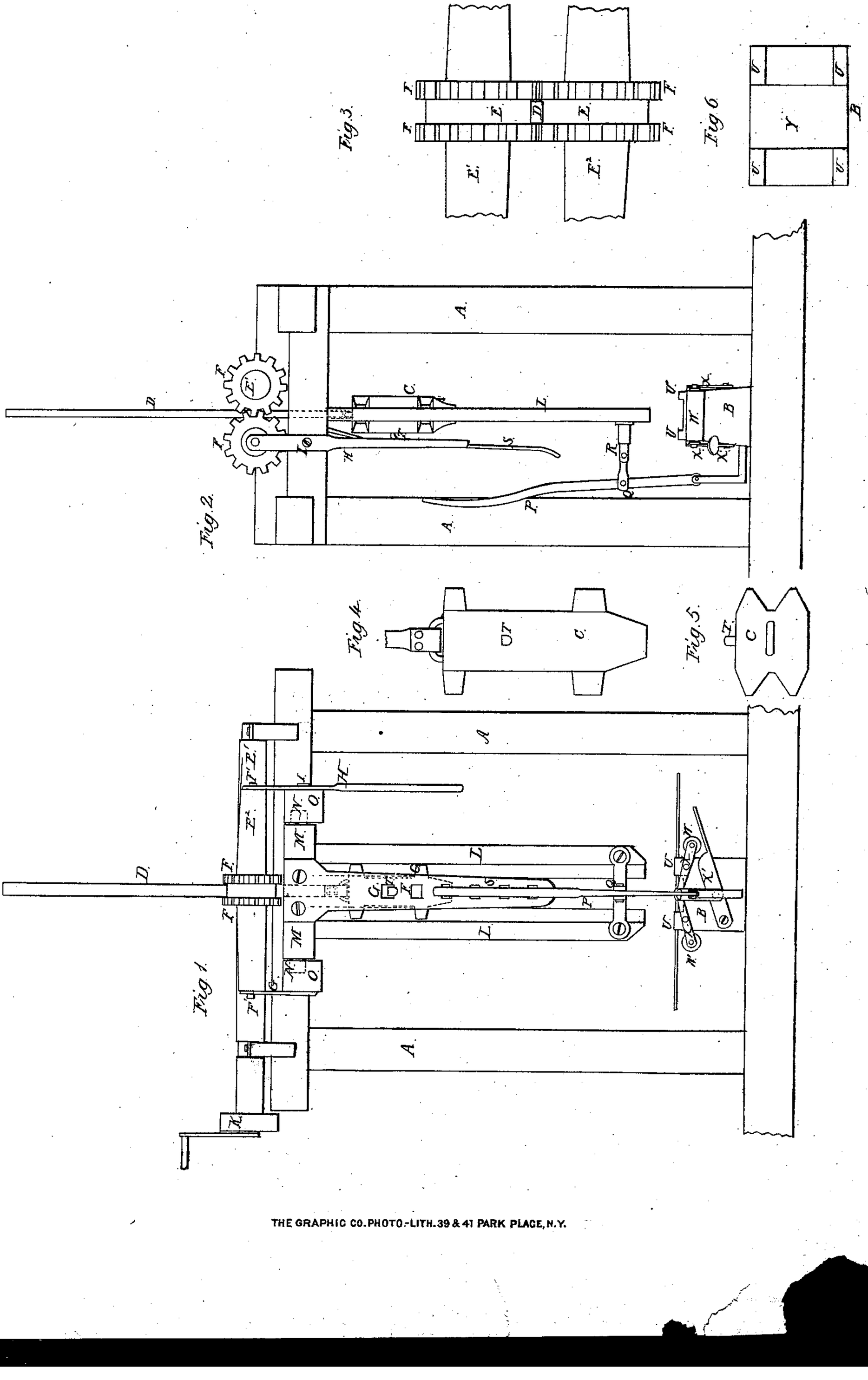
J. Anderson.

Straightening Iron Bars.

No. 5,733. Patented Aug. 29, 1848.



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UNITED STATES PATENT OFFICE.

JOHN ANDERSON, OF PHOENIXVILLE, PENNSYLVANIA.

MACHINERY FOR STRAIGHTENING RAILROAD-BARS.

Specification of Letters Patent No. 5,733, dated August 29, 1848.

To all whom it may concern:

Be it known that I, JOHN ANDERSON, of Phoenixville, in the county of Chester and State of Pennsylvania, have invented a new and useful Improvement, being a Machine for Straightening Bars of Iron for Railroads and for other Purposes, which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

Figure 1, is a front elevation of the machinery. Fig. 2, is a side elevation. Fig. 3, is a top view of the cogged rollers. Fig. 4 is a front elevation of the hammer. Fig. 5, is a top view of ditto. Fig. 6 is a top view of the anvil.

Similar letters in the several figures refer to corresponding parts.

A is the frame of the machine.

B is the anvil.

C is the hammer.

D is the handle of the hammer.

E E are the friction rollers for raising the hammer.

F are cogs on the periphery of the rollers to engage the one with the other when the rollers are to be revolved together to raise the hammer.

E′ is the driving axle of the back or driving roller.

E^2 is the vibrating axle of the front friction roller.

F′ are gudgeons of the front roller one of which turns in an upright plate G secured to the frame and the other turns in the upper ends of a vibrating lever H for throwing the cogs of the front roller in and out of gear with the cogs of the back roller. I is the fulcrum of said lever.

K is a pulley on the axle of the back roller for the band leading to the propelling power.

L L are two parallel hanging guides for guiding the hammer in its ascent and descent having their inner edges made of a V to correspond with a V shaped groove made in the edges of the hammer. M is a rock shaft into which the upper ends of these guides are inserted the lower ends being detached.

M N are the gudgeons of the rock shaft turning in the parallel timbers *o o* of the frame.

P is a lever for moving the lower ends of the hanging levers in the arc of a circle. Q is the fulcrum of said levers.

R is a jointed connecting rod and segment bale for connecting the swing guides to the lever, said lever serving to move their lower ends back and forth in bringing the hammer perpendicularly over the bar of iron to be straightened.

S a hanging gage plate attached by its upper end to the rock shaft, its lower end being loose. It is perforated with round or square openings at equal distances apart and lettered from the lower to the upper aperture A, B, C, &c., in order to gage the force of the blow to be given which will be increased in proportion to the elevation of the hammer.

T is a hook on the front side of the hammer for hooking into an opening in the hanging gage so to suspend the hammer at any required degree of elevation when not required to be in use.

U are cogs or projections on the upper surface of the anvil one at each corner.

V is a depression or hollow in the center of the anvil to allow room for the bar to be bent in bringing it to a straight line.

W, W, are antifriction rollers which are to be raised slightly above the bevel of the anvil on rolling on a bar to be straightened and to be depressed below it during the operation of hammering it so as to bring the bar down upon the bearing points of the anvil.

X is a combination of levers for raising and depressing the rollers attached to the anvil.

The width of the channels around the cogged rollers formed by the two circles of cogs is a little greater than the width of the handle of the hammer.

The frame may be of any required form, size, and strength adapted to the machinery to be placed therein—either connected with the timbers of the building in a hanging position or resting upon posts on a permanent bed, or platform, or in any convenient way.

Operation: The rear shaft E′ and cog wheel F being put in motion by the application of any convenient power to the driving pulley K on said shaft lay hold of the lever H and move the roller E or the vibrating shaft E^2 against the handle D of the hammer. The teeth of the cog wheels of both rollers being in gear will cause the hammer to rise by the friction of the rollers on the hammer handle. Raise the rollers W by bearing down the lever X′ roll on a bar of iron. Raise the lever X′ which will actuate the other levers connected to it and cause the rollers to descend below the level of the top

of the anvil which will bring the bar of iron down upon the anvil.

Lay hold of the lever P and move it to the right or left, causing the vibrating guide arms to move also to the right or left until the hammer is perpendicularly above the bar of iron to be straightened, then reverse the movement of the lever H attached to the vibrating shaft. This will liberate the hammer handle and cause the hammer to descend upon the bar of iron with sufficient force to straighten it. But should one blow not be sufficient the operation must be repeated as often as is necessary to effect the desired object. The force of the first and each succeeding blow will be determined by the height to which the hammer is raised and indicated by the perforated gage S.

I do not claim the invention of a gravitating weight for bending and straightening bars of iron, but,

What I do claim as my invention and desire to secure by Letters Patent, is—

1. The manner of directing the weight in its descent so as to strike the bar of iron in the point desired by the employment of the hanging arms L in combination with the rock shaft M into which they are inserted and the lever P for actuating the same as described.

2. I also claim the combination of the conducting and guide rollers W in combination with the levers X concave anvil B as described.

In testimony whereof I have hereunto signed my name before two subscribing witnesses this 3d day of August A. D. 1845.

JOHN ANDERSON.

Witnesses:

JAMES KYLE,

ROBT. W. FENWICK.