No. 648,563. Patented May 1, 1900.

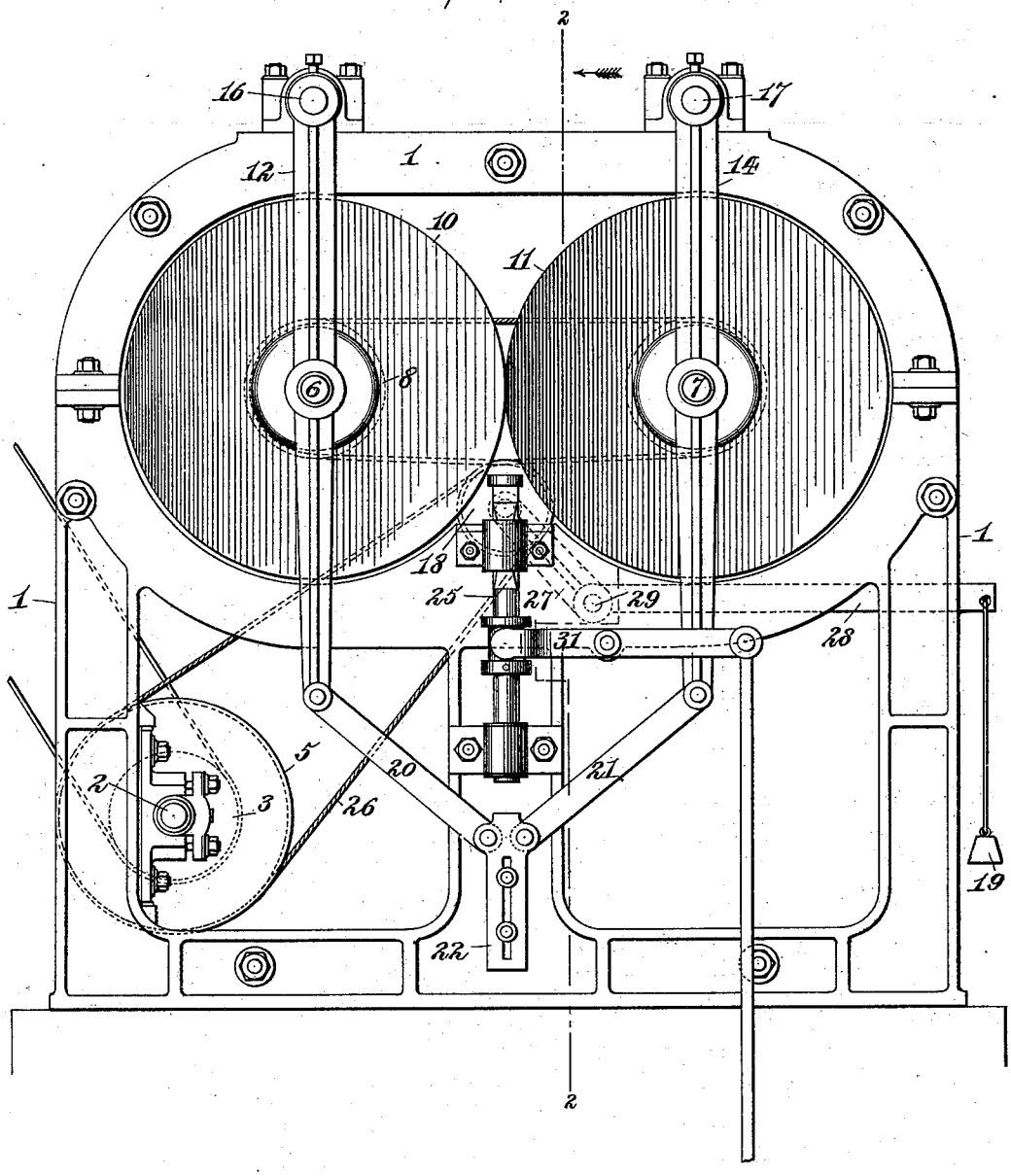
F. HENDRICHS.

GRINDING OR POLISHING MACHINE.

(Application filed Mar. 6, 1899.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.



WITNESSES:

William P. Goebel.

E. Jos. Belknap.

INVENTOR.

Franz Hendrichs,

BY

Chas. C. Gill

" ATTORNEY.

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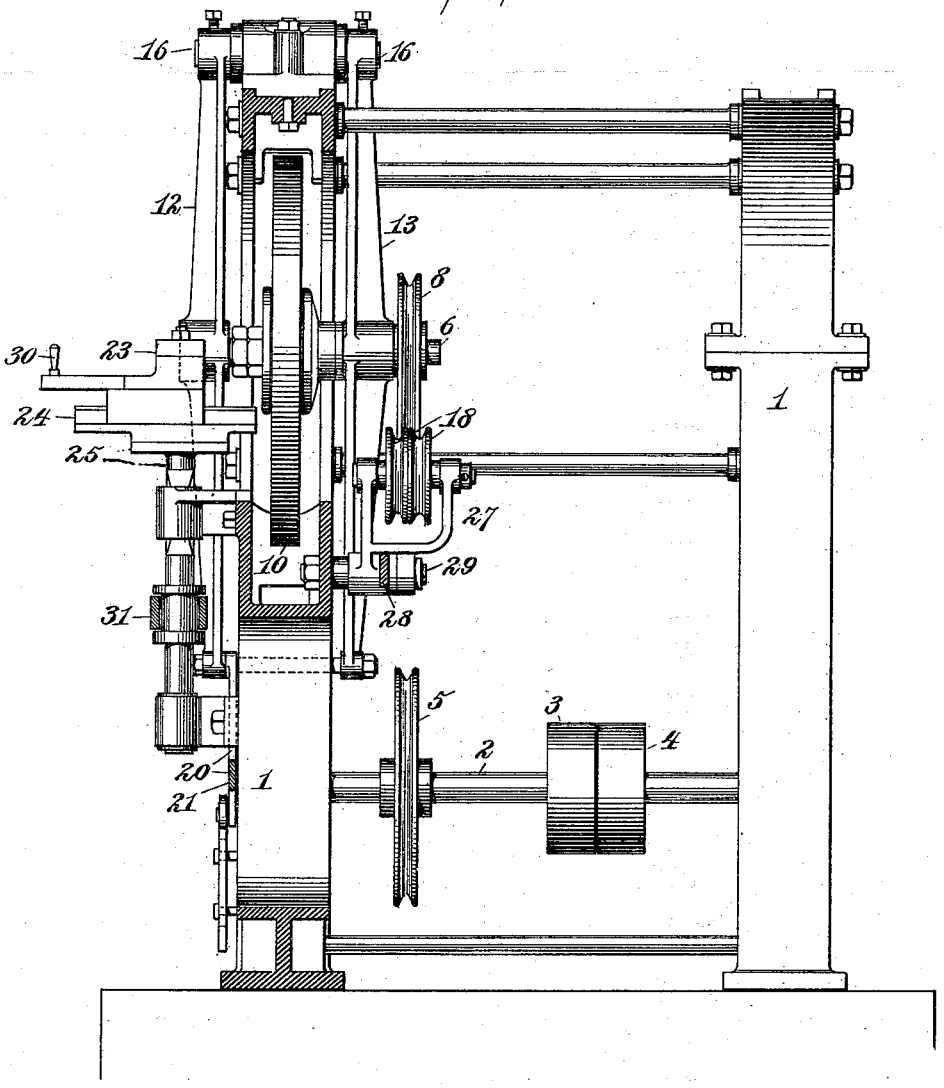
Fig. 2.



WITNESSES:
William P. Gaebel.
E. Jos. Belknap.

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UNITED STATES PATENT OFFICE.

FRANZ HENDRICHS, OF PAISLEY, SCOTLAND.

GRINDING OR POLISHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 648,563, dated May 1, 1900.

Application filed March 6, 1899. Serial No. 707,856. (No model.)

To all whom it may concern:

Be it known that I, FRANZ HENDRICHS, a citizen of Germany, and a resident of Paisley, Scotland, have invented certain new and useful Improvements in Grinding or Polishing Machines, of which the following is a specification.

The invention made the subject of this application has not been patented in any foreign country, and no application for any protection therefor has been filed in any foreign country except in Great Britain, where on August 25, 1898, I filed an application for provisional protection for said invention preparatory to applying later for a patent.

The invention relates to improvements in grinding and polishing machines; and it consists in the novel features, arrangement, and combination of parts hereinafter described, and particularly pointed out in the claims; and the object of the invention is to provide a machine of the character referred to which will grind or polish a large variety of articles.

The invention will be fully understood from the detailed description hereinafter presented, reference being had to the accompanying drawings, in which—

Figure 1 is a front elevation of a machine constructed in accordance with and embodying the invention; and Fig. 2 is a sectional end elevation of same, the section being taken on the dotted line 2 2 of Fig. 1.

The numeral 1 designates a substantial framing, and 2 the driving-shaft, provided with the fast and loose pulleys 3 and 4 and rope-pulley 5. The shafts 6 and 7, with the grinding-wheels 10 and 11, as well as pulleys 8 and 9, are held by levers 12 and 14, hanging from swiveling shafts 16 and 17 on the top of the frame. The shafts 6 and 7 are driven by an endless rope 26 from the pulley 5 on the main shaft, this rope 26 also passing over tension-pulleys 18, which are carried by levers 27 and 28, centered on the fulcrum 29 and balanced by the weight 19. The driving-rope 26, arranged as shown in Fig. 1, tends to draw shafts 6 and 7 together to give the grinding-wheels any desired pressure on any article inserted between the said wheels due to the adjustment of the weight 19. The extended hanging levers 12 and 14 are connected by levers 20 and 21 to a sliding bar 22, which gives an equal travel to the grinding-wheels when an object is inserted between them.

The article to be ground or polished is held in the vise arrangement 23, which is moved horizontally by handle 30 on rest 24, carried on the upper end of vertical shaft 25. Provision is also made for grinding and polishing flat surfaces by giving to the shaft 25 a vertical motion by means of the fork-lever 31, which is operated by foot-gear, as indicated. Both motions in the horizontal and vertical directions may also be actuated by self-acting mechanism.

Having now described and ascertained the nature of the said invention, I declare that what I claim is—

1. A grinding or polishing machine for grinding or polishing the two sides of an object simultaneously, comprising the grinding-wheels 10, 11, mounted upon shafts 6, 7, the pulley-wheels on said shafts, and the suspended levers 12, 14, carrying said shafts and wheels, combined with the levers 20, 21, connected with the lower ends of said levers 12, 14, the movable bar 22 to which the said levers 20, 21, are connected, and means engaging said pulley-wheels for rotating said wheels 10, 11; substantially as set forth.

2. A grinding or polishing machine for grinding or polishing the two sides of an object simultaneously, comprising the grinding-wheels 10, 11, mounted upon shafts 6, 7, the pulley-wheels on said shafts, and the suspended levers 12, 14, carrying said shafts and wheels, combined with the levers 20, 21, connected with the lower ends of said levers 12, 14, the movable bar 22 to which the said levers 20, 21 are connected, the power-shaft 2 having the pulley-wheel 5, the tension-pulleys 18 and the endless rope 26 passing over said pulley-wheel 5, thence over said tension-pulleys 18 and thence over the said pulley-wheels on said shafts 6, 7, drawing said shafts 6, 7, and the parts carried thereby toward each other; substantially as set forth.

3. The grinding-wheels 10, 11, mounted on the shafts 6, 7, movable supports for said shafts whereby said shafts are rendered movable toward and from each other, and the pulley-wheels on said shafts, combined with the tension-pulleys 18, the power-shaft, the pulley-wheel 5 on said power-shaft, and the

endless rope 26 passing over said pulley-wheel 5, thence over said tension-pulleys 18 and thence over the said pulley-wheels on said shafts 6, 7, drawing said shafts 6, 7, and the parts carried thereby toward each other; substantially as set forth.

4. The grinding-wheels 10, 11, mounted on the shafts 6, 7, movable supports for said shafts whereby said shafts are rendered movable toward and from each other, and the pulley-wheels on said shafts, combined with the tension-pulleys 18, levers 27, 28, pivotally mounted and carrying said tension-pulleys, the weight 19 suspended from the outer end of said lever 28, the power-shaft, the pulley-wheel 5 on said power-shaft, and the endless rope 26 passing over said pulley-wheel 5, thence over said tension-pulleys 18 and thence over the said pulley-wheels on said shafts 6, 7, drawing said shafts 6, 7, and the parts carried thereby toward each other; substantially as set forth.

5. The grinding-wheels 10, 11, the shafts 6, 7, carrying said wheels, the pivotally-suspended levers 12, 14, carrying said shafts and wheels, and means connected with the lower ends of said levers for impelling an equal travel to said wheels when an object is inserted between them, combined with means for rotating said wheels; substantially as set forth.

Signed at Glasgow, in the county of Lanark, Scotland, this 21st day of February, A. D. 1899.

FRANZ HENDRICHS.

Witnesses:
JNO. MCFADGEAN,
JAMES F. RUSSELL.