No. 649,317. Patented May 8, 1900.

A. B. LANDIS.

GRINDING MACHINE.

(Application filed Jan. 20, 1900.)

(No Model.) 3 Sheets—Sheet 1.

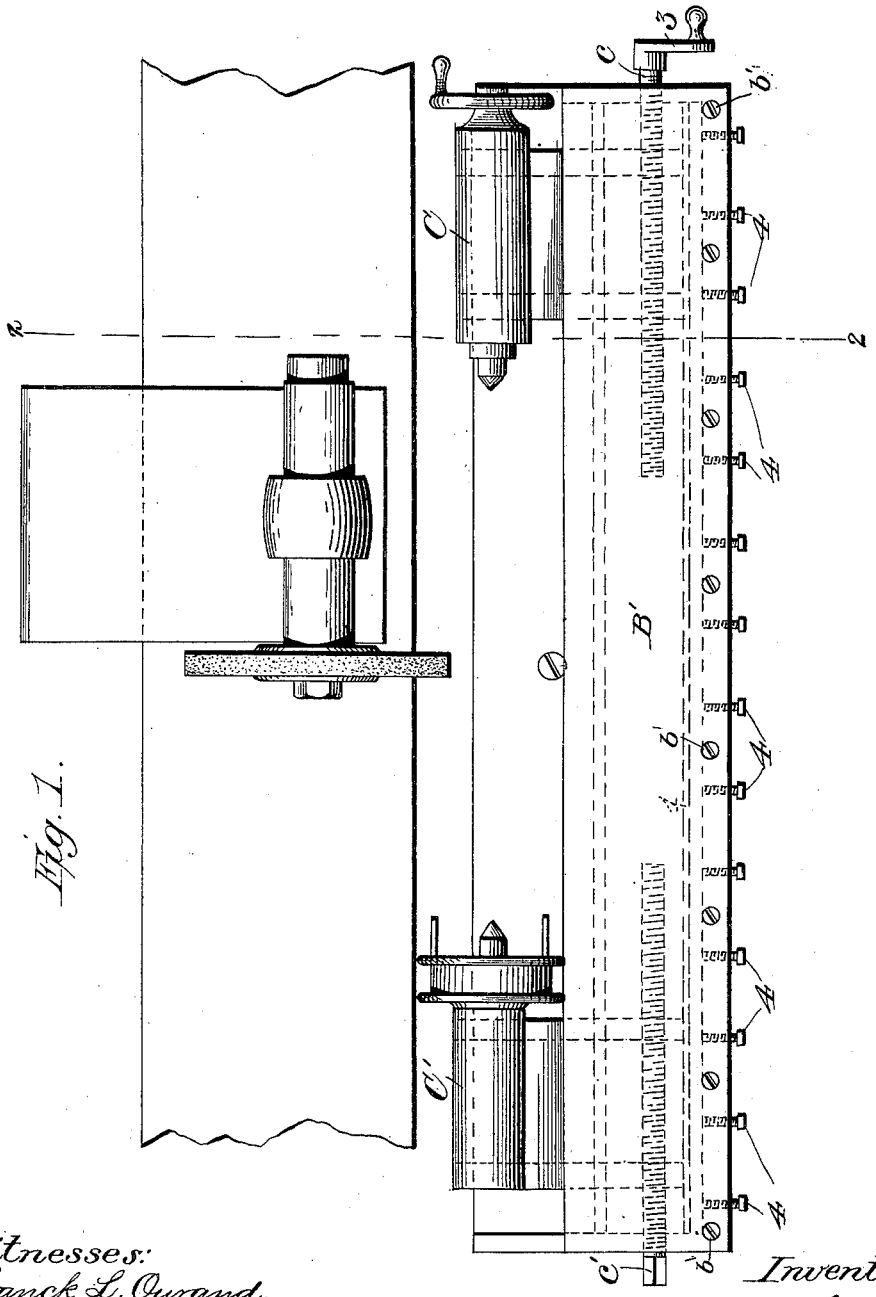

Fig. 1.

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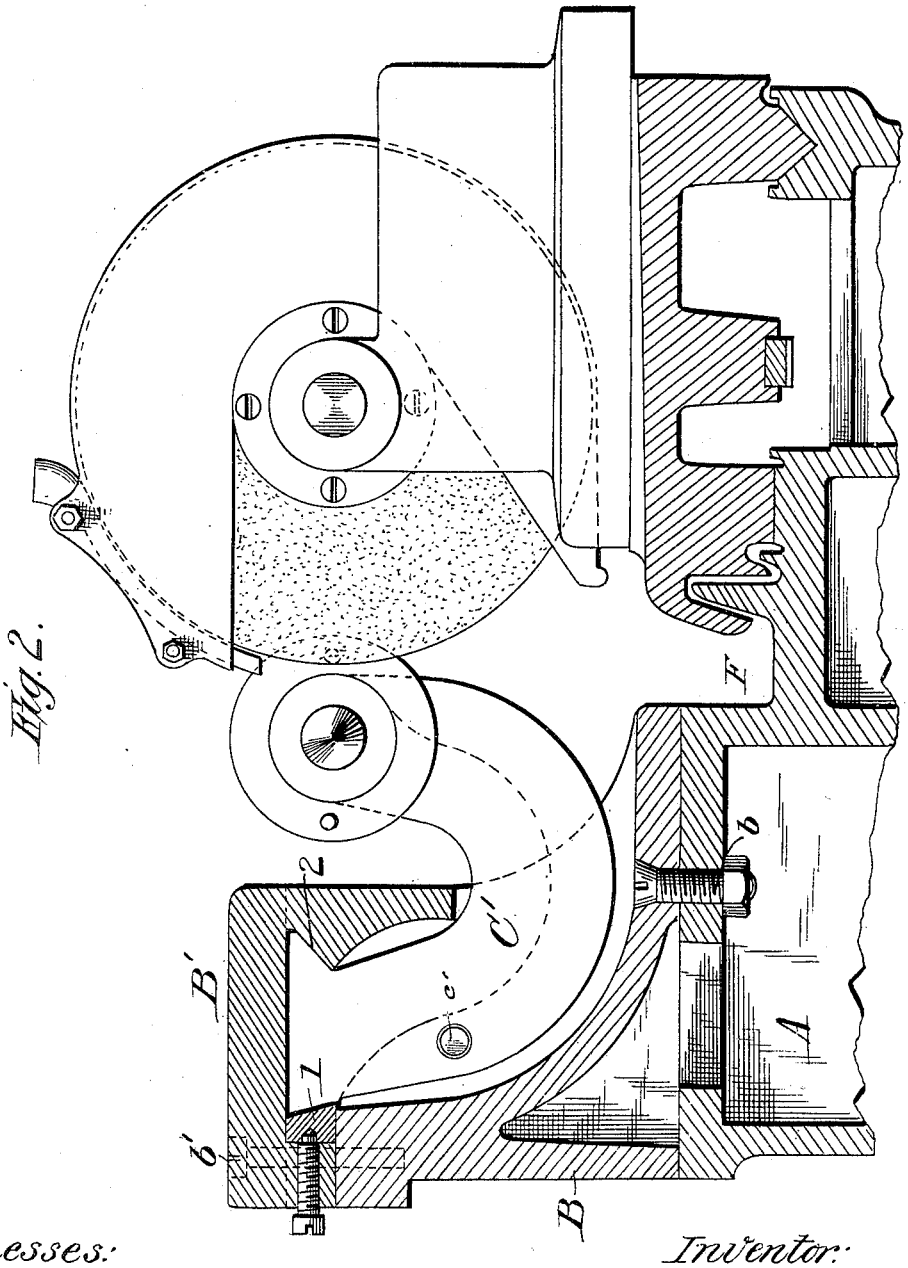

Fig. 2.

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Fig. 4.

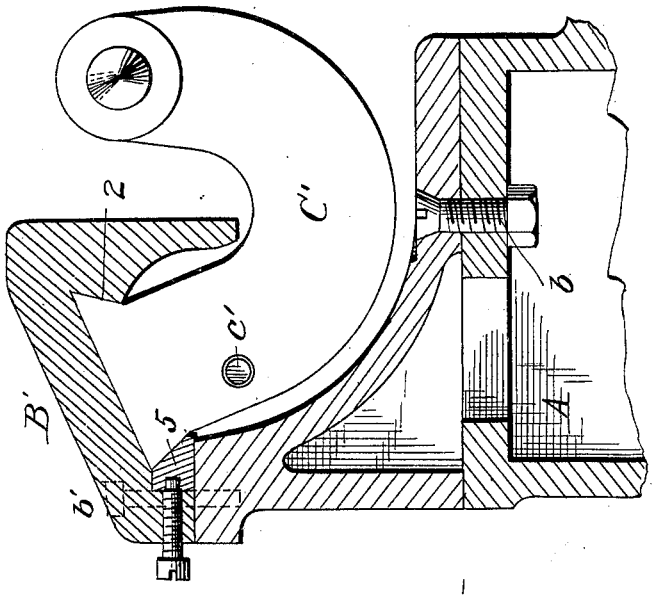
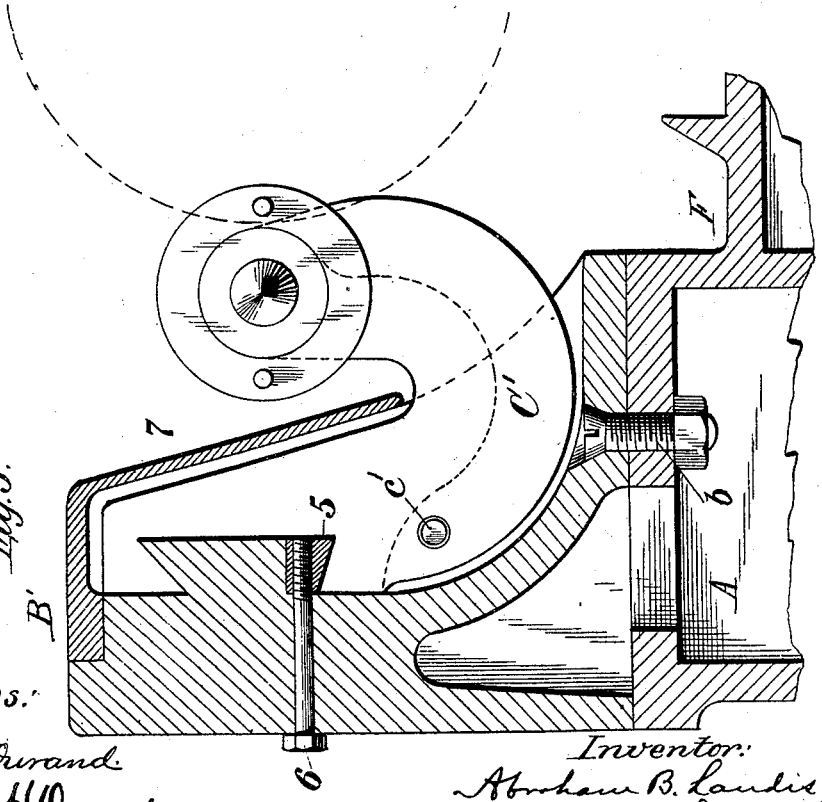


Fig. 5.



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UNITED STATES PATENT OFFICE.

ABRAHAM B. LANDIS, OF WAYNESBOROUGH, PENNSYLVANIA.

GRINDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 649,317, dated May 8, 1900.

Application filed January 20, 1900. Serial No. 2,166. (No model.)

To all whom it may concern:

Be it known that I, ABRAHAM B. LANDIS, a citizen of the United States, residing at Waynesborough, in the county of Franklin and State of Pennsylvania, have invented certain new and useful Improvements in Grinding-Machines, of which the following is a specification.

My said invention consists in various improvements in the construction and arrangement of parts of grinding-machines, particularly the construction of the table for the foot and head stocks and the manner of mounting the same thereon whereby certain advantages are secured, all as will be hereinafter more particularly pointed out and claimed.

Referring to the accompanying drawings, which are made a part hereof and on which similar reference characters indicate similar parts, Figure 1 is a top or plan view of a grinding-machine embodying my said improvements; Fig. 2, a transverse section through the same on the dotted line 2 2 in Fig. 1; Fig. 3, a similar view showing a modified form, and Fig. 4 a similar view of still another modified form.

In said drawings the portions marked A represent the bed of the machine, B the table for supporting the holding devices, and C C′ the head and foot stocks.

The bed A is of a usual or any appropriate form suitable to accommodate the various mechanisms mounted thereon, being preferably of that general form and construction shown in my Patent No. 640,669, of January 2, 1900, to which character of machine these improvements relate.

The table B is usually mounted on the bed A by means of a pivot *b* at its center, on which it may swivel, as is usual. The side of said table next the work is concave, having a wide bottom and a narrower top. Said top is formed true and smooth and has an angle-plate B′, secured thereon by screws *b*′, which extend down through vertical perforations at intervals along the outer edge of said plate into screw-threaded perforations in the top of table B′, formed to receive them. The outside edge of said part B′ is even with the outside of table B. Its horizontal portion overhangs the greater portion of the bottom of said table, and its vertical portion extends down from its inner edge a distance below the seat of the head and foot stocks and below the point of operation (or grinding-point) sufficient to cover and protect said seats. The portion of part B′ which rests upon the top of table B is preferably somewhat narrower than said top, thus leaving a recess in which is mounted a gib 1, having a tapered inner face, with its wide side at the bottom. Opposite said gib a similarly-shaped face 2 is formed at the angle between the horizontal and vertical portions of part B′. A longitudinal way dovetail-shaped in cross-section is thus formed on the under side of said part B′. In this way are mounted the supporting-arms of the head and foot stocks. Said head and foot stocks C and C′, so far as their holding-centers and adjustments are concerned, are of the common or any appropriate construction. The supporting brackets or arms are somewhat U-shaped, their outer ends carrying said holding-centers and their inner ends being formed to fit into the dovetail-shaped way between the gib 1 and angle 2 on the under side of the part B′. They are each provided with a screw-threaded perforation and are operated by screw-threaded shafts *c c*′, which are mounted in opposite ends of the table B and engage said perforations and are adapted to be operated by means of a crank 3, which fits on their squared outer ends. Transverse set-screws 4 extend in through the table B near its top, their inner ends bearing against the face of the gib 1, and furnish the means for locking said arms or brackets in any adjusted position. By this arrangement the bearing or way in which said head and foot stocks are mounted is effectually protected from grit, dust, and water and their ready and convenient adjustment provided for.

In Fig. 3 the same idea is carried out in a somewhat-modified form. A dovetail-shaped groove is formed in the vertical face of the inner side of the supporting arm or bracket C^{10} of the head and foot stocks, and a correspondingly-formed tongue is formed on the inner vertical face of the table B^{10}, one side of which tongue is in the form of a separate gib 5, mounted on transverse screws 6, which extend to the outside and furnish the means for adjusting said gib to lock said head or foot

stock or release them for adjustment, which is effected by means of the screws *c c'*, as in the principal construction. Mounted on the top of the table and extending out and down over the bearing to below the point of grinding is an overhanging protecting-plate 7, which serves the purpose of keeping said bearing free from objectionable substances.

In Fig. 4 the same idea is carried out in another form, the bearing or support for arm C^{11} being formed at an angle in the upper corner between the table B^{11} and overhanging plate B^{12}. Other forms of bearings may of course be provided without departing from my invention, which consists in mounting the head and foot stock on the table under an overhanging protecting guard or plate. It will of course be understood that instead of the ways or seats for the head and foot stocks being formed on a swiveled table they may be provided on the bed of the machine itself, which may be formed into a suitable table for the purpose, as where only straight grinding is to be done the swivel is not needed. It will also be understood that it is not material to my invention whether the work or the emery-wheel be mounted on a traveling carriage, as it is intended for use on machines of any character to which it may be found applicable.

Having thus fully described my said invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a grinding-machine, the combination, of the table, and the head and foot stocks mounted on said table under a rearwardly-overhanging guard, substantially as set forth.

2. In a grinding-machine, the combination, of the table, the head and foot stocks mounted to be adjusted thereon, a guard-plate on the top of said table and hanging between it and the work, a way under said plate, the head and foot stocks mounted in said way, and means for adjusting and securing them, substantially as set forth.

3. In a grinding-machine, the combination, of the table, the overhanging plate on the top of said table, the gib 1 and shoulder 2 forming a way on the under side of said plate, the head and foot stocks on U-shaped brackets with their inner ends formed to fit and being mounted in said way, the screws for adjusting them, and the set-screws for forcing in said gib to lock them in adjusted position, substantially as set forth.

4. In a grinding-machine, the combination, of a table having a way under and forward of an overhanging guard, and the head and foot stocks mounted in said way, and screws for adjusting said head and foot stocks substantially as set forth.

5. In a grinding-machine, the combination, of the table, having a way on which are mounted the head and foot stocks, a web or guard extending down on the rear and to a point below said way and below the point of operation, and said head and foot stocks, substantially as set forth.

6. In a grinding-machine, the combination, of a table having a way, the head and foot stocks mounted thereon, a web or guard extending downward on the rear and to a point below said way and below the point of operation, and screws for adjusting the longitudinal positions of said stocks, substantially as set forth.

7. In a grinding-machine, the combination, of the bed or frame, the table pivotally connected to said bed, and the head and foot stocks mounted on said table under an overhanging web or guard, substantially as set forth.

In witness whereof I have hereunto set my hand and seal, at Waynesborough, Pennsylvania, this 15th day of January, A. D. 1900.

ABRAHAM B. LANDIS. [L. S.]

Witnesses:

D. B. RUSSELL,

ALF. N. RUSSELL.