C. D. DISHONG.

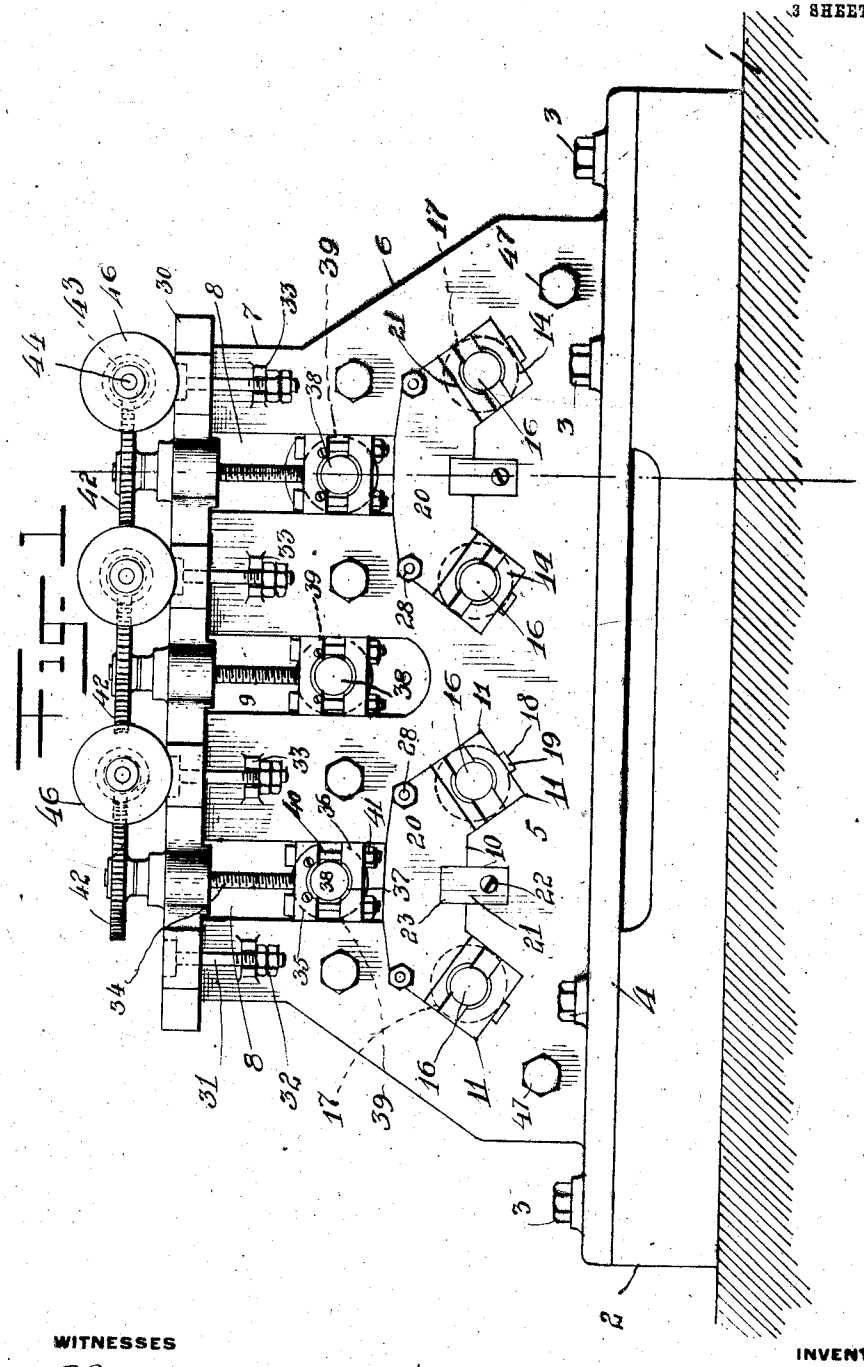
HOUSING FOR ROLLER STRAIGHTENING PRESSES.

APPLICATION FILED APR. 21, 1910.

987,443.

Patented Mar. 21, 1911.

3 SHEETS—SHEET 1.



WITNESSES

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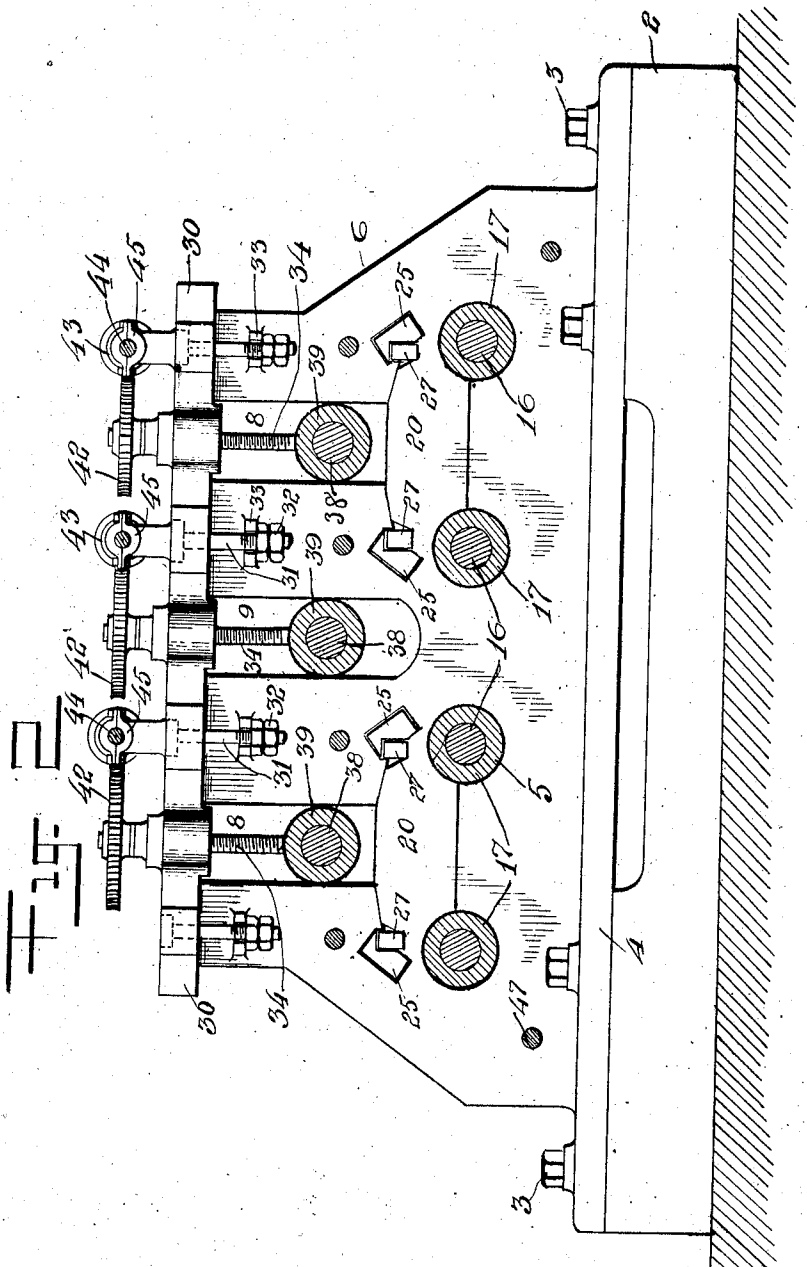

Fig. 2.

WITNESSES

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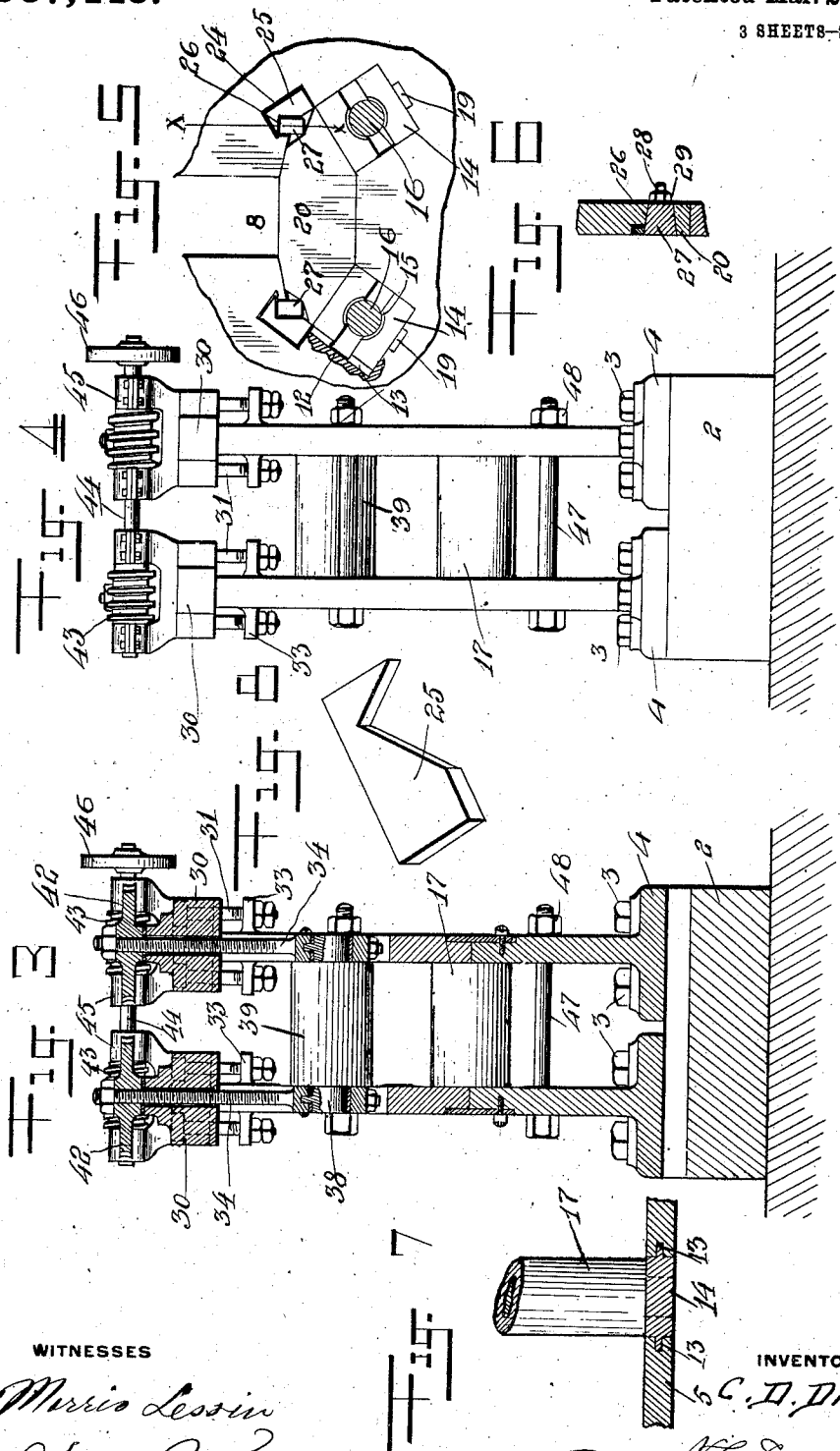

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UNITED STATES PATENT OFFICE.

CHESTER D. DISHONG, OF JOHNSTOWN, PENNSYLVANIA.

HOUSING FOR ROLLER-STRAIGHTENING PRESSES.

987,443. Specification of Letters Patent. Patented Mar. 21, 1911.

Application filed April 21, 1910. Serial No. 556,731.

To all whom it may concern:

Be it known that I, CHESTER D. DISHONG, a citizen of the United States of America, residing at Johnstown, in the county of Cambria and State of Pennsylvania, have invented certain new and useful Improvements in Housings for Roller-Straightening Presses, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to housings for roller straightening presses, and more particularly to housings adapted to support the revoluble straightening rolls of the press.

The object of my invention is to provide housings for rolls and to construct the housings whereby the rolls can be easily removed, repaired and renewed, without moving the housings supporting the rolls.

In a straightening press it has been the practice to employ housings for supporting the straightening rolls, and these housings have been constructed whereby it has been necessary for one of the housings to be moved and the parts thereof disassembled in order that certain rolls could be removed from the housings. This operation of dismantling the rolls not only consumed considerable time, but required a great deal of labor and a cessation in the operation of a mill, which not only reduces the output but is detrimental to the product on account of the time that expires between the heating of the product or billet and the rolling operation to which the same is subjected.

My invention aims to obviate the necessity of moving a housing in order to remove the roll, and to this end, I have devised housings that can be permanently anchored, and in connection with each housing, I furnish means that will allow the rolls thereof to be expeditiously removed with little labor, and either repaired or new rolls installed.

My invention will be hereinafter considered in detail and then claimed, and reference will now be had to the drawings forming a part of this specification wherein there is illustrated a preferred embodiment of the invention, but it is to be understood that the structural elements thereof can be varied or changed, as to the size, shape and manner of assemblage, without departing from the spirit and scope of the invention.

In the drawings: Figure 1 is a side elevation of a press constructed in accordance with my invention. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a vertical cross sectional view of the press. Fig. 4 is an end view of the same. Fig. 5 is an enlarged elevation of a portion of one of the housings. Fig. 6 is a vertical sectional view of the same taken on the line x—x of Fig. 5. Fig. 7 is a horizontal sectional view of a portion of the housing, and Fig. 8 is a perspective view of a detached insert plate.

In the accompanying drawings the reference numeral 1 denotes a foundation for a bed plate 2 and mounted upon said bed plate by screw-bolts 3 are the feet 4 of housings 5, said housings being arranged in parallelism to support revoluble straightening rollers adapted to provide a pass through which is fed the product to be straightened by the press. The housings are identical in construction and for the sake of brevity in describing my invention, I deem it only necessary to enter into the detail construction of one of the said housings, after which the housings will be considered as contributing to certain results produced by the entire press.

Each housing comprises a substantial body and the body a short distance above the foot 4 is reduced by inclining the end walls 6 thereof inwardly and then carrying the walls upwardly, as at 7 to form the upper end of the housing, the top of the housing being of a less length than the bottom thereof owing to the fact that the upper part of the housing supports a less number of rolls than the bottom part of the housing. The top part of the housing is provided with a plurality of vertical windows, preferably three in number and designated 8 and 9, with the window 9 intermediate the windows 8 and of a greater depth than said windows, in order that the intermediate upper roll can be adjusted relatively to other rolls located between the housings of the press. The windows 8 and 9 have the upper ends thereof open at the upper part of the housing and the lower end of the window 9 is closed, while the lower ends of the windows 8 terminate in transverse polygonal openings 10 and the lower angular sides of these openings are extended to form angularly-disposed auxiliary windows 11, these windows being designed to support the bearings of the lower rolls of the housings, while the upper part of the windows 8 and 9 are adapted to contain the bearings of the upper

rolls of the press. The walls of the auxiliary windows 11 are provided with longitudinal grooves 12 adapted to receive the tongues 13 of bearing blocks 14, said bearing blocks having the confronting faces thereof provided with bushings 15 adapted to support the necks 16 of the lower rolls 17. The lower ends of the auxiliary windows are provided with key-ways 18 adapted to receive keys 19 employed for adjusting the lower bearing blocks 14.

In the openings 10 are fitted polygonal-shaped retaining heads 20 and the angularly-disposed sides 21 of these heads are adapted to retain the uppermost bearing blocks 14 in engagement with the necks 16 of the rolls 17. The heads 20 are retained in place by plates 21 counter-sunk and suitably secured, as by screws or other fastening means 22 in the outer sides of the housings, these plates extending upwardly to engage in recesses 23 provided therefor in the outer faces of the heads 20. The upper edges of said heads are retained in position by hold-fast devices adapted to engage partly in the heads 20 and partly in the walls of the openings 10.

The inner side of the housing is recessed, as at 24, to receive an insert plate 25, and this plate in conjunction with the wall of the opening 10 is cut away, as at 26, to receive a tapering key 27, rectangular in cross section, and having the smaller end thereof reduced to form a threaded shank 28 adapted to receive a nut 29, the nut being a sufficient size to extend onto the head 20 and the edge of the opening 10, thereby preventing the key 27 from becoming accidentally displaced and at the same time permitting of a spanner wrench or suitable instrument (not shown) being placed upon the nut to tighten it and further draw the key 27 into position to firmly hold the upper edges of the head 20 within the opening 10. The insert plates 25 are provided whereby they can be easily renewed and thereby compensate for any wear to which the same are subjected by the action of the tapering keys 27.

The upper reduced end of the housing is provided with a cap 30 secured to the housing by tie-rods 31 and nuts 32, said tie-rods having the heads thereof counter-sunk in the cap with the lower ends thereof extending through lugs 33, carried by the sides of the housing, the nuts 32 engaging said lugs to bind the cap upon the housing.

Loosely mounted in the cap 30 at the windows 8 and 9 are screws 34 and loosely connected to the lower ends of said screws 34 are bearing blocks 35 and 36 provided with bushings 37 adapted to support the necks 38 of upper rolls 39. The bearing blocks 36 are adjusted relatively to the bearing blocks 35 by bolts 40 and nuts 41. The upper ends of the screws 34 are provided with horizontal gear wheels 42, said gear wheels being threaded upon the screws whereby when they are rotated the screws will be raised and lowered to adjust the rolls 39 relatively to the rolls 17. The gear wheels 42 mesh with worms 43 carried by transverse shafts 44, journaled in bearings 45, carried by the caps 30 of the housings, the end of each shaft being provided with a hand-wheel 46, whereby the shaft can be easily rotated to adjust the rolls 39. The housings 5 are adapted to be connected by tie-bolts or rods 47 and nuts 48, these tie-rods or bolts being suitably disposed to rigidly support the housings with relation to each other.

It is through the medium of the angularly-disposed auxiliary windows 11 and the detachable heads 20 that I am enabled to remove the lower rolls without moving either of the housings, it being only necessary to remove the heads and raise the lowermost rolls into the openings 10 and then withdraw the rolls from said openings.

I do not care to confine myself to the adjustment of the bearing blocks of either the upper rolls or the lower rolls, to the means of securing the heads 20 in the openings 10, or to the exact shape of the housings and the windows thereof.

What I claim, is:

1. A housing for a roll straightening press, a pair of housings each provided with a plurality of main windows, each of which terminates at its lower end in an enlarged polygonal-shaped opening having the lower angular sides thereof communicating with angularly-disposed rectangular auxiliary windows, certain of the walls of said auxiliary windows being provided with grooves, one of the walls of each of said auxiliary windows being provided with key-ways, adjustable bearing blocks mounted in said auxiliary windows and provided with tongues engaging in said grooves, keys mounted in said key-ways and engaging in said bearings for connecting them in position, said bearing blocks capable of being removed from said auxiliary windows and through said openings, and adjustable bearing blocks arranged within said main windows.

2. A housing for a roll straightening press, a pair of housings each provided with a plurality of main windows, each of which terminates at its lower end in an enlarged polygonal-shaped opening having the lower angular sides thereof communicating with angularly-disposed rectangular auxiliary windows, certain of the walls of said auxiliary windows being provided with grooves, one of the walls of each of said auxiliary windows being provided with key-ways, adjustable bearing blocks mounted in said auxiliary windows and provided with tongues engaging in said grooves, keys mounted in said key-ways and engaging in said bearings for connecting them in position, said bear-

ing blocks capable of being removed from said auxiliary windows and through said openings, adjustable bearing blocks arranged within said main windows, and heads fitted within said openings and engaging said bearing blocks.

3. A housing for a roll straightening press, a pair of housings each provided with a plurality of main windows, each of which terminates at its lower end in an enlarged polygonal-shaped opening having the lower angular sides thereof communicating with angularly-disposed rectangular auxiliary windows, certain of the walls of said auxiliary windows being provided with grooves, one of the walls of each of said auxiliary windows being provided with key-ways, adjustable bearing blocks mounted in said auxiliary windows and provided with tongues engaging in said grooves, keys mounted in said key-ways and engaging in said bearings for connecting them in position, said bearing blocks capable of being removed from said auxiliary windows and through said openings, adjustable bearing blocks arranged within said main windows, heads fitted within said openings and engaging said bearing blocks in the auxiliary windows, and means for securing said heads within said openings.

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

CHESTER D. DISHONG.

Witnesses:
N. B. RIBBLET,
WEBSTER F. CLARK.