G. H. McFEATERS.

GRINDER.

APPLICATION FILED JAN. 31, 1922.

1,425,121.

Patented Aug. 8, 1922.

Fig. 4.

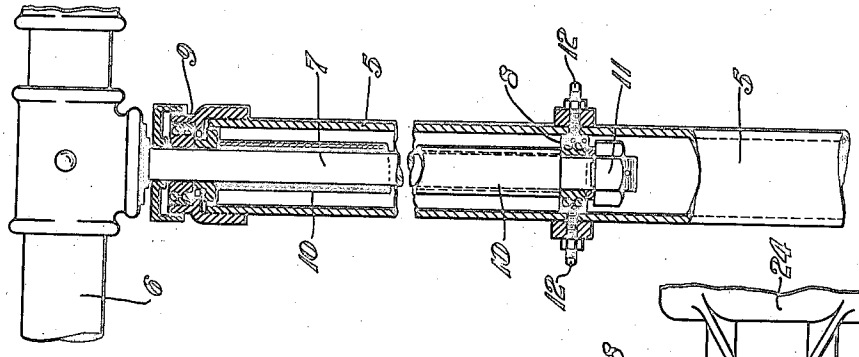


Fig. 5.

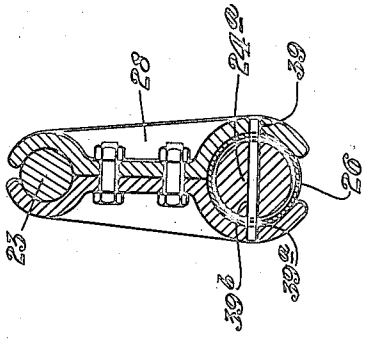


Fig. 6.

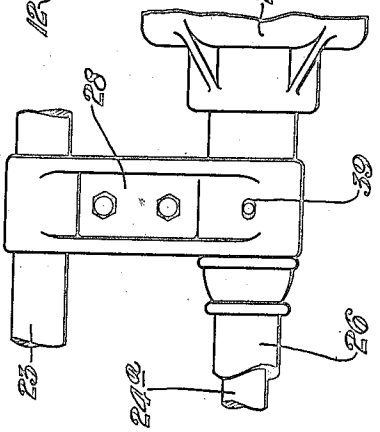
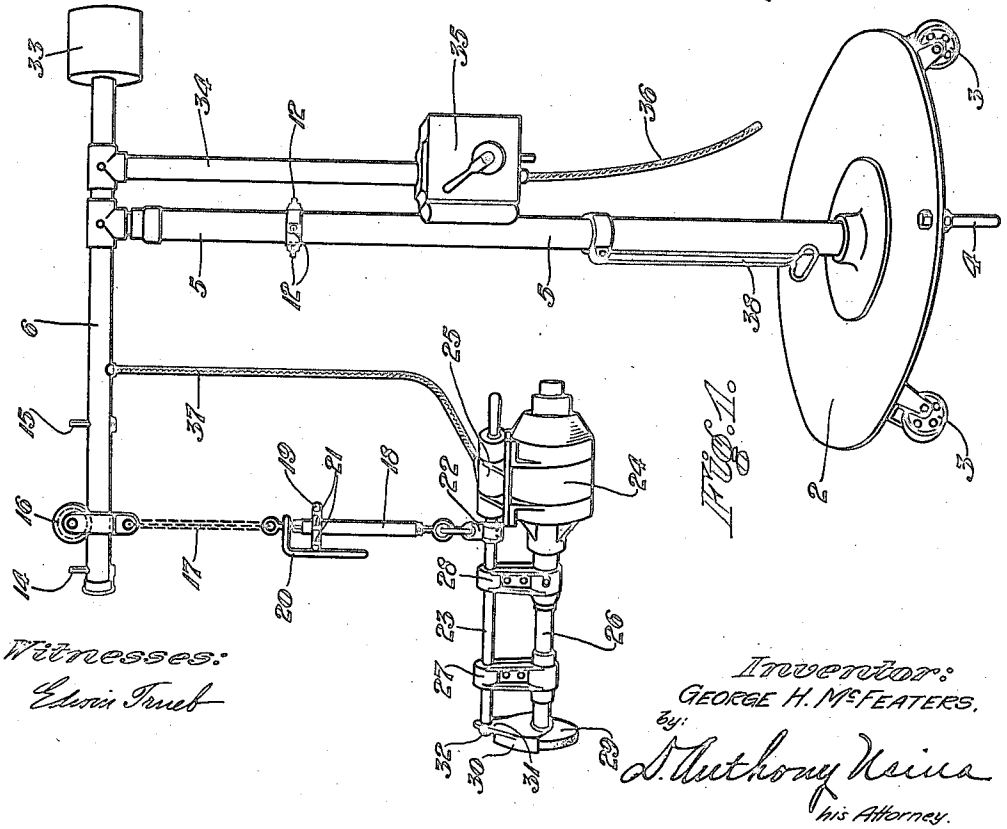


Fig. 1.



Witnesses:
Edwin Trueb

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UNITED STATES PATENT OFFICE.

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GRINDER.

1,425,121. Specification of Letters Patent. Patented Aug. 8, 1922.

Application filed January 31, 1922. Serial No. 532,930.

To all whom it may concern:

Be it known that I, GEORGE H. McFEATERS, a citizen of the United States, and resident of Johnstown, in the county of Cambria and State of Pennsylvania, have invented certain new and useful Improvements in Grinders, of which the following is a specification.

This invention relates to grinders, and more particularly to portable grinders, and has for one of its objects the provision of a grinder of this class that may be quickly transported from place to place.

Another object is to provide a grinder of this class that will have the grinding mechanism so mounted that it may be swung around a considerable radius, thereby permitting it to be used at different points without moving the base.

A further object is to provide a grinder of the class described having the novel construction and combination of parts described in the following specification and illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a grinder constructed in accordance with my invention.

Figure 2 is a fragmentary detail showing the manner in which the sleeve bearing carrying the motor shaft is mounted.

Figure 3 is a sectional view on the line III—III of Figure 2.

Figure 4 is a fragmentary elevation partly in section, showing the manner in which the supporting beam is pivotally mounted on the upright or standard of the device.

Referring more particularly to the drawings, the numeral 2 designates the circular plate or disk base member which has a plurality of spaced castors or wheels 3 secured thereon. A pin or leg 4 is secured to the base between each of the rollers and terminates short of the floor line. The pins or legs 4 are adapted to form additional supports for the base so that if for any reason the base is tilted the legs 4 will engage the floor and prevent further tilting.

A tubular standard 5 is secured to, and projects upwardly from, the center of the disk or base 2 and is adapted to support a tubular beam member 6. The member is of tubular form and is provided at a point intermediate its ends with a shaft 7 which projects downwardly within the standard 5. The shaft 7 is journaled in the standard 5 and is provided at its upper and lower ends with suitable anti-friction bearings 8 and 9. A suitable spacing sleeve 10 is arranged around the shaft 7 and serves to hold the bearings 8 and 9 in spaced relation. The lower end of the shaft 7 is provided with a screw thread and a nut 11 is threaded thereon to tie the bearings 8 and 9, sleeve 10, and shaft 7 together. The lower bearing 8 is of less diameter than the inside diameter of the standard 5 and is held in adjustable spaced relation with the inner periphery of the standard by a plurality of set screws 12 which are threaded through the standard 5 and engage against the bearing 8 and are adapted to be so adjusted as to maintain the beam at right angles to the vertical axis of the standard 5.

The forward or supporting end of the beam member 6 is provided with spaced stops 14 and 15, and a trolley member 16 is mounted on the beam between the stops. A suspension chain 17 is secured to the trolley 16 and is provided adjacent its lower end with a turn-buckle 18 for adjusting its length. The turn-buckle 18 is provided with a hand wheel 19 for operating it and a latch member 20 is adapted to engage in suitable notches 21 in the hand wheel 19 to lock it in adjusted position.

The lower end of the suspension chain is provided with a collar member 22 which is adjustably secured on a supporting rod 23 which is adapted to support the grinding mechanism. A motor 24 is suspended from the rod 23 by means of a clamping member 25 which engages the rod 23 and is secured to the motor housing. A sleeve 26 projects outwardly from the motor housing parallel with the rod 23 and is suspended therefrom by suspending brackets 27 and 28. The armature shaft 24^a of the motor 24 projects through the sleeve 26 and has a grinding wheel 29 secured on its free end.

A safety guard or hood 30 is welded or otherwise secured to the free end of the sleeve 26 and has a lug 31 projecting upwardly therefrom which is secured to the end of the rod 23 by a screw 32.

The collar member 22 is adapted to be adjusted along the rod 23 so as to maintain the grinding mechanism in a horizontal balanced position, the balance of which will vary with the various grinding wheels.

The bracket 28, sleeve 26, and shaft 24^a are provided with apertures 39, 39^a and 39^b, respectively, which are adapted to be alined

with each other, and a locking pin inserted therethrough when it is desired to change the grinding wheels. The locking pin when inserted being adapted to prevent the turning of the shaft 24a.

The rear end of the beam 6 is provided with counterweight 33 adapted to counterbalance the grinding mechanism.

A tubular column 34 projects downwardly from the rear portion of the beam 6 and is in communication with the interior thereof. A make and brake device such as the starting box 35 shown, is secured to the lower end of the column 34, and the electric current for operating the motor 24 is provided by a cable 36 which leads into the box 35. The current is conducted from the box through a cable 37 which passes through the tubular column 34 and beam 6 to a suitable outlet, and then passes to the motor.

A handle member 38 is pivotally secured to the standard 5 to facilitate the handling of the apparatus when transporting it.

It will be readily seen that a grinder constructed as above described may be swung around a circle having a comparatively large radius, and thus serve a considerable area, it may be bodily moved around a plant, it may be adjusted horizontally and vertically so as to be readily adapted to various work, and it is so balanced as to be easily operated.

I claim:

1. A portable grinder comprising in combination, a wheeled base, a vertical standard projecting upwardly from said base, a horizontal supporting beam pivotally mounted intermediate its ends on said standard, a trolley member mounted for horizontal movement on said beam, a flexible supporting element suspended from said trolley, a collar member secured on the lower end of said element and adjustably secured to a horizontally disposed supporting rod, a motor suspended from adjacent one end of said rod, a bearing sleeve projecting from said motor and suspended from said rod, a motor driven shaft within said sleeve, a grinding wheel on the free end of said shaft, means for supplying electric power to said motor, and means for counterbalancing said motor, grinding wheel and associated parts.

2. A portable grinder comprising in combination, a wheeled base, a vertical standard projecting upwardly from said base, a horizontal supporting beam pivotally mounted intermediate its ends on said standard, a trolley member mounted for horizontal movement on said beam, a flexible supporting element suspended from said trolley and secured to a horizontally disposed supporting rod, means for adjusting said element vertically, a motor suspended from adjacent one end of said rod, a bearing sleeve projecting from said motor and suspended from said rod, a motor driven shaft journaled within said bearing sleeve, and a grinding wheel carried by said shaft.

3. A portable grinder comprising a circular disk-like base member, wheels arranged at spaced intervals around said base, rigid pins projecting downwardly from said base and terminating short of the floor line and adapted to engage the floor only if the base is tilted, a rigid vertical standard projecting upwardly from said base, a horizontal supporting beam pivotally mounted intermediate its ends on said standard, a power driven grinding mechanism carried by a flexible supporting member suspended from said beam and movable horizontally relative thereto, and means for adjusting said flexible supporting element vertically relative to said beam.

In testimony whereof I have hereunto set my hand.

GEORGE H. McFEATERS.