

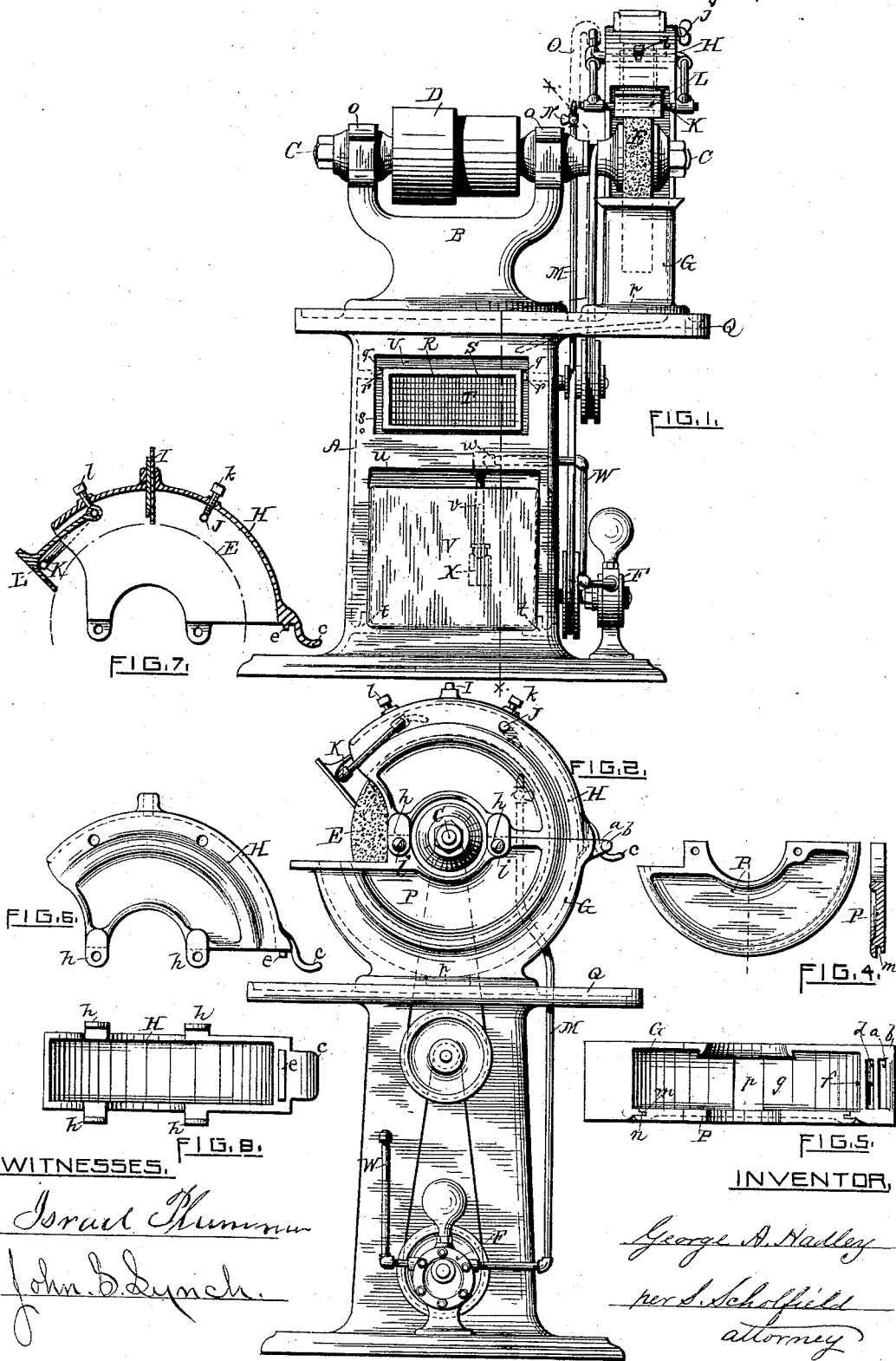
(No Model.)

2 Sheets—Sheet 1.

G. A. HADLEY.
GRINDING MACHINE.

No. 385,666.

Patented July 3, 1888.



(No Model.)

2 Sheets—Sheet 2.

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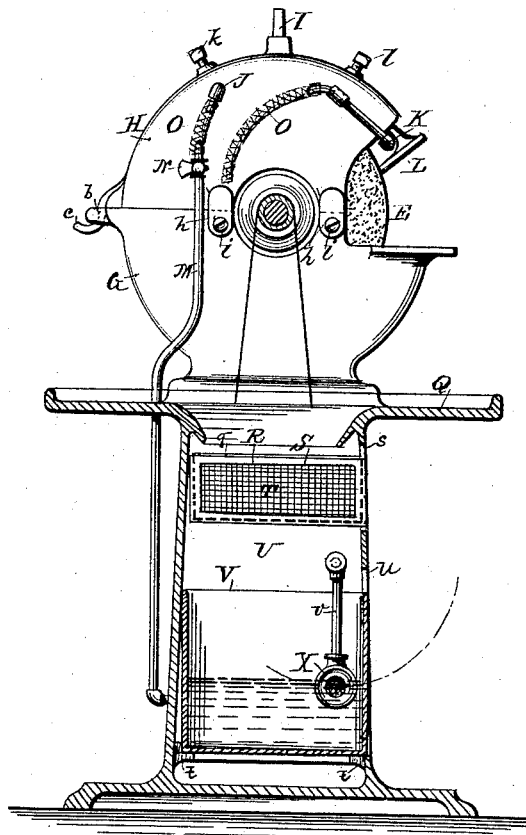


FIG. 3.

WITNESSES.

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UNITED STATES PATENT OFFICE.

GEORGE A. HADLEY, OF PROVIDENCE, RHODE ISLAND.

GRINDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 385,666, dated July 3, 1888.

Application filed May 7, 1886. Serial No. 201,488. (No model.)

To all whom it may concern:

Be it known that I, GEORGE A. HADLEY, of Providence, in the State of Rhode Island, have invented a new and useful Improvement in Grinding-Machines, of which the following is a specification.

My invention relates to that class of grinding-machines in which a grinding-wheel is employed in connection with a constantly-circulating stream of water, which serves to prevent the piece of work from becoming heated in the operation of grinding; and it consists in the combination of the pump, a removable reservoir-pan, and a filter pivoted to the suction-pipe of the pump and adapted to draw the water from the said reservoir-pan, and to be turned upward upon its pivot in order to effect the desired removal of the reservoir-pan, and also in the improved construction of the case, whereby the grinding-wheel can be readily removed and the leakage of water be prevented at the joints of the sections of the case, as hereinafter fully set forth.

Figure 1 is a front elevation with the closing doors of the hollow standard of the frame removed, showing the filtering-pan and the reservoir-pan for the circulating water. Fig. 2 is a side elevation of the machine. Fig. 3 is a vertical section taken in the line *x x* of Fig. 1. Figs. 4 to 8, inclusive, are detail views illustrating the improved construction of the case for the grinding-wheel.

In the accompanying drawings, A is the hollow standard of the frame of the machine; B, the head for holding the arbor C; D, the driving-pulleys; E, the grinding-wheel, and F the pump for causing the proper circulation of water to the periphery of the grinding-wheel.

G is the lower portion of the wheel-case, and H the upper portion of the same. The parts G and H are connected to each other by means of the slot *a*, made in the backwardly-extending lip *b* upon the part G and the curved tongue or hook *c* upon the part H; and in order to prevent leakage at the hinge-joint so formed I provide a groove, *d*, made parallel with the slot *a* upon the portion G, and a downwardly-extending lip, *e*, upon the portion H, adapted to enter the groove *d*, and also make a perforation, *f*, extending from the bottom of the groove *d* to the wheel-chamber *g*,

as shown in Fig. 5, which shows a top view of the lower portion of the wheel-case, Fig. 6 being a side elevation of the upper portion of the wheel case, and Fig. 8 an under view of the same.

The upper portion, H, of the case is provided with the ears *h h*, which are perforated to receive the screws *i*, by means of which secure attachment is made with the portion G. The portion H is also provided with a sliding gate, I, adapted to fit against the periphery of the wheel E, as shown by the dotted lines in the vertical section of the portion H, (shown in Fig. 7,) the gate I being held in proper position by means of a thumb screw, *j*. Behind the gate I, and extending transversely of the case H, is placed the sprinkler-pipe J, which is held in position for throwing jets against the periphery of the wheel E by means of the set-screw *k*, and in front of the gate I is placed the sprinkler-pipe K, which is pivoted to the case H, and is located immediately back of the guard-piece L, which is also pivoted to the case H, and which is held in proper position with the periphery of the grinding-wheel by means of the set-screw *l*. The ejection-pipe M of the pump extends upward to the stop-cock N, and from thence connection is made to either of the sprinkler pipes, J or K, as desired, by means of the removable flexible tube O.

The case G is provided with a removable side, P, made in segment form, as shown in side elevation and vertical section in Fig. 4, the lower edge of which is provided with a circular groove, *m*, adapted to fit over the corresponding circular rib, *n*, of the case G, and when it is desired to remove the grinding-wheel E from the arbor C, I have only to turn back the upper portion, H, of the case on the hinge-joint and slide the segment P circularly until it can be removed from the side of the case G. Then the wheel E, which is of less diameter than the diameter of the removed segment, can be removed from the arbor C through the opening so formed in the side of the case G. I can therefore remove the wheel without being obliged to raise the caps of the bearing-boxes *o* of the arbor, which is a very desirable improvement in machines of this class. The water from the grinding-wheel, with the material abraded from the work which

is being ground, passes downward through the passage *p* in the bottom of the case *G* and over the surface of the table *Q*, or along a passage in the same, to the filter-pan *R*, which is
 5 made principally of a frame, *S*, inclosing a bottom and four sides of fine wire gauze, *T*, and the filter-pan *R* is also provided with opposite laterally-extending ribs, *q*, which rest upon the slides *r r*, projecting inward from the sides of
 10 the chamber *U* of the frame-standard *A*, as shown in Fig. 1, whereby the filter-pan *R* can be drawn out through the opening *s* whenever it is desired to empty the accumulated sediment from the same. Directly under the fil-
 15 ter-pan *R* is placed the reservoir-pan *V*, which is supported in the slides *t t*, (shown by dotted lines in Fig. 1,) so that the pan *V* can be drawn out at the opening *u* whenever it is desired to empty the water from the same.
 20 The suction-pipe *W* of the pump *F* is provided with a filter, *X*, attached to the lower end of the pipe *v*, which is pivoted to the end *w* of the suction-pipe, so that as the reservoir-pan *V* is being drawn out at the opening *u* the
 25 lower end of the pipe *v* will be caused to move in the arc of a circle, as shown by the broken line in Fig. 3, thus allowing the ready removal and reinsertion of the reservoir-pan. The pump *F* is preferably of the rotary class, and
 30 is driven by means of suitable bands and pulleys, as shown in Figs. 1 and 2.

It is of course to be understood that the po-

sitions of the rib and groove which serve to join the case and removable segment may be reversed, so that the circular groove will be
 35 made upon the case and the corresponding rib upon the segment.

I claim as my invention—

1. In combination, the removable reservoir-pan, the pump, and the filter pivoted to the
 40 suction-pipe of the pump and adapted to draw the water from the said reservoir-pan and to be turned upward upon its pivot in order to effect the desired removal of the said pan, substantially as described.

2. In combination, the lower section of the
 45 wheel-case provided with the slot, the groove, and the perforation extending from the groove, and the upper section of the wheel-case provided with the curved tongue or hook, and
 50 the downwardly-extending lip which enters the said groove, substantially as and for the purpose specified.

3. In combination, the rotary arbor, the
 55 grinding-wheel, the case provided with a circular rib, and the removable segment provided with a groove adapted to fit over the corresponding rib of the case, substantially as and for the purpose specified.

GEORGE A. HADLEY.

Witnesses:

SOCRATES SCHOLFIELD,
 GEORGE D. BRIGGS.