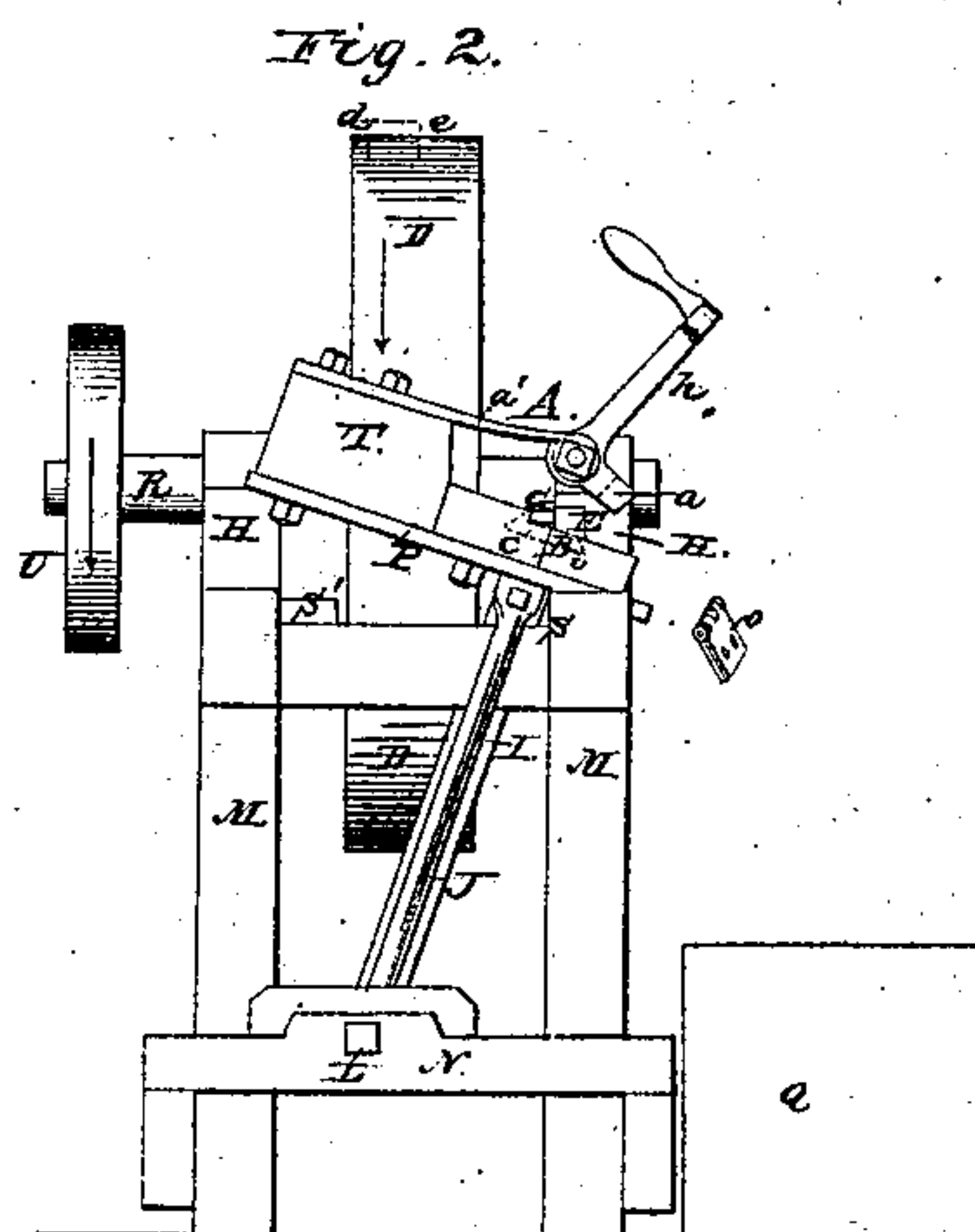
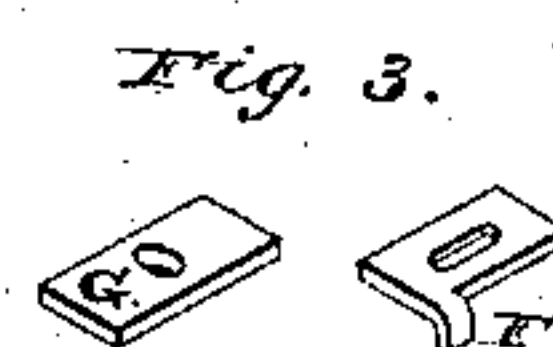
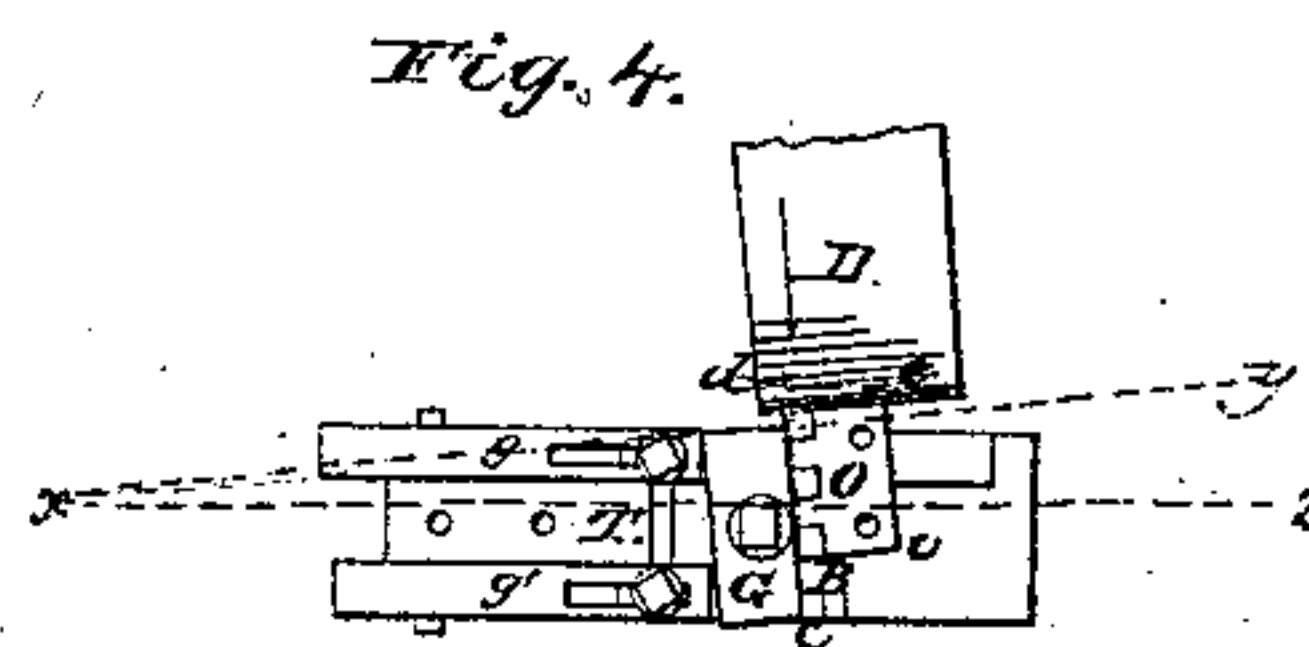
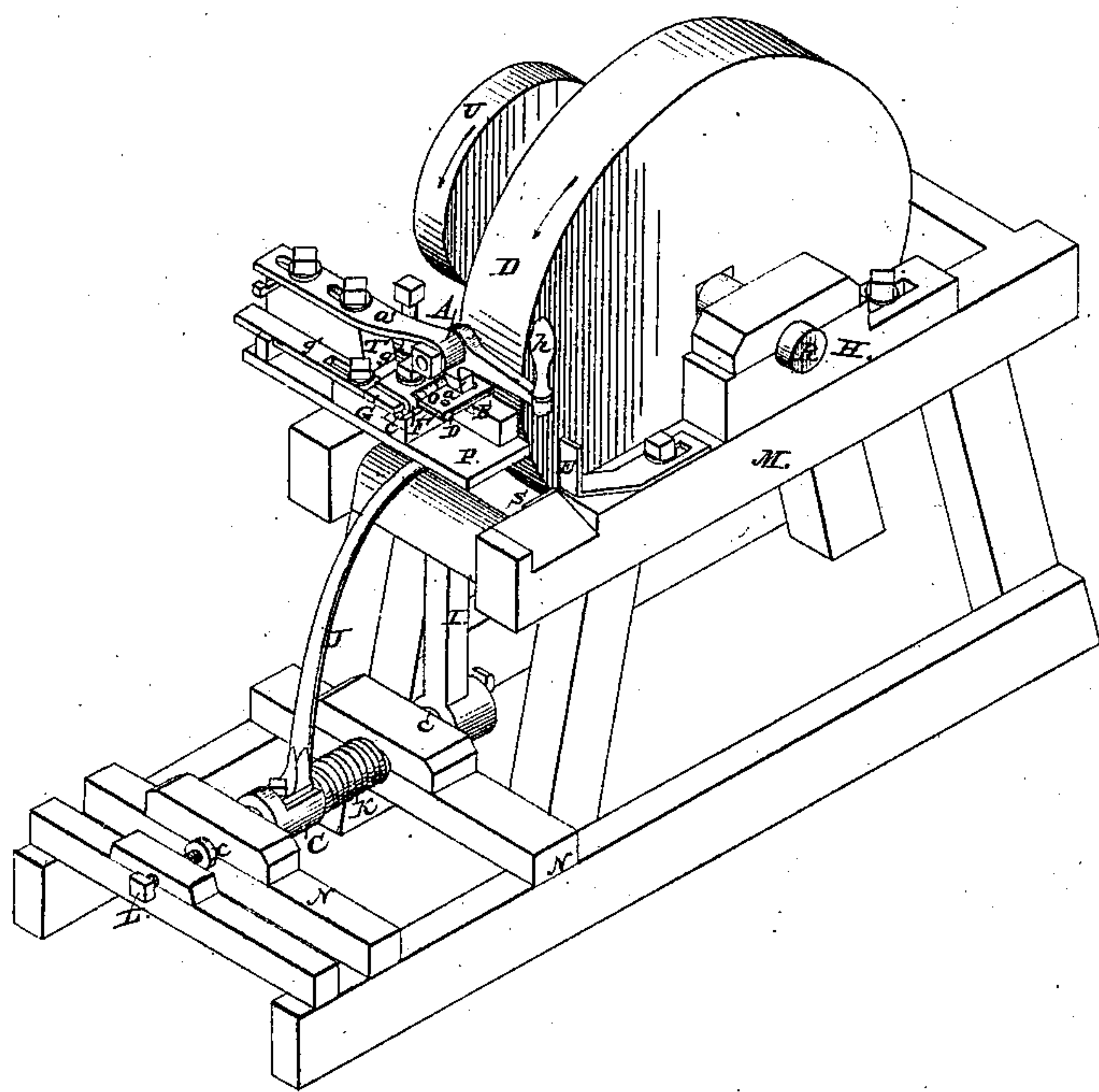


*Henney & Curley,*

*Edge-Tool Grinder*

*N<sup>o</sup> 15,241.*

*Patented July 1, 1856.*



# UNITED STATES PATENT OFFICE.

CYRUS KENNEY AND WM. GURLEY, OF TROY, NEW YORK.

## MACHINE FOR GRINDING BUTT-HINGES.

Specification of Letters Patent No. 15,241, dated July 1, 1856.

*To all whom it may concern:*

Be it known that we, CYRUS KENNEY and WILLIAM GURLEY, each of Troy, in the county of Rensselaer and State of New York, have jointly invented certain new and useful Improvements in Apparatus for Grinding the Edges of Butt-Hinges; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is an isometrical projection of our improved apparatus; Fig. 2, is a front elevation; and Figs. 3 and 4 show detached parts.

The same letters refer to like parts in all the figures.

Our invention relates to improving the construction of the part employed to grip the butts; also to an improved arrangement of means for applying the butt, when held by the gripper, to the grindstone.

The construction is as follows, to wit: M is the frame for all the works.

D is a grindstone, turning in the direction pointed by the arrow thereon.

C is a rock shaft, with long journals, which turn, and may be made to slide endwise, in the part N, of the frame M.

I is a stout arm, fastened at its lower end to the rock shaft C.

J is a brace, to strengthen the arm I.

B is the bed-piece of the gripper, on which bed the folded butt O is held while being ground. This bed-piece is firmly fastened to the upper end of the arm I. The rock-shaft C is arranged horizontally, or somewhat inclined, and lower than the axis of the grindstone, and in or near and parallel or nearly parallel to the plane of motion of the stone; and so that the plane in which the bed B vibrates is parallel or nearly so to the face of the stone at the place where the butt is held to be ground. The bed, B, is fastened to the arm, I, in such position that when the butt is in front of the stone, the upper face of the bed is parallel, or nearly so, to the axis of the stone, and perpendicular, or nearly so, to the face of the stone at the place where the butt is then held.

L is a set screw, which may be employed to move and retain the shaft C nearer the stone when desired; and K is a spiral

spring, used in such case to keep the shaft pressed back against the screw L.

S and S' are stops to limit the vibrating motion of the bed.

G is a stop-piece, fastened to or forming a part of the bed B; and is arranged perpendicular to the face of the stone at the place where the butt is held while being ground.

a' is a stout elastic arm, fastened to the bed-piece. The free end of this arm extends over the bed-piece to a little in front of the stop G.

a is a pinch-block or cam, with a lever handle h. This cam is hung to the free end of the arm a' so as to turn in a plane perpendicular, or nearly so, both to the bed B and stop G. This pinch-block, a, is hung in such position that when the operative places a folded butt on the bed, with its knuckles to the stop G, as shown in Fig. 4, and then, by the handle h, brings down the pinch-block upon the butt, the pinch-block will slide along the flap of the butt until it strikes the knuckles and will force the butt snugly against the stop G—whether the butt is too thick or too thin, and whether the operative does or does not place the butt accurately against the stop; and the pinch-block will there remain, holding the butt securely for grinding by the pressure of the elastic support, a', alone, without continued exertion therefor by the operative. Instead of having the pinch-block strike directly against the knuckles of the butt, a finger may extend back from the pinch block so as to catch against that edge of the butt opposite the knuckles so as to press the knuckles against the stop G as the pinch block slides along the flap of the butt, and in this manner stop the pinch block in the proper place for holding the butt securely. But we prefer to have the cam press directly against the knuckles.

c is a recess in the bed, for the knuckles. This is somewhat useful in grinding thin, short butts. The notch in the bed piece at v is to give room to the hand of the operative in laying a butt on the bed.

F is a gage fastened to the bed B, and E is another, on the frame M; either of which gages may be set by the operative to assist him in placing the butt in such place endwise on the bed that the proper amount of metal shall be ground from the butt when applied to the stone.



In using the apparatus, the operative, after putting the grindstone in motion, stands on the side next the handle *h*, and with one hand on this handle and the gripper in the condition and position seen in Fig. 2, places a folded butt on the bed and against the stop *G* with his other hand. He then grips the butt and pushes the gripper in front of the stone, (as in Fig. 1), by the handle *h*, and then moves it back and forth a little until the stone ceases to cut or the butt is ground sufficiently. He then pulls back the gripper to the stop *S*, at the same time pushing up the handle *h*, as in Fig. 2, whereupon the butt slides from the bed by reason of its inclination. He then places the butt, which he picked up at the same time he was applying the first one to the stone, on the bed, and grips, grinds, and discharges it as before; and so continues.

We hang the pinch block to an elastic support in combining it with the bed, *B*, and stop, *G*, in order that the pinch-block shall always slide along the flap of the butt to a position where the elasticity of the support will hold the butt securely on the bed. And we fasten the gripper to a rock-shaft and arrange the rock-shaft in respect to the grindstone as hereinbefore described not only to avoid the friction which attends sliding the gripper on "ways"; but in order that while the operative can conveniently place the butt in the gripper and can easily and in a firm manner slide the butt across the face of the stone so as to grind its edge "square" or properly; the butt shall slide from the gripper when withdrawn from the stone, on opening the gripper, as before herein specified.

The parts which support the gripper

should not be made so stiff but that the gripper with its butt can spring outward and downward from the stone a very little,—that is, from about the  $\frac{1}{60}$ th to the  $\frac{1}{30}$ th of an inch,—under the pressure necessary to make the stone cut fast; so that the butt can be more easily applied by the operative to the stone; and so as to not cut into or stop the stone, or consume more power than is required for grinding off the excess of metal; and so that the butt shall tremble a little, to keep the stone from becoming glazed.

The value of our invention depends upon the fact that the edges of wrought iron butts can be ground by the use of our improved apparatus, better with no more expense for labor, and with less exercise of skill or care by the operative, than can be done by the use of any other apparatus known to us.

We do not claim any part or arrangement of the herein described apparatus which has been before used or known.

We claim as our invention and desire to secure by Letters Patent—

1. The improvement of hanging the pinch-block or cam, *a*, on or to the elastic support, *a'*, arranged in combination with the bed, *B*, and stop, *G*, substantially as herein described, for the purpose specified.

2. We also claim mounting the gripper in the manner described upon the rock-shaft, *C*, arranged in combination with the grindstone as herein set forth, for the purposes specified.

CYRUS KENNEY.  
WILLIAM GURLEY.

Witnesses:

E. BELL,  
A. F. PARK.