

J. L. WALKER.
GRINDING OR HONING DEVICE.
APPLICATION FILED DEC. 23, 1910.

Patented Dec. 26, 1911.

2 SHEETS—SHEET 1.

1,012,772.

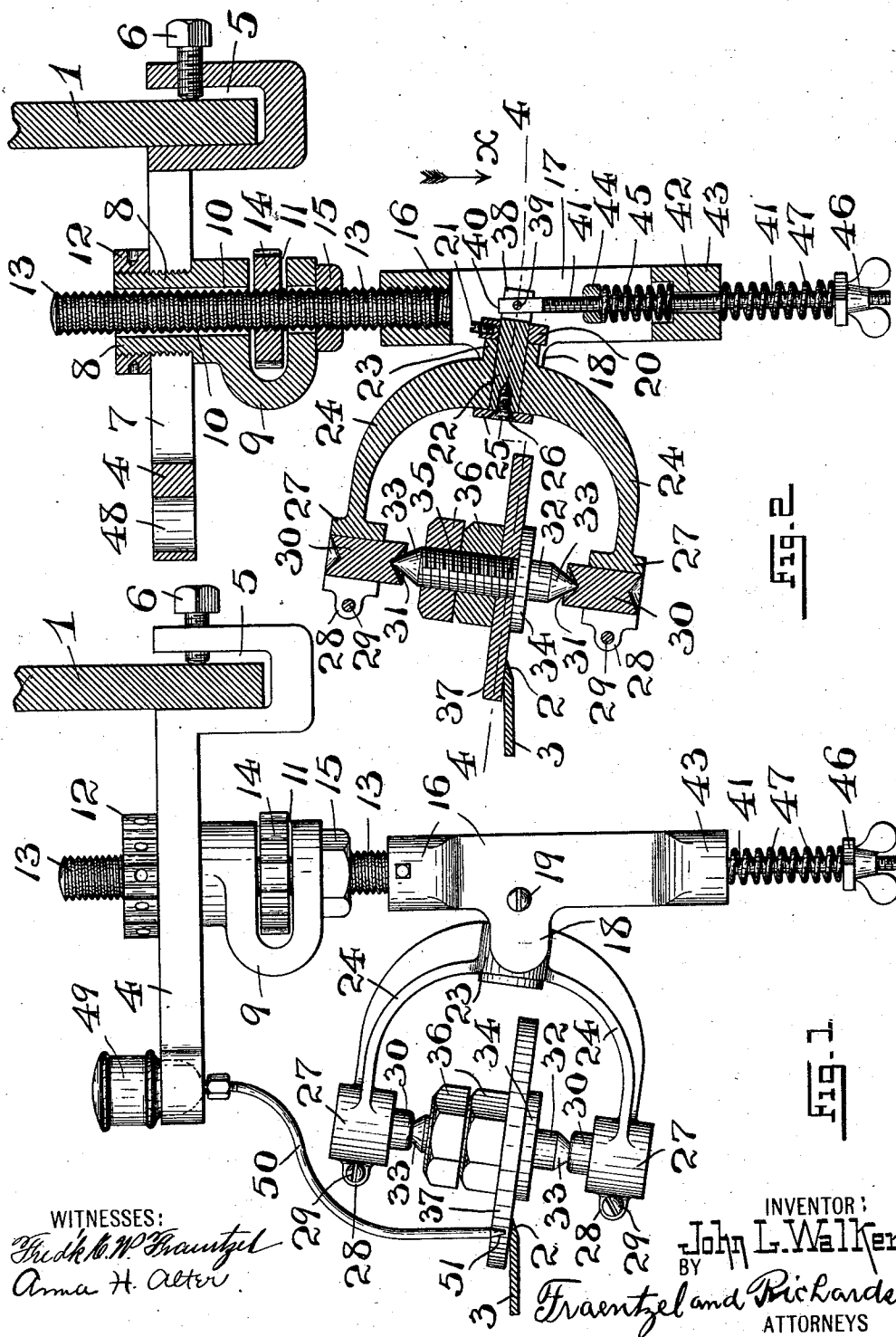


FIG. 2

FIG. 1

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Anna H. Alter

INVENTOR:
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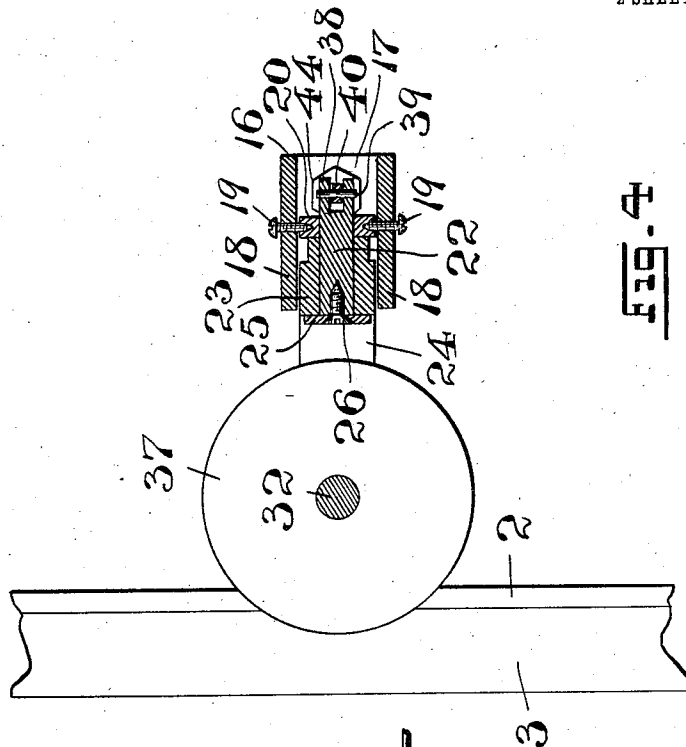


Fig. 4

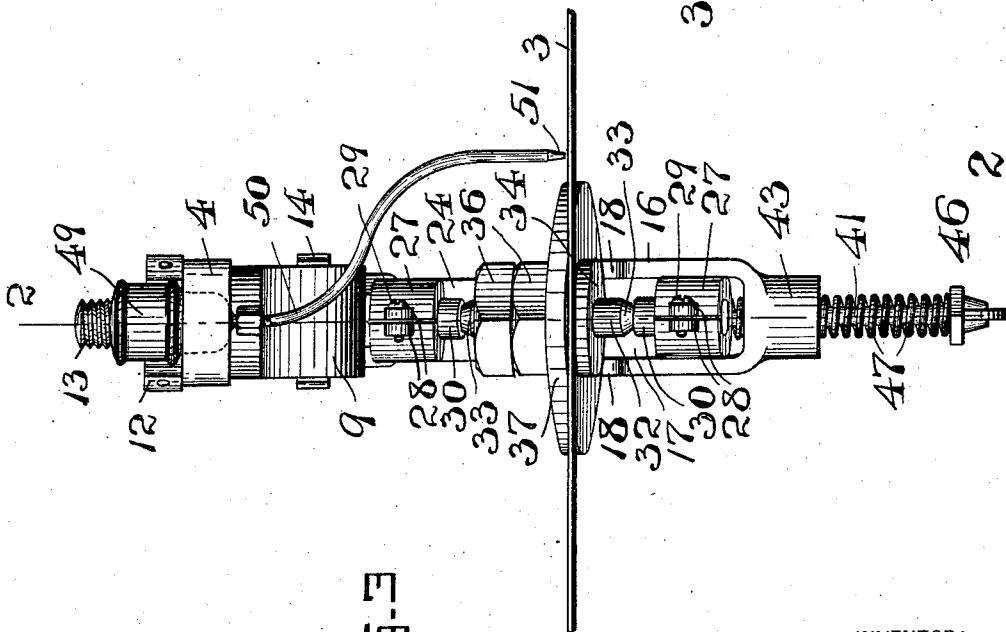


Fig. 5

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UNITED STATES PATENT OFFICE.

JOHN L. WALKER, OF NEWARK, NEW JERSEY.

GRINDING OR HONING DEVICE.

1,012,772.

Specification of Letters Patent.

Patented Dec. 26, 1911.

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To all whom it may concern:

Be it known that I, JOHN L. WALKER, citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Grinding or Honing Devices; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to characters of reference marked thereon, which form a part of this specification.

The present invention has reference, generally, to improvements in grinding or honing devices; and, the present invention refers, more particularly, to a novel grinding or honing device which is particularly adapted for use and to be connected with leather-splitting machinery for automatically sharpening or honing the running band or blade, or endless belt-knife of the splitting machine.

The invention has for its principal object to provide a simple, and a cheaply constructed, as well as an easily attachable grinding or honing device, which is compact in its construction, so as to be quickly attached to any style of leather-splitting machine, or other classes of machinery, with the cutting knives of which it may be used for sharpening and honing the same, and especially for removing the feather-edge from the cutting edge of the knife.

The invention has for a further object to provide a means for easily adjusting the grinding or honing elements of the device with relation to the running band or blade of an endless or belt-knife, together with means for delicately balancing the said grinding or honing elements, so as to govern its pressure upon said band-blade.

Other objects of the present invention not at this time more particularly enumerated, will be clearly understood from the following detailed description of this invention.

With the various objects of said invention in view, the same consists, primarily, in the novel construction of grinding or honing device hereinafter set forth; and, furthermore, this invention consists in the several novel arrangements and combinations of the various devices and parts, as well as in the details of the construction thereof, all of which will be hereinafter more fully de-

scribed, and then finally embodied in the clauses of the claim which are appended to and which form an essential part of this specification.

The invention is clearly illustrated in the accompanying drawings, in which:—

Figure 1 is a side elevation of a grinding or honing device, as attached in its operative relation with a portion of a machine, such as a leather-splitting machine, and in contact with the running band or blade of a knife connected therewith; Fig. 2 is a longitudinal vertical section, and Fig. 3 is a front elevation of the same. Fig. 4 is a detail horizontal section of the device, said section being taken on line 4—4 in said Fig. 2, looking in the direction of the arrow *x*.

Similar characters of reference are employed in all the hereinabove described views, to indicate corresponding parts.

Referring now to the said drawings, the reference-character 1 indicates a bracket or a part of the framework of a machine, such as a leather-splitting machine, to which the said grinding or honing device is attached so as to bring the same into its operative contact with the cutting edge 2 of an endless belt-knife or running band or blade 3 of the leather-splitting or other suitable machine. The said grinding or honing device consists, essentially, of a supporting bracket 4, which is provided at one end with a receiving socket 5 having connected therewith a set-screw 6. Said receiving socket 5 is adapted to receive the herein-above mentioned bracket 1, or other suitable portion of the frame-work of the machine, for the purpose of retaining said supporting bracket 4 in connection therewith, said set-screw 6 serving to suitably fasten or lock the said parts in their assembled and connected relation. Said supporting bracket 4 is provided with an elongated slot or opening 7, and arranged so as to project upwardly through said slot or opening 7 is a screw-threaded hub or shank 8 of a hanger-like member or element 9, the same being formed with a longitudinally extending tubular part, as 10, and with a laterally extending opening 11 intersecting said tubular part or opening 10, as will be clearly seen from an inspection of Fig. 2 of the drawings. Arranged upon the upwardly projecting end of said screw-threaded hub or shank 8 is a nut 12 which serves to lock the said hanger-like member or element 9 in any adjusted

position within said elongated opening or slot 7, as will be clearly evident. Extending upwardly through said tubular part or opening 10 of said hanger-like member 9 is a screw-threaded rod 13 having arranged upon its screw-threads a suitably formed hand-nut 14. The said nut 14 is arranged in said laterally extending opening 11 of said hanger-like member or element 9, in such a manner, so as to maintain the said nut in a rotatable relation to said hanger-member, but fixed against vertical movement, so that by manipulating or turning the nut, the said screw-threaded rod 13 may be raised or lowered to vertically adjust its position, and the devices supported thereby, with relation to said hanger-like member 9. In order to lock said screw-threaded rod 13 in any adjusted position, the same is further provided with a lock-nut 15 which engages with the lower portion of said hanger-like member 9, substantially in the manner shown. Supported upon and carried by the lower end of said screw-threaded rod 13 is a carrier-block 16 which is provided with an elongated opening 17, and extending outwardly from the marginal edges of said opening 17 are a pair of ears or lugs 18, preferably forming an integral part of said carrier-block 16. The said ears or lugs 18 are provided with inwardly projecting screws 19, and pivotally journaled upon the free ends of said screws 19 is a ring or collar 20. Secured in said ring or collar 20, by means of a set-screw 21, is a journal-pin 22, and journaled upon the outer end of said pin 22, so as to swivel thereon, is the hub 23 of a yoke-like member 24, said member 24 being retained in its operative relation with said journal-pin 22 by means of a retaining disk 25 which is secured to the end of said journal-pin 22 by means of a screw 26, or the like. The free ends of the arm of said yoke-like member 24 are provided with split-collars or socketed portions 27 having perforated ears or lugs 28 in which is operatively arranged a binding or tightening screw 29, for drawing the separated portions of said split-collars or socketed portion 27 together, so as to secure a bearing-block 30 rigidly therein, each bearing-block being provided with a conical depression or bearing-seat 31 in the inner end thereof. Mounted between and in engagement with said bearing-blocks 30 is a spindle or shaft 32, the free ends of which are provided with conical journal-like members 33, adapted to be seated in said conical depressions or seat 31 of the respective bearing-blocks 30, so that said spindle or shaft 32 may be capable of a free revolving action. Said spindle or shaft 32 is further provided with a shoulder or annular flange 34, and extending from said shoulder or annular flange, toward one end, the said spindle or shaft 32 is provided with a screw-thread 35. Mounted upon said screw-threaded portion of said spindle or shaft, and rigidly connecting the same therewith, by forcing the same against said shoulder or annular flange 34 by means of suitable lock-nuts 36, is a grinding or honing element 37, the latter being circular in form and providing grinding or honing portions at its periphery, of any suitable material. The inner end of said journal-pin 22, which projects into said opening 17 of the carrier-block 16, is provided with a perforated forked end 38, to which is pivotally secured by means of a pivot or pin 39, suitable ears 40 of a screw-threaded rod 41. The said rod 41 extends through a vertical opening 42, in the lower end-portion 43 of said carrier-block 16; and, being slidably or movably arranged therein, is adapted to be guided in its movements by said vertical opening 42. A nut 44 is arranged upon said rod 41 above the said end-portion 43 of said carrier-block 16, a coiled spring 45 being mounted upon and encircling said rod 41, between said end-portion 43 of said carrier-block and the nut 44, said nut 44 serving as a means for increasing or decreasing the operative tension of said spring. In like manner, a thumb-nut 46 is arranged upon said rod 41, between its outwardly projecting free end and the end-portion 43 of said carrier-block 16. A coiled spring 47 is arranged upon and encircles the said rod 41, between the end-portion 43 of said carrier-block 16 and the thumb-nut 46, said thumb-nut 46 serving as a means for increasing or decreasing the operative tension of the said coiled spring. The purpose of said respective springs 45 and 47 is to provide a means for creating a proper adjustment of the bearing-tension of said grinding or honing element 37, as it bears upon the freely running band or blade 3 of said splitting knife, to properly hone its cutting edge 2, without burning or otherwise injuring the same. The said coiled spring 45 is adjusted in such a manner to its tension, that it slightly overbalances the tension of the coiled spring 47, the degree of this overbalancing determining the degree of pressure with which said grinding or honing element 37 bears upon the said cutting edge 2 of the running band or blade 3; and, as will be clearly evident, a great delicacy of adjustment in this respect is thus possible. It will be clearly understood, that the tension of said coiled spring 45, as thus controlled, is transmitted through the rod 41 and journal-pin 22 in the yoke-like member 24 in which said grinding or honing element is mounted. The said grinding or honing element 37, being mounted so as to revolve freely, is caused to turn by the onward or forward movement of said belt-like knife or running band or blade 3, as it passes in contact therewith, thus causing the guiding

or honing element to move toward and away from said cutting edge 2 of said running knife, band or blade 3, due to its revolution, thereby producing a peculiarly effective honing movement or action. Said supporting bracket 4 is also provided at its outer free end with a receiving socket 48 adapted to receive and support an oil-cup or reservoir 49. A pipe or duct 50 leads downwardly from said oil-cup or reservoir 48, and is provided with an outlet-drip or nozzle 51, which will feed oil or other lubricant upon the grinding or honing element and the running band or blade 3, as desired, and thus keeps the same lubricated; and, at the same time, it materially aids in the proper smooth grinding or honing of the cutting edge 2 of said band or blade 3.

I claim:—

1. An attachable grinding or honing device comprising a supporting bracket having an elongated slot, a hanger-like member adjustably arranged in said slot, a screw-threaded rod carried by said hanger-like member, means connected with said hanger-like member and said screw-threaded rod for vertically adjusting the same, a carrier-block secured upon the lower end of said screw-threaded rod, a revolving grinding or honing means pivotally supported by said carrier-block, means for automatically maintaining said grinding or honing means in contact with the cutting edge of a running band or blade with any desirable degree of pressure, comprising a rod slidably arranged with relation to said carrier-block and pivotally connected with said grinding or honing means, a pair of coiled springs for actuating said rod, said springs exerting, respectively, opposite tensional pulls upon said rod, and means for adjusting the tension of said springs to cause the tension of one of said springs to overbalance the tension of the other spring to any desirable degree, substantially as and for the purposes set forth.

2. An attachable grinding or honing device comprising a supporting bracket having an elongated slot, a hanger-like member adjustably arranged in said slot, a screw-threaded rod carried by said hanger-like member, means connected with said hanger-like member and said screw-threaded rod for vertically adjusting the same, a carrier-block secured upon the lower end of said screw-threaded rod, a revolving grinding or honing means pivotally supported by said car-

rier-block, means for automatically maintaining said grinding or honing means in contact with the cutting edge of a running band or blade with any desirable degree of pressure, comprising a rod slidably arranged with relation to said carrier-block and pivotally connected with said grinding or honing means, a pair of coiled springs for actuating said rod, said springs exerting, respectively, opposite tensional pulls upon said rod, and means for adjusting the tension of said springs to cause the tension of one of said springs to overbalance the tension of the other spring to any desirable degree, consisting of screw-threads formed upon said rod, and nuts engaging said screw-threads and said coiled springs, substantially as and for the purposes set forth.

3. An attachable grinding or honing device comprising a supporting-bracket, a receiving socket connected with said supporting-bracket adapted to serve as means for securing said supporting-bracket to a machine, said supporting-bracket being further provided with an elongated slot, a hanger-like member provided with a screw-threaded hub adapted to be inserted through said elongated slot of said supporting bracket, a nut arranged upon said screw-threaded hub for securing said hanger-like member in any desirable adjusted position in said elongated slot, said hanger-like member being further provided with a vertically disposed opening and a lateral opening intersecting said vertical opening, a screw-threaded rod slidably arranged in said vertical opening, a nut upon said screw-threaded rod, said nut being supported in said lateral opening and adapted to raise and lower said screw-threaded rod when turned, a carrier-block secured upon the lower end of said screw-threaded rod, a revolving grinding or honing means pivotally supported by said carrier-block, and means for automatically maintaining said grinding or honing means in contact with the cutting edge of a running band or blade with any desirable degree of pressure, substantially as and for the purposes set forth.

In testimony, that I claim the invention set forth above I have hereunto set my hand this 21st day of Dec. 1910.

JOHN L. WALKER.

Witnesses:

FREDK. C. FRAENTZEL,

FREDK. H. W. FRAENTZEL.