

(No Model.)

W. D. EYNON.

MACHINE FOR ROLLING AND BENDING METAL INTO SPIRAL FORMS.

No. 491,341.

Patented Feb. 7, 1893.

Fig. 1.

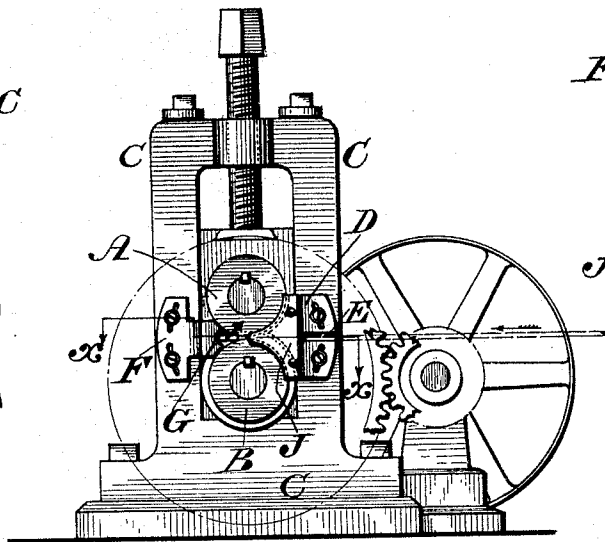


Fig. 6.

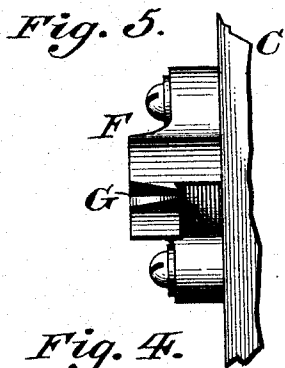
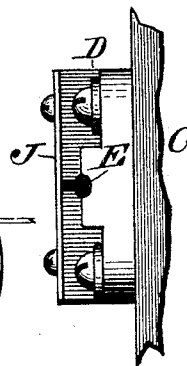


Fig. 4.

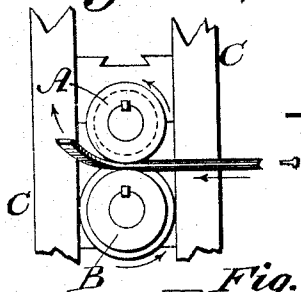


Fig. 2.

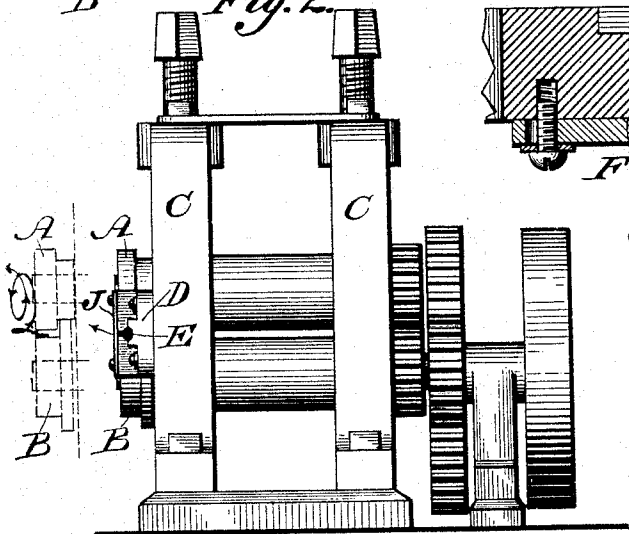
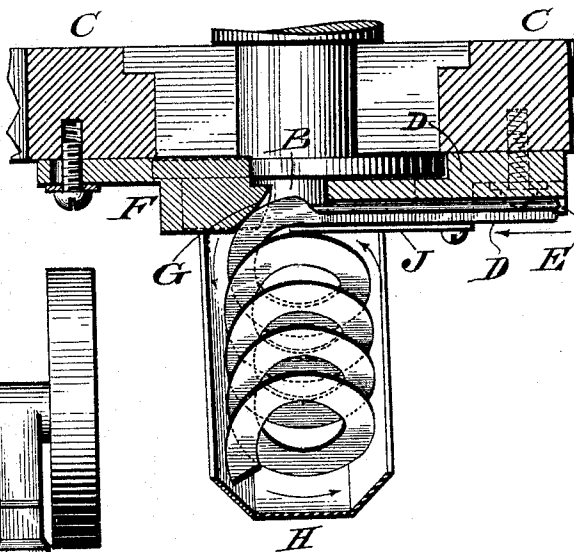


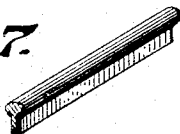
Fig. 3.



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Fig. 7.



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MACHINE FOR ROLLING AND BENDING METAL INTO SPIRAL FORMS.

SPECIFICATION forming part of Letters Patent No. 491,341, dated February 7, 1893.

Application filed July 21, 1892. Serial No. 440,754. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM D. EYNON, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Machines for Bending and Rolling Metal into Spiral Forms, which improvement is fully set forth in the following specification and accompanying drawings.

My invention consists of improvements in rolls for forming flights for conveyers and other purposes, the same embodying a guide which directs the metal to the rolls, and a die or former which converts the metal as it is flattened by the rolls into spiral or flight shape, as will be hereinafter described.

Figure 1 represents a side elevation of flight-forming rolls embodying my invention. Fig. 2 represents a front view thereof. Fig. 3 represents a horizontal section of a portion on line *a, x*, Fig. 1. Fig. 4 represents a side elevation of a detached portion. Fig. 5 represents a face view of the bending die employed. Fig. 6 represents a front view of the guide of the device. Fig. 7 represents a perspective view of the bar or blank from which the flights are produced.

Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings:—A and B designate a pair of rolls mounted on a housing C, and receiving power in any suitable manner, the peripheries of said rolls being flanged on opposite sides. Secured to the housing C, is a guide D, in which is a longitudinally extending passage E, one side of said passage being enlarged so that a headed or widened rail, such as is shown in Fig. 7, may enter said passage, it being noticed that the inner side of the guide D approaches the peripheries of the two rolls A and B. Secured to the housing, on the side opposite to the guide D, is a die F, whose working face G extends between the peripheries of the rolls A and B, in line with the passage E of the guide D. Projecting laterally from the housing is a trough H, which occupies a position adjacent to the guide D and die F.

The operation is as follows:—The bar is placed in the guide or passage E and conveyed toward the peripheries of the rolls A and B, where it is pressed between said rolls

and formed into flat condition, as shown in Figs. 3 and 4, it being noticed that in order to form a flight, a greater quantity of metal is required at the outer portion of the same than at the central portion. When the flattened metal reaches the working face G, of the die F, it is curved outwardly, and caused to rise, see arrows in Fig. 2, whereby it comes in contact with the outer side of the roll A, and is thus slightly twisted, so as to begin its conversion into a spiral form, the subsequent convolutions bearing against said outer case of the rolls, and thus the flight as formed becomes heavy, it lowers upon the trough H, and is sustained by the same as its length increases. The die F, is adjustably connected to the housing so that it may be set nearer to or farther from the rolls A and B, and thus vary the pitch of the flight.

Secured to the guide D is a guard J, which closes the front of the passage E and extends somewhat in front of the rolls A and B beyond the inner end of said guard, whereby the bar as it is being flattened, is prevented from escaping at the front of the rolls, while the flange of the lower roll prevents such escape at the rear, said parts also serving to guide the bar true and uniform to the rolls.

In carrying out my invention I may utilize old railroad rails, and as seen in Fig. 7, the headed portion of the same is taken to be converted into a flight by the means heretofore set forth.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is:—

1. The combination of rolls with a guide for the metal on one side of the rolls, and a die on the opposite side of the rolls in a line with the guide, and having a working face extending between the peripheries of the rolls, substantially as described.

2. The combination of rolls with a guide having a longitudinally-extending passage with an enlarged side, and an adjustable die on the opposite side of the rolls, substantially as described.

3. The combination of rolls having flanges on their opposite sides, with a guide having a longitudinally-extending passage, and a die on the opposite side of the rolls having a working face between the peripheries of the

rolls, and in line with the said longitudinal passage, substantially as described.

4. The combination of rolls suitably mounted in a housing, and having flanges on their sides, a guide having a longitudinally-extending passage therein with an enlarged side a die on the opposite side of the rolls, and having a working face in line with the passage of the guide, and a guard secured to the guide closing the front of the passage and extending in front of the rolls, substantially as described.

5. Rolls for flattening a piece of metal, a bending die having a working face extending outwardly from a point between the rolls and a trough extending laterally from said rolls to receive the spirally shaped metal or flight, substantially as described.

6. A housing having rolls mounted therein,

the same being adapted to flatten a piece of metal, a guide secured to the housing in advance of said rolls, said guide having thereon a passage, a portion of which is enlarged, a die opposite said guide, and a guard adjacent to said guide, substantially as described.

7. Rolls for flattening a piece of headed or widened metal, a guide for said piece having a passage adapted to the shape of said piece, and a die for bending said piece at the discharge side of the rolls, the working face of said die extending outwardly from the point of discharge of the flattened metal, thus bending the latter, substantially as described.

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Witnesses:

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