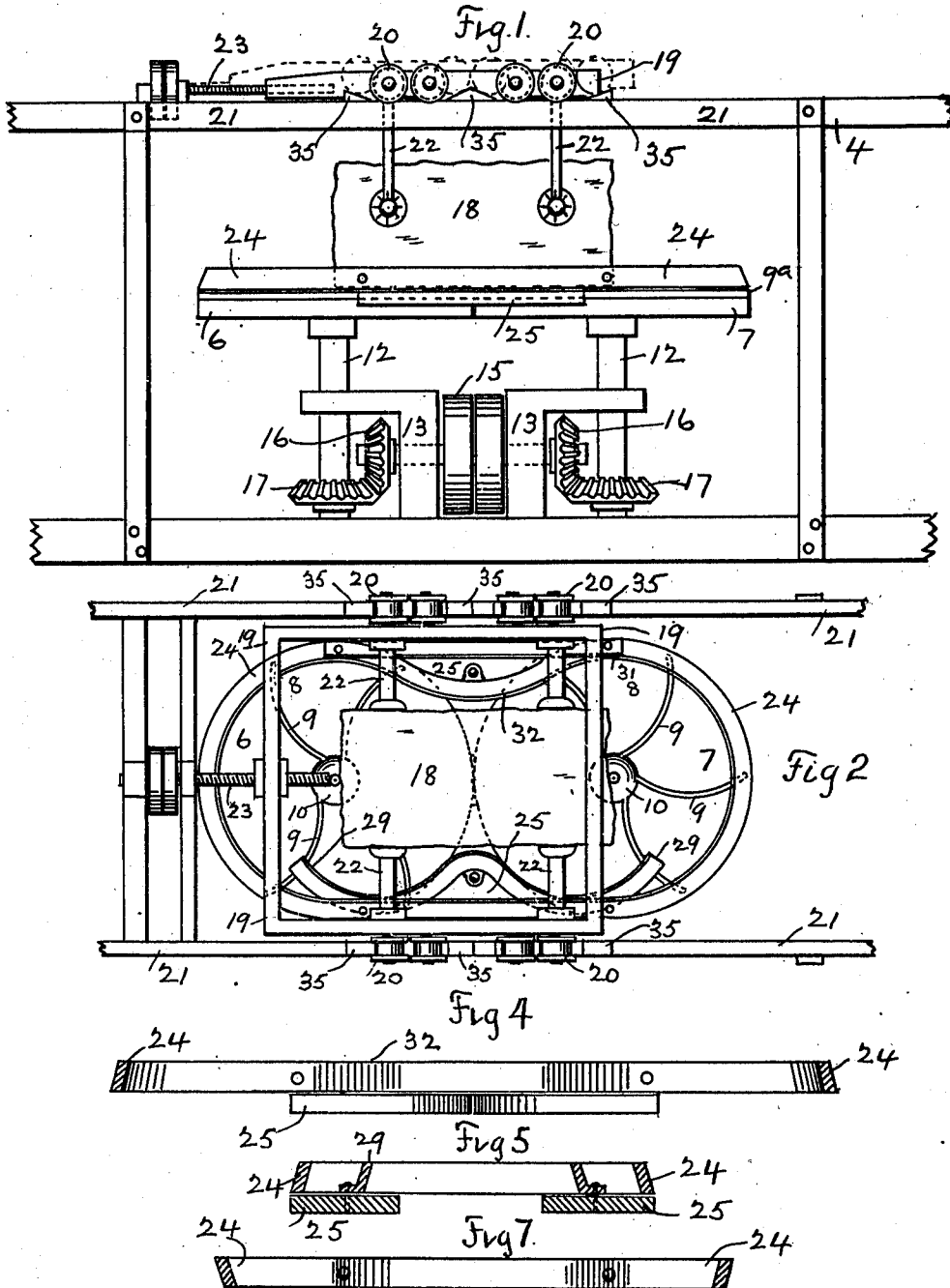


E. COLLINS.
STONE DRESSING MACHINE.
APPLICATION FILED DEC. 9, 1908.

989,122.

Patented Apr. 11, 1911.

2 SHEETS—SHEET 1.

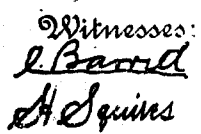


Witnesses:
O. Barnett
H. Squires

Inventor
Edward Collins

989,122.

2 SHEETS—SHEET 2.



Inventor
Edward Collins

UNITED STATES PATENT OFFICE.

EDWARD COLLINS, OF BROOKLYN, NEW YORK.

STONE-DRESSING MACHINE.

989,122.

Specification of Letters Patent.

Patented Apr. 11, 1911.

Application filed December 9, 1909. Serial No. 532,173.

To all whom it may concern:

Be it known that I, EDWARD COLLINS, citizen of the United States, and resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Stone-Dressing Machines, of which the following is a specification.

My invention relates to stone dressing machines, and the object is to provide means for retaining the cutting medium upon the revolving disks or circular plates.

Another object is to provide means for raising the stone operated upon when it is traveling backward and forward over the revolving disks.

Referring to the drawings:—Figure 1. is a side elevation of a stone dressing machine embodying my improvements. Fig. 2. is a top view of the same. Fig. 3. is a detached plan view of the retaining rim showing the attachments thereto, enlarged. Fig. 4. is a longitudinal section of the rim on line *x x*, Fig. 3. Fig. 5. is cross sectional view of the rim on line *y y*, Fig. 3. Fig. 6. is another elevation of a stone dressing machine showing the method by which the revolving disks are magnetized, and used in conjunction with the retaining rim. Fig. 7. is a longitudinal section of a modified form of the rim.

The stone dressing machine in this case comprises the frame 4, suitably braced and supported on a bed plate 5. Within this frame revolve two disks or plates 6 and 7 in close proximity to each other, see Figs. 1—2. The faces 8 of these disks are each provided with curved grooves 9 commencing from the center of the disk and terminating at or near the outer edge of the same where they are suitably closed or cut-off, see Fig. 2. The side walls of the grooves 9 may be made either perpendicular or inclined inwardly, but preferably inclined inwardly. The grooves can be cut in the faces of the disks or created by segments 9^a fastened on the top of the disks at certain distances apart, said distances corresponding to the width of the grooves. The face of each of the disks has a center hole 10, and around this hole is formed a circular depression, or dish, leading into the curved grooves 9. The disks are each mounted on the upper end of a hollow vertical shaft 12, supported on ball bearings mounted on the base plate 5. These shafts 12 are further supported by block bearings 13 supported in the bed plate; and these blocks 13 are

bearing supports for the driving axles 14, upon which are mounted the driving pulleys 15, and bevel gears 16, which mesh into the bevel gears 17 mounted on the hollow vertical shafts 12. This mechanism revolves the disks 6 and 7 in the direction of the arrows, Fig. 2.

Over the revolving disks 6—7 is suspended the material 18 to be cut or dressed, said material may consist of a stone of any character. The stone is suspended from the traveling carriage 19 by grappling arms 22, which are suitably connected to the said carriage, and made adjustable in order to adjust the stone above the disks for regulating the distance, said distance should be however sufficient to allow the chilled shot, the cutting material, to pass under the stone and effect the required cutting action. The carriage travels backward and forward on the top rail 21, of the frame, upon the grooved wheels 20 mounted on said carriage, see Figs. 1—2. The carriage is moved back and forth by the worm shaft 23, mounted on frame and suitably operated automatically. To prevent the chilled shot being centrifugally thrown off the revolving disks 6—7 I use the retaining rim or fender 24 intended to rest on the said disks at or near their outer edges, see Figs. 1—2 and 3. The edge of this rim-fender is preferably inclined inward, see Figs. 4—5, but under certain conditions, this edge is inclined outward, see Fig. 7, or perpendicular, see Fig. 6. The rim 24 is secured to the joining pieces 25 which fill in the spaces between the centers of the wheel. These pieces are suitably connected to the frame of the machine. By this means of securing the rim 24 it is prevented from shifting laterally on the disks when they are revolving, and also prevented from lifting bodily off the same. As the faces of the disks wear down in cutting the stone the rim must conform thereto; and I employ any suitable means to adjustably regulate the resting of the rim on the disks that will conform to the wearing away of the said disks. The rim on the inside, at point 28, has secured to it the curved deflecting rim 29, the outer ends thereof being so curved that it will throw the chilled shot toward the center of the disks. At 31 the inside of the rim 24, has secured to it the directing shield 32 serving to throw the cutting material or chilled shot toward and under the stone. Both the deflecting rim

29, and the directing shield 32 have their rim edges inclined inwardly. Now as the cutting material, or chilled shot, reaches the disks, either by hydraulic pressure forcing the shot up through the hollow vertical shaft 12, or by means of tubes directing it from above the disks down on the same; it will be forcibly carried under the stone and retained upon the disks by the curved deflecting rim 29 and shield 32, and also by that portion 33 of the directing rim 24. No occasion can now arise for the said cutting material being centrifugally forced off the disks in their revolutions until it has produced its work and become reduced to uselessness, in which state it will be carried off by the water usually used with the chilled shot in these machines.

As the cutting material is thrown against the shield 32, at 34, between the stone and rim, it may have a tendency to bank itself up at that point, and be prevented from passing under the stone for doing effective work on same. This objectionable feature I overcome by raising the carriage 19, as it travels to and fro on the frame, which lifting action will also raise the stone sufficiently to release the pent up cutting material, and allow it to pass under the stone. I raise the carriage 19 by the wedges 35 mounted on the rails 21, and as the wheels 20 of the carriage mount, the said wedges in either travel they will of necessity carry with it the carriage and the stone attached or suspended therefrom. It may be advisable under certain conditions to magnetize the revolving disks to retain the cutting material thereupon. In Fig. 6, I have shown a machine having magnetizing disks, and also the above described mechanical means for retaining the cutting material on the disks for the purpose of showing how the two can be worked together and in conjunction with each other. I have shown three wedges 35. The center wedge tends to raise the stone bodily. The two end wedges tend to tilt the stone when raising same. This is necessary under certain conditions. The rim 24 need not be secured to the deflecting rim 29 and directing shield 32 rigidly. To effect the best result of the rim on the disks, adjustably, the securing points should be pivoted.

What I claim is,—

1. In a stone dressing machine consisting of revolving curved grooved disks, an inwardly inclined retaining rim or fender,

resting upon said disk around the outer edges, an inwardly inclined deflecting rim, said deflecting rim secured to the inside of said retaining rim at the point where the disks travel outwardly and means for supporting said retaining rim in position.

2. In a stone dressing machine comprising revolving curved grooved disks, an inwardly inclined retaining rim or fender resting on the outer edges of said disk, an inwardly inclined deflecting rim, secured to the inside of said retaining rim, at a point where the said disks travel outwardly, a directing shield secured to said retaining rim at a point where the said disks travel inwardly, means for supporting and retaining said oblong retaining rim.

3. In a stone dressing machine, comprising a frame, revolving curved grooved disks, a traveling carriage, with traveling wheels, supporting the cutting material over the said disks, means for raising the said carriage and stone at the end of said carriage travel, compressing wedges, said wedges mounted on the top rail of the said frame, and over which ride the traveling wheels of the said carriage for effecting the carriage lift to permit the stone suspended therefrom to rise to allow the cutting material to pass under said stone.

4. In a stone dressing machine a retaining rim revolving curved closed grooved disks on which the said retaining rim rests and encircling the outer edges thereof, means for holding said rim from moving laterally upon said disks and means for preventing the said rim lifting bodily off said disks, and means for adjustably conforming said rim to the wearing down of the faces of said disks, and means for supporting and revolving said disks.

5. In a stone dressing machine mechanism for retaining the cutting material on the revolving disk of said machine, comprising a rim or fender resting and encircling the said revolving disk, said fender having its edges inclined outwardly, means for supporting said fender in a stationary yielding position on the said disk, and means for revolving said disks.

Signed at Brooklyn in the county of Kings and State of New York this 6th day December A. D. 1909.

EDWARD COLLINS.

Witnesses:

ELIZABETH COLLINS,
MICHAEL N. DELAGI.