

No. 654,406.

Patented July 24, 1900.

D. D. LEWIS.

FEED ROLL FOR ROLLING MILLS.

(Application filed Jan. 16, 1900.)

(No Model.)

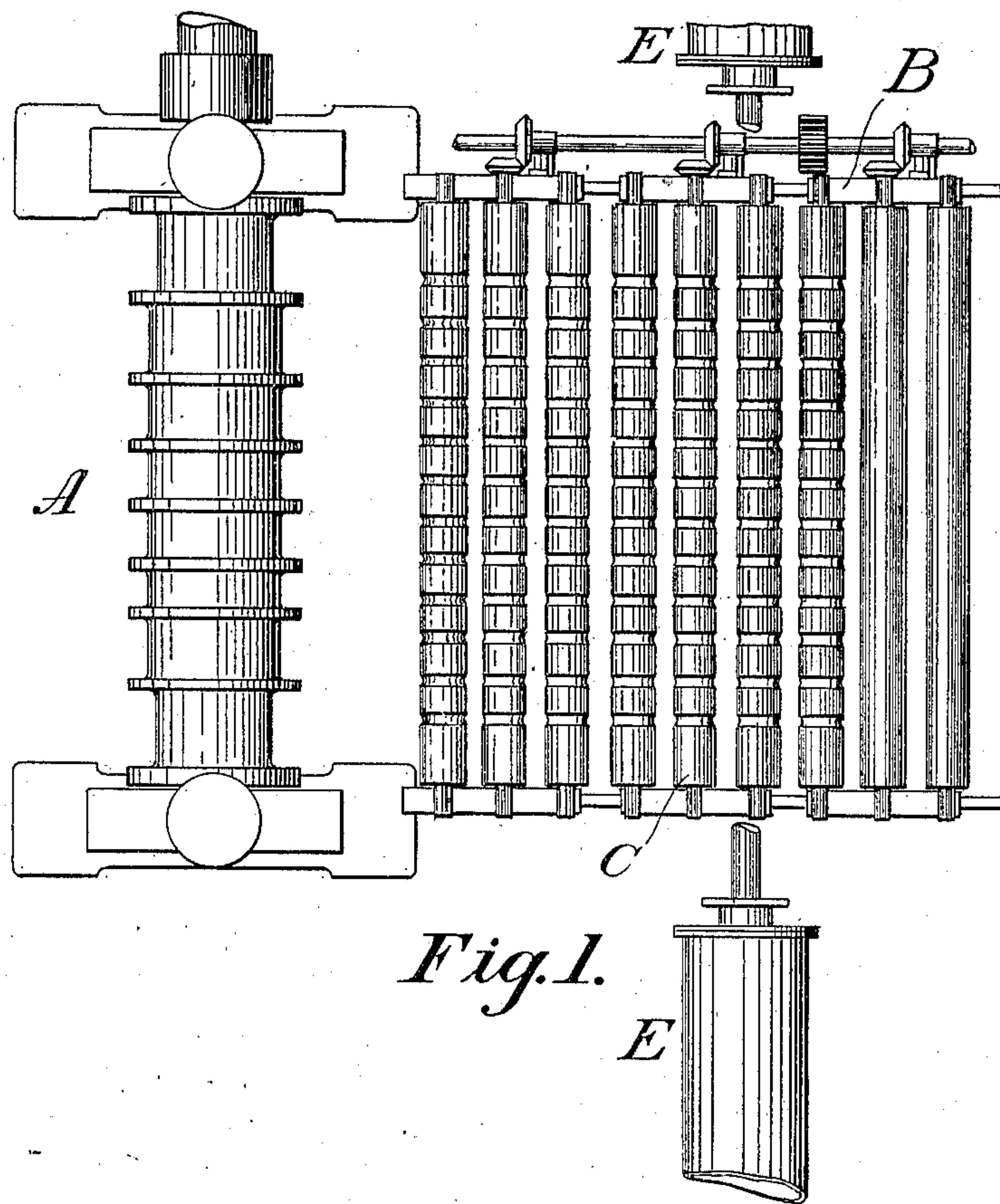


Fig. 1.

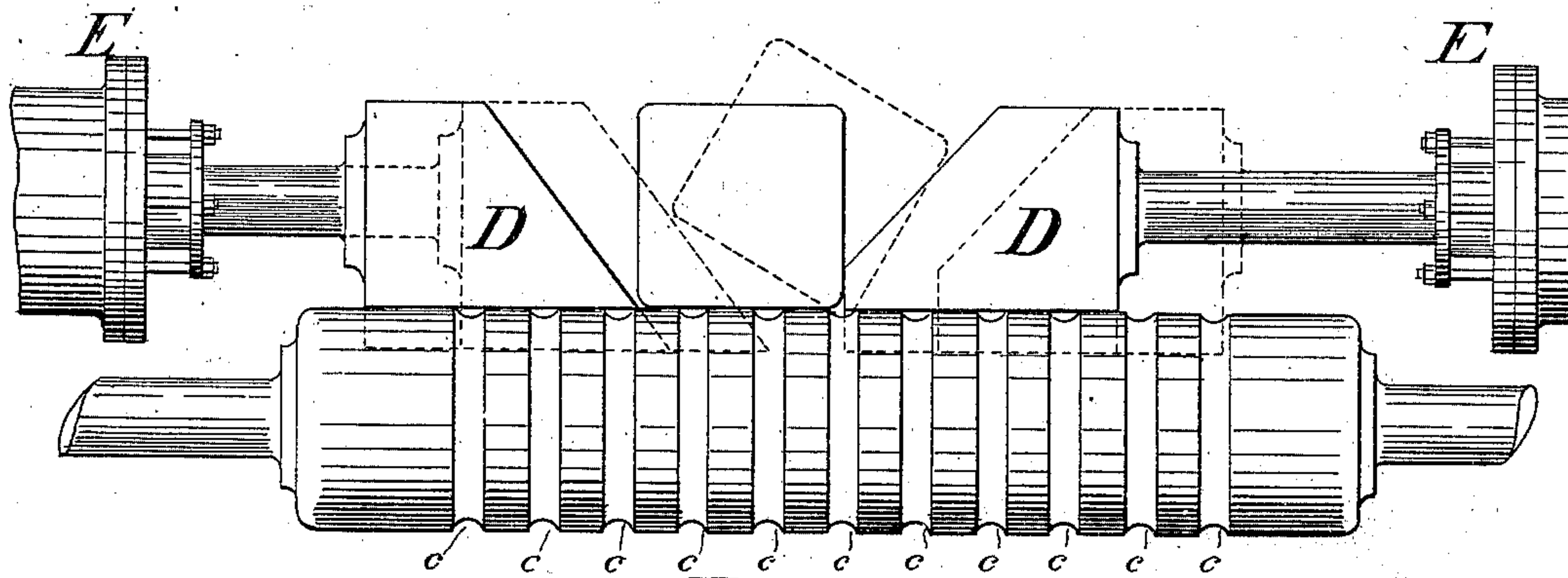


Fig. 2.

WITNESSES:

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FEED-ROLL FOR ROLLING-MILLS.

SPECIFICATION forming part of Letters Patent No. 654,406, dated July 24, 1900.

Application filed January 16, 1900. Serial No. 1,628. (No model.)

To all whom it may concern:

Be it known that I, DAVID D. LEWIS, of Lorain, in the county of Lorain and State of Ohio, have invented a new and useful Improvement in Feed-Rolls for Rolling-Mills, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention has relation to certain new and useful improvements in feed-rollers for rolling-mills, and is designed to provide a roll having a surface adapted to facilitate the manipulation of the ingot or other piece being rolled to properly position the same to enter the respective passes of the rolls. As is well known, it is necessary to turn the ingot or other piece from side to side or from side to edge to adapt it to the various passes of the rolls, this being accomplished by means of devices known as "manipulators" or "turners," and which are of various types and arrangement. With smooth-surfaced feed-rollers (upon which the ingot lies while being manipulated) the ingot is apt to slide on the rolls under the action of the manipulators instead of turning or rolling on its edge in the desired manner, thus often causing considerable delay in the rolling operation. My invention is designed to overcome this difficulty by providing those feed-rolls of the roller-bed adjacent to the rolls and manipulators with a grooved surface, the grooves of which act to catch and hold an edge of the ingot, and thereby enable it to be readily turned in the desired manner.

In the accompanying drawings, which illustrate my invention and its application, Figure 1 is a plan view of a portion of a rolling-mill, showing my invention applied thereto; and Fig. 2 is a front view of one of the feed-rolls and manipulators, showing the manner in which the invention operates.

The letter A designates the upper mill-roll; B, the roll table or bed on the furnace side of the mill; C, the feed-rolls thereof; D, the manipulators, and E the hydraulic cylinders by means of which the manipulators are actuated.

While I have shown the manipulators as being of horizontal type, my invention is equally desirable in connection with and applicable to mills which employ vertically-acting manipulators.

The feed-rolls C are arranged and driven in any usual manner and are similar to the ordinary feed-rolls, except that I provide a number of them nearest the mill-rollers with parallel circumferential grooves *c*, as shown. While I have usually placed these grooves about six inches apart on the surface of the rolls, measuring from center to center, and have made them about one-fourth of an inch in depth, this arrangement is by no means essential, as they may be placed nearer together or farther apart and may be of any suitable depth. They may also be either of semicircular or angular form, and any desired number of the rolls may be provided with them. The grooves in all the rolls may be alined or every other roll may have its grooves arranged to alternate with those of the adjacent rolls. The action and advantages of the grooves will be readily understood from Fig. 2, wherein the dotted lines show the ingot I in the act of being turned by the manipulators, the edge upon which it turns being engaged with a groove of the roll C, and thereby held from slipping and sliding.

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

1. The herein-described feed-roll for rolling-mills, having its surface provided with a number of narrow shallow circumferential grooves adapted to catch the corner of an ingot or other piece being rolled, and separated from each other by relatively-wide smooth-surfaced portions of substantially-uniform diameter.

2. In a rolling-mill, the combination with manipulators arranged to turn ingots or other pieces being rolled about their longitudinal axis, of one or more feed-rolls adjacent to said manipulators whose cylindrical surfaces are broken at intervals by shallow circumferential grooves adapted to catch and hold a corner of the ingot as the latter is moved by the manipulators.

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

DAVID D. LEWIS.

Witnesses:

H. M. DAVIES,
D. W. LAWRENCE.