2 Sheets—Sheet 1.

J. F. BLESS.

SAD-IRON GRINDER.

No. 185,386. Patented Dec. 19, 1876.

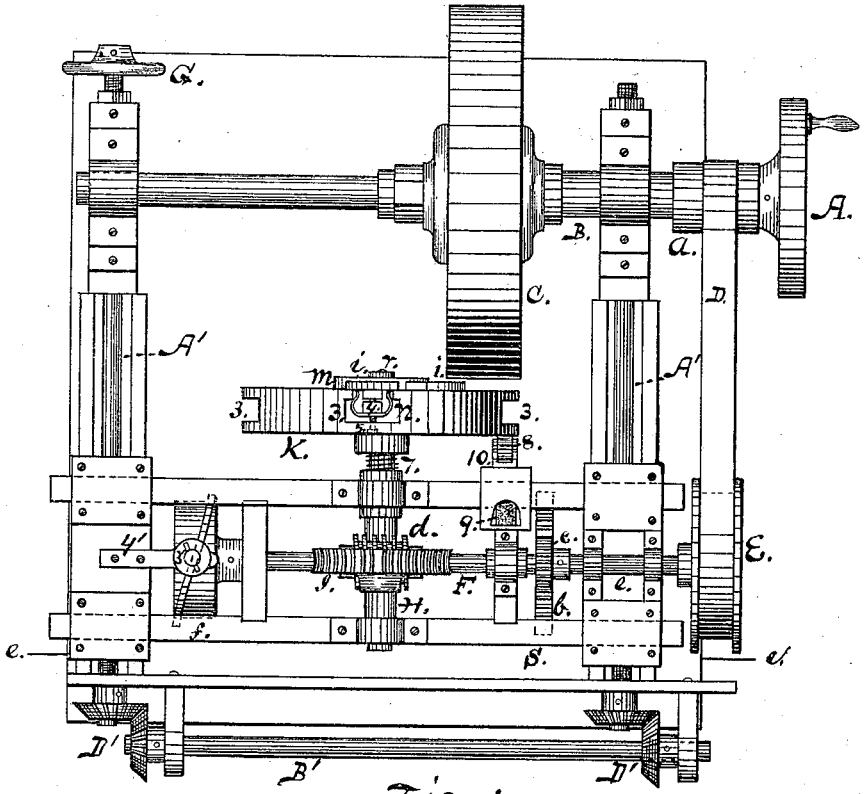

Fig. 1

Witness
Howee Harris
Benjamin Wace

Inventor.
James F. Bless.

2 Sheets—Sheet 2.

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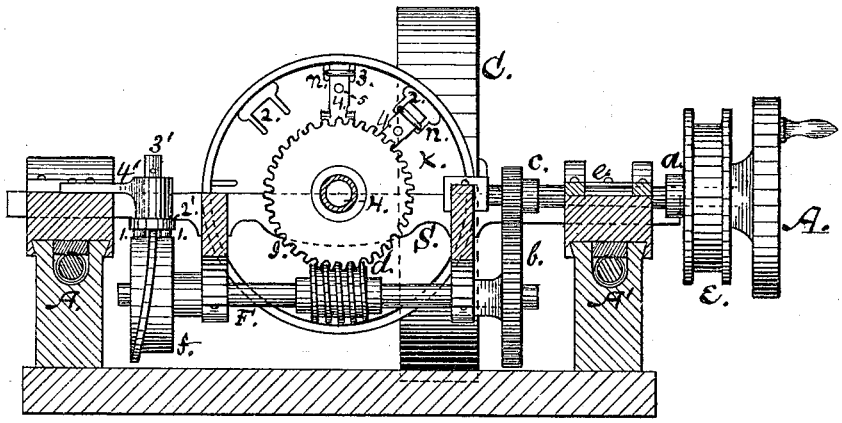

Fig. 2.

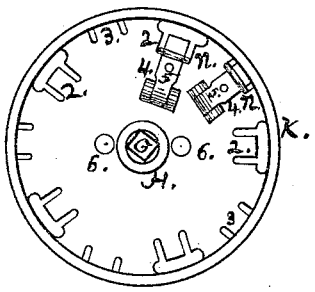

Fig. 3.

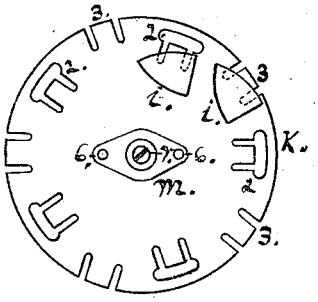

Fig. 4.

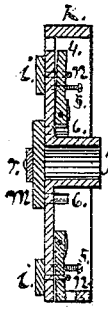

Fig. 5.

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Benjamin Wade.

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UNITED STATES PATENT OFFICE.

JAMES F. BLESS, OF NEWARK, NEW JERSEY.

IMPROVEMENT IN SAD-IRON GRINDERS.

Specification forming part of Letters Patent No. **185,386**, dated December 19, 1876; application filed April 4, 1876.

To all whom it may concern:

Be it known that I, JAMES F. BLESS, of Newark, in the county of Essex and State of New Jersey, have invented a certain Improved Smoothing-Iron-Grinding Machine, of which the following is a specification:

My invention consists in the improved means of holding sad-irons, and of adjusting them in relation to the grindstone while the machine is in motion.

Figure 1 is a plan view. Fig. 2 is a sectional elevation from the line of *e e*. Figs. 3, 4, and 5 are detailed views of a disk or wheel to which the irons are attached.

In grinding sad-irons by machinery it is important to have the irons put into the machine and taken out without stopping it, and to have the irons move back and forward across the face of the stone, so that it may be kept level, and to provide for the different thickness of irons that may be found mixed together, and to provide, also, for feeding the irons to the stone, and of changing the relative speed required as the stone wears away. To meet these demands is the object of this invention.

The power is applied to the wheel A on the shaft B, on which, also, is the grindstone C, and a pulley, *a*, and over this pulley passes a belt, D, also connecting with the pulley E on the shaft *e*, working on the sliding frame S. On this shaft *e* is a small gear, *c*, working into a larger gear, *b*, on a shaft, F, below. On this shaft F is also a screw-gear, *d*, and a cam-wheel, *f*. Above the shaft F, and lying across it, is a shaft, H, on which is a gear, I, with a concave edge, working into the screw-gear *d*, and on the same shaft is disk K, on which the irons *i* are placed for grinding. This disk is constructed with the apertures 2 on the face, and apertures 3 on the edge and face, through which the handle *n* of the iron is inserted. This handle then slips down over the end of the swing-lever 4, and the screw 5, passing through the lever, and the end pressing against the disk, turned after the iron is in position, throws out the outer end of the lever, which, pressing against the inside of the handle, holds it firm in position for grinding; and to remove the iron it is only necessary to loosen the screw, when it is readily taken out. The disk is held on the shaft H by a cap and clutch, *m*. This cap, with a square hole, *o*, (see Fig. 3,) slips onto the end of the shaft H, and is held by a screw, *r*, or a nut, and the pins 6, passing through the disk, keep it from turning on the shaft, although it is loose on the shaft. The object of having it loose on the shaft is, that it may slide endwise, and thus be adjustable for irons of different thickness. The spring 7 reacts the disk, holding it against the stone, but allows it to yield, as aforesaid, for irons of different thickness.

Another provision for this same purpose is in the roll 8, pressing against the inside of the disk, actuated by the spring 9 on the opposite end of the slide 10. Without this spring-roll the disk would bind on its shaft, the pressure being at the one edge. The springs also provide for grinding a convex surface on the irons, which is quite important. With the cam-wheel *f* are connected the double rolls 1 1, working on each side of the cam, and turning in the plate 2′, which has a shaft, 3′, loose in the arm 4′, attached to the frame S, on which is the disk, &c., and this cam communicates lateral motion to the disk across the face of the stone.

The order of working them will appear. The power applied at A by the belt D turns the shaft *e*, and with it the gear *c*, and, by means of the larger gear *b*, communicates slower speed to the shaft F. The turning of shaft F by the screw-gear *d*, working in the larger gear I, gives more moderate speed to the shaft H, on which is the disk. This disk then moves at such a rate of speed that an operator can put on and take off the irons, as before shown, while the disk continues in motion. The same turning of shaft H by means of the cam *f*, as above shown, gives lateral motion to the disk, and the irons on its face are moved across the face of the stone, back and forward, to keep it level.

To provide for stones of any size, from a new one to one much worn away, the adjustable screw-rods A′, by the connecting-rod B′, making the connection by the bevel-gears D′, turned by the wheel G, move the sliding frame S to or from the stone, carrying with it the

disk and the irons. A tightener-pulley will be used in connection with the belt D, to provide for these changes.

I claim—

1. In a smoothing-iron-grinding machine, the disk K, having the circular motion by means of the gears *d* and I, and the lateral motion by the cam *f* and rolls 1 1, in combination with the frame S, substantially as and for the purposes specified.

2. The disk K, loose on the shaft H, and held by the cap and clutch *m*, and screw *r*, and made adjustable on the shaft H, for irons of different thickness, by the springs 7 and 9, substantially as specified, and for the purposes set forth.

3. The disk K, having the apertures 2 and 3, and the swing-lever 4 and screw 5, for attaching the irons, substantially as shown.

4. The combination of the driving-wheel A, shaft *e*, shaft F, on which is the gear *b*, and screw-gear *d* and cam *f*, the shaft H, on which is the gear I and disk K, and the sliding frame S, substantially as and for the purposes specified.

5. The frame S, adjustable by the screw-rods A′ and connecting-rod B′, and carrying the shafts *e*, F, and H, to operate the disk K, in combination with the driving-wheel A and stone C, substantially as set forth, and for the purposes specified.

JAMES F. BLESS.

Witnesses:
HORACE HARRIS,
BENJAMIN WADE.