A. A. LONGAKER.

CONVERTIBLE PRESS.

APPLICATION FILED NOV. 17, 1913.

1,114,708.

Patented Oct. 20, 1914.

2 SHEETS—SHEET 1.

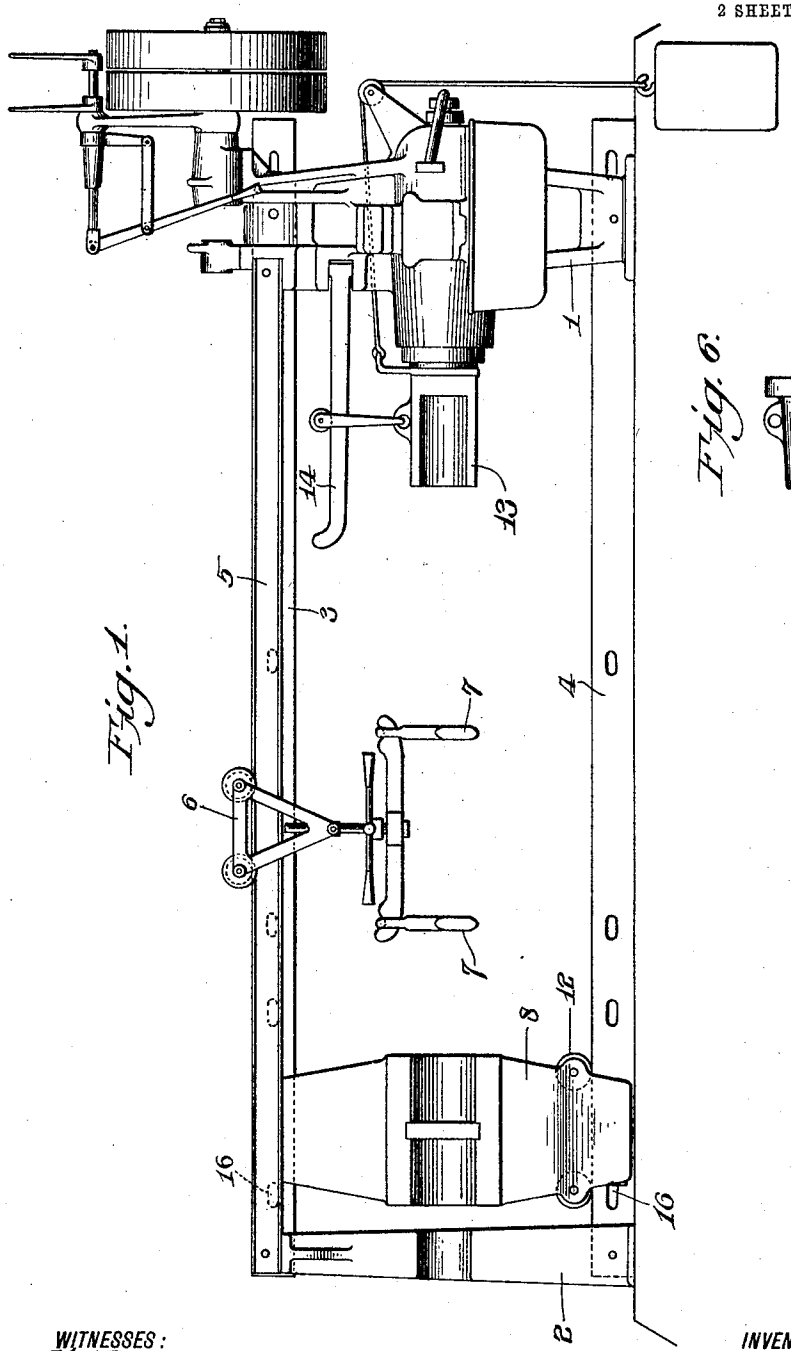


Fig. 1.

Fig. 6.

WITNESSES:

J. D. Stroup

INVENTOR

Albert A. Longaker

BY

Chas A. Carter.

ATTORNEY.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

A. A. LONGAKER.

CONVERTIBLE PRESS.

APPLICATION FILED NOV. 17, 1913.

1,114,708.

Patented Oct. 20, 1914.

2 SHEETS—SHEET 2.

Fig. 2.

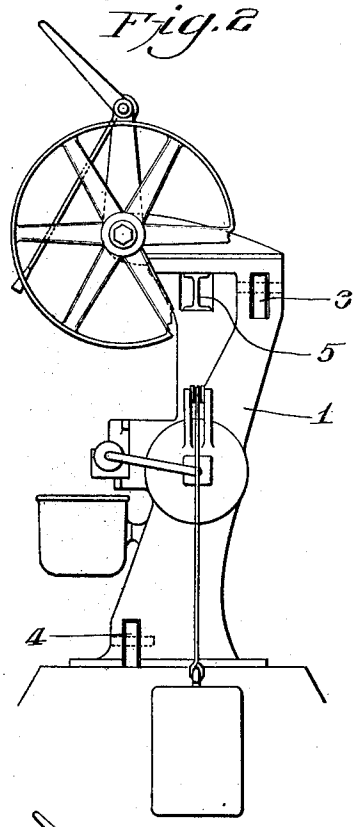


Fig. 5.

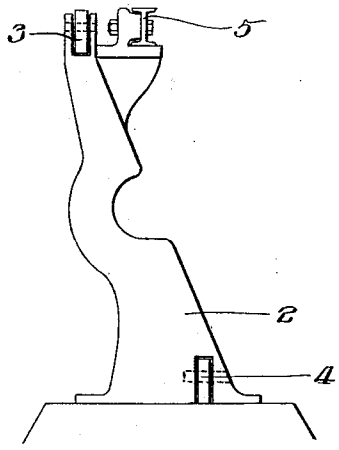


Fig. 3.

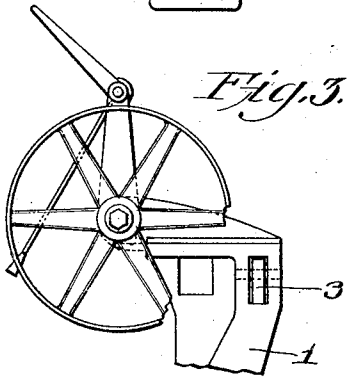
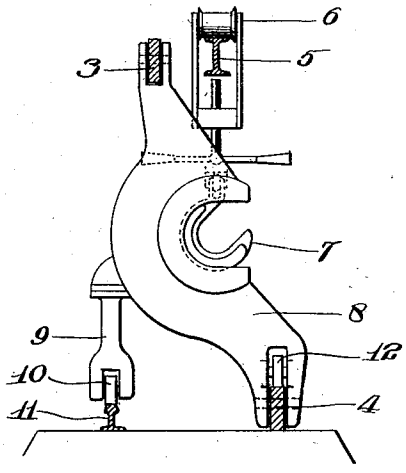


Fig. 4.



WITNESSES:

J. D. Stroup

INVENTOR

Albert A. Longaker

BY

Chas A. Carter

ATTORNEY.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ALBERT A. LONGAKER, OF CHAMBERSBURG, PENNSYLVANIA, ASSIGNOR TO CHAMBERSBURG ENGINEERING COMPANY, OF CHAMBERSBURG, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

CONVERTIBLE PRESS.

1,114,708. Specification of Letters Patent. Patented Oct. 20, 1914.

Application filed November 17, 1913. Serial No. 801,339.

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 Convertible Presses, of which the following is a specification.

My invention relates to improvements in presses for forcing on or removing from axles or shafts wheels, gears, couplings, etc., and the object of my invention is to furnish a press of this character which will be adapted for use in connection with either an overhead traveling crane, such as many shops are equipped with, or with a relatively light removable trolley carrying beam and hook trolley for use where a traveling crane is not at hand or when it is desired to operate the press independently of such a crane.

Wheel presses for my purposes as ordinarily constructed comprise a fixed cylinder beam, a fixed end supporting beam, and a movable intermediate resistance beam which is located between the two first beams. The cylinder and end supporting beams are tied together by means of tie-bars at their upper and lower ends and the intermediate resistance beam is adjustably secured to these bars as may be necessary for the work that the machine is to perform. In some cases a hook trolley, carried by the upper tie-bar, is employed to carry the object to be operated upon by the press, in others the object is carried by a crane that may form part of the equipment of the shop in which the press is installed. If the press is to be used in connection with a trolley carried by the upper tie-bar it is usual, for the proper distribution of strength and strains, to locate the upper and lower tie-bars and the axis of the cylinder carried by the cylinder beam all in the same vertical plane. If the press is to be used in connection with a shop crane the upper tie-bar as thus arranged will be found to be directly in the way of the hoisting chain. To meet this difficulty it has been customary to construct the machine with movable tie-bars, each of which may be constructed of a single or of a multiplicity of bars, which can be shifted from a vertical to an inclined plane as may be required for a hook trolley carried by the upper bar or bars or for use in connection with a traveling crane.

In wheel presses of the so-called inclined type, such for instance as set forth in patent to Augustus Wood, No. 946,930, January 18, 1910, it is necessary when changing from a vertical to an inclined arrangement of the tie-bars or vice-versa, to remove and shift the tie-bars, and as they are of necessity heavy, considerable trouble is had in effecting the transfer particularly if the overhead crane, which might be used in connection with this work, be temporarily out of service.

My present machine has been designed so that there are no very heavy parts to move to adapt it for use either in connection with the usual traveling crane of the shop or with a hook trolley carried upon a beam running lengthwise of and carried by the press.

It comprises the usual cylinder and end supporting beam, a movable intermediate resistance beam, all of which are inclined from the vertical and secured by permanent tie-bars, and of a light track, for carrying a hook trolley, which can be removed from or placed upon the beams at any time in a few minutes and without the aid of any heavy lifting mechanism.

My invention consists, further, in certain details of construction which will be hereinafter fully pointed out.

In the accompanying drawings which form part of this specification, and in which similar letters of reference indicate similar parts throughout the several views:—Figure 1, is a front elevation of a press embodying my improvements: Fig. 2, an elevation of the right hand end of the press shown in Fig. 1: Fig. 3, a view similar to Fig. 2 of the upper end of the cylinder beam, the trolley carrying beam being removed to adapt the press to conditions for use in connection with an overhead crane: Fig. 4, an end elevation of the intermediate resistance beam: Fig. 5, an end elevation of the end supporting beam. Fig. 6, a side elevation of a plug that may be used in certain cases instead of the sleeve 13.

1 is the cylinder beam and 2 the end supporting beam. The cylinder beam carries the usual hydraulic cylinder and piston which are so well known that detailed de-

scription of them, or the means for admitting or exhausting the actuating fluid, will be unnecessary. Both of these beams are stationary, are inclined from the vertical as shown and are tied together by fixed tie-rods 3 and 4, the former secured to the beams at their tops, to the rear of a vertical plane passing through the longitudinal center of the cylinder in the cylinder beam, the latter secured to the beams at their lower ends forward of said vertical plane. The said bars and the center of the cylinder being on a true diagonal line with the center of pressure may be used in conjunction with an overhead crane or with a relatively light carrier beam 5 with its trolley 6 and hooks 7. This carrier beam to be removed when an overhead crane is employed. The beam 5 is removably carried by the end beams 1—2 and as it serves only to carry the trolley 6 and the work that may be carried by the hooks of this trolley it can be so light as to be easily and quickly removed or replaced by hand.

In order to retain its stability, the intermediate movable resistance beam 8 is provided with an outrigger 9 and wheel 10 which is carried upon a permanent track 11. At its front side the beam 8 is furnished with a wheel 12 which runs on the top of the tie-bar 4 and through these two wheels this beam may easily be moved back and forth as may be necessary in performing different operations.

16 are the usual keys for locking the intermediate beam 8 to the tie-bars.

In this convertible press it is not necessary to use the usual sole plate as the tie-bars, being never moved, retain the cylinder and resistance beams in proper alinement when a suitable foundation is furnished.

In order that the sleeve 13, which in the vertical axis press is usually suspended from the upper tie-bar, may be operative under any condition, I suspend it from a jib or davit crane 14 pivotally carried by the cylinder beam 1. The sleeve 13 may be demounted from the crane 14 and a plug 15 substituted for it in order to operate upon a wheel pulley or coupling the hub of which is flush with the axle or shaft. It will be obvious that other forms of tools or appliances may be supported by this crane which is so carried that it can be used without interfering in any way with the convertibility of the press.

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

1. In a wheel press, in combination, a fixed cylinder beam, a fixed end supporting beam, and a movable resistance beam all so rearwardly inclined that their upper ends are to the rear of and their lower ends in front of a vertical plane passing through the longitudinal center of the press, a tie-bar permanently secured to the upper ends of said cylinder and end beams, a tie-bar permanently secured to the forward lower ends of said beams, said tie-bars movably supporting said resistance beam, and a light removable beam carried by the upper ends of said cylinder and end beams in a vertical plane passing through the longitudinal center of the press.

2. In a wheel press, in combination, a fixed cylinder beam, a fixed end supporting beam, both so rearwardly inclined that their upper ends are to the rear of and their lower ends to the front of a vertical plane passing through the longitudinal center of the press, tie-bars permanently secured to the upper ends and to the forward lower ends of said cylinder and end beams, a movable resistance beam inclined similarly to said cylinder and end beams carried by said tie bars and furnished with an extension to the rear, a roller carried by said extension, a track upon which said roller runs, means for locking said movable beam to said tie-bars, and a light removable trolley carrying beam carried by the upper ends of said cylinder and end beams in a vertical plane passing through the longitudinal center of the press.

ALBERT A. LONGAKER.

Witnesses:
LILLIAN M. WOLF,
JAS. A. SMITH.

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