T. F. PHILIPPI.

SWING FRAME GRINDER.

APPLICATION FILED AUG. 23, 1912.

1,052,844. Patented Feb. 11, 1913.

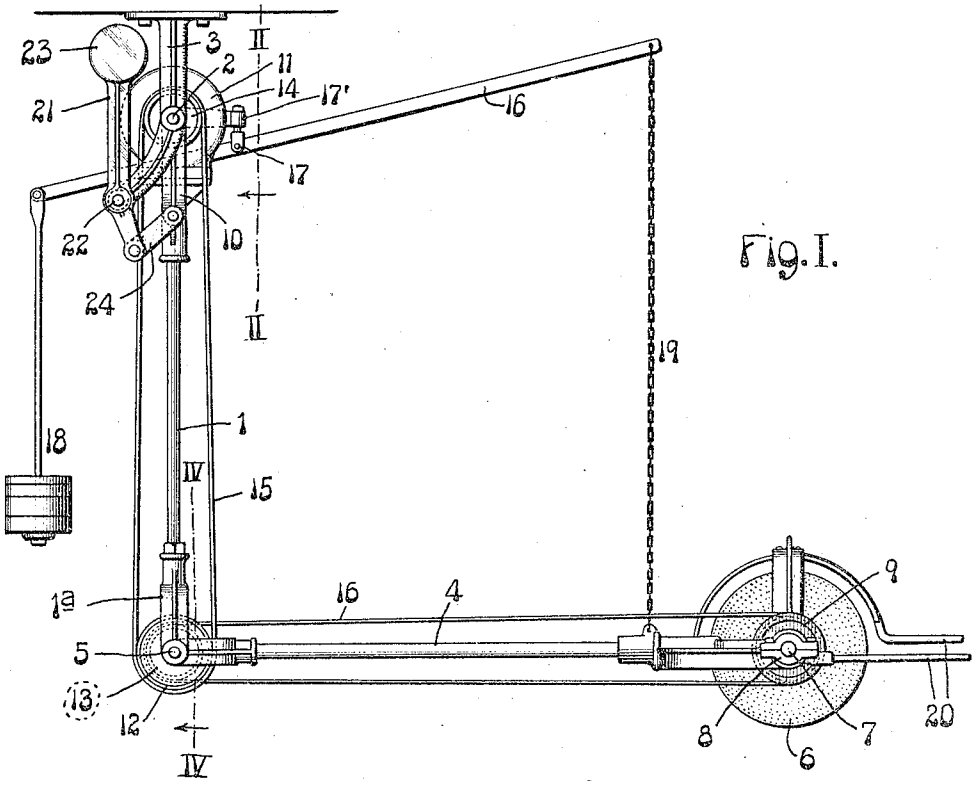


Fig. I.

Fig. II.

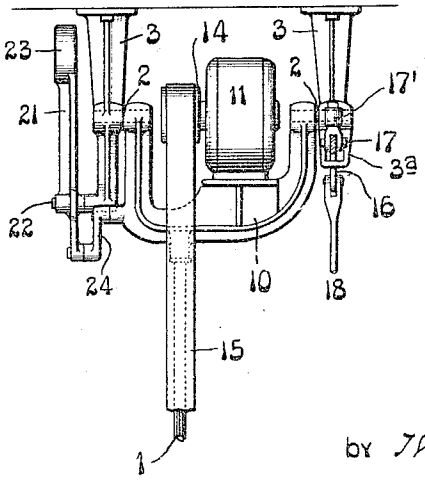
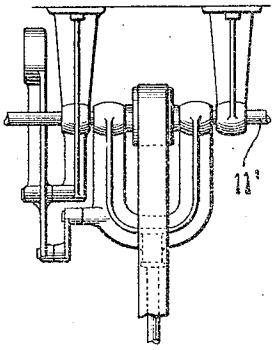


Fig. III.



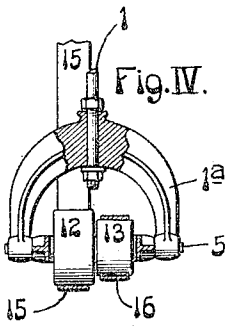


Fig. IV.

Attest

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SWING-FRAME GRINDER.

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Application filed August 23, 1912. Serial No. 716,625.

To all whom it may concern:

Be it known that I, THEODORE F. PHILIPPI, a citizen of the United States of America, and a resident of East St. Louis, county of St. Clair, and State of Illinois, have invented certain new and useful Improvements in Swing-Frame Grinders, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to a swing frame grinder and has for its object the production of a grinder carried by a pendant and a counterbalance associated with the pendant so as to allow the grinder to be shifted for a considerable distance with very little labor on the part of the operator.

The invention also includes details of construction, which will be hereinafter pointed out.

Figure I is a side elevation of a swing frame grinder embodying the features of my invention. Fig. II is a section on the line II—II, Fig. I. Fig. III is a view similar to Fig. II illustrating a modification. Fig. IV is a vertical section taken approximately on the line IV—IV, Fig. I.

In the accompanying drawings: 1 designates a pendant having its upper end pivotally connected at 2 to the hanger 3. A horizontal arm 4 extending from the lower end of the pendant is pivoted to said pendant at 5 and provided at its free end with a grinding wheel 6. A shaft 7, secured to the grinding wheel is mounted in bearings 8 and provided with a pulley 9. The upper end of the pendant 1 is preferably in the form of a yoke 10 and a motor 11 is preferably supported in said yoke. Transmission pulleys 12 and 13 are located at the junction of the arm 4 and pendant 1. Power is transmitted from the power pulley 14 on the motor to the grinding wheel 6 through the medium of a belt 15 passing around the pulleys 12 and 14 and a second belt 16 passing around the pulleys 9 and 13.

The means for counterbalancing the free end of the arm 4 comprises a lever 16 pivotally supported by a swivel 17, a counterweight 18 at one end of said lever and a chain 19 connecting the opposite end of said lever to the free end of the arm 4. The lower end of the pendant 1 is a jaw 1^a swiveled to the vertical rod, as seen in Fig. IV, and the arm 4 carrying the grinding wheel is therefore free to swing about the axis of the pendant. To permit the counterbalance lever 16 to swing horizontally with the arm 4, the swivel 17 is rockably fitted to an arm 17′ on one of the hangers 3. The movement of the lever 16 is limited by the side bars of a yoke 3^a at the lower end of a hanger 3 (see Fig. II).

In the practical use of this apparatus, the operator engages handles 20 at the free end of the arm 4 and swings the grinding wheel along the surface of the work. A very objectionable feature in the usual types of swing frame grinders is the labor required to swing the arm and pendant. This renders it difficult to operate the grinder and limits the stroke of the swinging frame to a slight distance. This invention includes a counterweight attached to the pendant so as to provide for a wide range of movement of the swinging frame with very little labor on the part of the operator. 21 designates a counterbalance lever, pivoted at 22 to the lower end of a hanger 3, and provided at its upper end with a counterweight 23. A pivotally mounted link 24 connects the lower end of the lever 21 to the pendant 1. It will be readily understood that when the pendant 1 swings on its pivot in either direction the counterweight 23 will swing in the opposite direction, and overcome the tendency of the pendant to return to vertical position.

Fig. III illustrates a modification in which the grinder is driven from and pivotally supported by a shaft 11′.

I claim:—

A swing frame grinder comprising hangers, a pendant pivotally supported by said hangers, the lower portion of said pendant being a swivel, an arm pivoted to said swivel and extending at an angle therefrom, said arm being movable both horizontally and vertically, a grinder carried by the free end of said arm, a counterbalance lever connected to said arm, and a swivel supporting said counterbalance lever so as to allow said lever to swing horizontally in response to horizontal movements of said arm.

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Witnesses:
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