

(No Model.)

2 Sheets—Sheet 1.

J. D. ELLIS.

DEVICE FOR ROLLING RIBBED PLATES.

No. 369,328.

Patented Sept. 6, 1887.

Fig. 1.

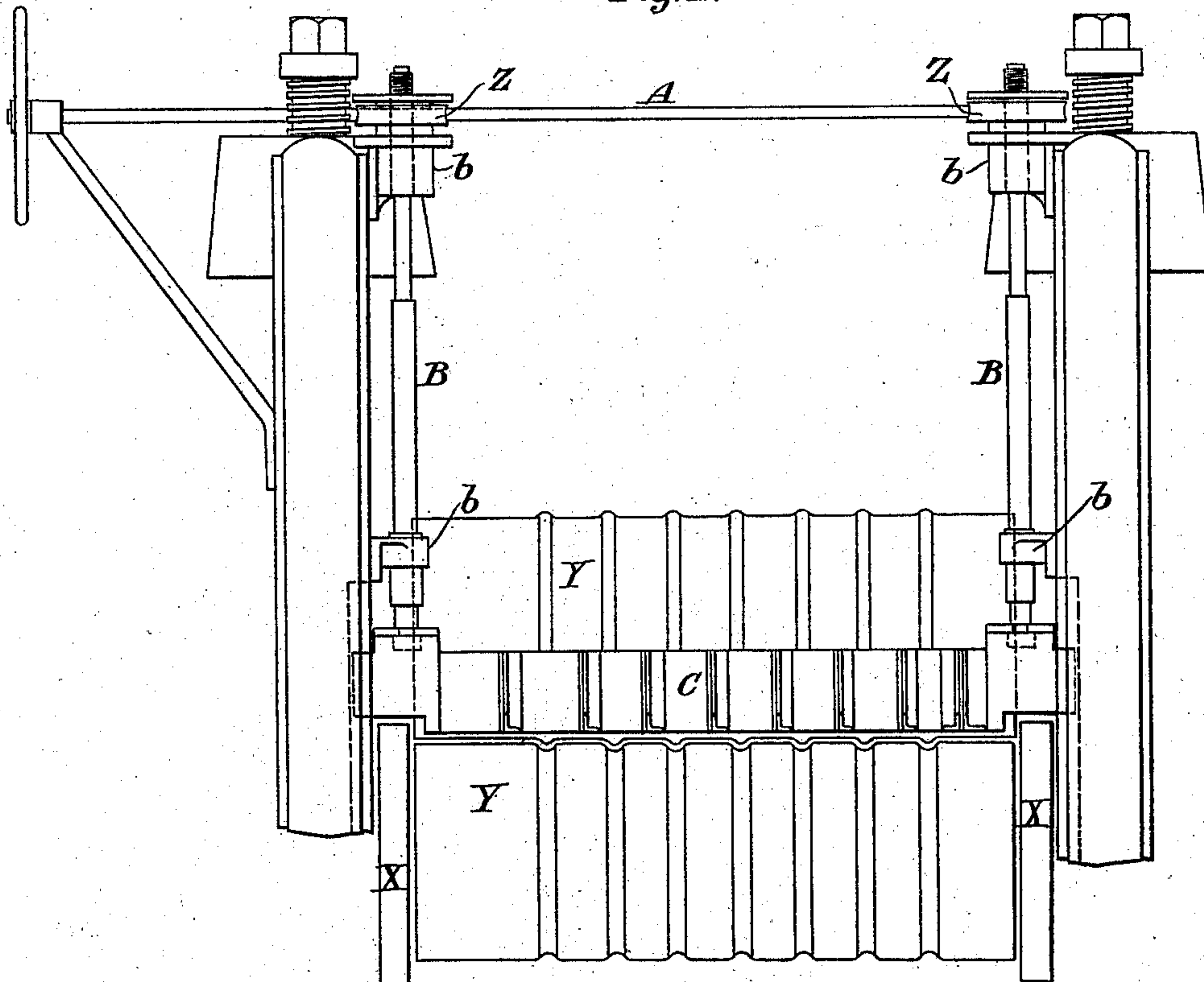
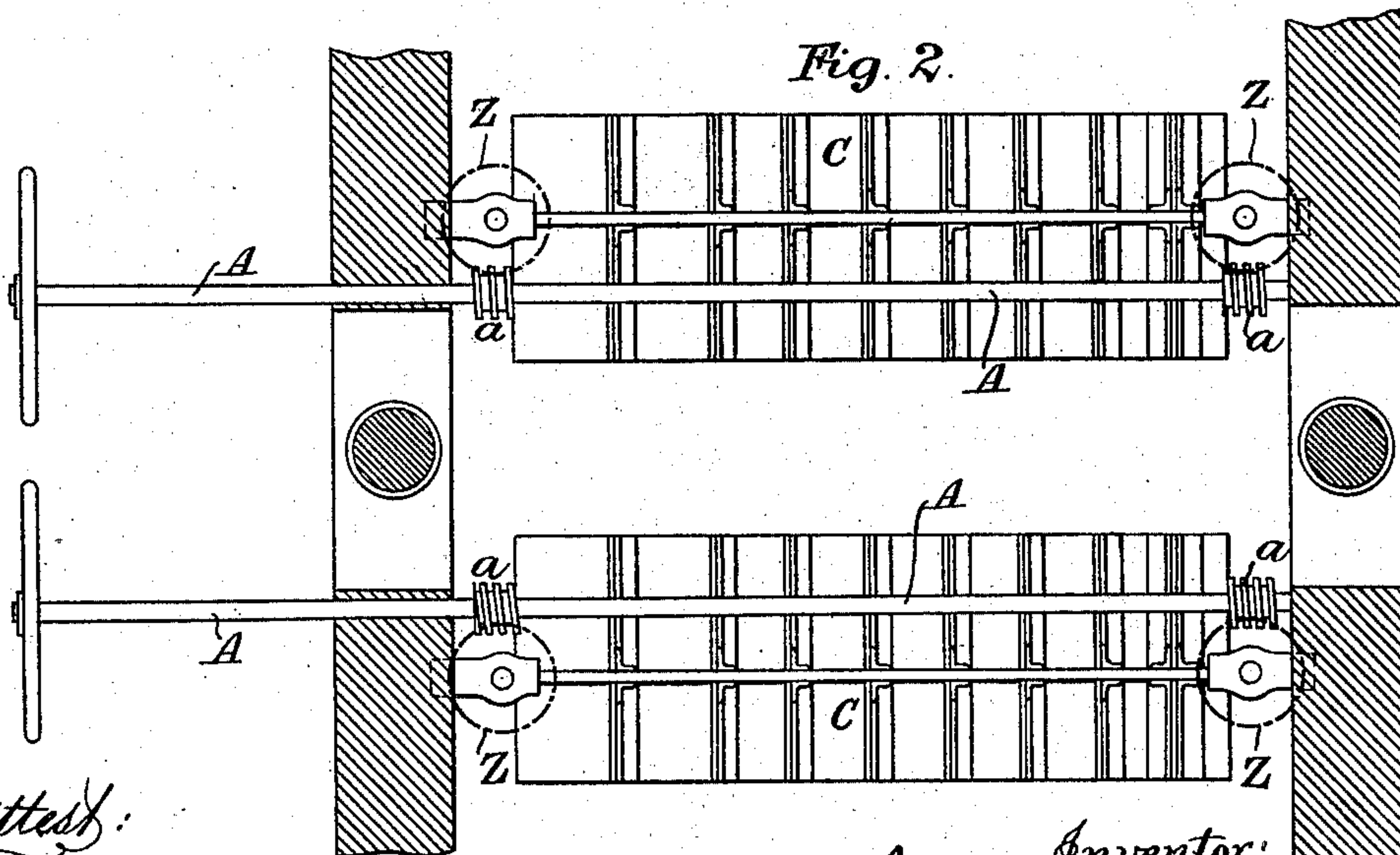


Fig. 2.



attest:
Geo. T. Smallwood,
Geo. H. McBethman

Inventor:
John Devoushire Ellis
by J. A. Lockett
his attorney

(No Model.)

2 Sheets—Sheet 2.

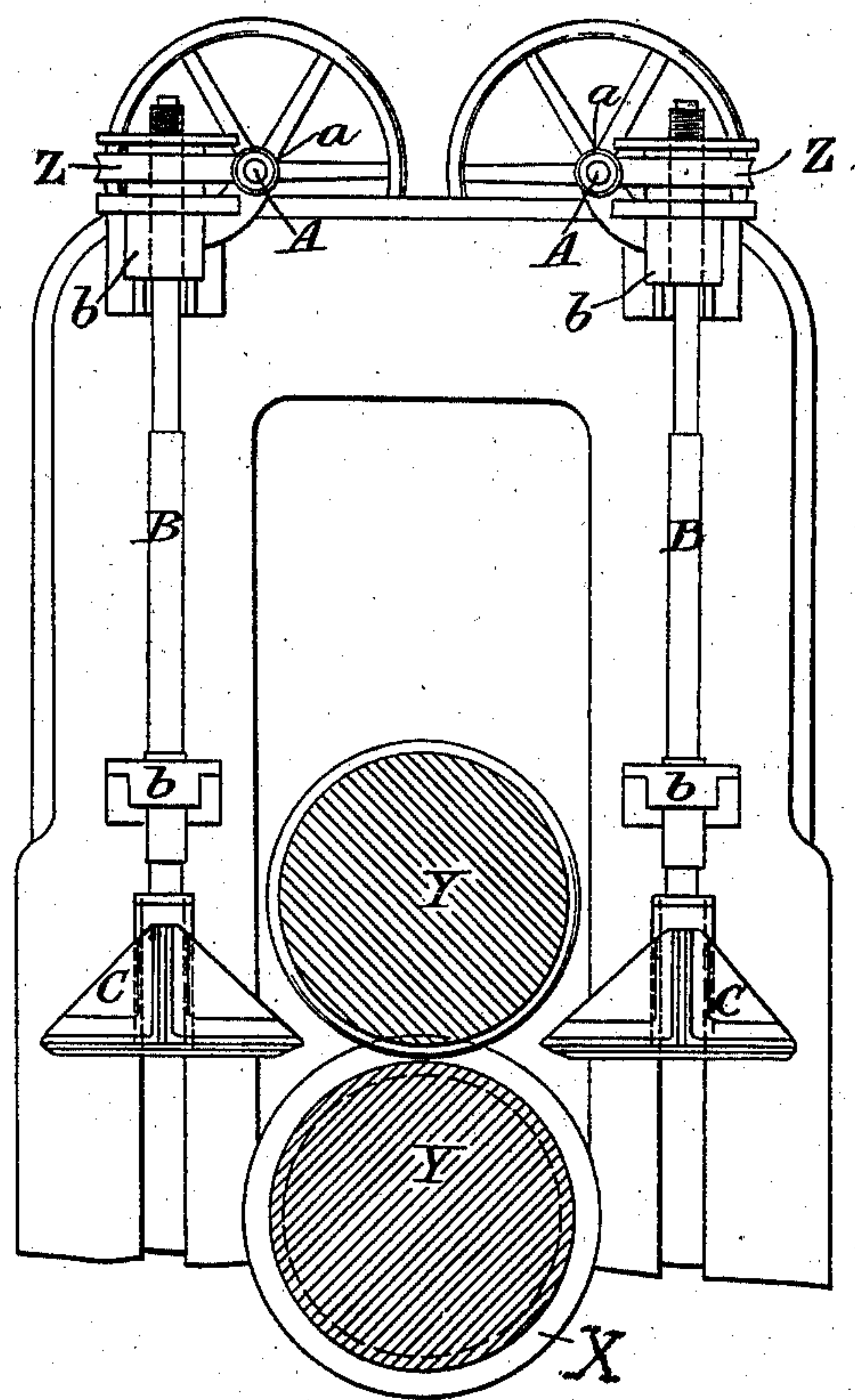
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Fig. 3.



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UNITED STATES PATENT OFFICE.

JOHN DEVONSHIRE ELLIS, OF SHEFFIELD, COUNTY OF YORK, ENGLAND.

DEVICE FOR ROLLING RIBBED PLATES.

SPECIFICATION forming part of Letters Patent No. 369,328, dated September 6, 1887.

Application filed July 26, 1887. Serial No. 245,350. (No model.) Patented in England October 4, 1886, No. 12,601.

To all whom it may concern:

Be it known that I, JOHN DEVONSHIRE ELLIS, ironmaster, a subject of the Queen of Great Britain and Ireland, residing at the
5 Atlas Steel and Iron Works, Sheffield, in the county of York, England, have invented certain new and useful Improvements in and Apparatus for the Manufacture of Iron or Steel Plates with Ribs or Projections thereon, (for
10 which I have applied for a patent in Great Britain on the 4th October, 1886, No. 12,601,) of which the following is a specification.

My invention relates to the manufacture of steel and iron plates with convex or other
15 form of ribs or projections on one side and plain or concave or other form on the opposite side, the said ribs or projections running lengthwise of the plates and being principally applicable for use in the construction of furnaces or fire-boxes or of flues for steam-boilers,
20 or for other analogous purposes.

According to my invention I prepare ingots, slabs, or blooms, with or without ribs or projections to suit the section to be produced by
25 the rolls, the said ingots, slabs, or blooms being made of a length corresponding to the width of the finished plate. The ribs or projections may be cast on the ingot for rolling into plates direct, or the ingots, with or without
30 cast ribs or projections, may be reduced in thickness under a hammer or forging-press or by planing or by cogging in rolls. After being so prepared the steel or iron slabs or blooms are rolled in rolls with grooves and
35 collars, as illustrated in the accompanying drawings, Figure 1 of which is a front view; Fig. 2, a plan with the rolls removed, and Fig. 3 an end view of apparatus for performing this invention.

40 The collars which are used with the rolls are shown at X X in Figs. 1 and 3. They are applied to each end of one of the rolls and overlap the other of the rolls. I place a horizontal guard, C C, at each side of the rolls Y, which
45 can be raised or lowered, as required. For the purpose of preventing the plate from either buckling or moving laterally, ribs or guides are

placed or formed upon the guards C C, which ribs or guides correspond in shape and size to the hollows rolled in the plate. Thus, when the
50 guards are brought down to the plate during the process of rolling, the ribs of the guard, by fitting the hollows in the plate, prevent the lateral movement of the plate. The gearing for raising or lowering these guards may be
55 worked by hand, steam, or hydraulic power.

As illustrated in the drawings, the guards C are each guided in grooves in the roll-framing, and are carried by uprights B, passing through
60 guiding-brackets b on the roll-framing, and provided at their upper ends with screws on which work internally-screwed wheels Z, formed with worm-teeth on their peripheries, with which engage worms on the shafts A,
65 mounted on brackets and worked by hand-wheels a, as shown.

I claim—

1. In an apparatus for producing steel or iron plates with ribs or projections thereon, the combination of the rolls and the collars on the
70 ends of one of said rolls and overlapping the other roll, substantially as described.

2. The combination, with rolls for rolling steel or iron plates, as described, of a ribbed guard at each side of the rolls in the manner
75 described, to prevent the buckling or lateral movement of the plates being rolled, substantially as described and illustrated.

3. The combination, with the rolls for rolling steel or iron plates, of the guards at each
80 side of the rolls, said guards being provided with ribs for the purpose stated, and mechanism, as indicated, for raising and lowering said guards, substantially as described.

In testimony whereof I have signed my name
85 to this specification in the presence of two subscribing witnesses.

JOHN DEVONSHIRE ELLIS.

Witnesses:

HERBERT ANTCLIFFE,

WM. FREDK. JACKSON,

Both of 41 Norfolk Street, Sheffield, Clerks to
Messrs. Burdekin & Co., Solicitors, Sheffield.