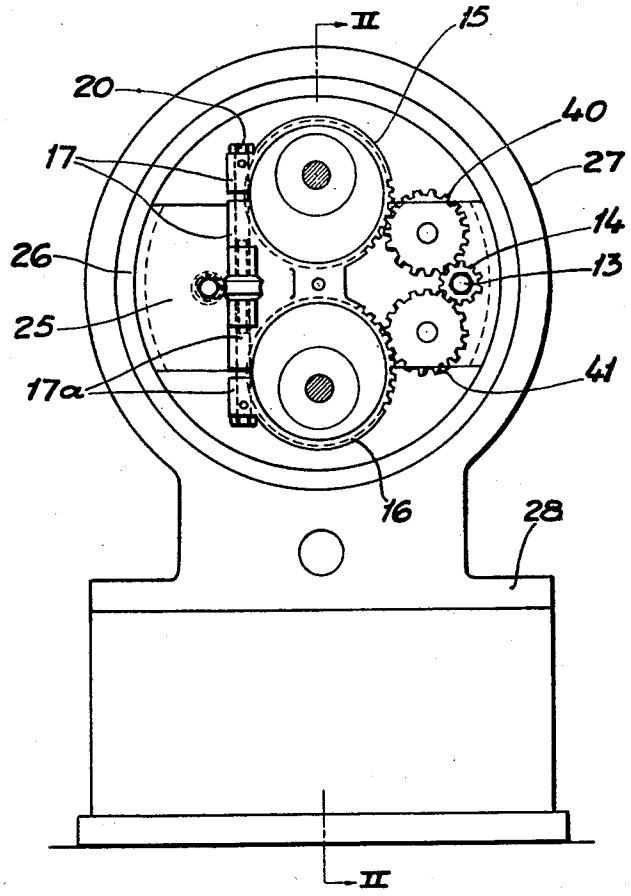
Oct. 16, 1951 P. G. VINELL ET AL 2,571,632

MACHINE FOR CONTINUOUS POLISHING OF WIRE OR RODS

Filed April 2, 1946 2 SHEETS—SHEET 1

Fig. 1



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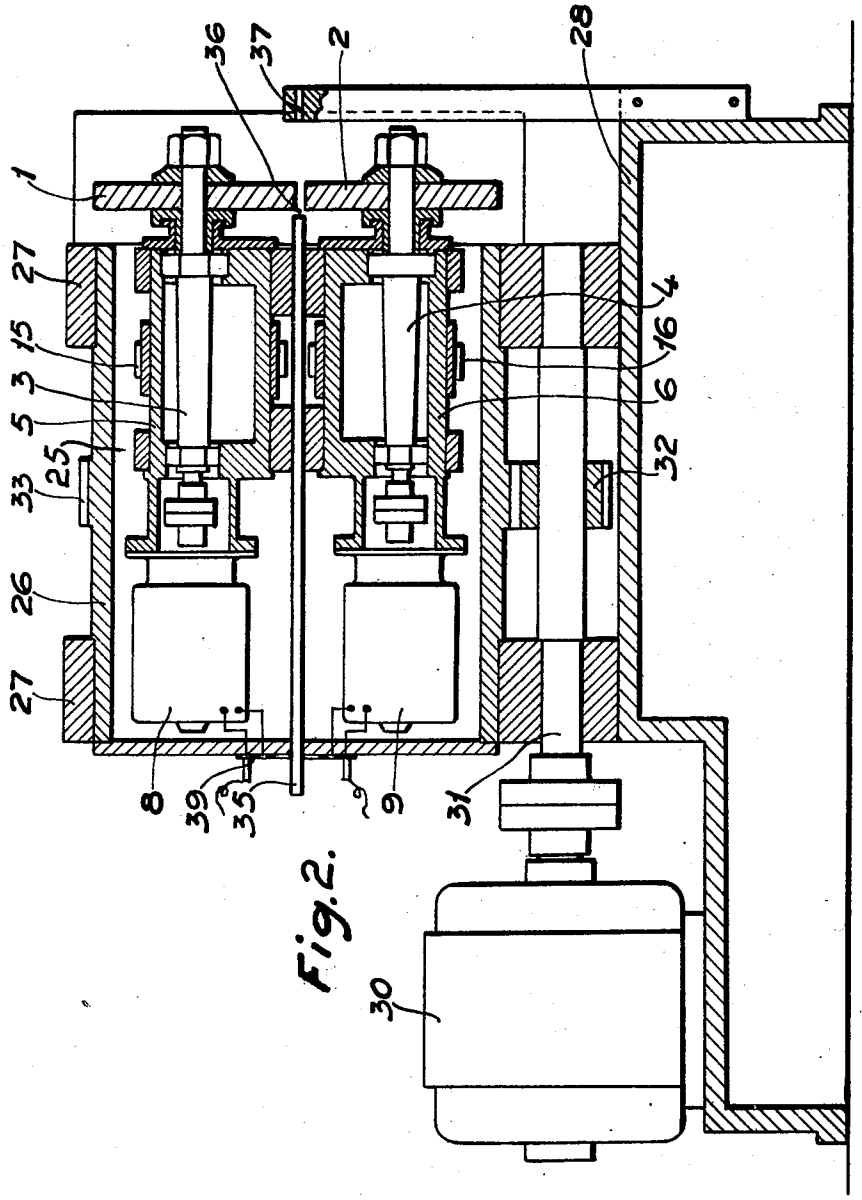


Fig. 2.

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UNITED STATES PATENT OFFICE

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MACHINE FOR CONTINUOUS POLISHING OF WIRE OR RODS

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Application April 2, 1946, Serial No. 659,000
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2 Claims. (Cl. 51—80)

1

The present invention refers to a machine for continuous polishing of wire on rods.

The invention relates specifically to machines for the continuous grinding and polishing of wire surfaces of the type in which a cylindrical shell is mounted in a frame stand for rotation about its own longitudinal axis, and supports therein on diametrically opposed sides of the shell axis two substantially identical cylindrical housings which can be turned about their own central axes and locked in any angular position to which they are adjusted. A spindle is mounted in each housing for rotation therein about its own axis, the axes of said spindles extending parallel to and being equally spaced from the respective axes of the associated housings. Grinding or polishing discs are mounted on the ends of the spindles opposite each other. The shell is provided with a passage for the articles to be ground or polished, said passage extending coaxially through the shell. Means are provided for rotating the shell about its own axis and means are arranged in said shell for rotating the two spindles at a high speed above their own axes. One object of the invention is to provide, in a grinding apparatus of the type described, means for turning both cylindrical housings simultaneously in such a way that, in each adjusted position of the housings, the two spindles are spaced equidistantly from the shell axis and lie in a straight plane containing the shell axis.

Another object of the invention is to provide adjusting means for the housings which do not interfere with or prevent the axial feeding of material to be polished through the shell.

Still another object of the invention is to provide adjusting means for the two housings which operate both housings simultaneously and in proper relationship, and permit a very accurate and fine adjustment of the position of the two spindles relative to the shell axis. These objects are accomplished by the arrangement and combination of elements set forth in the following detailed description, defined in the appended claims and illustratively exemplified in the accompanying drawings in which Fig. 1 is an end elevation and Fig. 2 is a section on the center line II—II in Fig. 1.

Referring now to the drawings, the polishing discs 1 and 2 of the machine are mounted on the free ends of spindles 3, 4, which are eccentrically mounted in the round bearing housings 5, 6.

The bearing housings 5, 6 are mounted in a

2

block 25, which is rigidly connected with a shell 26, which latter is rotatably mounted in the stand 27 pertaining to the machine frame 28. The shell 26 is rotated by an electric motor 30 over the shaft 31, the pinion 32, and the toothed ring 33, which latter is secured about the shell 26.

The wire and so forth to be ground or polished passes through a pipe 35 extending coaxially with the shell 26. The wire is guided between the discs 1, 2 by the front end 36 of tube 35 and a guiding member 37 mounted on the frame in the front of the discs. The spindles 3, 4 are rotated by the electric motors 8, 9, mounted on the housings 5, 6. The motors are supplied with current over the collecting rings 39.

The adjustment of the discs 1, 2 is effected in the following manner.

The shaft 13 carries a small pinion 14 which meshes with two intermediate gear wheels 40, 41, which in turn mesh with the toothed rings 15, 16 of the bearing housings 5, 6.

The intermediate wheels 40, 41 have a diameter smaller than that of the toothed rings 15, 16 but larger than that of the pinion 14. The gear mechanism formed by the elements 13, 14, 40, 41 and 15, 16 connects the two bearing housings 5 and 6 in positions in which the axes of both spindles 3 and 4 are equidistant from the axis of the shell 26, and when the shaft 13 and pinion 14 are turned by hand, the two housings are turned simultaneously about their own axes at the same rate and in the same direction whereby the axes of spindles 3 and 4 in all positions of adjustment lie in a straight plane containing the axis of shell 26.

The provision of a small pinion 14 rotating the bearing housings 5 and 6 through intermediate gear wheels 40, 41 of a diameter smaller than that of the rings 15, 16 but larger than that of the pinion 14 has advantages in that very fine and accurate adjustments of the positions of the spindles 3, 4 relative to the axis of shell 26 can be made, because turning of pinion 14 through a relatively large angle produces a turning of the housings 5, 6 simultaneously and in the same direction through a very small angle. It should also be noted that all parts of the gearing mechanism 13, 14, 40, 41 and 15, 16 are disposed inside of the shell 26 and outside of the shell axis.

The bearing housings 5, 6 are surrounded by split clamping rings 17, 17a (Fig. 1) adapted to be tightened by means of a screw 20. When the

housings 5, 6 have been turned by means of the gear mechanism 13, 14, 40, 41 and 15, 16 to the desired positions, the screw 20 is operated in order to tighten both clamping rings 17 and 17a simultaneously, thus locking the bearing housings in their adjusted positions.

Having now described our invention, what we claim as new and desire to secure by Letters Patent is:

1. In a machine for the continuous grinding and polishing of the surfaces of elongated articles of relatively narrow circular cross-section, the combination with a frame stand, a cylindrical shell mounted in said frame stand for rotation about its own longitudinal axis, two substantially identical cylindrical housings, each having a diameter less than half that of said shell, said housings being supported in said shell on diametrically opposed sides of the shell axis for rotary adjustment about their own central axes which extend parallel to and at equal distances from said shell axis, means for locking said housings in any angular positions to which they are adjusted, a spindle mounted in each housing for rotation therein about its own axis, the axes of said spindles extending parallel to and being equally spaced from the respective axes of the associated housings, said spindles projecting axially from their housings and carrying on their projecting ends polishing discs disposed opposite each other, said shell providing a passage for articles to be ground or polished, said passage extending coaxially through said shell, means for rotating said shell about its own axis, and means in said shell spaced from the shell axis for rotating said spindles at a high rotary speed about their own axes, of a gear mechanism disposed inside said shell and outside of the shell axis and connecting the two housings in positions in which the axes of both spindles are equidistant from the shell axis for turning said two housings simultaneously about their own axes at the same rate and in the same direction, whereby the axes of the spindles in all positions of adjustment lie in a straight plane containing the shell axis.

2. The combination as claimed in claim 1, in which said gear mechanism includes a small, manually operated pinion mounted in said shell for rotation about an axis parellel to and spaced from said shell axis, each of said housings carrying a toothed peripheral rim, and two intermediate gears in mesh with said pinion and the toothed rims of said two housings, respectively, the diameter of said intermediate gears being larger than that of said pinion and smaller than that of said housings.

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