

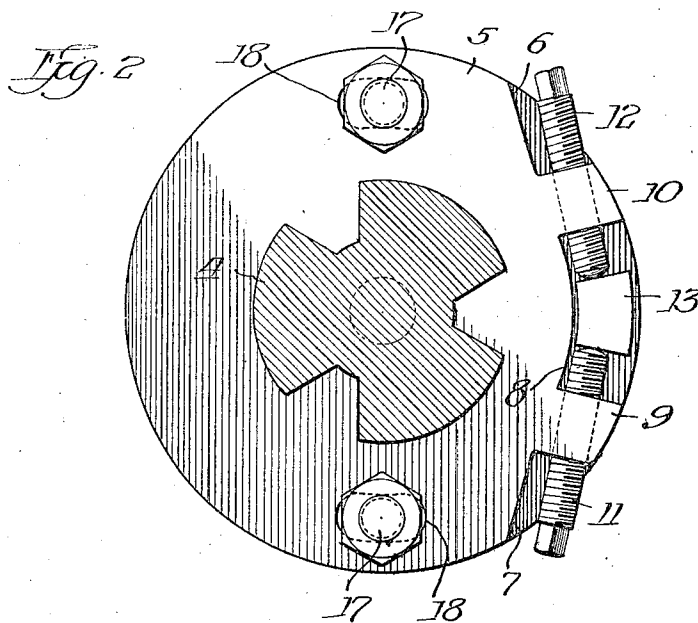
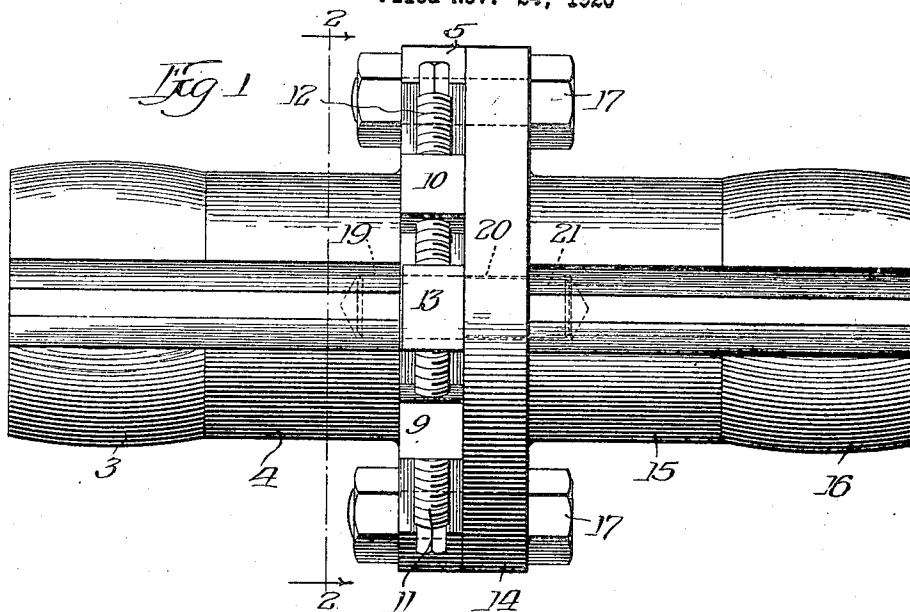
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H. W. WILSON

1,556,737

ADJUSTABLE SPINDLE FOR MERCHANT MILLS

Filed Nov. 24, 1920



Witness:

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UNITED STATES PATENT OFFICE.

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ADJUSTABLE SPINDLE FOR MERCHANT MILLS.

Application filed November 24, 1920. Serial No. 426,173.

To all whom it may concern:

Be it known that I, HENRY W. WILSON, a citizen of the United States, residing at Duluth, in the county of St. Louis and State of Minnesota, have invented certain new and useful Improvements in Adjustable Spindles for Merchant Mills, of which the following is a specification.

This invention relates to a new and improved spindle for rolling mills and which is particularly adapted for use in merchant mills rolling deformed sections.

In the use of merchant mills rolling bars of various irregular or deformed cross sections such as are largely used for concrete reinforcement, it is necessary that the coacting rolls have certain notches or grooves cut in them in order to impress corresponding projections or enlargements upon the bar which is being rolled. Obviously in the use of rolls of this character it is highly essential that the notches or grooves upon the two rolls maintain a predetermined relation since otherwise the indentations or projections upon the rolled bar will not be properly located relative to each other. This relative location is essential since otherwise the bar would have portions of varying cross section with consequent weak points which would render it inefficient for concrete reinforcement or similar use where the bar takes up a strain.

It has been the practice heretofore in the use of such mills when coacting rolls get out of relative adjustment, that is when one roll gets ahead or behind the other, to insert a shim in the coupling to advance one of the rolls until adjustment is again secured. This practice is crude and is incapable of securing an accurate adjustment. Moreover the shim is readily subject to dislocation.

It is an object of the present invention to provide means whereby coacting mill rolls may be quickly and accurately adjusted as to relative position and whereby the rolls will be effectively maintained in adjusted relation. It is a further object to provide means for accomplishing this desired result comprising a composite spindle adapted to drive one of the rolls, the spindle being formed of two laterally divided pieces which may be positively adjusted in rotary relation. It is a further object to provide a device of this character which is comprised of but few and simple parts which may be readily and quickly installed and adjusted and

which is comparatively inexpensive to manufacture. Other and further objects will appear as the description proceeds.

More specifically my invention comprises a two part roll driving spindle, the parts being provided with coacting radial flanges and bolts connecting the two flanges, the bolts having a slotted engagement with one of the flanges. I further provide means whereby the flanges may be positively rotated relative to each other and whereby such rotation may be accomplished with a fine degree of relative adjustment.

I have illustrated a preferred form of my invention in the accompanying drawings in which—

Figure 1 is a side view of my composite spindle; and,

Figure 2 is a section taken on line 2—2 of Figure 1.

The left hand member of the spindle comprises the wobbler 3 and the shank 4, the latter carrying the radial flange 5. This flange is cut away at 6, 7, and 8 to form the adjusting screw carrying lugs 9 and 10. These lugs carry the screws 11 and 12 respectively which extend substantially tangential in direction, their outer ends being provided with square portions whereby they may be readily adjusted by means of a wrench. The rounded ends of the screws bear against the axial lug 13 carried by the flange 14 which is a portion of the right hand member 15 of the spindle. This member 15 is provided with the usual wobbler 16. The flange 14 is provided with holes adapted to receive the bolts 17, these bolts extending through the slotted openings 18 in the flange 5 of the left member of the spindle. The interengaging faces of the spindle members are provided with axially located registering recesses 19 and 20 adapted to receive the dowel pin 21 which serves to maintain the two members in axial alignment.

In the use of my adjustable spindle the two parts would normally be maintained in the position in which they are shown in the figures. Should it be desired to advance one portion relative to the other, the nuts upon the bolts 17 are loosened and the screws 11 and 12 are adjusted so that the location of the lug 13 is varied relative to the lugs 9 and 10. This adjustment necessitates the loosening of one screw 11 or 12 and the equivalent tightening of the other screw. By means of these two screws slow

motion is given through which a very accurate adjustment may be had. When the correct adjustment is secured, the nuts are tightened upon the bolts 17 which then serve to clamp the two flanges together and to positively maintain them in adjusted position. The arcuate slots 18 may be made of any desired arc and the play between the lugs 9 and 10 and the lug 13 may be increased but the amount of adjustment normally required can be taken care of by parts substantially as shown in the drawing.

My construction, as has been seen, is extremely simple and yet, due to the combination of slow motion adjusting screws, and clamping bolts, a fine degree of adjustment can be easily secured and positively maintained. The device is susceptible of easy adjustment without the use of special tools or parts.

While I have described more or less precisely the details of construction of my invention, I do not wish to be understood as limiting myself thereto, as I contemplate changes in form and the proportion of parts and substitution of equivalents as circumstances may suggest or render expedient, without departing from the spirit of my invention.

I claim:

1. A composite spindle adapted for use in rolling mills, the spindle comprising a plurality of portions, the portions having interrelated members, a set screw carried by certain of said members adapted to coact with other of said members to vary the rotary adjustment of the portions.

2. A composite spindle adapted for use in rolling mills, the spindle comprising a plurality of portions, the portions having interrelated members, a plurality of set

screws carried by certain of said members adapted to coact with opposed faces of other of said members to vary and maintain the rotary adjustment of the portions.

3. A composite spindle adapted for use in rolling mills, the spindle comprising a plurality of portions, the portions having interrelated members, a plurality of set screws carried by certain of said members adapted to coact with opposed faces of other of said members to vary and maintain the rotary adjustment of the portions, and means adapted to adjustably maintain the two members in axial juxtaposition.

4. A composite spindle adapted for use in rolling mills, the spindle comprising a pair of radially divided portions having juxtaposed flanges, a portion of the first flange being cut away, the second flange carrying a lug interposed in the cut away portion of the first flange, and set screws carried by the first flange adapted to coact with the lug on the second flange and to vary and maintain the rotary adjustment of the two spindle portions.

5. A composite spindle adapted for use in rolling mills, the spindle comprising a pair of radially divided portions having juxtaposed flanges, a portion of the first flange being cut away, the second flange carrying a lug interposed in the cut away portion of the first flange, set screws carried by the first flange adapted to coact with the lug on the second flange and to vary and maintain the rotary adjustment of the two spindle portions, and axially extending bolts connecting the two flanges and adapted to maintain them in juxtaposition.

Signed at Duluth, Minnesota, this 15th day of Nov., 1920.

HENRY W. WILSON.