Fisher & Norris,

Polishing Anvils.

No. 10,066. Patented Oct. 4, 1853.

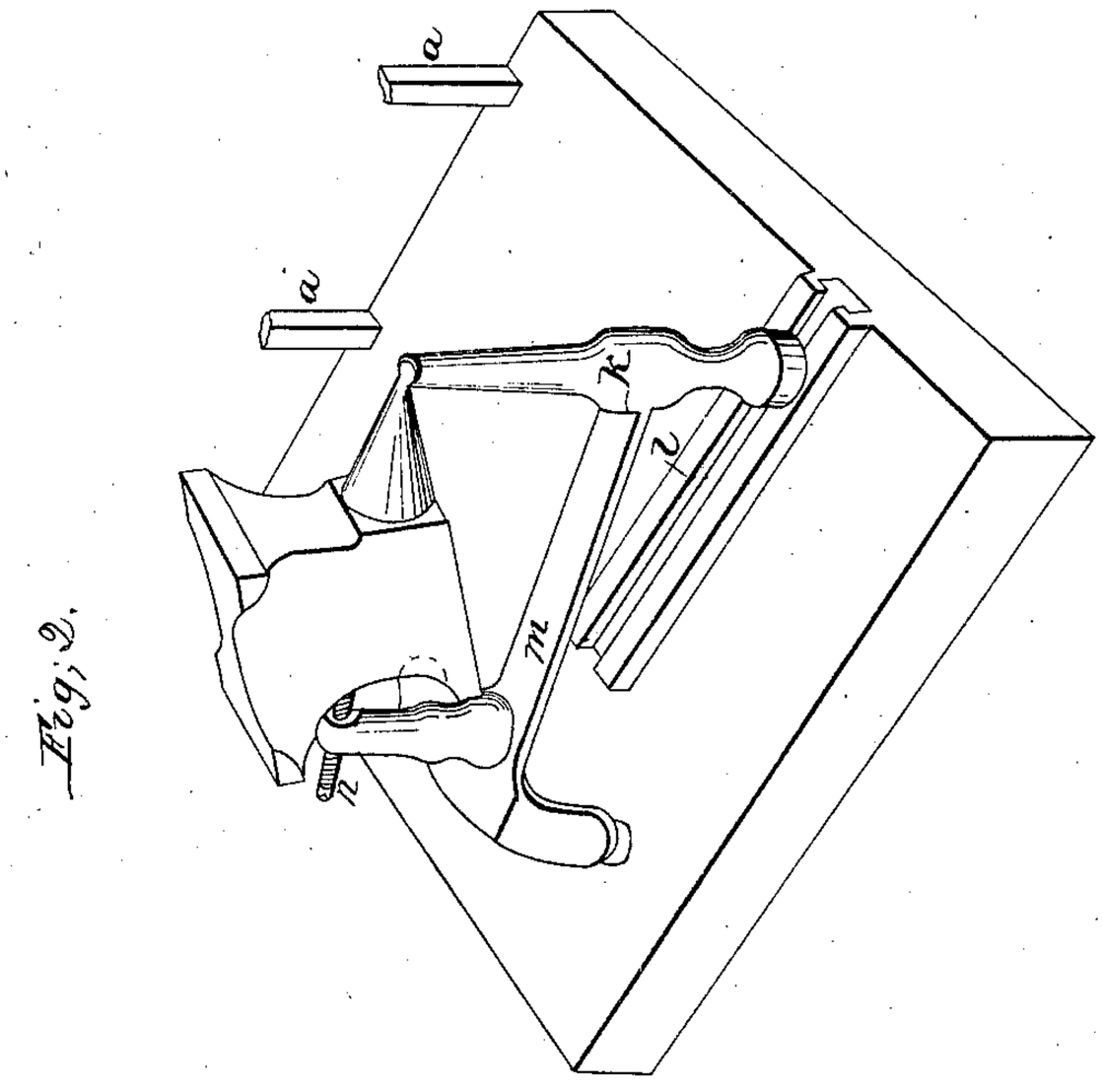

Fig. 2.

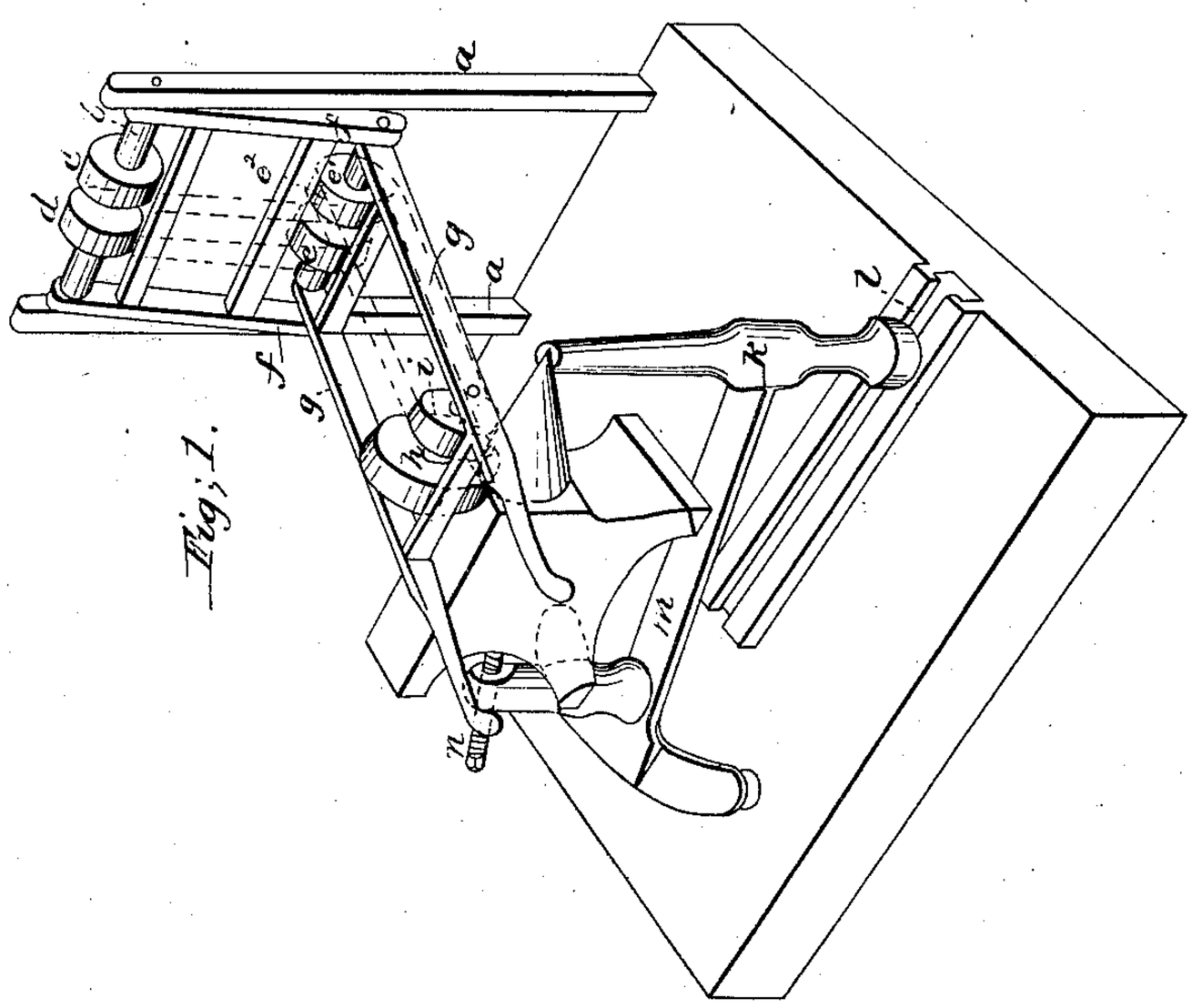

Fig. 1.

UNITED STATES PATENT OFFICE.

MARK FISHER AND JOHN H. NORRIS, OF TRENTON, NEW JERSEY.

APPARATUS FOR POLISHING ANVILS.

Specification of Letters Patent No. 10,066, dated October 4, 1853.

To all whom it may concern:

Be it known that we, MARK FISHER and JOHN H. NORRIS, of Trenton, in the county of Mercer and State of New Jersey, have invented certain new and useful Improvements in Facing and Polishing Anvils and other Irregular Conical Surfaces and the horns thereof made of cast-iron with wrought steel or iron faces or in any other way; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this description, in which—

Figure 1, is a perspective view of the whole apparatus. Fig. 2, shows the anvil in a different position from Fig. 1.

Our invention consists in applying an emory wheel or other grinding wheel or stone with a universal action to an anvil so hung and supported as to be revolved on the axis of the conical horn, while it can be turned horizontally by the swing rests by which it is supported, adapting itself to the inequalities of the casting.

The construction is as follows: We form an upright frame, consisting of two upright posts (*a*) properly braced, in the top of which there is supported the journals of an axis (*b*) on which are two pulleys, one of which (*c*) receives a band from the driving power; the other (*d*,) communicates motion to another pulley (*e*,) or a shaft (*e'*) at the ends of two arms (*f*,) whose center is the axis (*b*,); these arms (*f*,) hang down and swing upon the axis (*b*,); two other arms (*g*,) are jointed to the ends of arms (*f*,) by means of shaft (*e*,) which passes through both; and these lower arms (*g*,) bear on their lower ends the axis of the emory wheel (*h*,), driven by a pulley (*i*,), by being connected by a band with pulley (e^2,) on shaft (*e*); the polishing apparatus thus constructed can be brought into a variety of positions, as required, by certain inequalities of the casting, and can also polish the plane surface of the face of the anvil.

In front of the upright posts (*a*,) and at a proper distance therefrom, there is a sliding standard (*k*) made to slide in a proper groove (*l*,) in a right line in front of the posts; this standard (*k*,) not only slides, but it has also a swiveling motion; and from one side near the bottom an arm (*m*) projects nearly horizontally, its outer end branching out into a curved crosspiece in form nearly resembling the letter (T); on the two ends of the cross piece are rollers that rest on the platform below, so that as the standard (*k*,) swivels the end of the cross-arm shall trundle around in a circle, while it is capable of sliding along with standard (*k*,) the whole length of its groove (*l*,). In the top of the standard (*k*,) there is a recess into which the small point of the horn of the anvil fits, laying over far enough to support the weight of the anvil, and at the same time projecting a little above the surface or the top of the standard so as to be polished to its extreme point; a puppet head projects up from the arm (*m*), near the cross through which a centering mandrel (*m*,) passes in a line with the axis of the conical horn, bringing the surface of the same to a horizontal line, as clearly illustrated in the drawing, so as to bring all parts of the anvil properly under the horizontal polisher for its action thereon. There are handles projecting from the ends of the arms (*g*,) by which the polishing wheel is guided, and the anvil is turned by a crank upon the center mandril (*n*,) as it is worked off.

What we claim therein as new and of our invention is—

Suspending the anvil in the sliding and vibrating frame, and arranging it in respect to the polishing part of the apparatus, and operating them as herein fully described.

M. FISHER.
JOHN H. NORRIS.

Witnesses:
MARY M. EVANS,
SAML. EVANS.