

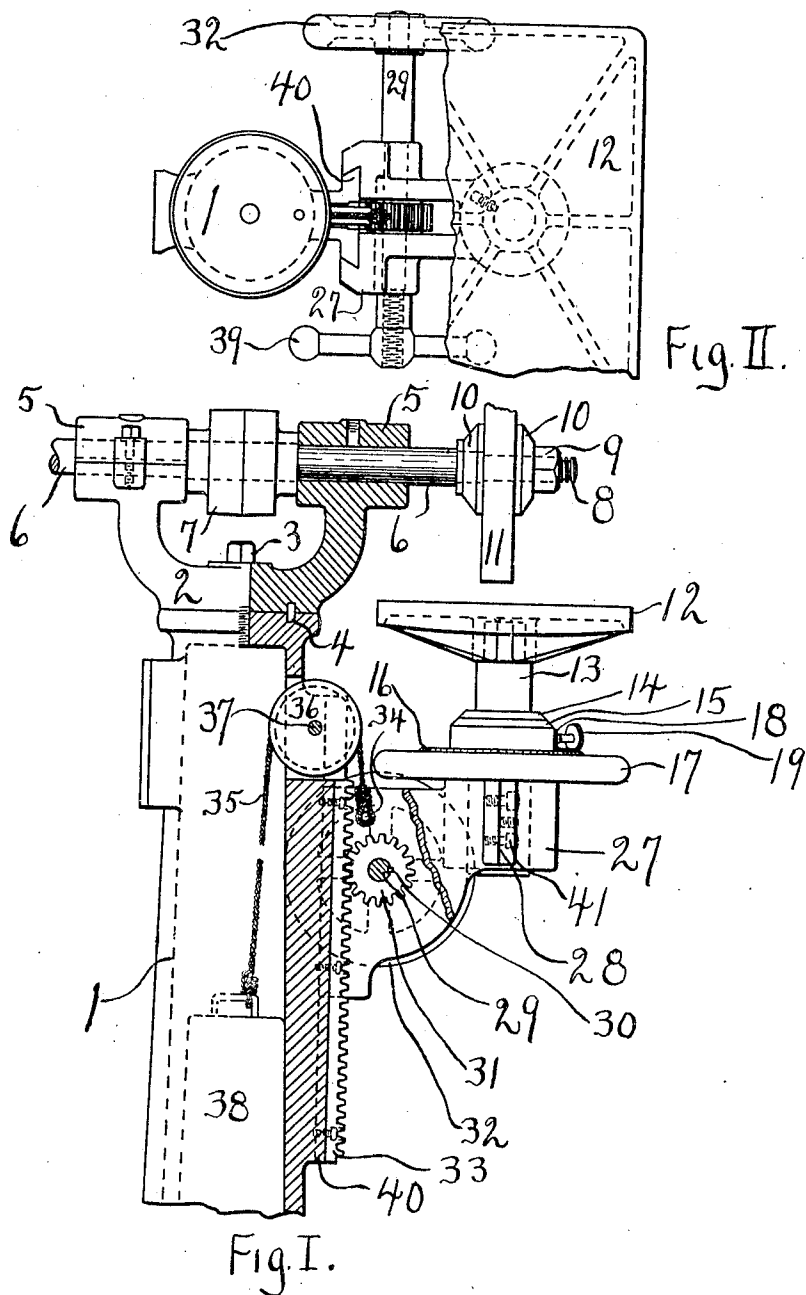
No. 876,372.

PATENTED JAN. 14, 1908.

R. C. MATTHEWS.
SURFACE GRINDING MACHINE.

APPLICATION FILED SEPT. 3, 1907.

2 SHEETS—SHEET 1.



WITNESSES:

William A. Radske.
Oscar W. Dauber.

INVENTOR

Robert C. Matthews.

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Andrew H. Neureuther

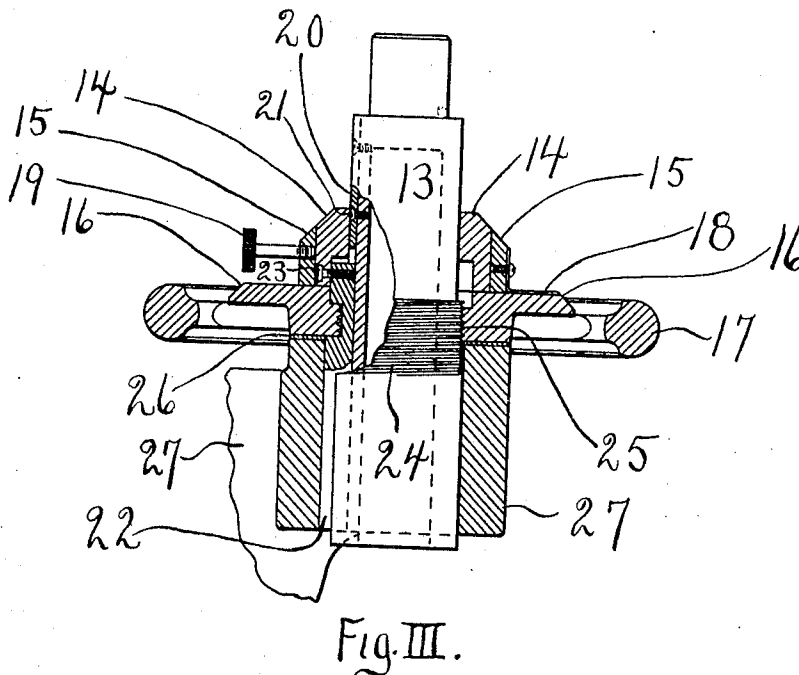
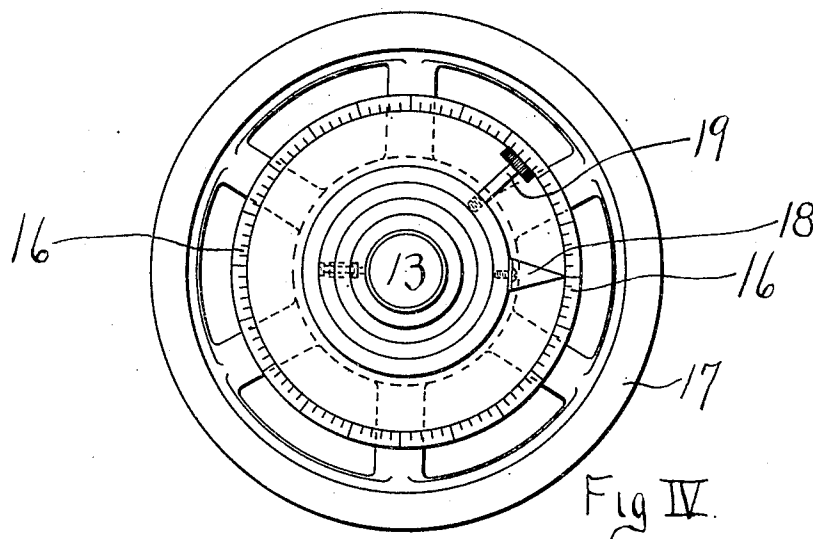
ATTORNEY

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UNITED STATES PATENT OFFICE.

ROBERT C. MATTHEWS, OF PERU, ILLINOIS, ASSIGNOR TO LA SALLE MACHINE & TOOL COMPANY, OF LA SALLE, ILLINOIS, A CORPORATION OF ILLINOIS.

SURFACE-GRINDING MACHINE.

No. 876,372.

Specification of Letters Patent.

Patented Jan. 14, 1908.

Application filed September 3, 1907. Serial No. 391,097.

To all whom it may concern:

Be it known that I, ROBERT C. MATTHEWS, a citizen of the United States, residing in the city of Peru, in the county of Lasalle and State of Illinois, have invented certain new and useful Improvements in Flat-Surface-Grinding Machines, of which the following is a specification.

This invention relates to certain improvements in grinding machines, more particularly to the class known as flat surface grinders, and has for its object the production of a grinder which has a quick raising device for the table, in connection with an accurately dividing or micrometer adjustment for same.

The invention further consists in certain novel features in the construction, in arrangement of parts and details, as more fully and particularly pointed out in the specification and claims, and shown in the accompanying drawings, in which

Figure 1 is a front view of a machine of my invention having a part shown in section. Fig. 2 is a top view of Fig. 1 with head and part of table removed. Fig. 3 is a vertical cross-sectional view of the micrometer table raising device. Fig. 4 is a top view of Fig. 3.

Similar parts are represented by the same numerals in all the drawings.

In the drawings, 1 represents the pedestal of the grinder, on which is mounted the head frame 2, which is fastened to pedestal 1 by means of cap bolt 3 and dowel pin 4. Head frame 2 has the usual bearings 5 with the shaft 6 rotatably mounted therein, and a belt pulley 7 rigidly fastened on said shaft 6. Shaft 6 has a shouldered portion terminating with a screw thread 8 at each end for fastening an emery wheel 11 between the collars 10, by means of the nut 9.

The pedestal 1 has formed on its side a V-shaped guide 40 upon which is slidably mounted a bracket or knee 27, which supports the adjustably mounted work table 12. The portion of knee 27 which engages the V-shaped part 40 of pedestal 1, comprises a fork shaped end which has rotatably mounted in its members a shouldered shaft 29, on which is rigidly mounted, by means of key 30, the gear 31, said gear 31 being between the members of 27 and in mesh with a gear rack 33, which is rigidly mounted on the pedestal 1. Shaft 29 has mounted on one of its ends a handwheel 32 for moving said shaft 29 and gear 31, which gives the knee 27,

and the table 12, which is further adjustably mounted thereon, a vertical motion. Knee 27 has a cord 35 fastened to it by means of a pin 34, which passes over a pulley 36 rotatably mounted on a pin 37 fastened in the pedestal 1, and which has a weight 38 fastened at its other end, the pedestal 1 being cast with a space for the weight. This weight 38 serves to counter-balance the weight of the knee 27 and table 12. On the other end of shaft 29 is formed a screw thread which has a hand nut 39 fitted to same, and which, when taken in connection with the shouldered portion of shaft 29, serves as a means for drawing together or clamping the forked members of knee 27 on the V-shaped portion of pedestal 1, thus enabling the operator to practically rigidly connect the knee and the pedestal.

The knee 27 has an aperture in its other extremity which is slotted vertically at 28 and is made smaller or larger and locked by means of the screws 41 shown. This aperture also has a key seat for a key 22 (see Fig. 3), which key has a portion cut away, as shown, to permit the threaded aperture of a handwheel 17 to engage with the threaded portion of the table supporting member 13. This member 13 is slidably mounted in the above mentioned aperture in knee 27 and is prevented from rotating by means of the said key 22 which feathers in a slot in said member 13 as shown. It is evident from this construction that any rotation of handwheel 17 can not rotate member 13, but can only raise or lower it.

26 is a washer or collar between knee 27 and hand wheel 17 to make a better bearing and lessen the wear. The hand wheel 17 which envelops the member 13 is graduated to any convenient scale at 16 (see Fig. 4) and comprises the micrometer feed for raising or lowering the table very small distances. Adjacent to and above hand wheel 17, is a collar 14 which envelops the member 13 and has a recessed portion into which the key 22 projects, said collar 14 being rigidly fastened to said key by means of a screw 23. This collar 14 protects the more delicate parts, such as the screw thread and key seat, of the device, from the emery dust, which is well known to be destructive to the rubbing surfaces of machines. To this end also the upper end of the key seat for key 22 is filled, as shown, by means of piece 20 and screws

21. Rotatably mounted on this dust proof collar 14 is a collar 15 which has an index or pointer 18 fastened to it by means of the screw shown, and whose index or pointer reaches to the graduated scale 16 on the hand wheel 17. This collar 15 enables the operator to set the pointer 18 back to the zero of the graduation at any part of the vertical travel of the table 12 (the value of this feature will be explained below), where it is clamped by means of the thumb screw 19 in said collar 15, where it remains stationary, while hand wheel 17 can be rotated to raise or lower the table 12 any required number of divisions of the graduated scale 16 on said hand wheel 17.

In practice my grinder is operated as follows: The piece to be ground is put on the table 12 immediately below the grinding wheel 11, the table 12 is quickly raised by means of the hand wheel 32 of the knee 27, until the work is near the wheel 11, when the knee 27 is clamped by means of the handle 39, as above explained. Then the table 12 is further raised by means of hand wheel 17 and the work is pushed over the table immediately below wheel 11, until the wheel just touches the work when the index or pointer 18 is clamped at zero, when the operator can take off any amount he desires, as he then has simply to gradually set up the required number of divisions on the graduated scale 16.

It is evident from the above description of the device that it is simple, compact and inexpensive to manufacture.

It will be understood, of course, I do not wish to limit myself to the exact arrangement and shape of parts herein shown, but have here shown a form of my device which can be taken in a sense diagrammatic of devices all of which will contain and be within the scope of my invention.

I claim:

1. In a surface grinding machine, the com-

bination of a knee slidably mounted on a pedestal, with a work table adjustably mounted on said knee and comprising a cylindrical member having a threaded portion and a keyseat into which feathers a key which is fastened to said knee and which has a notch to permit the threaded portion of a hand wheel, supported by said knee, to engage the threaded portion of said cylindrical member.

2. In a surface grinding machine, the combination of a knee slidably mounted on a pedestal, with a work table adjustably mounted on said knee and comprising a cylindrical member having a threaded portion and a keyseat into which feathers a key which is fastened to said knee and which has a notch to permit the threaded portion of a hand wheel, supported by said knee, to engage the threaded portion of said cylindrical member, a dust proof ring rigidly fastened to said key, a collar rotatably mounted on said ring, having a pointer fastened thereto projecting to a graduated scale on said hand wheel and a thumb screw for locking said collar.

3. In a surface grinding machine, a micrometer adjustment for the working table comprising a cylindrical member having an external threaded portion and a key seat, a key which feathers in said key seat fastened to the knee, a notch in said key to permit the threaded aperture of the hand wheel, which envelops said cylindrical member and is supported by said knee, to engage the threaded portion of said member, a dust ring rigidly fastened to said key, a collar rotatably mounted on said dust ring, which has a pointer projecting to a graduated scale on said hand wheel and a thumb screw for locking said collar.

ROBERT C. MATTHEWS.

Witnesses:

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G. W. SCOTT.