

1,137,643.

A. A. LONGAKER.
WHEEL PRESS.
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Fig. 3.

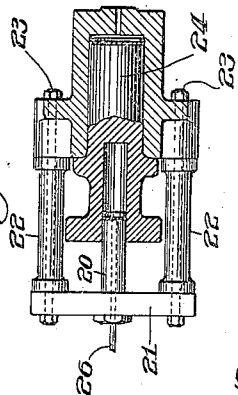


Fig. 1.

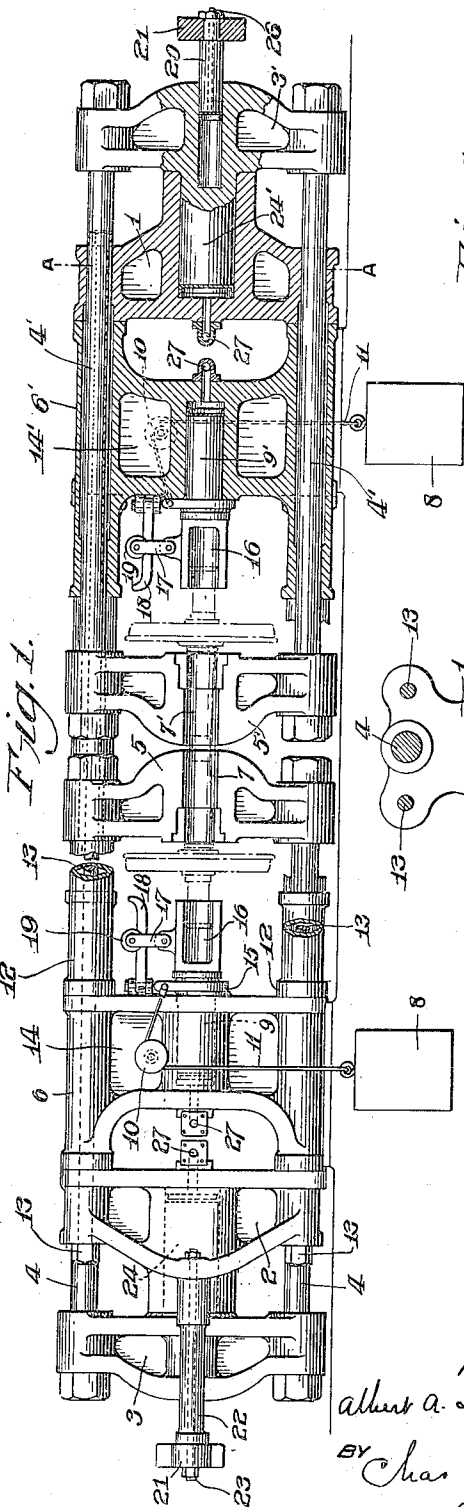


Fig. 4.

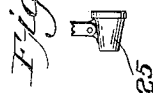
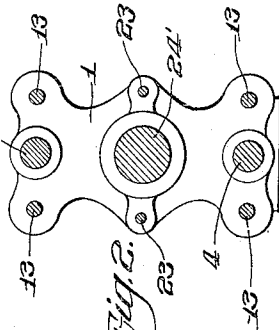


Fig. 2.



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WHEEL-PRESS.

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1,137,643.

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To all whom it may concern:

Be it known that I, ALBERT A. LONGAKER, a citizen of the United States, and a resident of Chambersburg, in the county of Franklin and State of Pennsylvania, have invented certain new and useful Improvements in Wheel-Presses, of which the following is a specification.

My invention relates to improvements in presses for mounting or demounting wheels and axles and the object of my invention is to furnish a press equally well adapted for either of these purposes by simply substituting certain light and easily handled pieces adapted to be engaged by the central rams instead of it being necessary to uncouple, move, and adjust certain heavy parts of the mechanism as has heretofore been necessary in presses of this character.

Briefly speaking my press consists of a pair of interior cylinders the plungers and rams of which face one another and the operative strokes of which are toward one another, a pair of exterior cylinders, one at each end of the machine, the operative strokes of which are outward or away from the center, a pair of movable yokes at the center of the machine attached each to a cross-head at the end of the machine and operated by the plungers or rams of the cylinders there situated, and movable sleeves or movable plugs the former adapted to be engaged and actuated by the central plungers to push wheels upon axles, the latter to be held by these plungers against the ends of the axle while the central yokes are operated by the plungers at the end of the machine to demount the wheels from the axle. The cylinders and plungers of the machine are arranged in tandem, that is to say they are all upon a common longitudinal axis.

In the accompanying drawings forming part of this specification—Figure 1, is a side elevation, partly in section, of my machine for mounting or demounting wheels and axles: Fig. 2, a section of Fig. 1 on line A—A: Fig. 3, a longitudinal central section upon an enlarged scale, of a pull back for returning the wheel demounting mechanism to its first position after having been operated: Fig. 4, a side elevation of plug used in demounting wheels.

14—14' are two fixed cylinder beams the plungers or rams 9—9' of which face one

another and the operative strokes of which are toward one another and the center of the machine. Arranged in tandem with the fixed cylinder beams 14—14' and at the ends of the machine are fixed cylinder end beams 1—2, the plungers or rams 24—24' of which face in opposite directions, one outward from each end of the machine, and the operative strokes of which are outward. The plungers 24—24' of these latter cylinders are attached to or engage main cross-heads 3—3' at the ends of the machine. The cross-head 3 is attached to a yoke 5 to one side of the center of the machine by rods 4 which slide in long bearings 6 at the top and bottom of the cylinder beams 14 and 2, and the cross-head 3' is similarly secured to a yoke 5' upon the opposite side of the center of the machine. The yokes 5—5' are furnished with gaps 7—7' to receive the axle. The cylinder beams 1—2—14—14' are tied together by tie rods 13 which carry distance pieces 12 to properly space them. There are four of these tie rods and they extend continuously from the outer end of the cylinder beam 1 to the outer end of the cylinder beam 2, two upon each side of the top of the machine and two upon each side of the bottom as shown best in Fig. 2. The cross-head 3' and the yoke 5' are connected by sliding tie rods 4'—4' and the cross-head 3 and the yoke 5 are similarly connected by sliding tie rods 4—4.

The plungers or rams 24—24' in the cylinder beams 2—1 upon being operatively actuated by admitting fluid to their cylinders through their ports 27, move the cross-heads 3—3' outward and these latter, through rods 4—4' draw their yokes 5—5' outward and away from one another.

The axle the wheels of which are to be demounted is carried in the gaps 7—7' of these yokes and the ends of the axle are engaged and held by stops 25, Fig. 4, which are now interposed between the ends of the axles and the rams 9—9' in the cylinders carried by the cylinder beams 14—14'. The axle being thus held the outward movement of the yokes, which engage the inner sides of the wheels will force these from their seats.

The demounting being accomplished air or liquid is admitted through pipes 26, best shown in Fig. 3, to cylinders in the cross-

heads 3—3' in which are pistons 20 which are fixedly carried by arms or cross-heads 21 which are rigidly connected by bolts 23 and distance pieces 22 to the cylinder beams 1—2. This air or liquid, which may be under constant pressure, acting against the end of the fixed plungers 20 moves the cross-heads 3—3', the rods 4 and the yokes 5—5' back to their original positions and liquid being cut off from plungers 9—9' the pull backs 8 bring them back into their cylinders when the axle with its demounted wheels can be removed from the machine.

To mount wheels the stops 25 are removed from in front of the rams 9—9' and their places are taken by sleeves 16 which are preferably suspended from a trolley 19 by a link 17. The trolley 19 is preferably carried on a swinging crane 18 in a well known manner. This crane can be swung aside to move the sleeve completely out of the path of the rams. The sleeves 16 being in place in front of the rams 9—9' and the axle with the wheels loosely on it being in place in the gaps 7—7' of the yokes 5—5', the rams 9—9' are actuated in a well known manner to advance the sleeves 16 which pass over the ends of the axle and engage the faces of the wheels pushing them on the fit of the axles. After the hydraulic pressure is relieved in cylinders which carry rams 9—9' these latter are returned to their first position by any convenient form of pull-back. I have shown in the drawings weights 8 for this purpose which are connected with the rams through cords or chains 11 passing over pulleys 10.

The demounting plungers 24—24' are returned to their first position by constant water or air pressure acting through fixed pistons 20 held by arms or cross-heads 21, tie rods 23 and distance pieces 22, all of which are best shown in Fig. 3. Constant pressure is supplied through connection 26 from any convenient source.

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

1. In a press for mounting and demounting wheels and axles, in combination, a pair of fixed cylinder beams, one at each end of the press, outwardly moving plungers carried by said beams, a pair of movable yokes at the center of the machine, means for connecting said yokes one to the plungers carried by the cylinder beam at the right hand end of the machine and the other to the plungers carried by the cylinder beam at the left hand end of the machine, a pair of fixed intermediate cylinder beams between said

end cylinder beams and the center of the machine, plungers carried by said intermediate cylinder beams operatively acting toward the center of the machine and each other, means for tying all of said cylinder beams together, and means for operatively actuating the plungers carried by said beams.

2. In a press for mounting and demounting wheels and axles, in combination, two fixed end cylinder beams, plungers carried by and operating outwardly from said beams, cross-heads actuated by said plungers, two yokes at the center of the machine, sliding rods connecting the left cross-head and yoke, sliding rods connecting the right cross-head and yoke, means for supporting and guiding said rods, an intermediate fixed cylinder beam located between each of said end cylinder beams and said yokes, plungers carried by said intermediate cylinder beams operatively acting toward the center of the machine and each other, means for admitting liquid under pressure to the cylinders carrying said plungers, and means for tying all of said cylinder beams together.

3. The combination in a wheel press of two fixed end cylinder beams, outwardly operating plungers carried by said beams, two movable yokes between said cylinder beams, means for connecting said plungers and yokes, two fixed cylinder beams one intermediate the left end cylinder beam and yoke, the other intermediate the right end cylinder beam and yoke, inwardly facing plungers carried by said intermediate cylinder beams and means for operatively actuating said plungers, all of said plungers being upon a common longitudinal axis.

4. In a machine of the character described, in combination, fixed end beams carrying cylinders, plungers carried by said cylinders, means for admitting liquid to said cylinders to move said plungers outwardly, main cross-heads carrying cylinders and being carried by said plungers, movable tie rods carried by said cross-heads, yokes carried by said tie rods, arms or cross-heads fixedly carried by said fixed end beams, plungers carried by said arms or cross-heads, entering the cylinders in the main cross-heads, and means for admitting a liquid under pressure to the cylinders in said main cross-heads, all substantially as and for the purposes set forth.

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Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."