

W. H. BROWER & B. BONNICHSEN.

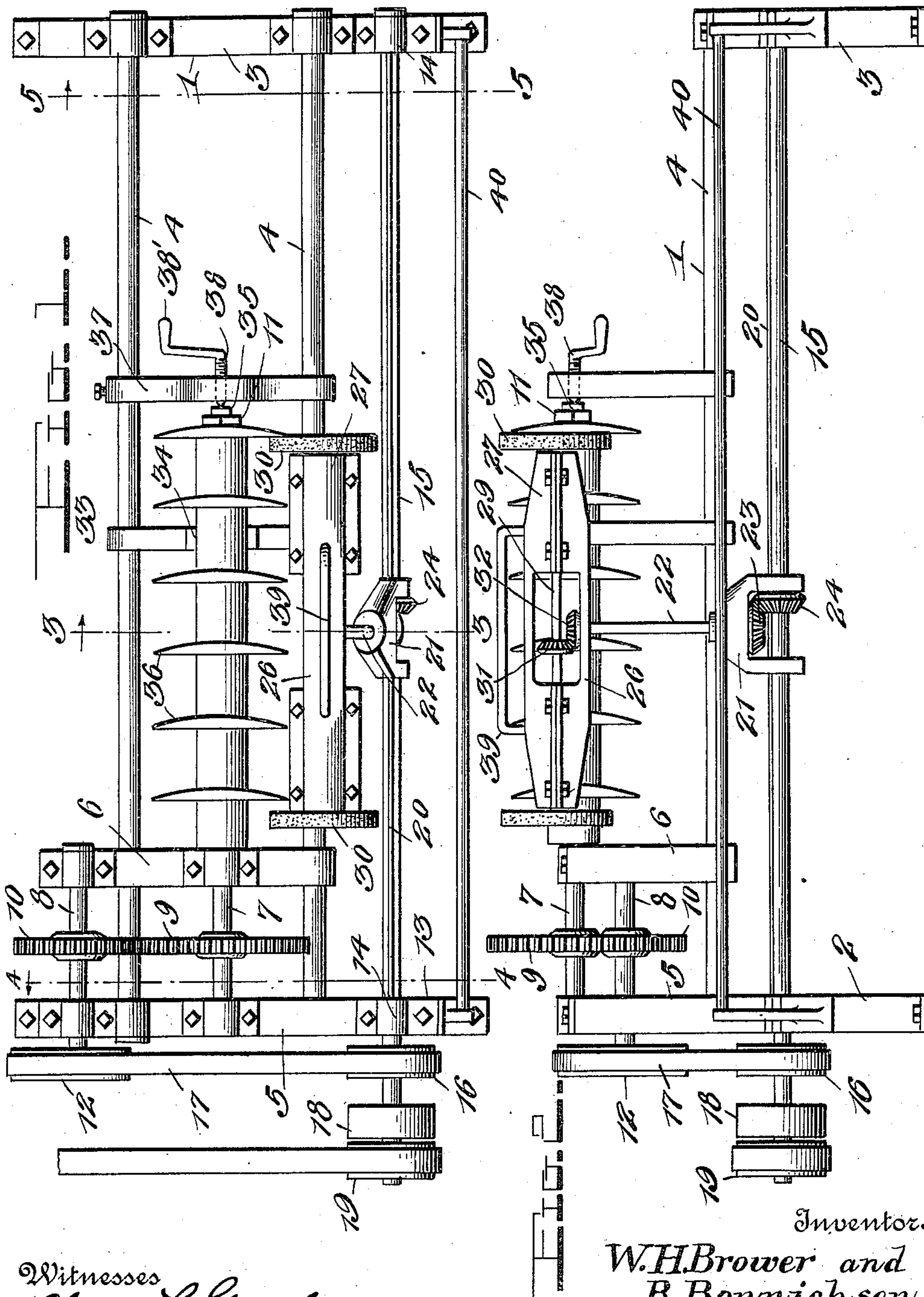
DISK GRINDING MACHINE.

APPLICATION FILED DEC. 8, 1910.

990,332.

Patented Apr. 25, 1911.

2 SHEETS—SHEET 1.



Witnesses

Chas. L. Griestauer.  
O. B. Hopkins

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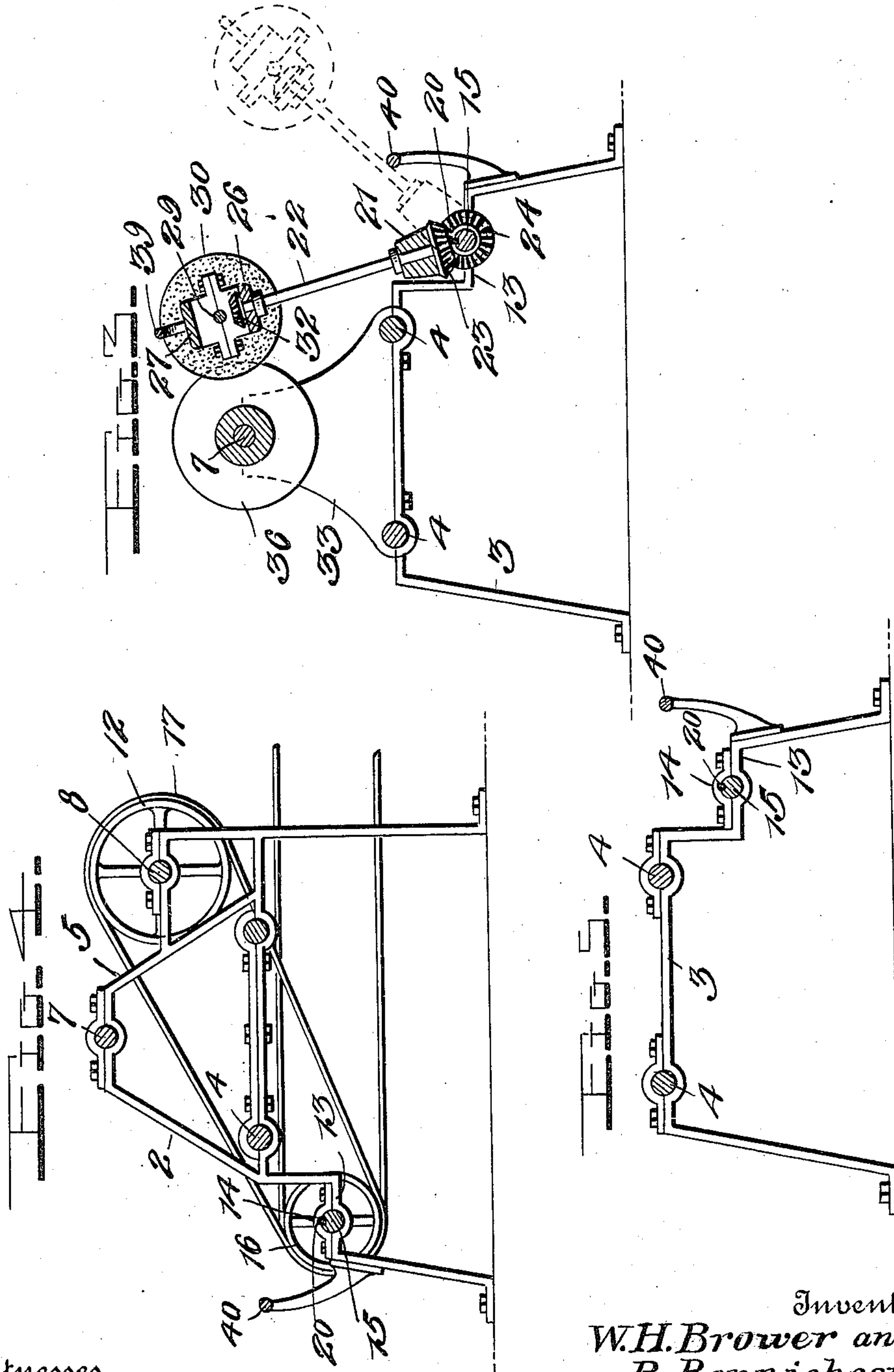
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# UNITED STATES PATENT OFFICE.

WILLIAM H. BROWER AND BAHNE BONNICHSEN, OF REMBRANDT, IOWA.

## DISK-GRINDING MACHINE.

990,332.

Specification of Letters Patent.

Patented Apr. 25, 1911.

Application filed December 8, 1910. Serial No. 596,275.

*To all whom it may concern:*

Be it known that we, WILLIAM H. BROWER and BAHNE BONNICHSEN, citizens of the United States, residing at Rembrandt, in the county of Buena Vista and State of Iowa, have invented certain new and useful Improvements in Disk-Grinding Machines; and we do 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.

This invention relates to improvements in grinding machines for harrow disks.

One object of the invention is to provide a machine of this character having an improved construction and arrangement of disk supporting and revolving mechanism and an improved construction and arrangement of supporting and operating mechanism for the grinding wheels of the machine whereby they may be brought into operative engagement with the harrow disks.

Another object is to provide a machine of this character which will be simple, strong and durable in construction, efficient in operation and well adapted to the purpose for which it is designed.

With these and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts as will be more fully described and particularly pointed out in the appended claim.

In the accompanying drawings: Figure 1 is a top plan view of a disk grinding machine constructed in accordance with the invention; Fig. 2 is a side view of the same; Fig. 3 is a vertical cross sectional view on the line 3—3 of Fig. 1; Fig. 4 is a similar view on the line 4—4 of Fig. 1; Fig. 5 is a similar view on the line 5—5 of Fig. 1.

Referring more particularly to the drawing, 1 denotes the supporting frame of the machine said frame comprising end members 2 and 3 which are connected together by longitudinally disposed horizontal supporting bars 4. On the bars 4 and end member 2 are arranged bearing standards 5 and 6 in which is revolubly mounted a disk revolving shaft 7 and an operating shaft 8. On the shafts 7 and 8 are fixedly mounted operating gears 9 and 10 whereby the motion of the shaft 8 is imparted to the shaft 7. On the inner end of the shaft 7 is ar-

anged a squared socket 11 the purpose of which will be hereinafter described. On the outer end of the shaft 8 is fixedly mounted an operating pulley 12.

On one side of the end members 2 and 3 of the frame are formed right angular offsets 13 having arranged therein bearings 14 in which are revolubly mounted the opposite ends of a main drive shaft 15 having on one end a pulley 16 which is connected by a belt 17 with the pulley 12 on the outer end of the shaft 8. On the end of the shaft 15 is also mounted a loose pulley 18 and a tight pulley 19 whereby the shaft 15 may be operatively connected to the drive shaft of any suitable motor. The drive shaft 15 is provided throughout its length with a longitudinally disposed key 20 and on said shaft is slidably and loosely mounted a yoke 21 in which is revolubly mounted an upwardly projecting power transmitting shaft 22 on the lower end of which is fixedly mounted a bevel gear 23 which is adapted to mesh with a similar gear 24 slidably keyed to the shaft 25 by the key 20.

On the upper portion of the shaft 22 is loosely supported a bearing frame 26 which is preferably formed in upper and lower sections, bolted or otherwise suitably secured together. In the opposite ends of the frame are formed shaft bearings 27 while in the center of the frame is formed an opening 28. In the bearings 27 is revolubly mounted the grinding shaft 29 of the machine, on the opposite ends of which are fixedly mounted grinding wheels 30 which are preferably in the form of emery wheels. On the shaft 29 in the opening 28 of the frame 26 is fixedly mounted a bevel gear 31 which meshes with a similar gear 32 on the upper end of the power transmitting shaft 22.

On the supporting bars 4 is arranged a disk supporting standard 33 having in its upper end a bearing recess 34 which is adapted to receive and support the adjacent end of the shaft 35 containing the disks 36 to be sharpened. On the bars 4 is also mounted a screw standard 37 in the upper end of which is arranged an adjusting screw 38 having on its outer end a crank handle whereby the screw is turned to bring the inner conical end or point of the same into engagement with this end of the disk shaft 35 and thereby hold the opposite end of the same in operative engagement with



the socket 11 of the operating shaft 7 whereby the shaft 35 and disks 36 thereon are revolved.

On the frame 26 is arranged a handle or 5 bail 39 by means of which the frame and the yoke 21 is slipped along on the drive shaft 15 to bring the grinding wheels 30 into proper engagement of the disks 36, said wheels being driven by the main drive 10 shaft through the gearing connecting the drive shaft with the shaft of said wheels thus quickly and easily sharpening the disks. Connected at its opposite ends with the end frames 2 and 3 is a longitudinally disposed 15 supporting rod 40 by means of which the frame 26 and yoke 21 are supported when swung back to an inoperative position as shown in dotted lines in Fig. 3 of the drawings.

20 By means of a disk grinding machine constructed as herein shown and described a set of harrow disks may be quickly and easily arranged and supported in operative position to be ground by the grinding mechanism of the machine.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation. 30

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advan-

tages of this invention, as defined in the appended claim. 35

Having thus described our invention what we claim is:—

In a disk grinding machine, a supporting frame, a disk revolving shaft mounted in 40 said frame, means to hold a set of disks in operative engagement with said shaft, a main drive shaft, a key extending throughout the length of said shaft, a yoke pivotally and slidably mounted on said shaft, a beveled gear slidably keyed to the drive shaft, 45 a power transmitting shaft revolubly mounted in said yoke, a beveled gear on the lower end of said shaft, having an operative engagement with the beveled gear on the drive 50 shaft, a frame formed in separable sections loosely mounted on said shaft, a handle connected thereto, a grinding wheel shaft mounted in said frame and geared to said power transmitting shaft, grinding wheels 55 fixedly mounted on the grinding wheel shaft and a longitudinally disposed rod adapted to support said grinding mechanism when swung back to inoperative position.

In testimony whereof we have hereunto 60 set our hands in presence of two subscribing witnesses.

W. H. BROWER.  
BAHNE BONNICHSEN.

Witnesses:

JOHN LIEUROEN,  
L. F. PINGEL.