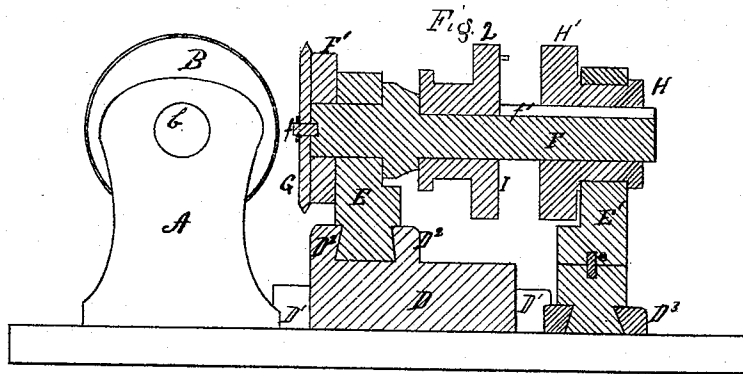


Machines for Grinding Colters.

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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN MACHINES FOR GRINDING COLTERS.

Specification forming part of Letters Patent No. **157,026**, dated November 17, 1874; application filed April 20, 1874.

To all whom it may concern:

Be it known that we, JOHN PEDDER, of Pittsburg, and GEORGE ABEL, of Chartiers township, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Apparatus for Grinding Colters; and we do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 is a perspective view of my invention. Fig. 2 is a vertical section of the colter-shaft and bearings.

This invention relates to apparatus employed for grinding colters and similar articles where a beveled edge is to be obtained; and it consists in the manner of securing the colter to the revolving shaft; in supporting the shaft upon sliding bearings; in supporting said shaft on sliding and pivoted bearings, whereby the colter can be presented to the stone at any angle to obtain the bevel, or made to move across the face of the stone, as desired, and, also, in grooving the stone in such a manner as to prevent the bevel thereof marking the colter.

In the drawing, A represents the frame, in which the shaft *b* of the grindstone B is journaled. This frame is placed at right angles to the guides for the shaft carrying the colter. The grindstone C has a deep recess or groove, *c'*, encircling its face about the middle to prevent the colter from furrowing the stone during the grinding of the colter-face, and to prevent the stone from rounding off the beveled edge of colter. The face of the colter is fed across the grinding-surface of the stone until the nut *f*, which secures the colter to the shaft F, comes in contact with the edge of the stone. Now, as the stone is broader than half the diameter of the colter, the colter would wear the stone irregularly, and, as the stone was furrowed out, it in turn would round off the bevel on the colter. To avoid this we furnish the stone with a groove, *c'*, near or about the center, so that the bevel of the colter projects over the groove with the result above specified. The stone is driven by suitable gearing, or by a belt passing over pulley B'. D represents a

bed, sliding in ways D¹ toward and from the frame A, and, in connection with the sliding shaft, permits the colter to approach or recede from the stone. Upon bed D, at the end thereof nearest the frame A, are ways D², placed at right angles to the ways D¹, in which bed D moves. These ways permit of a lateral movement of the bearing E, in which one end of the shaft F is journaled. D³ represents ways on the same plane as the ways D¹ of bed D, but at right angles to D¹, and parallel to the ways D² on bed D. These ways are for the bearing E', said bearing being divided on a line with bed D, the two parts of the bearings being pivoted as shown at *e*.

By this construction of the bearings E and E' the shaft F, carrying the colter, can be made to move across the face of the stone, and, by means of the divided pivoted bearing E', the end of the shaft F farthest from the stone can be moved from a right line, so as to present the colter to the stone at an angle, the bed D being sufficiently movable to permit the slight play required of bearing E.

F represents the shaft to which the colter is attached. In the drawing it is shown as provided, at the end nearest the stone, with a disk, F', from the face of which projects a bolt and nut, *f*, or other suitable device for securing the colter G; but it is evident that the disk F' may be omitted and the colter G be secured directly to the end of the shaft by a bolt and nut, the disadvantages of the latter method being the less support given to the colter. H is a sleeve, through which passes a shaft, F. This sleeve is provided with a pulley, H', to which the power is applied, and, being journaled in bearing E, can rotate independently of shaft F. I is a clutch sliding upon shaft F, but provided with a feather, which takes into a longitudinal recess, *f'*, in the shaft, so that the clutch will rotate with shaft. This construction of the clutch and sleeve is adopted so that the shaft F may be moved endwise in its bearing E without disturbing the driving-gear. When the clutch I is in contact with pulley H' the shaft F and sleeve H revolve together, but when the clutch is withdrawn the sleeve revolves independently of the shaft.

The operation of these devices is as follows: The colter being secured to disk F' by bolt f, or other suitable means, the bearings E and E' are moved the requisite distance to bring the edge of the colter at the proper angle to the face of the stone, after which the bed D is moved toward the stone, carrying with it bearing E until the colter comes in contact with the stone, the shaft F sliding laterally in sleeve H to admit of this adjustment. The clutch I is then moved back along the shaft until it takes into pulley H, when the shaft F begins to revolve. The ways and sliding bearings permit the traverse of the colter across the face of the stone. The divided and pivoted bearing permits the colter to be presented to the stone at any angle desired, and the sliding bed, and shaft sliding in the sleeve-bearing, permits the colter to be moved toward and from the stone without disturbing the driving-power.

The object to be accomplished is stated, and the construction of apparatus therefor preferred by us has been fully set forth above; but it is evident that the stone may be made to travel across the face of the colter, &c.—in other words, the shaft carrying the colter may have

fixed bearings, and the stone may be mounted in sliding and pivoted bearings similar to those described above as applied to the shaft of the colter—and we hereby distinctly state that such construction is the duplicate of our devices, and so considered by us.

Having thus described our invention, we claim—

1. The combination of a sliding bed and bearings, sliding at right angles thereto, with a shaft having an endwise movement in one of its bearings, as described.

2. The combination of a sliding bed, a shaft having an endwise movement in one of its bearings, and a sliding pivoted bearing, whereby a colter secured to the shaft is presented to the stone at a tangent, substantially as specified.

In testimony whereof we, the said JOHN PEDDER and GEORGE ABEL, have hereunto set our hands.

JOHN PEDDER.

GEO. ABEL.

Witnesses:

W. N. ERWIN,
JOHN MCARTH.