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M. A. HOLLENGREEN
INTERNAL GRINDING FIXTURE

2,909,013

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3 Sheets-Sheet 1

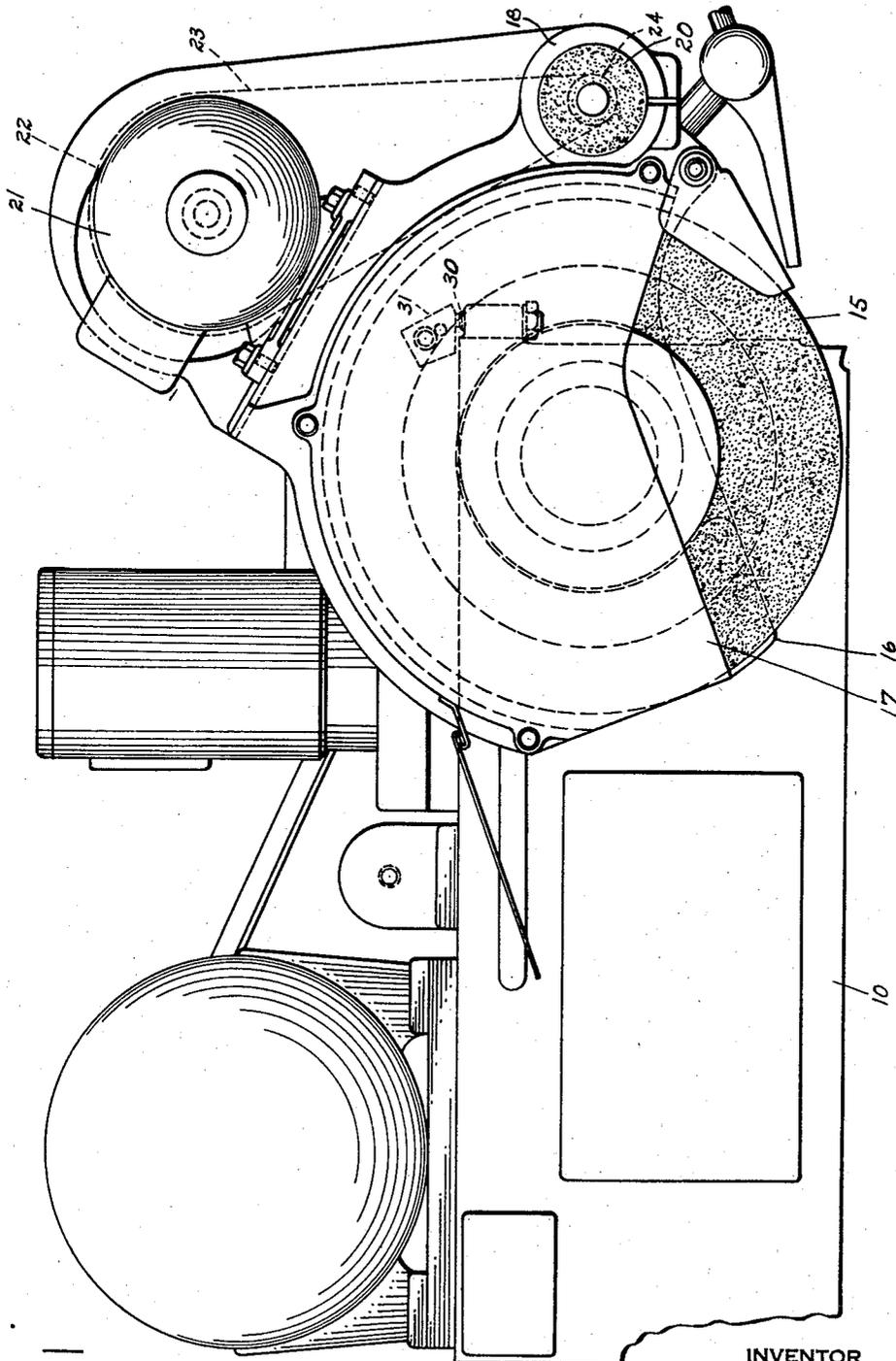


Fig. 1

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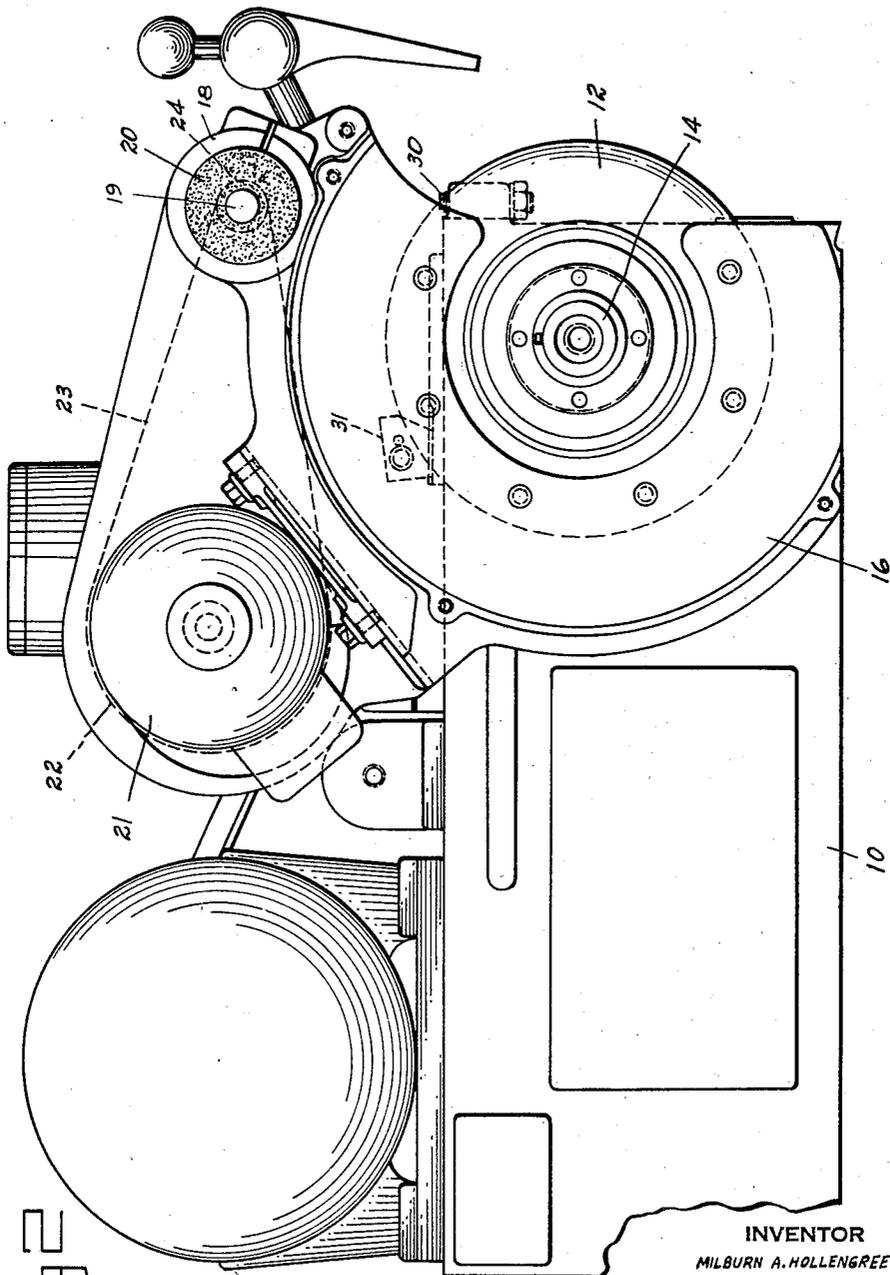


Fig. 2

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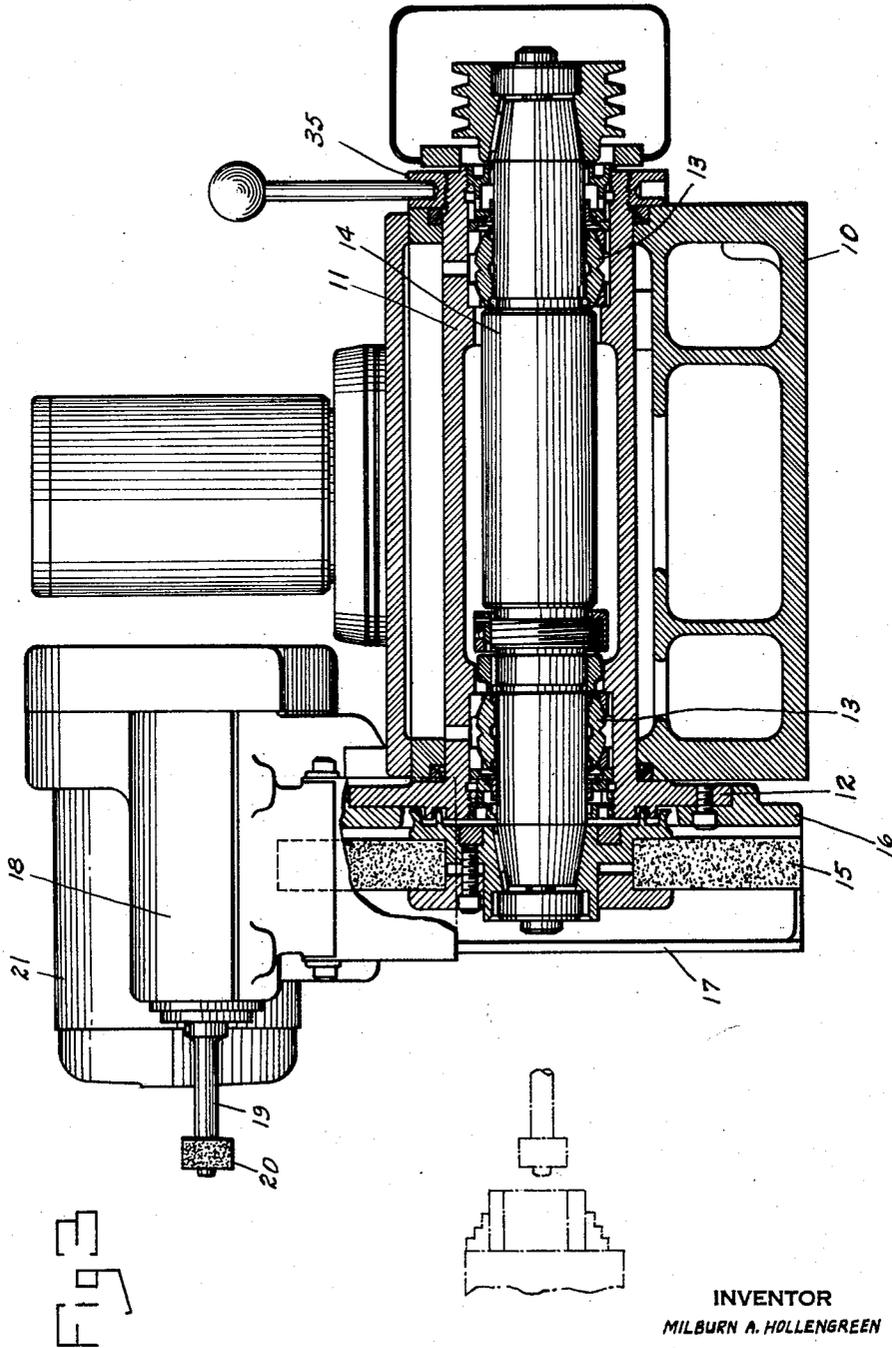


FIG 3

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INTERNAL GRINDING FIXTURE

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5 Claims. (Cl. 51-166)

This invention relates to internal grinding fixtures for cylindrical grinding machines particularly to the means for mounting such fixtures on the machines.

Conventional internal fixtures generally consist of a belt driven spindle carried on a bracket which is pivotally attached to the wheel support on the machine.

The spindle is generally driven by belts from the jack shaft on the bracket. The jack shaft may be driven from the motor which also drives the external grinding wheel.

Other fixtures included a self containing fixture having a driving motor connected by belts to the internal spindle. The spindle and motor are supported on a bracket pivotally mounted to be swung down over the grinding wheel.

The present invention has a novel feature apart from that of the previous fixtures in that, the bracket which carries the spindle and driving motor is also the wheel fender.

It is an object of this invention to provide a rotatable mount for said wheel fender so that the internal fixtures may be rocked toward and away from operative position.

Another object is to provide an internal grinding fixture mounted to swing to and from working position about the axis of the external grinding wheel.

Figure 1 is an end elevation showing the internal fixture in operative position.

Figure 2 is an end elevation showing the internal fixture in in-operative position.

Figure 3 is a front elevation partly in section showing the sleeve which provides the rotatable support for the internal fixture.

Numeral 10 indicates a wheel support for a conventional universal external grinding machine. 11 is a sleeve rotatably mounted in said support 10 and having a flange member 12 at one end thereof. Bearings 13 are mounted in axially spaced relation in said sleeve 11. A spindle 14 is rotatably mounted in said bearings 13 and has an external grinding wheel 15 mounted at one end thereof. The internal grinding fixture consists of a bracket 16 attached to said flange member 12 and formed to serve as a part of the peripheral portion of a wheel fender. A side member 17 of the wheel fender is removably attached to bracket 16. At the right end of said bracket is formed a spindle housing 18 in which is rotatably mounted a spindle 19. An internal grinding wheel 20 is mounted on said spindle 19. On the end of said spindle 19 opposite the grinding wheel is a pulley 24 driven through belt 23 from pulley 22 on motor 21. Said motor 21 is adjustably and removably mounted on bracket 16.

An adjustable stop member 30 is mounted in a vertical position on the front end of wheel support 10 adjacent

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bracket 16. A stop member 31 is secured in a predetermined position on bracket 16 so as to properly locate the fixture in operative position against stop member 30 or in in-operative position against the top of wheel support 10 as shown in Figure 2. Stop member 30 is adjusted to locate the fixture with the axes of both wheels in the same horizontal plane so that said wheels engage the workpiece in the same horizontal plane. The fixture may be clamped in either position by means of a clamping ring 35 threaded to one end of sleeve 11. A handle 36 serves as a means to actuate said clamping ring.

I claim:

1. In a grinding machine, a grinding wheel support, a grinding wheel rotatably mounted thereon, a wheel guard mounted for angular adjustment on said wheel support and an internal grinding attachment mounted on said wheel guard and movable therewith in a circular path toward and from operative position.

2. In a grinding machine, a wheel support, a grinding wheel rotatably mounted thereon, a guard for said grinding wheel, an internal grinding attachment mounted on said guard, said guard being adjustably mounted on said wheel support to move said attachment toward and from operative position.

3. In a grinding machine, a grinding wheel support, means for rotatably supporting a grinding wheel thereon including a sleeve rotatably mounted in said support, axially spaced bearings in said sleeve, a spindle rotatably mounted in said bearings, a grinding wheel mounted on said spindle, a bracket on the end of said sleeve adjacent said grinding wheel and rotatable with said sleeve in the plane of said grinding wheel, an internal grinding wheel spindle rotatably mounted in said bracket, and means also on said bracket for driving said internal grinding wheel spindle.

4. In a grinding machine, a grinding wheel support, means for rotatably supporting a grinding wheel thereon including a pair of axially spaced bearings, a spindle rotatably mounted in said bearings, a grinding wheel mounted on said spindle, an internal grinding fixture for said machine having a mounting bracket pivotally mounted on said grinding wheel support, said mounting consisting of a sleeve rotatably mounted in said support concentric with said spindle and bearings, a flange on one end of said sleeve, said bracket being secured to said flange.

5. In a grinding machine, a grinding wheel support, means for rotatably supporting a grinding wheel thereon including a pair of axially spaced bearings, a spindle rotatably mounted in said bearings, a grinding wheel mounted on said spindle, an internal grinding fixture for said machine having a mounting bracket pivotally mounted on said grinding wheel support, said mounting consisting of a sleeve rotatably mounted in said support concentric with said spindle and bearings, a flange on one end of said sleeve, said bracket being secured to said flange, and means for locking said fixture in either operative or in-operative position including a clamping device on said sleeve.

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