

(No Model.)

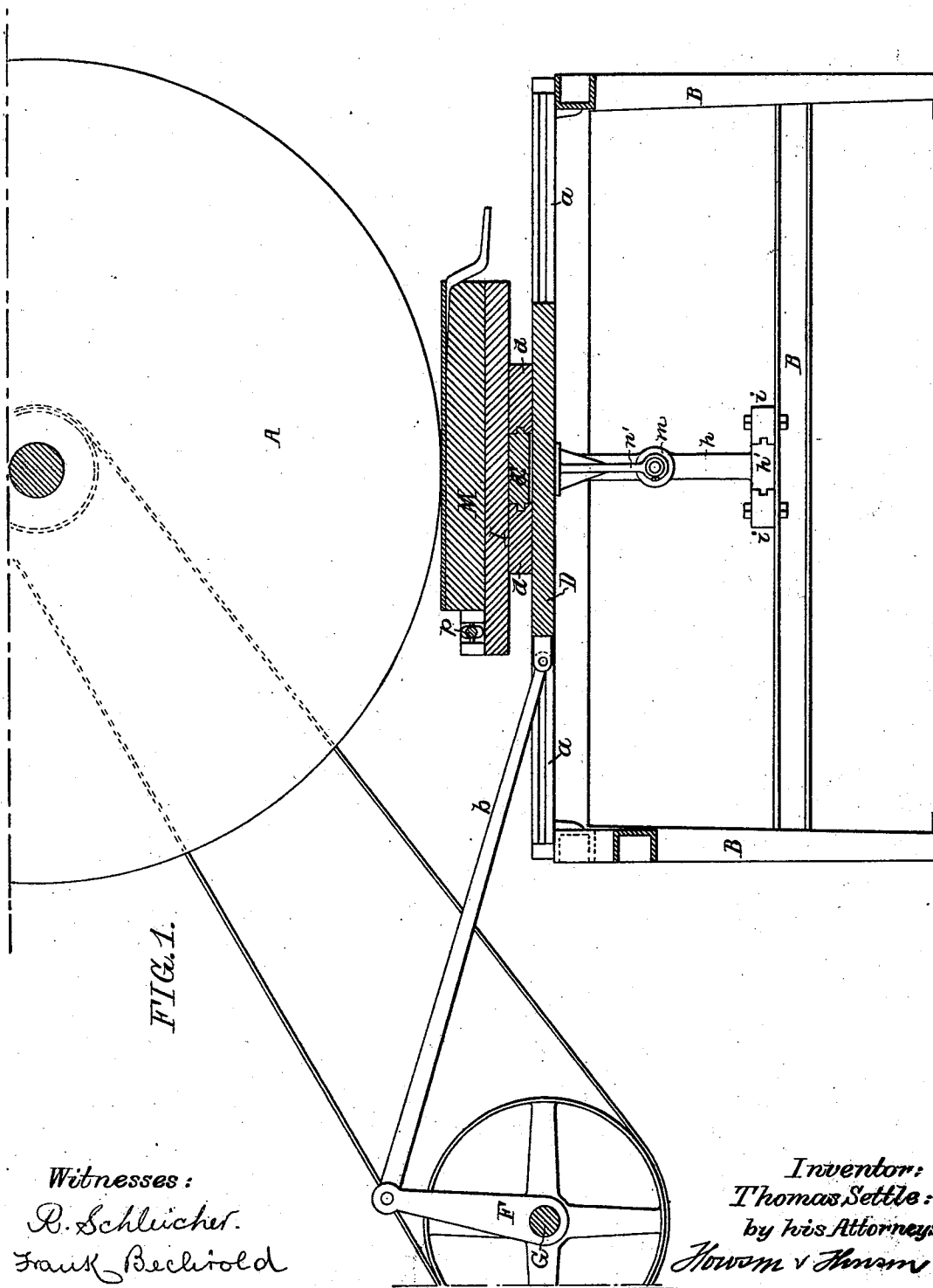
2 Sheets—Sheet 1.

T. SETTLE.

WORK CARRYING DEVICE FOR GRINDING MACHINES.

No. 510,196.

Patented Dec. 5, 1893.



Witnesses:
R. Schluicher.
Frank Bechold

Inventor:
Thomas Settle:
by his Attorneys
Howson & Henning

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FIG. 2.

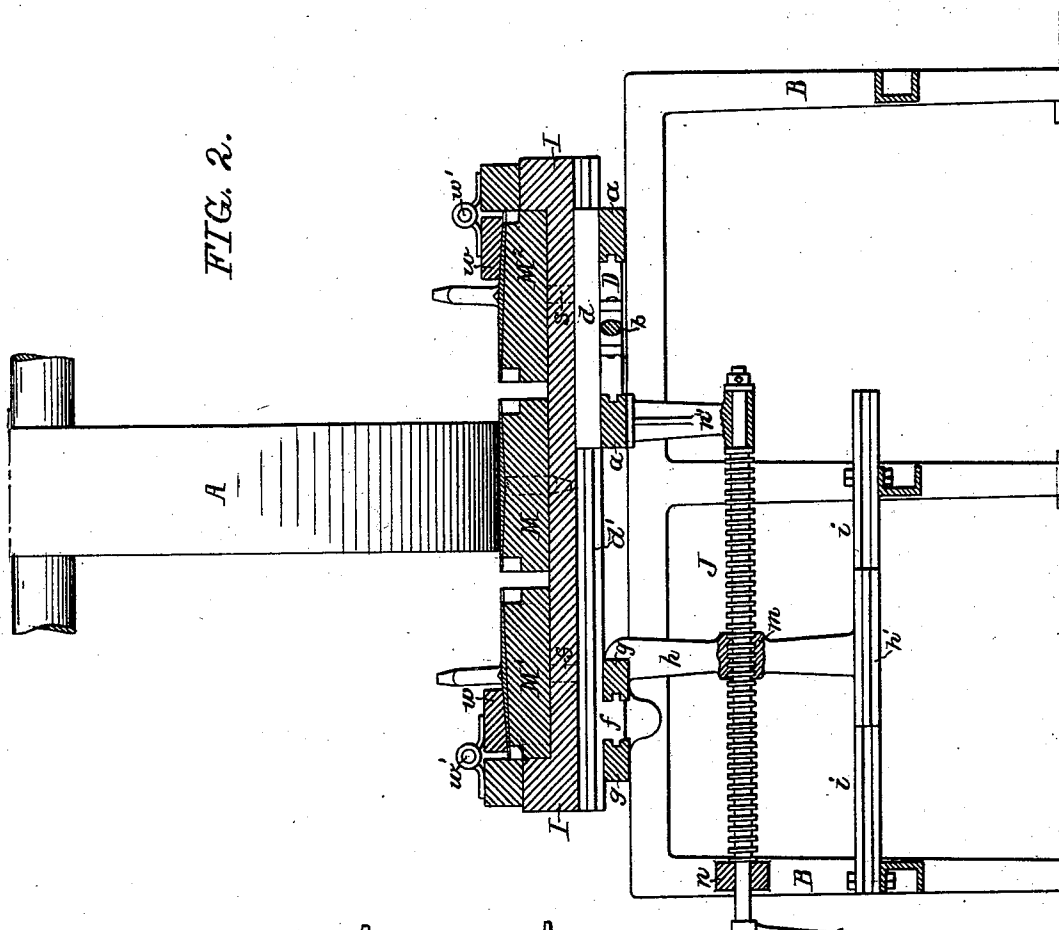
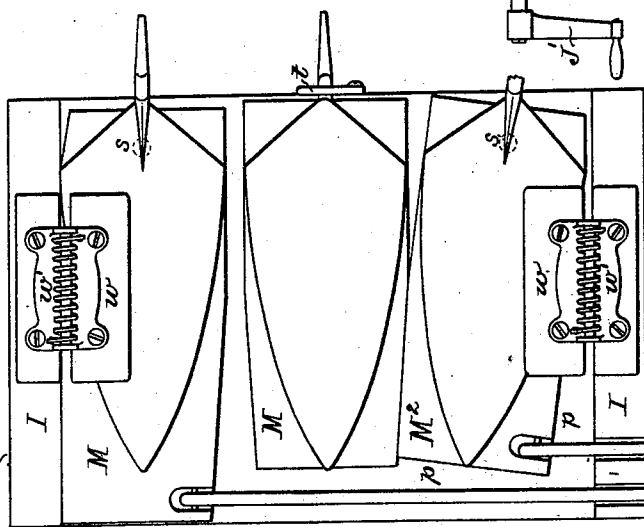


FIG. 3.



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UNITED STATES PATENT OFFICE.

THOMAS SETTLE, OF PHILADELPHIA, PENNSYLVANIA.

WORK-CARRYING DEVICE FOR GRINDING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 510,196, dated December 5, 1893.

Application filed September 26, 1893. Serial No. 486,528. (No model.)

To all whom it may concern:

Be it known that I, THOMAS SETTLE, a citizen of the United States, residing at Philadelphia, Pennsylvania, have invented certain
5 Improvements in Work-Carrying Devices for Grinding-Machines, of which the following is a specification.

One object of my invention is to so construct work carrying devices for a grinding
10 machine as to effect the movement of the work beneath the grind stone or other grinding surface mechanically, and without the exercise of as much care or skill on the part of the attendant, as usual, a further object being to provide for the rapid and effective
15 grinding of blades or plates which have tapered portions. These objects I attain in the manner hereinafter set forth, reference being had to the accompanying drawings, in which—
20 Figure 1, is a longitudinal sectional view of work carrying devices for grinding machines constructed in accordance with my invention. Fig. 2, is a transverse section of the same; and Fig. 3, is a plan view of the special form of
25 work carrier shown in Figs. 1 and 2.

The grinding device may be a stone A or other suitable grinding surface mounted and rotated in the usual or any suitable bearing above the work table, my invention having no
30 reference to the construction or method of mounting or driving the stone, but relating wholly to the construction and operation of the work holder, which I will now proceed to describe.

B is a frame upon which is rigidly mounted a pair of longitudinal guide bars *a* having their inner faces grooved for the reception of ribs upon a sliding cross head D which is connected by a rod or link *b* to a crank F
40 upon a shaft G which is intended to be slowly rotated in any suitable manner, as for instance by an endless chain or belt adapted to sprocket wheels or pulleys on said shaft and on the shaft of the grinding wheel or disk.

Upon the cross head D, or secured to the same, are transverse guide bars *d* grooved for the reception of a rib *d'* upon the transverse work table I, said table also having a supplementary cross head *f* guided between bars *g*
50 constituting part of a frame which is mounted upon the frame B and has a depending arm *h* provided at its lower end with a head *h'*

which is suitably guided by means of fixed transverse bars *i* on the frame B. The depending arm *h* is also provided with a nut *m* 55 which is adapted to a feed screw J free to turn in suitable bearings in a bar *n* and depending bracket *n'* but having no longitudinal movement.

The outer end of the feed screw J is constructed for the reception of a suitable operating handle J' or it may be driven by belt and pulley from any suitable rotating shaft of the machine so as to receive a continuous movement, the feed screw in this case being preferably right and left threaded, so as to change the direction of movement of the guides *g* at each end of their travel. It will thus be seen that the work mounted upon the table I will receive a continuous back
60 and forth longitudinal movement beneath the stone and also a slow transverse movement so as to expose all portions of the work to the grinding action and carry said work from side to side of the stone so as to insure the even wear of the grinding surface of the latter. 75

Various forms of work holders may be employed, depending upon the character of the work to be performed, the work holder which I have shown in the drawings and which
80 forms a special feature of my invention, being intended for grinding trowels, which have a flat face and a back beveled in opposite directions from the center.

Upon the work table I are mounted three 85 blocks M, M' and M² the central block M being secured in position in any available manner but the outer blocks M', M² being provided with pivot pins *s* near one end as shown by dotted lines in Figs. 2 and 3 so that these
90 blocks can be swung upon the table I to a limited extent, being retained in either position of adjustment by means of latches *p* engaging with a plate *p'* at the edge of the work table. The central block M has its upper
95 surface shaped to receive the beveled back of the blade, but the outer blocks M' and M² have upper surfaces beveled in opposite directions so that a trowel blade applied to one of these blocks will present one side of its
100 back, say the right hand side, in proper position for the action of the stone A, while a blade applied to the other block will present the opposite or left hand side of its back in

proper position for such action. In one complete transverse movement of the work table, therefore, the stone will act upon one side of the back of the blade carried by the outer block M', upon the flat face of the blade carried by the central block M, and upon one side of the back of the blade carried by the outer block M², and, when the grinding of these surfaces has been completed, a fresh blade may be applied to the block M and the blades of the blocks M', M² may be shifted from one to the other so as to grind the other side of the back of each blade. By swinging the blocks M', M² the back of each blade may be ground off level at the point of the blade instead of continuing the central rib completely to the point. Suitable clamps are employed to hold the blades in proper position upon the supporting blocks, a central turn-buckle *t* being sufficient in the case of the central block M and clamping bars *w* carried by spring hinges *w'* being employed in connection with the outer blocks M' M².

By providing for the automatic longitudinal movement of the work beneath the stone a great portion of the labor involved in hand grinding is dispensed with, and if the feed screw J is also operated automatically or by power the work of the grinder is reduced to a minimum, being mainly devoted to the application of the work to and its removal from the work table and to the supervision of the grinding operation, so that a single attendant can, in many cases, take charge of more than one stone.

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

1. The combination of a stone or like grinding device, a frame having longitudinal guides, a cross head adapted to said guides, a

power driven shaft provided with means for reciprocating said cross head, a work carrier mounted upon but free to slide transversely on said cross head, a second cross head on said work carrier, supplementary guides for said second cross head, and means for moving said guides in a direction at right angles to the movement of the reciprocating cross head, substantially as specified.

2. The combination of a stone or like grinding device, the frame having longitudinal guides, the cross head adapted to said guides, the power driven shaft provided with means for reciprocating said cross head, the work carrier mounted upon but free to slide transversely on the reciprocating cross head, a second cross head on said work carrier, supplementary guides for said second cross head, a nut carried by said supplementary guides, a feed screw adapted to said nut, and means for turning said feed screw in either direction, substantially as specified.

3. The combination of the work table with a central block having a recessed face, and outer blocks having inclined or beveled faces, in combination with means for clamping to said blocks the blades to be ground, substantially as specified.

4. The combination of the work table with blocks pivoted thereto near one end, and presenting inclined upper faces, in combination with clamps for securing to said blocks the blades to be ground, substantially as specified.

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

THOMAS SETTLE.

Witnesses:

FRANK E. BECHTOLD,
JOSEPH H. KLEIN.