

C. BALL.

SCYTHE GRINDER.

APPLICATION FILED APR. 26, 1907.

901,059.

Patented Oct. 13, 1908.

Fig. 1.

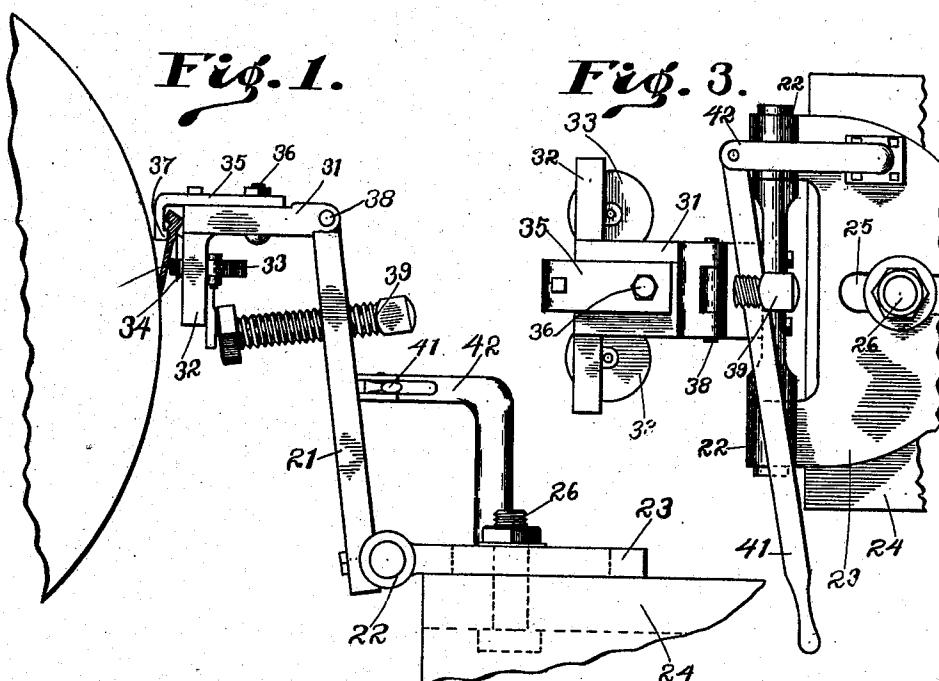


Fig. 3.

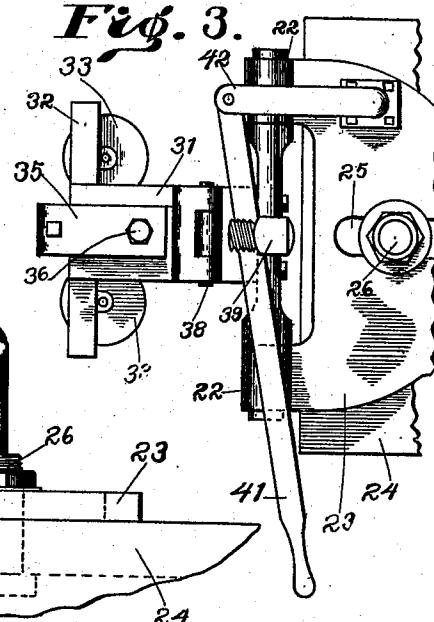


Fig. 2.

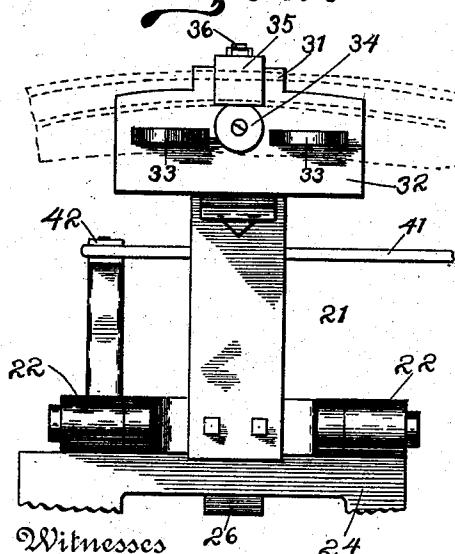
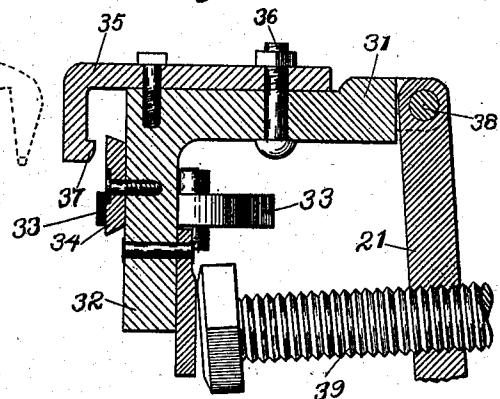


Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

CHARLES BALL, OF ALEXANDRIA, INDIANA, ASSIGNOR TO KELLY AXE MFG. CO., OF ALEXANDRIA, INDIANA, A CORPORATION OF INDIANA.

SCYTHE-GRINDER.

No. 901,059.

Specification of Letters Patent.

Patented Oct. 13, 1908.

Application filed April 25, 1907. Serial No. 370,121.

To all whom it may concern:

Be it known that I, CHARLES BALL, a citizen of the United States, residing at Alexandria, in the county of Madison and State 5 of Indiana, have invented certain new and useful Improvements in Scythe-Grinders, of which the following is a specification.

In the manufacture of scythes one of the most difficult and dangerous operations is 10 the grinding of the blades on large power grindstones. In doing this work in the ordinary way, such blades are usually held in the hands of the operator and forced against the stone manually. The operation is com- 15 paratively slow, and like all hand operations, is somewhat inaccurate.

It is the object of my present invention to provide an improved mechanical device for holding the scythe-blades during the opera- 20 tion of grinding; applying the necessary pressure thereto, and adjusting the same accurately to the desired angles and positions.

Referring to the accompanying drawings, on which similar reference characters indicate similar parts, Figure 1 is a side elevation of my improved grinder, a fragment only of the grindstone being shown, while the scythe-blade being operated upon is shown in section; Fig. 2 a front elevation of 25 the scythe-holding device separate from the grindstone and with the position of the scythe indicated by means of dotted lines; Fig. 3 a top or plan view, and Fig. 4 a detail sectional view, on a somewhat enlarged scale, 30 showing the details of construction more clearly.

The main standard 21 of my improved grinder is mounted in suitable bearings, as 22, and the structure 23 embodying or carrying said bearings, is also adjusted in respect to its base or support 24, as by means 35 of slots 25 therein and one or more screws or bolts 26. By this means the device can be adjusted nearer to or further from the grind- 40 stone at pleasure, and be thus adapted to use with various sized stones, or adapted to the various angles required in various kinds of grinding.

Hinged to the main standard 21 is a blade- 45 carrying head which is adapted to carry the scythe-blade and hold the same in the proper relation to the grindstone, during the grinding operation. The main or body member 31 of this head extends outwardly from the

main standard a suitable distance, and then 55 turns downwardly a distance approximately the same as the width of a scythe blade and spreads outwardly a distance approximately equal to the thickness of the grindstone. Mounted in this downwardly extending por- 60 tion 32 are two anti-friction rollers 33 against which that side of the scythe blade opposite to the grindstone will bear as said blade is moved back and forth, and between said rollers, and directly behind the grind- 65 ing point, I also provide a guide roller 34 extending out nearly as far as the peripheries of the rollers 33, which will not only support and guide the blade, but will prevent it from being forced back too far at 70 that point in case a too heavy pressure is applied during the grinding operation. Upon the main or body member 31 of this head is secured an overhanging member 35 (as by bolts 36), the front portion of which extends 75 down parallel with the downwardly extending portion 32 of said main or body member 31. On the inner face of this downwardly extending portion is a rib 37 which engages with the groove usually formed in the blank 80 from which the scythe blade is made; and, as the space between this part and the face of the rollers is just sufficient to permit the scythe blade to travel freely back and forth, the consequence is, when the scythe blade is 85 introduced from the end, that it is prevented from escaping from the head during the grinding operation. The scythe blade cannot of course escape upwardly, as the horizontal portion of the member 32 extends 90 over it. The whole of this head portion swings on the hinges or pivots by bolts 38 by which it is secured to the main standard 21, and its relation to said standard is ad- 95 justed as desired by means of the adjusting screw 39.

The whole structure is held forward toward the grindstone with any required force by means of a lever 41 which is secured to any suitable adjacent rigid structure (as an 100 arm 42 on the base 24) and bears against the back side of the part 21 and extends out to a point convenient to the hand of the operative.

In operation, the operative, after insert- 105 ing the scythe blade endwise into this machine, moves it back and forth through said machine and over the face of the stone with

one hand, while he applies the necessary force thereto through the lever 41 with the other.

It will be noticed that this device is capable of being swiveled at the bed plate, so that it can be adjusted to follow the curves of the scythe and produce an even bevel on a scythe of any shape, while allowing the grinding to take place on the full face of the stone. It will further be seen that by reason of the hinge carrying the head and the set screw for adjusting it that the machine can be adjusted to grind the edge of the scythe true at any desired bevel. The two anti-friction wheels keep the scythe from kinking while grinding; and, with the guide wheel between them, makes the scythe run easy. The whole machine being mounted on hinge bearings is practically self-adjusting;—that is, it will follow up or give way from the stone, according to its character, and according to the character and width of the scythe blade.

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

1. The combination, in a scythe grinder, of a hingedly-mounted standard, a head hingedly mounted on said standard, means 30 for adjusting said head to the proper condition for the work to be performed, means for holding the scythe blade in such head, a lever support, a lever hinged thereto for operating the standard, and anti-friction 35 rollers against which the scythe will bear during the grinding operation.

2. The combination, in a scythe grinder, of a main standard, a base to which said main standard is hinged, said base being 40 provided with means whereby it may be adjusted, a head carried by said standard, a guide roller and anti-friction rollers carried by said head against which the scythe blade rests in operation, and an overhanging member carried by said head and extending over and engaging with the scythe blade and preventing the latter from escaping during the grinding operation.

3. The combination, in a scythe grinder, 50 of a main standard, a head portion hinged thereto and provided with engaging devices for securely holding the scythe blade during the grinding operation, said holding devices being adapted to permit the scythe 55 blade to travel freely longitudinally while preventing its escape laterally, and means

for swinging the holding device toward and from the grindstone.

4. The combination, in a scythe grinder, of an adjustable base, a main standard 60 hinged to said adjustable base, a head hinged to said standard, engaging devices on said head for engaging and holding the scythe blade during the grinding operation, and a lever carried by the adjustable base 65 and adapted to force the scythe being ground toward the grindstone.

5. The combination, in a scythe grinder, of a main standard, a head hinged thereto, an adjusting screw carried by the standard 70 for adjusting the relation of said head to said standard, and engaging devices on said head for engaging and holding the scythe blade during the grinding operation.

6. The combination, in a scythe grinder, 75 of a main standard, a head thereon, a guide roller on said head, anti-friction rollers mounted in said head on the opposite sides of said guide roller, and an overhanging member extending out over and beyond said 80 rollers and adapted to hold the scythe blade in position in front of said rollers during the grinding operation.

7. The combination, in a scythe grinder, 85 of an adjustable base, a pivoted main member mounted on said base, a head hinged to said main member, means for adjusting said head in relation to said main member, means for swinging said main member toward and from the grindstone, and devices secured to 90 said head for engaging and holding the scythe blade during the grinding operation.

8. The combination, in a scythe grinder, 95 of a main standard, a head thereon, an overhanging member extending out over and beyond the face plate of said head and having a rib adapted to engage with a groove on the scythe blade and guide the same as it is moved back and forth during the grinding operation, and anti-friction rollers in 100 said head behind the overhanging member against which the scythe bears during the grinding operation.

In witness whereof, I, have hereunto set my hand and seal at Charleston, West Virginia, this twentieth day of April, A. D. 105 one thousand nine hundred and seven.

CHARLES BALL. [L.S.]

Witnesses:

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