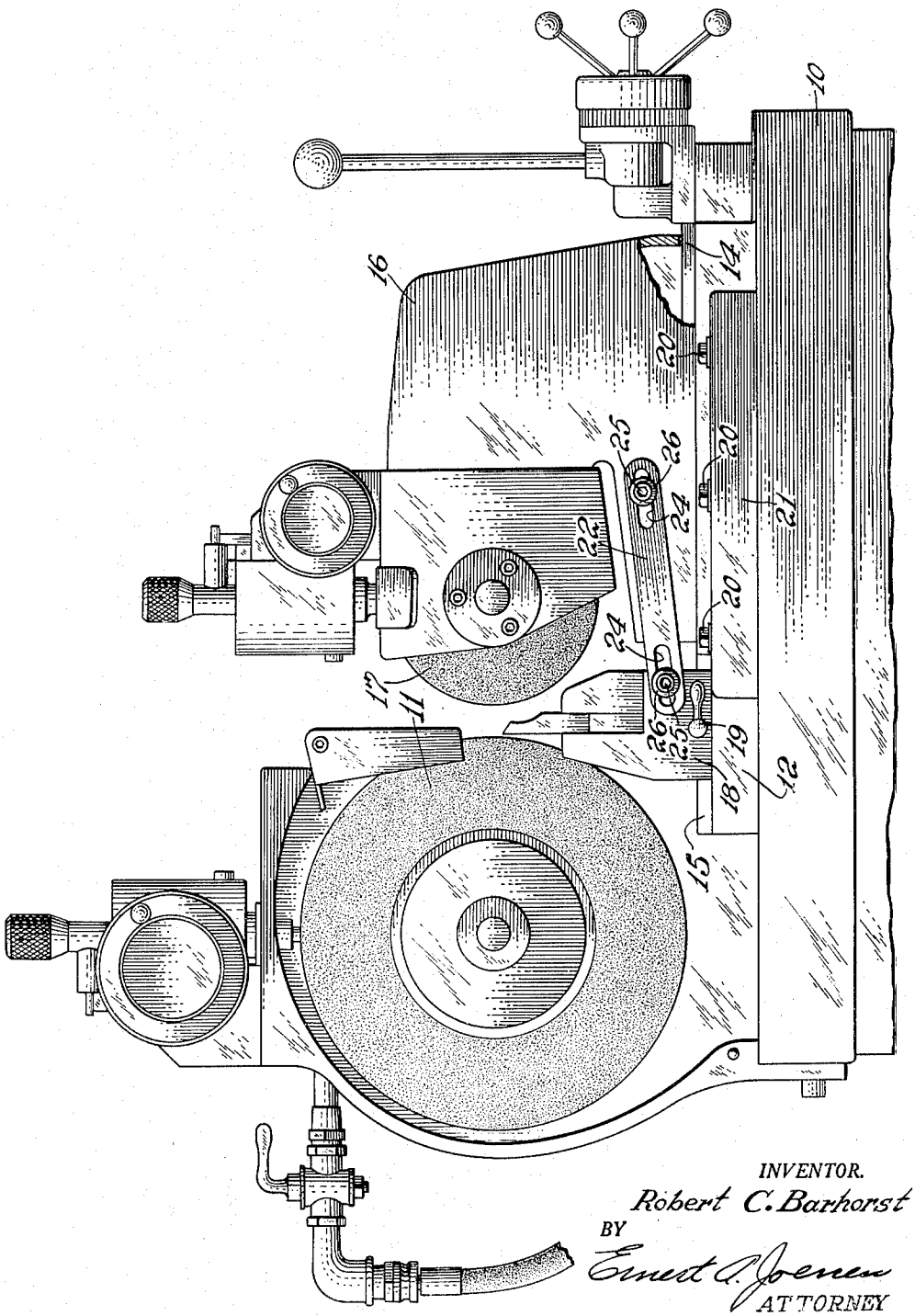
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CONVERTIBLE CENTERLESS GRINDER

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CONVERTIBLE CENTERLESS GRINDER

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The present invention relates to centerless grinders, and, more particularly, to an improved work rest holder and regulating wheel supporting housing arrangement for centerless grinders.

Heretofore, centerless grinders have included a bed or base, a work wheel mounted on the bed, a guide on the bed, a slide on the guide, a work rest holder mounted on the slide in a fixed position, a regulating wheel, and a supporting housing for the regulating wheel movably mounted on the slide. Such grinders could not be readily converted from a through feed grinding machine to infeed machine or vice versa.

Accordingly, an object of the present invention is to provide a centerless grinder which is adapted for through feed and infeed operation.

Another object is to provide such a grinder wherein the customary slide is dispensed with.

Another object is to provide such a grinder adapted to be converted from through feed to infeed operation and vice versa in a simple, practical and convenient manner.

Another object is to provide such a grinder wherein the work rest holder and the regulating wheel ram or supporting housing can be moved independently of each other and as a prepositioned unit with respect to the work wheel.

A further object is to provide such a grinder wherein the work rest holder and the regulating wheel ram are removably secured by adjustable linkage.

Other and further objects of the invention will be obvious upon an understanding of the illustrative embodiment about to be described, or will be indicated in the appended claims, and various advantages not referred to herein will occur to one skilled in the art upon employment of the invention in practice.

A preferred embodiment of the invention has been chosen for purposes of illustration and description, and is shown in the accompanying drawing, forming a part of the specification, wherein:

The single figure is a fragmentary side elevational view of a centerless grinder embodying the present invention.

Referring to the drawing in detail, there is shown a centerless grinder which essentially comprises a bed or base **10**, a work wheel **11** mounted on the bed at one end thereof in the conventional manner, a ram bed **12** slideably mounted on the base **10** for general fixed positioning with respect to the work wheel and having a front slide **14** and a rear slide **15** thereon, a ram **16** including a regulating wheel **17** mounted on the front slide, a work rest holder **18** mounted on the rear slide, and a screw clamp **19** for securing the work rest holder to the rear slide. The ram and the work rest holder and their respective slides are dovetailed in a conventional manner.

In this manner, the regulating wheel ram and the work rest holder are constructed and arranged to be moved independently of each other on the ram bed with respect to the work wheel. For example, when it is desired to use the machine for infeed operation, the work rest holder

is placed into a predetermined position with respect to the work wheel and is clamped on its slide in a fixed position and the regulating wheel ram is moved back and forth on its slide by conventional mechanism in the customary manner.

However, when it is desired to use the machine for through feed operation, it is of utmost importance that the work rest holder and the regulating wheel be maintained in a predetermined position with respect to each other and the work wheel. This is accomplished by securing the ram bed on the base in a fixed position, for example by tightening bolts **20** or the like of side members **21**, adjusting the work rest holder on its slide and clamping the same in a fixed position, and adjusting the regulating wheel ram on its slide and securing the same in such position.

In the course of using the machine, the work wheel will wear and its diameter will be reduced thereby disturbing the original adjustment and requiring the work rest holder and the regulating wheel to be repositioned with respect to the work wheel.

In accordance with the present invention, this latter operation is greatly facilitated by providing a link **22** at each side of the machine for securing the work rest holder and the regulating wheel ram for movement as a unit on their respective slides, whereby the original adjustment between the work rest holder and the regulating wheel is preserved and both can be moved as a unit towards the work wheel.

As shown herein, these links may comprise a flat strap having an elongate slot **24** at each end thereof, and are secured to the work rest holder and the regulating wheel ram by bolts **25** adapted to slide within the slots and washers **26** between the bolt heads and the strip adapted to provide a greater clamping area.

The slots **24** facilitate adjustment of the work rest holder with respect to the ram, and, when secured, maintain such adjustment. When it is desired to readjust the position of both the work rest holder and the ram with respect to the work wheel, the links remain fastened and the clamp **19** is loosened to permit the work rest holder to move with the ram. The slots **24** also facilitate using the machine for infeed operations without removing the links. In such case, the work rest holder remains clamped to its slide and the bolts **25** are loosened thereby permitting the bolts to slide in the slots and provide for relative movement between the ram and the work rest holder.

Another advantage of the machine described herein is that the work rest holder is readily removed from its slide by disconnecting the links, thereby enabling another work rest holder of like or different design to be placed on the slide. The interchangeability of the work rest holder makes the machine adaptable for a wide variety of uses.

Also, by mounting the work rest holder on the ram bed slide, movement thereof to adjust its position with respect to the work wheel is made much more convenient than in conventional machines wherein the work rest holder is fixed to the ram bed and can only be moved therewith. In the present machine, the ram bed need only be moved for general positioning and this can be done before mounting the ram thereon.

From the foregoing description, it will be seen that the present invention provides a centerless grinder adapted for both through feed and infeed operations. The conversion linkage making such use possible is simple and rugged in construction and does not materially increase the cost of the machine.

As various changes may be made in the form, construction and arrangement of the parts herein, without departing from the spirit and scope of the invention and

without sacrificing any of its advantages, it is to be understood that all matter herein is to be interpreted as illustrative and not in any limiting sense.

I claim:

1. In a centerless grinder, the combination of a base, a work wheel mounted on said base in a fixed position, a ram bed mounted on said base solely for general positioning with respect thereto and having front and rear slides on the upper surface thereof, a work rest holder slideably mounted on said rear slide for movement towards and away from said work wheel, a regulating wheel ram slideably mounted on said front slide for movement towards and away from said work wheel independently of said work rest holder, and a link attached to said work rest holder and said regulating wheel ram for securing said work rest holder and said regulating wheel ram for movement as a unit on said ram bed with respect to said work wheel.

2. A grinder according to claim 1, including a clamp for releaseably securing said work rest holder to its slide.

3. A grinder according to claim 1, wherein said link includes means for releaseably securing the same to said work rest holder and said ram.

4. A grinder according to claim 3, wherein said means include slots in said link and bolts extending through said slots and threaded into said work rest holder and said ram for clamping said link.

5. In a centerless grinder, the combination of a base, a work wheel mounted on said base in a fixed position, a work rest holder slideably mounted on said base for movement towards and away from said work wheel, a regulating wheel ram slideably mounted on said base for movement towards and away from said work wheel independently of said work rest holder, a link having an elongate slot adjacent each end thereof, and a bolt slideably positioned in each slot, one bolt being threaded to said work rest holder and the other being threaded to said ram thereby releaseably securing said work rest holder and said regulating wheel ram for movement as a unit and independent movement.

6. A grinder according to claim 5, including a clamp for releaseably securing said work rest holder against movement with respect to said work wheel.

7. In a centerless grinder, the combination of a base, a work wheel mounted on said base in a fixed position, a work rest holder slideably mounted on said base for movement towards and away from said work wheel, a regulating wheel ram slideably mounted on said base for movement towards and away from said work wheel independently of said work rest holder, and a link at each side of said work rest holder and said regulating wheel ram for releaseably securing the same for movement as a unit.

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