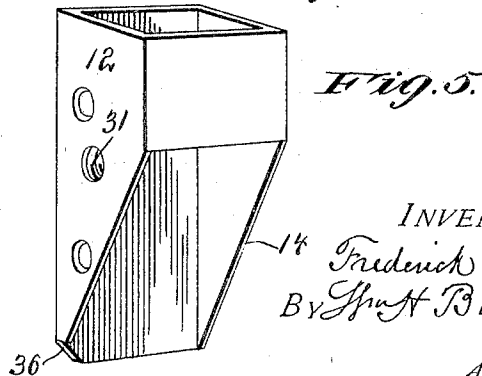
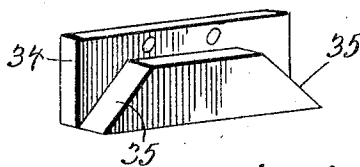
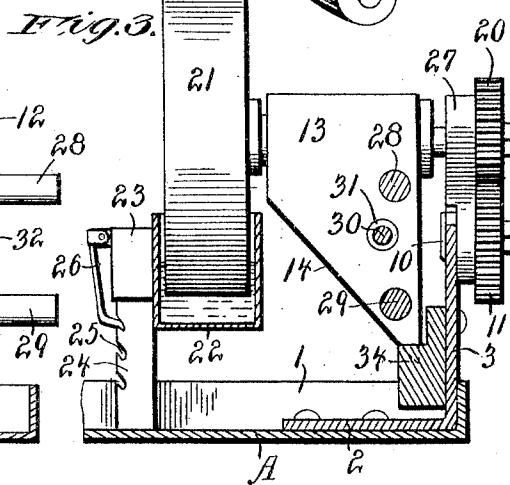
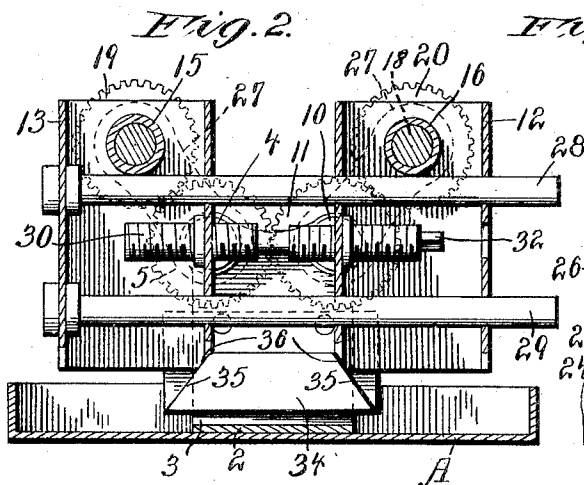
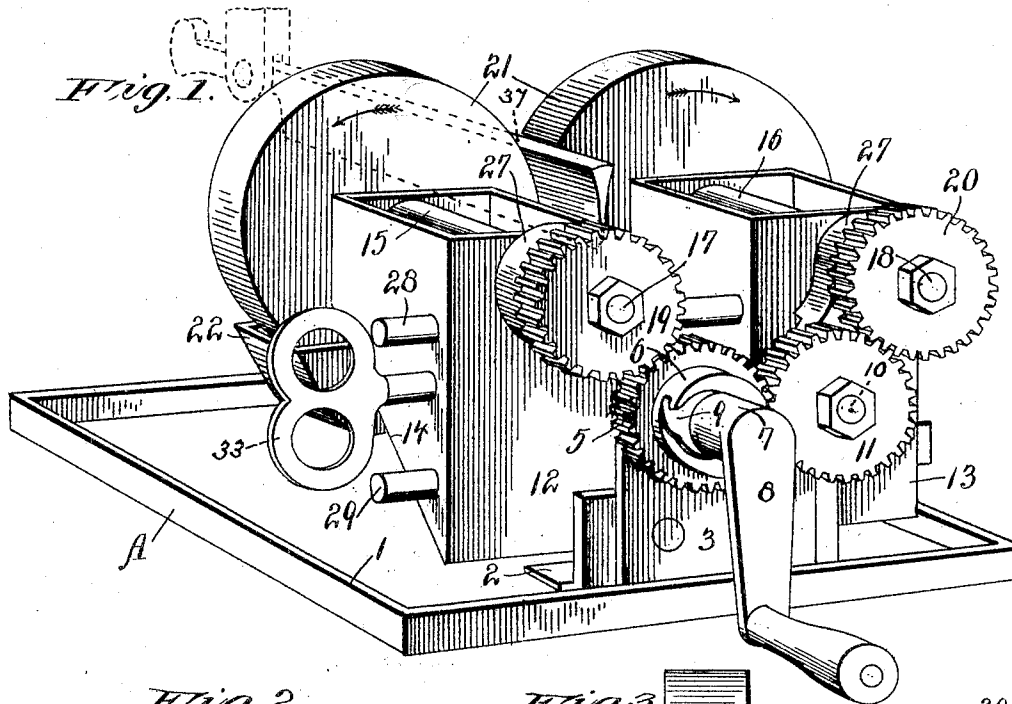


F. BEX.

GRINDING MACHINE.

APPLICATION FILED JAN. 31, 1905.



~~WITNESSES:~~

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FREDERICK BEX, OF BRIGHTWOOD, DISTRICT OF COLUMBIA.

GRINDING-MACHINE.

No. 802,731.

Specification of Letters Patent.

Patented Oct. 24, 1905.

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To all whom it may concern:

Be it known that I, FREDERICK BEX, a citizen of the United States, residing at Brightwood, in the District of Columbia, have invented new and useful Improvements in Grinding-Machines, of which the following is a specification.

My present invention relates to improvements in grinding-machines; and the object is to simplify and improve the existing art in providing a machine of the kind named and for the purposes intended which is expeditious and efficacious in reducing an edge-tool to a cutting edge by the application of revolving grindstones simultaneously to both sides of the tool.

Another purpose is to produce originally and to preserve in-repairing the preferred double-concave contour in razors and other edge-tool blades.

Another object is to make the operative parts of the machine easily adjustable to blades of different thicknesses.

The invention resides in the novel construction of parts and their aggroupment in operative combinations, as will be hereinafter fully disclosed, and the asserted novelty then particularly pointed out and distinctly claimed.

In the annexed drawings I have fully and clearly illustrated my improvements.

Reference being had to the drawings, Figure 1 is a perspective view of the complete machine. Fig. 2 is a longitudinal vertical section through machine. Fig. 3 is a transverse vertical section of the machine. Fig. 4 is a detail perspective view of the adjusting-block which moves the frames vertically when they are adjusted relatively by the adjusting-screw. Fig. 5 is a detail perspective view of one of the box-frames which carry the operative elements of the grindstones.

In the drawings the same reference notations are used in the several illustrations to designate the same parts, and, reference being had thereto, A designates a suitable bed or base provided with a vertical peripheral flange 1. The bed is made of such size as may suit it to the character of the machine to be mounted thereon, and the flange 1 is made of such height as may be required to catch and hold the drippings from the grindstones. The bed may be mounted and secured to any suitable support in any well-known manner.

On the floor of the bed A, at one end thereof, is secured a plate 2, having its outer end di-

rected vertically, as at 3, the whole constituting a support for the spindles, on which are loosely mounted the driving-pinions. In the upper end of the vertical plate 3 are made apertures, in one of which is fixedly secured a spindle 4, whereon is loosely mounted the main driving-pinion 5, formed with a hub the outer end of which is made with diametrically-positioned clutch members or seats 6, adapted to be engaged by a sleeve 7 of a crank 8, the sleeve being loosely disposed on the extending portion of the spindle 4 and is formed at its inner end with radially-projecting ears 9 to engage in the seats or clutch members, whereby the rotatable elements of the machine may be operated. Another spindle 10 is positioned and fixedly secured in the plate 3, whereon is loosely journaled an idler-pinion 11 in mesh with the driving-pinion 5, substantially as indicated in the drawings.

12 13 designate housings preferably consisting of metal casings rectangular in cross-section, as shown, and having their inner walls cut away at their lower portions and their side walls cut obliquely, as at 14, for convenience in placing, adjusting, and manipulating the slide-rods and adjusting-screw. In each of the housing-casings, adjacent to the upper ends, are secured bearing-sleeves 15 16, wherein are revolubly mounted shafts 17 18. On the outer extending portion of the shaft 17 is fixedly mounted a pinion 19, in mesh with the driving-pinion 5, and on the shaft 18 is mounted a pinion 20, in mesh with the idler-pinion 11, substantially as indicated in Fig. 1 of the drawings. The shafts 17 18 are extended inwardly beyond the inner walls of the housing-casings, and on the extensions are mounted the grindstones 21, duplicates in size and, as hereinafter stated, adjustable to and from each other. Under the grindstones is placed a water trough or tank 22, in which the lower parts of the grindstones run. This water-trough is provided with a sleeve 23, which slidably engages over a standard 24, formed with notches 25, and is secured in bed A by any suitable means. To the sleeve 23 is pivotally secured an arm 26, the nose or free end of which is adapted to engage in any one of the notches 25, as shown in Fig. 3 of the drawings, and thus hold the water-trough in any elevation to which it may be moved. It will be perceived that by this supporting device the water-trough may be adjusted to a position to always permit the grindstones to

run at the requisite depth in the water or other lubrication.

On the spindles of the pinions 5 and 11 are loosely disposed the lower ends of spreading arms or links 27, the upper ends of the links being loosely disposed on the shafts 17 18, substantially as indicated in the drawings.

In housing-casing 13 are rigidly secured upper and lower bars 28 29, positioned parallel with each other and in vertical alinement and project through the casing 13 and extend through both side walls of the casing 12. Through the inner side walls of the casings is let an adjusting-bar 30, having right and left screw-threads, as shown, which engage in threaded nuts or apertures 31 in the walls of the casings. The one end of the adjusting-bar 30 is made with an angular termination 32, to which a suitable turning-key 33 may be applied and the threaded bar turned as may be required. It will be perceived that when the threaded bar is turned on its axis the housing-casings are moved to or from each other as the direction of the threaded bar may carry them. At the same time the function of the links 27 maintains the constant engagement of the pinions. It will be seen, further, that the function of the links and that of the threaded bar is to carry with the housing-casings the grindstones into closer or more remote relations.

To the plate 3 is secured a guide-block 34, made with inclined end surfaces 35 to engage coincident inclines 36, made at the lower ends of each housing-casing. By this construction and arrangement the housing-casings are prevented from binding on the slide-bars 28 29 and are maintained in vertical relation during the process of adjustment.

It will be observed that the housing-casings are carried in relative position by the slide-bars and that the casings and the grindstones are mainly supported by the links and the inner walls of the housings resting on the inclines of the guide-block.

A razor-blade 37 is shown in Fig. 1 as being subjected to the grindstones.

To utilize the device, the proper adjustments are made to bring the grindstones to the desired position, and then the trough is supplied with lubrication, the crank is applied, and the machine is ready for operation. The blade to be subjected to the grinding process is then held between the revolving surfaces of the grindstones and manipulated as skill may require. The grindstones revolve in opposite

directions, as indicated by the arrows in Fig. 1 of the drawings.

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

1. In an edge-tool-grinding machine, vertically-disposed housings laterally adjustable to and from each other means carried by the housings to make the adjustment, shafts journaled in the housings, grindstones mounted on the shafts, and means to rotate both shafts at the same time.

2. In an edge-tool-grinding machine, vertically-disposed housings laterally adjustable to and from each other and simultaneously vertically, a shaft journaled in each housing, a grindstone mounted on each shaft, means carried by the housings to simultaneously adjust them laterally and vertically, and means to rotate the shafts simultaneously.

3. In an edge-tool-grinding machine, oppositely-positioned rectangular hollow housing-casings, means mounted in the housings to simultaneously adjust them vertically and from and toward each other, shafts journaled in the housings, and means to rotate the shafts synchronally.

4. In an edge-tool-grinding machine, oppositely-positioned housings, bars projected through the housings on which they are slidably mounted, a right-and-left threaded screw to move the housings to and from each other, and a guide-block having inclined end surfaces on which the housings engage.

5. In an edge-tool-grinding machine, the combination of rectangular hollow housings formed with inclines at their lower inner end portions, means carried by the housings to simultaneously adjust them laterally and vertically, a grindstone-shaft journaled in each housing, and a guide-block having inclined end surfaces on which the inclines of the housings engage.

6. In an edge-tool-grinding machine, a driving-pinion, an idler-pinion, vertically and laterally adjustable housings, shafts in the housings, pinions on the latter shafts, arms loosely mounted on and connecting the pinions, and means to rotate the pinions.

In testimony whereof I affix my signature in presence of two subscribing witnesses.

FREDERICK BEX.

Witnesses:

JACOB SCHAEFER,
K. A. HERON.