

(No Model.)

2 Sheets—Sheet 1.

E. HEYDE.
BENDING ROLLS.

No. 468,659.

Patented Feb. 9, 1892.

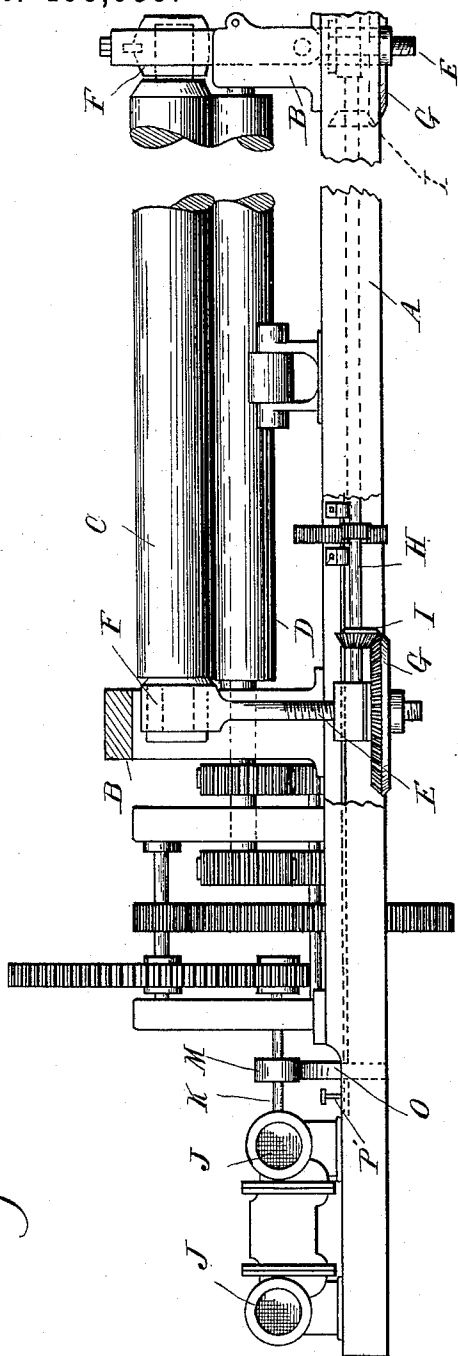


Fig. 1.

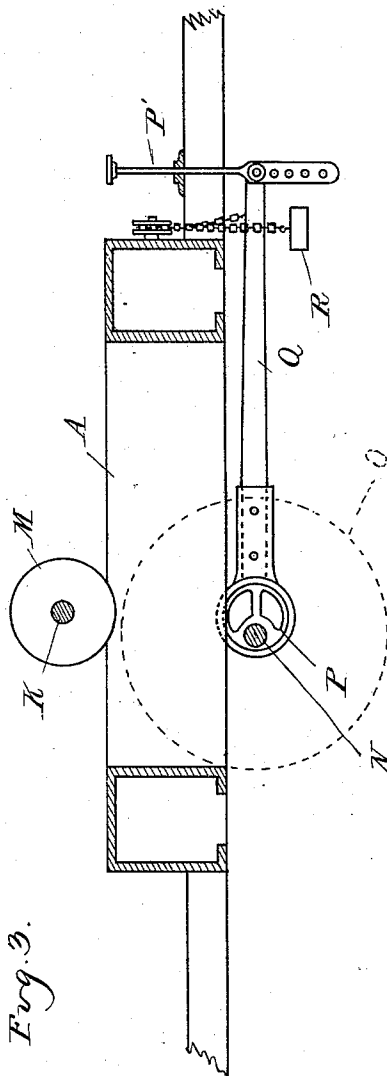


Fig. 3.

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(No Model.)

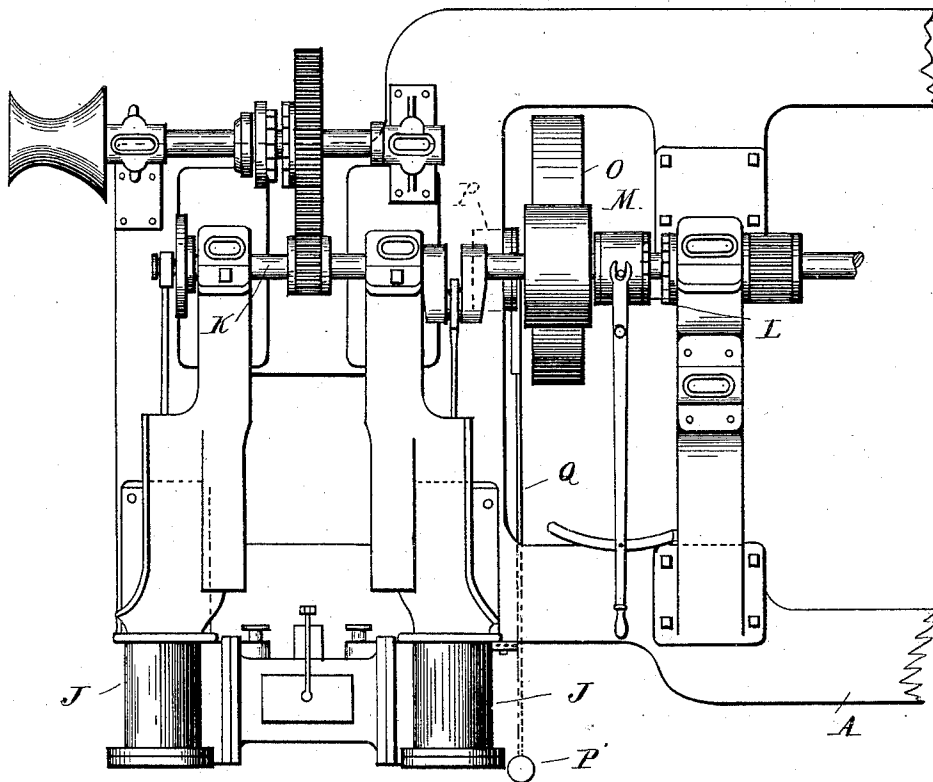
2 Sheets—Sheet 2.

E. HEYDE.
BENDING ROLLS.

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Patented Feb. 9, 1892.

Eng. 2.



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UNITED STATES PATENT OFFICE.

EDWARD HEYDE, OF EAST SAGINAW, MICHIGAN, ASSIGNOR TO WICKES BROTHERS, OF SAME PLACE.

BENDING-ROLL.

SPECIFICATION forming part of Letters Patent No. 468,659, dated February 9, 1892.

Application filed August 27, 1891. Serial No. 403,885. (No model.)

To all whom it may concern:

Be it known that I, EDWARD HEYDE, a citizen of the United States, residing at East Saginaw, in the county of Saginaw and State of Michigan, have invented certain new and useful Improvements in Bending-Rolls, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to new and useful improvements in bending-rolls of that class designed for rolling sheet metal into curved plates, such as boiler-plates, &c.

15 The invention consists in the peculiar construction of the mechanism designed for raising and lowering the upper roll for the purpose of changing the curvature at which the plate will be rolled, all as more fully hereinafter described.

20 In the drawings, Figure 1 is a side elevation of a set of bending-rolls embodying my invention, partly in section. Fig. 2 is an enlarged top plan of the engine and friction-gearing. Fig. 3 is a cross-section beside the
25 friction-gearing.

A is the main supporting-frame, upon which are secured the standards B, provided with suitable bearings, in which are journaled the upper rolls C and the lower rolls D. The
30 standard B is apertured centrally to receive the shafts E, one for each standard, these shafts carrying at their upper ends the boxes or bearings F for the upper roll, which bearings are entirely supported upon these shafts,
35 which are guided in vertical bearings F' in the standards. The lower end of the shaft is screw-threaded and engages with a female thread in the horizontal bevel gear-wheel G, which rests between the bearing F' and a
40 bracket E'.

H is a shaft extending horizontally beneath the rolls and carrying at each end the beveled pinions I, which mesh with the bevel gear-wheels G upon the vertical shafts.

45 It is evident that if motion is imparted to the shaft H the gear-wheels will be turned upon the shafts E and will raise and lower these shafts, and with them the upper roll will be raised or lowered, according to the direction in which the gear-wheels are turned.

My present invention consists in the peculiar construction of the mechanism for imparting motion to these vertical shafts.

J are the engines (preferably two) connected with the crank-shaft K, which forms the
55 main drive-shaft for the rolls, motion being communicated to the rolls by any suitable driving-gear. I also preferably employ a clutch at L, whereby this main shaft may be connected or disconnected at will from the
60 drive-gearing. Upon this shaft I secure a friction-pulley M, and below this pulley, upon the shaft N, I secure a friction-pulley O. (More plainly shown in Figs. 2 and 3.) The outer
65 end of the shaft N is journaled eccentrically in a rotary bearing P, to which bearing is secured a lever Q for rotating the same. This lever is provided with a suitable counterweight R to normally hold the faces of the
70 friction-pulleys out of engagement, and also with a foot-lever P' extending through the platform beside the machine, by means of which the operator may depress the lever, rock the bearing, and bring the faces of the two
75 pulleys into engagement to impart motion to the shaft N and through suitable intermediate gearing to the shaft H for the purpose of raising and lowering the upper roll. A reverse movement is imparted to this raising
80 and lowering shaft by reversing the engines. Thus, when the machine is in operation rolling a plate of metal, if the operator in putting his gage upon the sheet finds the curvature is not the proper one, he can, by simply
85 putting his foot upon the standard P', throw the friction-pulley O into contact with the pulley on the drive-shaft and raise and lower the upper roll to increase or diminish the curvature, the drive-shaft being given motion
90 in the proper direction.

By using the frictional gearing to transmit the power from the drive-shaft to the adjusting mechanism for the upper roll there is no danger of applying sufficient power when the roll is drawn downward to increase the curvature to break the roll. This has been a serious source of trouble in other mechanism that has been devised for such adjustment.

What I claim as my invention is—

The combination, with a series of bending- 100

rolls, one of which is adjustable, of means for
adjusting said roll, a shaft for actuating said
means, a friction-disk mounted on said shaft,
an eccentric bearing for the shaft, a lever on
5 the bearing, a foot-lever on said other lever,
a weight on the eccentric lever, and a friction-
disk on the driving-shaft of the rolls arranged
to be engaged with the said other disk upon

the depression of the lever on the eccentric
bearing, substantially as described. 10

In testimony whereof I affix my signature in
presence of two witnesses.

EDWARD. HEYDE.

Witnesses:

ALFRED HUDSON,
JNO. W. HOAG.