(No Model.)

H. B. CHESS.

APPARATUS FOR GRINDING ROLLS.

No. 330,561. Patented Nov. 17, 1885.

FIG. 1.

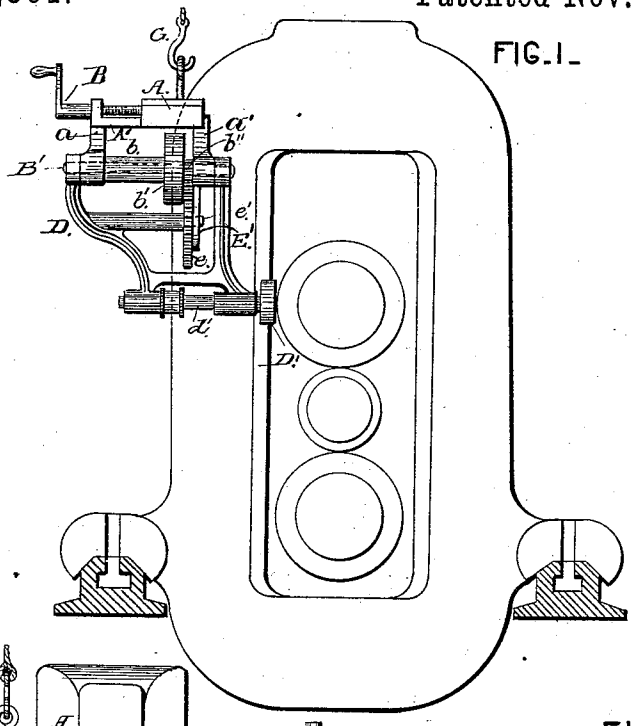


FIG. 2.

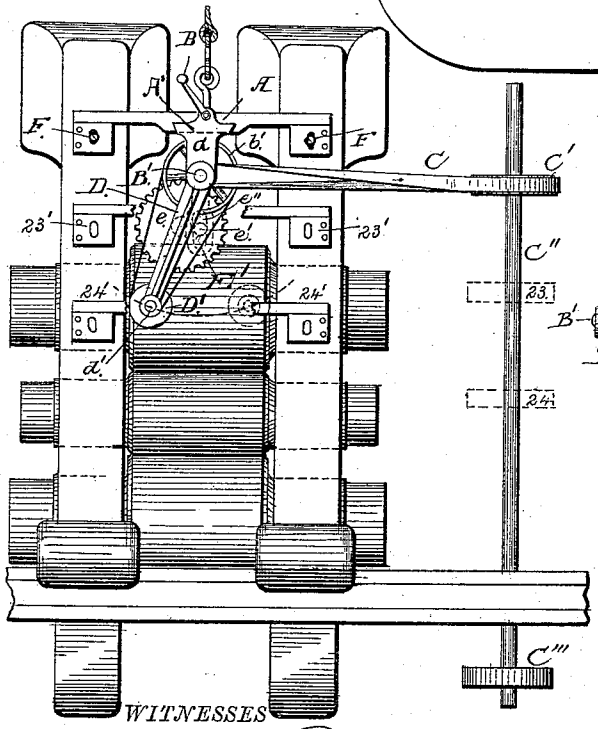
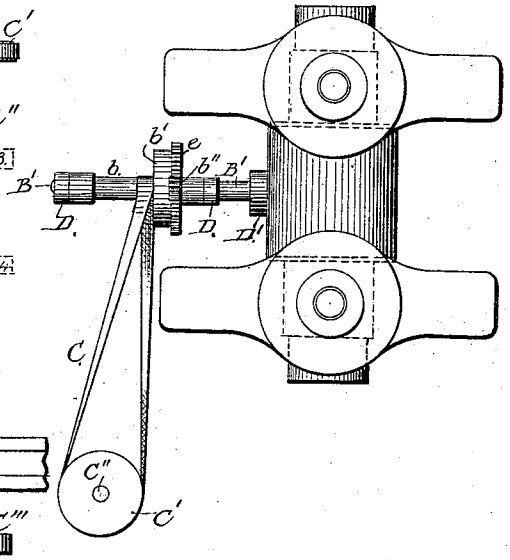


FIG. 3.



WITNESSES

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APPARATUS FOR GRINDING ROLLS.

SPECIFICATION forming part of Letters Patent No. 330,561, dated November 17, 1885.

Application filed May 6, 1885. Serial No. 164,531. (No model.)

To all whom it may concern:

Be it known that I, HARVEY B. CHESS, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented an Improved Apparatus for Grinding Rolls, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents an elevation of a roller-mill housing with the apparatus in position for grinding. Fig. 2 is a front elevation of the same. Fig. 3 is a plan view with the shelf and sliding head removed and showing a means for driving the apparatus.

My present invention relates to mechanism for grinding the rolls of rolling-mills; and it consists in the combination of devices hereinafter explained and claimed.

It is essential that rolls used in rolling metal plates shall be true and as nearly as possible perfect cylinders, and frequent dressing by tools or by grinding must be done.

My grinding apparatus is designed to be used more particularly with a system of rolls for which I have made application for a patent of even date herewith.

To enable others skilled in the art to make and use my invention, I will now proceed to describe the manner in which I have carried it out.

A bracket-shelf, A, Fig. 2, crosses from housing to housing, and is rigidly secured thereto. At its center a sliding head, A′, is hung, capable of adjustment toward or from the face of the rolls by means of the screw and crank B, Fig. 1.

The head A′ has two depending arms, *a a′*, which furnish bearings for the shaft B′, on which the drum *b*, pulley *b′*, and pinion *b″* are mounted.

The shaft B′ is driven by a quarter-twist belt, C, from pulley C′ on an upright shaft, C″, which in turn is driven by wheel C‴, or by means of any well-known mechanism. Concentric with the shaft B′, but outside of the arms *a a′*, I suspend a swinging frame, D. This frame vibrates through an arc sufficient to cover the length of the rolls to be ground by the "tub-wheel" D′, which is carried on spindle *d′*, and driven by connecting pulley *b′* on the shaft B′ with a pulley on the spindle *d′*.

The pinion *b″* gears into and drives the spur-wheel *e*, Figs. 1 and 2. This large spur-wheel has a wrist, *e′*, projecting from its side, so as to engage in and move through the vertical slot *e″* in arm E′, depending from and being a continuation of arm *a′*.

If the driving-pulley C′ be dropped to 23 on vertical shaft C″ and secured in that position, and the bracket-shelf A be lowered to 23′, the grinding apparatus can be applied to the middle roll; and so, also, if the same removals be made to 24 and to 24′ the apparatus will be in proper position for grinding the lower roll.

Should the plane of the arc not coincide with the face of the roll, it is readily corrected by set-screws F, by which either end of the shelf A may be set in or out, as required.

The vertical driving-shaft C″ is secured in such a position with reference to both stands of rolls in a rolling-mill that by simply clamping the shelf A to the other stand the belt C will be driven from the pulley C′ in each of its positions.

When not in use, the apparatus is to be detached from the housing and may be swung by a hook, G, and cord to any desired position overhead.

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

1. The grinding-wheel D′ and spindle *d′*, in combination with the swinging frame D, shaft B′, drum *b*, pulley *b′*, pinion *b″*, arms *a a′*, and carriage or head A′, all constructed to operate substantially as and for the purpose set forth.

2. The shelf A, carriage or head A′, provided with the arms *a a′*, screw B, and shaft B′, carrying the drum *b*, pulley *b′*, and pinion *b″*, in combination with the swinging frame D, the spur-wheel *e*, provided with wrist *e′*, slotted arm E′, and grinding-wheel D′, all constructed to operate substantially as and for the purpose set forth.

3. The shelf A, adjustable head or carriage A′, swinging frame D, and grinding-wheel D′, in combination with the shaft B′, carrying the drum *b*, pulley *b′*, the belt C, vertical shaft C″, and wheels C′ C‴, substantially as herein set forth.

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Witnesses:
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