No. 819,384. PATENTED MAY 1, 1906.

J. A. STANSBURY.

APPARATUS FOR TRUING GRINDING DISKS.

APPLICATION FILED NOV. 18, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

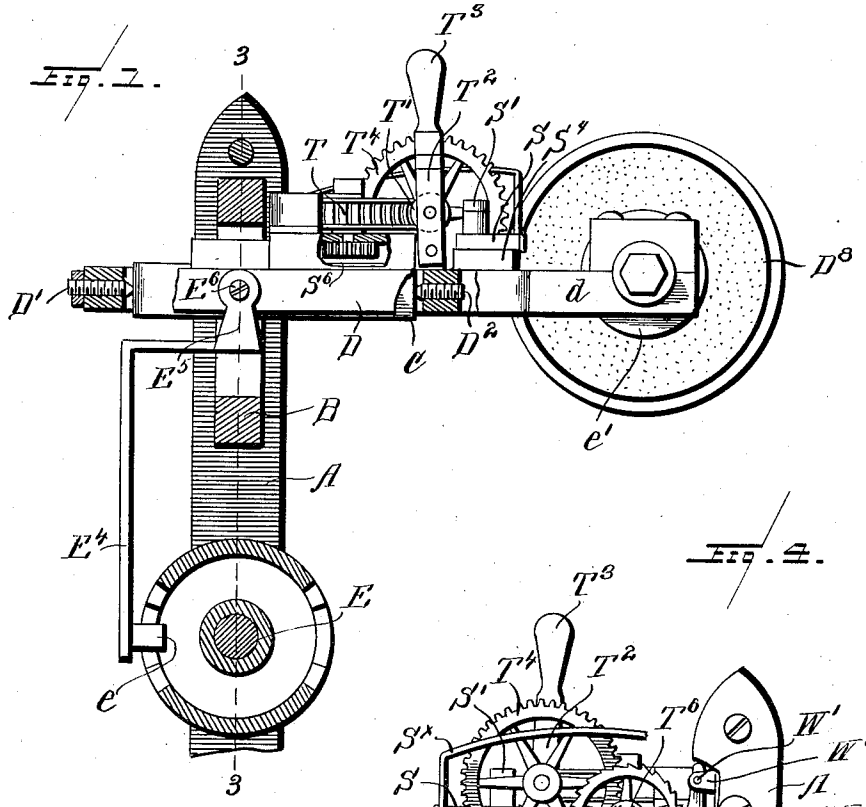



Fig. 4.

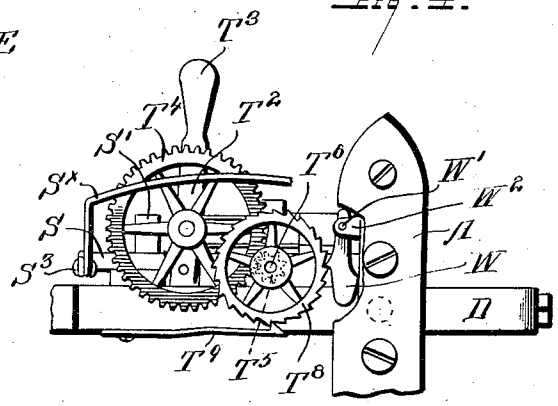
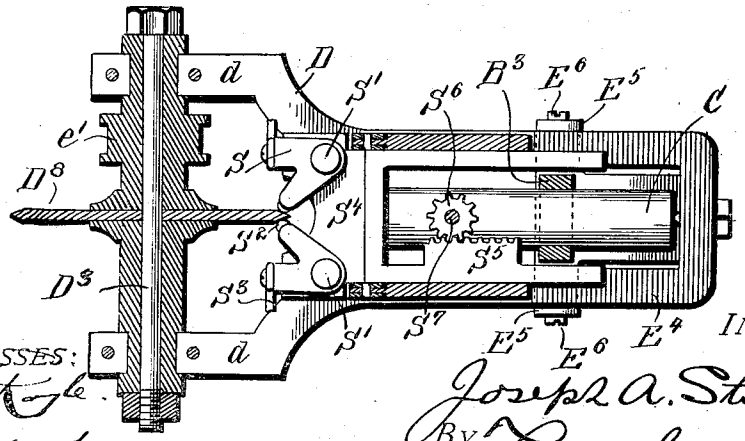



Fig. 5.

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2 SHEETS—SHEET 2.

Fig. 1.

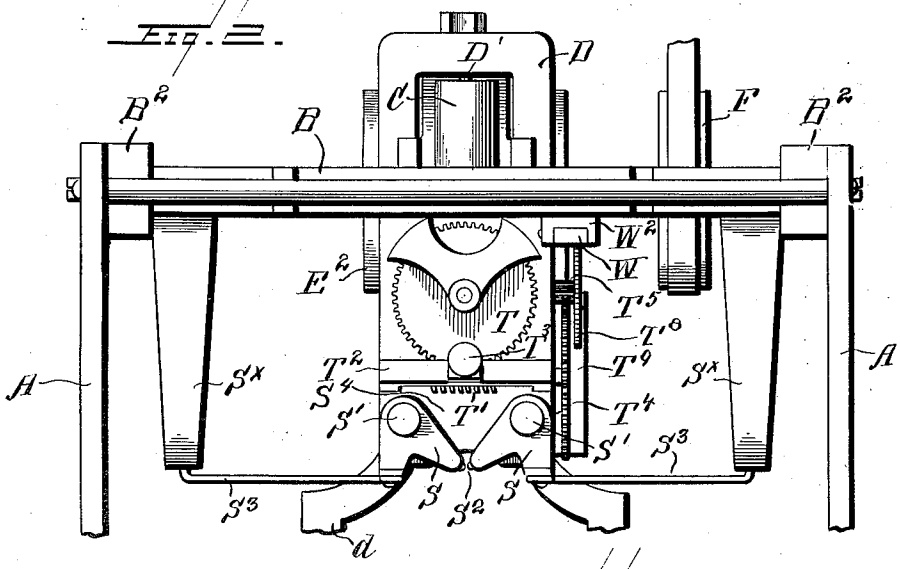
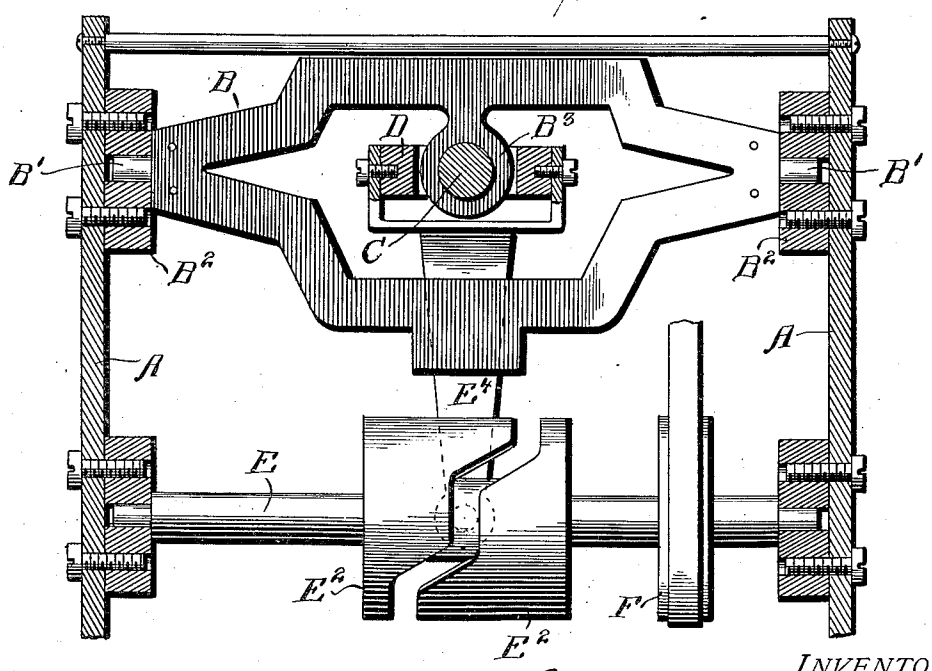



Fig. 2.

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# UNITED STATES PATENT OFFICE.

JOSEPH A. STANSBURY, OF LOS ANGELES, CALIFORNIA.

## APPARATUS FOR TRUING GRINDING-DISKS.

No. 819,384. Specification of Letters Patent. Patented May 1, 1906.

Original application filed June 6, 1905, Serial No. 263,998. Divided and this application filed November 18, 1905. Serial No. 288,022.

*To all whom it may concern:*

Be it known that I, JOSEPH A. STANSBURY, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Apparatus for Truing Grinding-Disks; 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 the letters of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in mechanism adapted especially for truing the edge of a grinding-disk such as is utilized in my improved apparatus for sharpening the edges of beet-shredding knives as covered by my allowed application, Serial No. 263,998, which mechanism is illustrated in the drawings forming a part of said application, and from which it has been divided.

The invention comprises various details of construction and arrangements of parts, which will be hereinafter fully described, and then specifically defined in the appended claims.

I illustrate my invention in the accompanying drawings, in which—

Figure 1 is a side elevation of my apparatus for truing the edges of grinding-disks, parts being shown in section. Fig. 2 is a top plan view. Fig. 3 is a sectional view through part of the apparatus, taken on line 3 3 of Fig. 1, details being illustrated in elevation. Fig. 4 is a side elevation of a part of the mechanism for feeding the devices for truing the edge of the grinding-disk, and Fig. 5 is an enlarged top plan view of the yoke carrying the grinding-disk and the diamond-points for truing the edge thereof.

Reference now being had to the details of the drawings by letter, A designates a framework in which is mounted a yoke B, having spindle ends $B'$, mounted in suitable bearings in the box $B^2$ of the frame. Depending from the upper portion of said yoke is an apertured lug $B^3$, carrying the shaft C; and said shaft supports a rocking yoke D, carrying the screws $D'$ and $D^2$, each of which has its inner end pointed and engaging an indenture as a bearing in the opposite end of the shaft. The forward end of the yoke D is forked, having arms *d* with a shaft $D^3$ journaled therein, which shaft carries a grinding-disk $D^8$.

E designates a shaft mounted in suitable bearings upon the frame of the apparatus, and $E^3$ $E^2$ designate two complemental segment cylindrical shells, the inner marginal edges of which are cut away to form a cam-groove intermediate the same. Said shell-sections $E^2$ are keyed or otherwise fixed to the shaft E, and $E^4$ designates a lever, the upper end of which is bifurcated, forming arms $E^5$, which are held to the opposite sides of the yoke D by means of screws $E^6$. The lower end of the lever $E^4$ carries a lug *e*, which is adapted to travel in said irregular-outlined cam-groove formed intermediate the shell-sections as the shaft E rotates, whereby said lever $E^2$ may be given a rocking movement and also rocking the yoke D, to which said lever is connected, which will impart a tilting movement to the grinding-disk for the purpose of alternately grinding the opposite beveled edges of the knife. The shaft upon which the grinding-disk is mounted is provided with a pulley *e'*, whereby a rotary movement may be imparted to said shaft and disk from any source of power. The shaft E is also provided with a pulley F, whereby a rotary movement may be imparted to the shaft E.

Referring to the top plan view of the drawings will be seen a plate $S^4$, which is adjustably mounted upon the yoke D, and mounted upon said plate are the pivotal pins $S'$, to each of which is pivotally connected an angle member S, and the inner angled end of each of said members is adapted to carry a diamond-point $S^2$. To the outer arm of each member S is pivotally connected a rod $S^3$, the outer end of each rod being fastened to an arm $S^\times$, which is held stationary to the frame of the apparatus, thus holding the member S stationary as the yoke carrying the grinding-disk rocks, which will bring alternately first one diamond-point against one beveled edge of the grinding-disk and then the other, thus affording means for keeping the grinding-disk cut down to a true edge. Said plate $S^4$ has a recess formed therein, and along one of the marginal edges of said recess is a series of rack-teeth $S^5$, which are in mesh with the teeth of a pinion $S^6$, journaled to a stub-shaft $S^7$. Keyed to said stub-shaft $S^7$ is a worm-wheel T, which is adapted to mesh with a worm-

wheel T′, mounted in a yoke T², which is pivotally mounted upon the yoke D and provided with a handle T³. Upon the end of the shaft upon which the worm-wheel T′ is mounted is a fixed gear-wheel T⁴, which is adapted to be thrown into mesh with a pinion T⁵, mounted upon a shaft T⁶, which latter also carries a ratchet-wheel T⁸, adapted to be engaged by a resilient pawl T⁹.

W designates a dog which is pivotally mounted upon a pin W′, carried by the ears W², projecting from the frame of the apparatus, and the shouldered portion of said dog is designed to engage the teeth of said ratchet-wheel, and as the side of the yoke D to which said resilient pawl T⁹ is fixed tilts up one of the teeth of said ratchet-wheel coming against the dog W will cause a partial rotary movement to be imparted to said ratchet-wheel, and a reverse movement of the ratchet-wheel is prevented by said resilient pawl T⁹. As the outer ends of the rods S³ have loose connections with the bracket-arms S×, the inner ends of said rods may have a slight forward movement incident to the feeding forward of the plate.

By the provision of the feeding means and the plate carrying said members S it will be observed that the cutting down and truing of the edges of the grinding disk-may be regulated, and when it is desired to throw the mechanism out of gear the lever T³ may be thrown toward the grinding-disk and the feeding mechanism will be at rest.

In operation the yoke D is given a rocking motion through the medium of the cam E², which rocks the arm E⁴, the upper forked end of which is pivotally connected to the yoke D. As the yoke D rocks in one direction the angled member S, which is upon the side of the yoke which tilts up, will be drawn away from one of the beveled edges of the grinding-disk, whereas the member upon the side of the yoke which tilts down will be forced toward the other beveled edge of the grinding-disk, and as the yoke tilts in the opposite direction a reverse movement will take place, and the second disk, which is idle in the former tilting movement, will act against the other beveled edge of the grinding-disk, thus serving to keep the grinding edge true and even. By means of the gear mechanism as the yoke tilts in one direction toward the ratchet-wheel the latter coming in contact with the pivotal dog W will cause the latter to tilt outward; but on the return rocking movement of the yoke one of the teeth of said ratchet-wheel engaging the dog will cause the ratchet-wheel to be held stationary for a moment during the balance of the upward rocking movement of the yoke carrying the same, and through the medium of the gear connections with said ratchet-wheel a slight forward movement may be imparted to the plate carrying the members provided with diamond-points. This feeding mechanism may be regulated by the pivotal handle T³, which may be thrown in one direction or the other to cause the worm-wheels to be in or out of gear.

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

1. A device for truing the edge of a grinding-disk comprising, in combination with a tilting disk, diamond-points, and means for causing said points to contact alternately with the opposite beveled edges of the disk as the latter tilts, as set forth.

2. An apparatus for truing the edge of a grinding-disk comprising, in combination with a disk and means for tilting the same, pivotal members, a diamond-point carried by each of said members, and means for tilting said members, as set forth.

3. An apparatus for truing the edge of a grinding-disk comprising, in combination with a disk and means for tilting the same, pivotal members, a diamond-point carried by each of said members, means for tilting said members, and mechanism for feeding the latter forward, as set forth.

4. An apparatus for truing the cutting edge of a grinding-disk comprising a rocking yoke, a grinding-disk tilting with said yoke, pivotal angle members mounted upon said yoke, a diamond-point upon each of said members, a rod pivotally connected to each member and fixed to a part of the frame of the apparatus, as set forth.

5. An apparatus for truing the edge of a grinding-disk comprising a rocking yoke, a disk carried by the forked ends of said yoke and tilting therewith, angle members pivotally mounted upon the yoke, diamond-points mounted upon the inner ends of said members, a rod pivotally connected to each member, the outer end of each rod being fixed to a stationary part of the frame of the apparatus, and means for feeding said members upon the yoke, as set forth.

6. An apparatus for truing the edges of grinding-disks comprising a yoke, a lever having bifurcated ends secured to said yoke, a shaft, cylindrical segment-shells fixed to said shaft with a cam-groove intermediate their inner ends, a lug projecting from said lever and adapted to travel in said cam-groove whereby the lever and yoke may be rocked, a disk carried by said yoke, diamond-points carried by said yoke and adapted to alternately contact with the opposite beveled edges of the disk as the yoke rocks, as set forth.

7. A device for truing the edge of a grinding-disk comprising a rocking yoke, a disk carried thereby, a slide mounted upon said yoke, pivotal members mounted upon said slide, a diamond-point carried by each member, rods pivotally connected one to each of

said members and fixed each to the frame of the apparatus, and means for moving said slide, as set forth.

8. A device for truing the edge of a grinding-disk comprising a rocking yoke, a disk carried thereby, a slide mounted upon said yoke, pivotal members mounted upon said slide, a diamond-point carried by each member, rods pivotally connected one to each of said members and fixed each to the frame of the apparatus, a series of rack-teeth along the inner marginal edge of said slide, a shaft, pinion-wheel fixed thereto and in engagement with said teeth, and gear mechanism for rotating said shaft, as set forth.

9. A device for truing the edge of a grinding-disk comprising a rocking yoke, a disk carried thereby, a slide mounted upon said yoke, pivotal members mounted upon said slide, a diamond-point carried by each member, rods pivotally connected one to each of said members and fixed each to the frame of the apparatus, a series of rack-teeth along the inner marginal edge of said slide, a worm-wheel T, a yoke $T^2$ and worm-wheel carried thereby and in mesh with said wheel T, a handle upon said yoke $T^2$, a gear-wheel rotating with said worm-wheel $T^2$ and in mesh with said ratchet-teeth, a gear-wheel mounted upon said yoke $T^2$, a counter-shaft mounted upon the yoke D, a gear-wheel upon said counter-shaft in mesh with said gear-wheel upon the yoke $T^2$, a ratchet-wheel upon said counter-shaft, a pivotal pawl mounted upon the frame of the apparatus and in the path of the teeth of said ratchet-wheel, whereby as the yoke carrying the ratchet-wheel tilts upward, a partial rotary movement will be imparted to the ratchet-wheel and, through the gear mechanism described, to impart a movement to said slide, as set forth.

10. An apparatus for truing the edge of a grinding-disk comprising, in combination with a rocking yoke, a disk carried thereby, a movable slide, pivotal members mounted upon said slide, a diamond-point upon each of said members, and means for imparting an intermittent movement to said slide as the yoke carrying the latter rocks, as set forth.

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

JOSEPH A. STANSBURY.

Witnesses:

NEWTON T. KIRK,

INEZ M. PECK.