

(No Model.)

3 Sheets—Sheet 1.

H. D. GORDON.
WHEEL PRESS.

No. 504,030.

Patented Aug. 29, 1893.

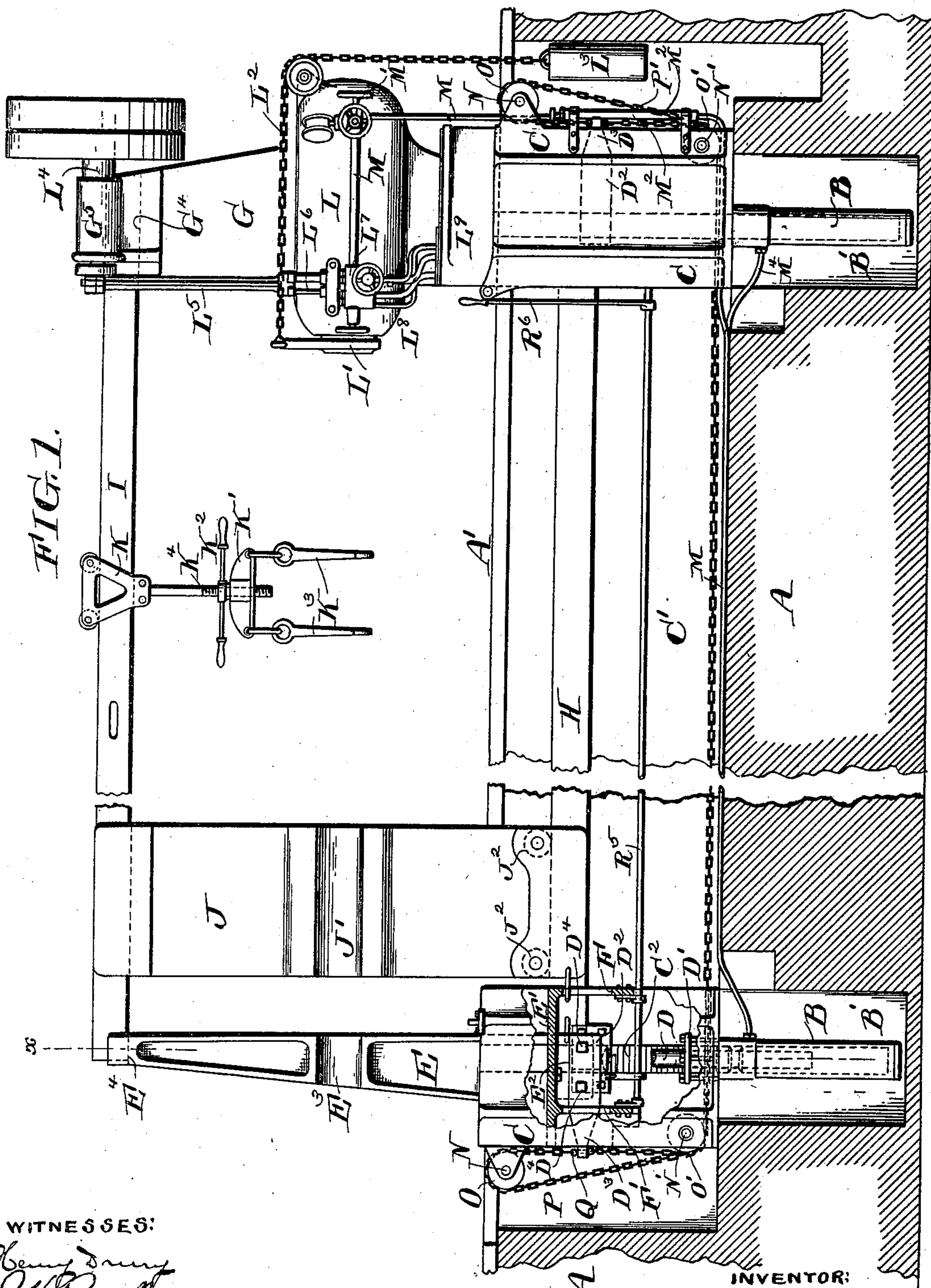


FIG. 1.

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J. H. Russell

INVENTOR:

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by his atty.
Francis T. Chambers

(No Model.)

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FIG. 3.

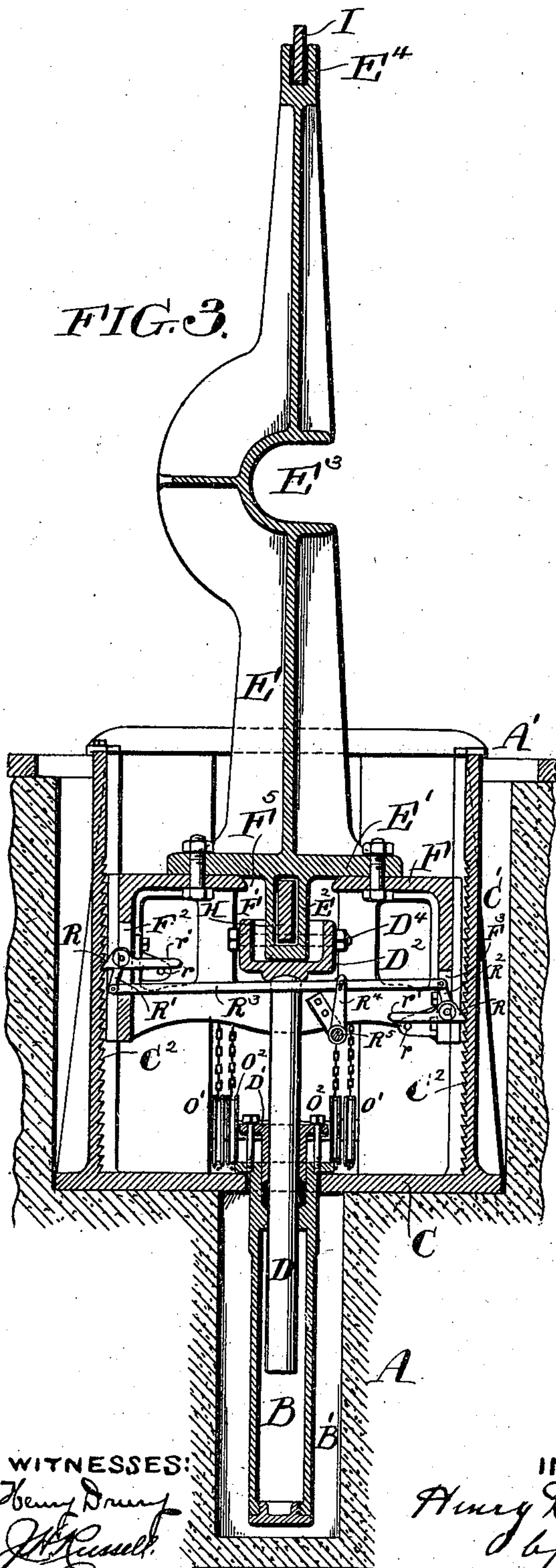
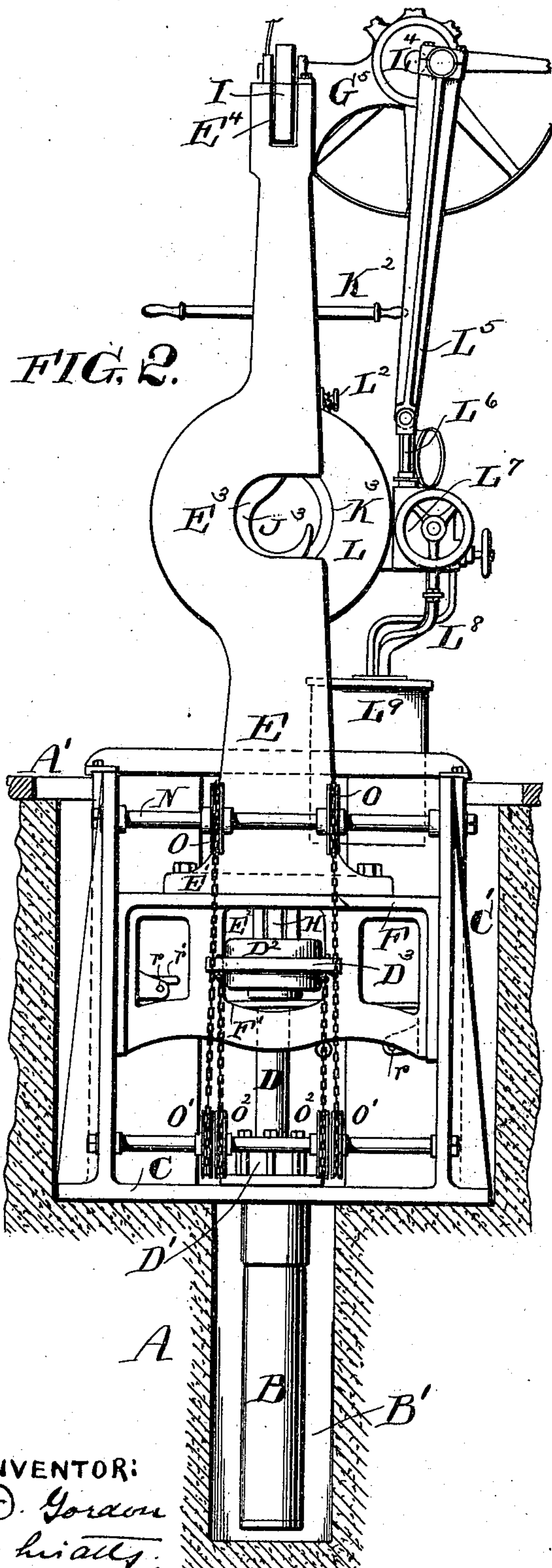


FIG. 2.



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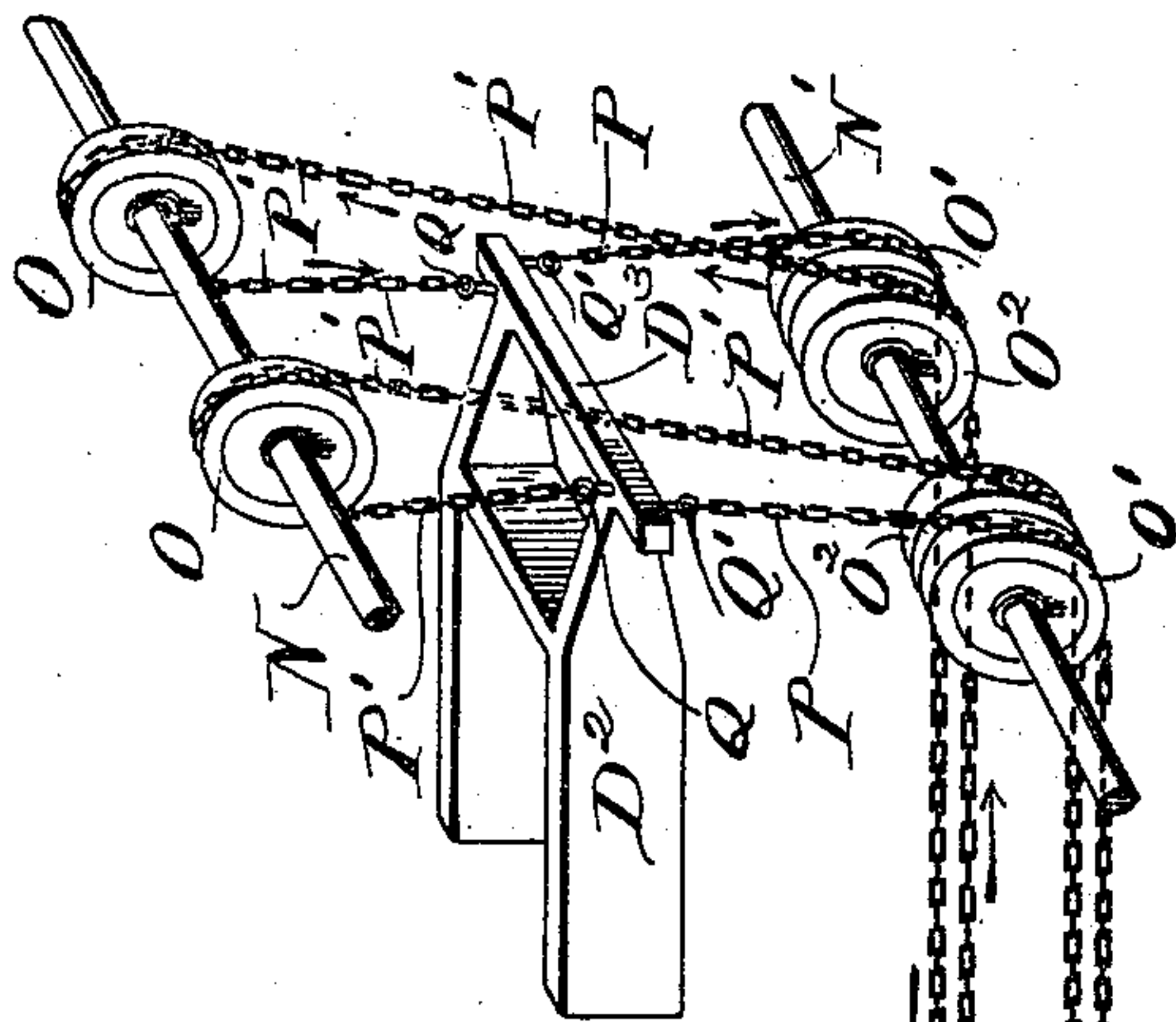


FIG. 4.

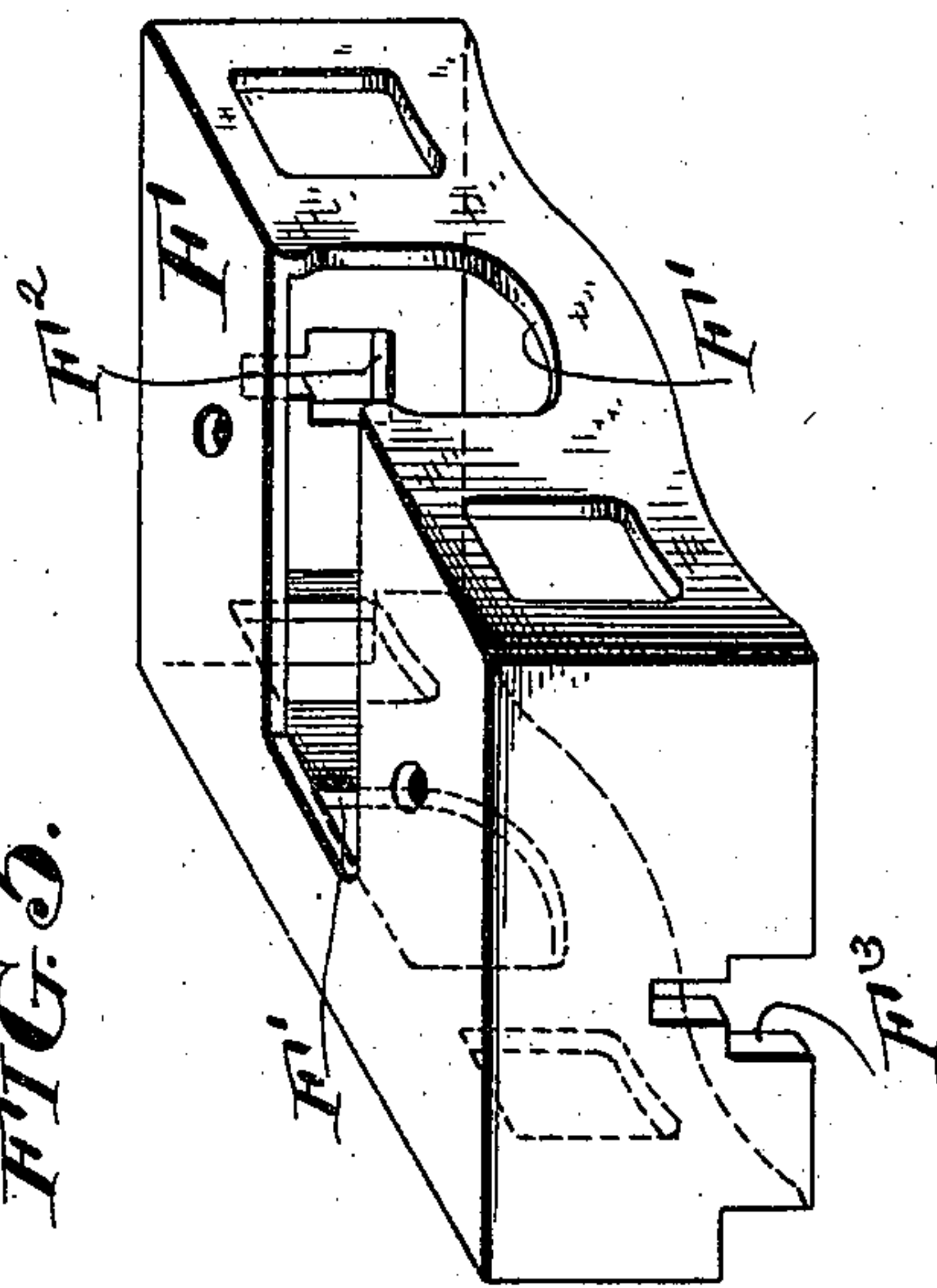
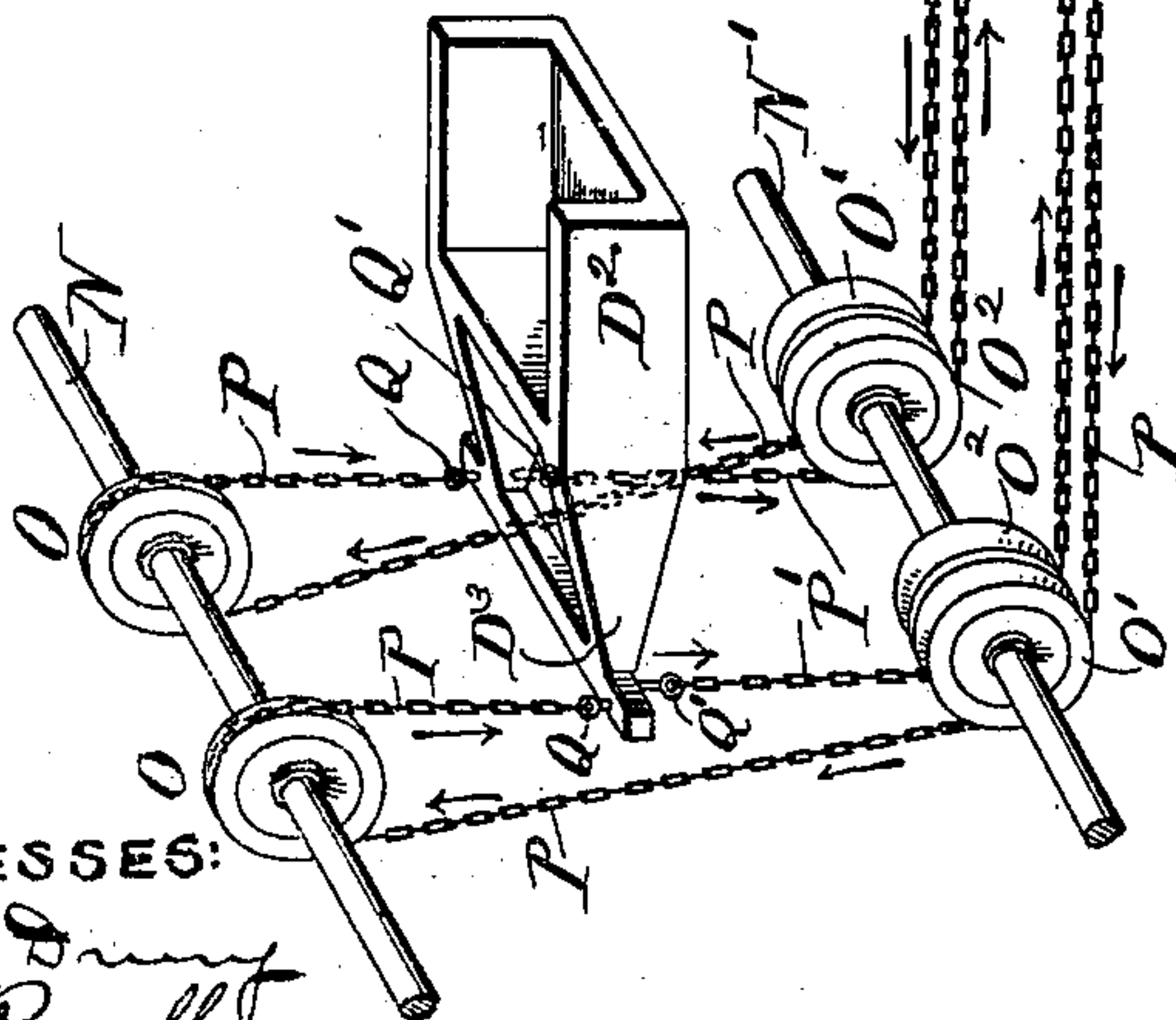


FIG. 5.



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UNITED STATES PATENT OFFICE.

HENRY D. GORDON, OF ALTOONA, PENNSYLVANIA.

WHEEL-PRESS.

SPECIFICATION forming part of Letters Patent No. 504,030, dated August 29, 1893.

Application filed July 20, 1892. Serial No. 440,596. (No model.)

To all whom it may concern:

Be it known that I, HENRY D. GORDON, of Altoona, county of Blair, State of Pennsylvania, have invented a certain new and useful Improved Wheel-Press, of which the following is a true and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to wheel presses such as are used for pressing axles into and out of the hubs of car and engine wheels; as heretofore constructed these presses have not been built to accommodate themselves to different sizes of wheels; consequently in use there is a good deal of trouble and delay arising from the necessity of adjusting the wheel to the proper height relative to the press.

The object of my invention is to overcome this difficulty by making the press itself vertically adjustable so that its operative parts can always be brought to the proper position to operate upon a wheel standing upon the floor, no matter what the height of the wheel may be, and this device of a vertically adjustable wheel press is the leading feature of my invention, the details and subordinate parts of which will be best understood as described in connection with the drawings in which my invention is illustrated as applied to a familiar type of wheel press, and in which—

Figure 1 is a front elevation of the press; Fig. 2 an elevation looking from the left-hand end of Fig. 1; Fig. 3 a cross-section on the line xx of Fig. 1; Fig. 4 a perspective view illustrating a detail of construction, and Fig. 5 a perspective view illustrating one of the supports further to be described.

A indicates the foundation upon which the press is erected; on this foundation is formed a cavity C' with vertical extensions B' , said cavities being below the floor A' of the press. In these cavities or wells B' are secured hydraulic presses B secured to the bottoms of castings C which are placed above the presses, and which, as their function is to guide the supports upon which the press is sustained, I will hereinafter refer to as guides. These guides, as shown consist of heavy rectangular castings having on the inside of their front and back sides racks C^2 .

F indicates the supporting casting which is vertically movable in the guide C .

E and G are upright standards constituting part of the press, and which support all the operative press mechanism. These standards are bolted securely to the supporting castings F and, as shown, are provided with extensions E^2 which extend down through an opening F^5 in the top of the support F and are formed with slots as shown, to receive the ends of a cross-bar H which extends across from one standard to the other as shown in Fig. 1.

In the construction shown a casting D^2 is secured to the bottom of the extension E^2 by means of bolts D^4 which also serve to hold the cross-bar H in position; these castings D^2 I form with an extension D^3 which extends out to an opening F' in the support F and serves a purpose hereinafter to be described. The pistons D of the hydraulic rams B extend upward through a suitable stuffing box as indicated at D' and rest against the bottoms of the castings D^2 .

At the tops of the standards E and G are slots E^4 and G^4 adapted to receive a cross-bar I running parallel to the bar H; these cross-bars serving to support and guide the adjustable standard J which is supported on bar H by means of wheels J^2 J^2 and provided with a proper cavity J' corresponding with a similar cavity E^3 in the standard E to receive the axle. The bar I also supports the traveling carriage K having a threaded bolt K^4 extending down from it upon which is secured the hook-support K' , K^3 being the hook and K^2 a binding nut. The standard G (which I have not shown in its lower part in detail as it corresponds exactly with the lower part of and attachments to the standard E) supports on a sprocket G^3 the driving shaft L^4 which communicates motion through a connecting rod or rods L^5 with the piston L^6 of a pump L^7 connected by pipes L^8 with a reservoir L^9 , and also connecting with the ram L, the head of which is indicated by the letter L' , L^2 indicating a chain which is attached to the head of the ram and running backward over a pulley is attached also to a weight L^3 which serves to draw the ram back after it has been forced forward by the action of the pump. All these parts are of familiar and well un-

derstood construction, and need not be further referred to.

In appropriate openings F^2 and F^3 of the supporting casting F are pivoted pawls R in such position that they will engage the racks C^2 and hold the supporting casting and the parts sustained upon it at any desired position. Any equivalent locking device may be used instead of racks and pawls, which, however, are a very convenient lock for the purpose. As shown the pawls are provided with lever arms R' and R^2 extending in opposite directions and connected by a bar R^3 , by shifting which the pawls are simultaneously engaged or disengaged with the rack. The bar R^3 is shifted by a lever R^6 (see Fig. 1) connected with the rock shaft R^5 to which shaft is attached a lever arm R^4 connecting with the rod R^3 (see Fig. 3).

While any convenient mechanism may be employed for raising the supports F and the mechanism sustained upon them, hydraulic rams such as shown are in many respects peculiarly adapted for the purpose and when used they can be connected and actuated by the same pump which actuates the ram of the wheel press; thus, as shown in the drawings, a pipe M provided with a valve M' which leads to the two rams B , a sliding joint M^2 being provided in this pipe to permit of the vertical adjustment of the standard G which supports the pump. It is, however, impossible to so proportion the rams that they will raise the two ends of the press simultaneously because the center of gravity of the press is necessarily changed from time to time particularly by the adjustment of the upright post J . I overcome this difficulty, however, by means of the device best shown in Fig. 4, that is to say, I secure to the guides, shafts N placed near their tops, and shafts N' near their bottoms, the shafts being above and below the extreme positions of the supporting castings F . To this casting, or as shown, to the casting D^2 which is secured to it and substantially forms a part of it I attach chains P and P' which chains are passed over pulleys O O' and O^2 as shown in the drawings. Each chain connects with the two supports in such a way that a movement of one support cannot take place without a similar and simultaneous movement in the other support.

The operation of the device is as follows: An axle is hung in the hooks K^2 , and properly adjusted in front of the ram plunger L' by means of the threaded bolt K^4 and nut K^2 ; a car wheel is then rolled into position on the floor A' so that its center will be in the same vertical plane as the axle and ram plunger L' . By now raising or lowering the standards E G and the ram C and the axle, all carried by said standard by means of the hydraulic rams B B , the axle and the ram L may be brought directly in line with the hole in the hub of the wheel into which it is designed to force the said axle. The ram L is now put in operation

and the axle pressed into the hole in the wheel hub in the usual manner, the wheel being held from lateral displacement by the adjustable standard J . This sort of wheel press and its mode of operation are well known being illustrated in *Knight's Mechanical Dictionary* (page 2767, edition of 1884) and it is therefore not deemed necessary to show the wheel or axle in position in the press.

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

1. In a wheel press the combination with a wheel supporting platform, of independent standards arranged at each side of said platform, press mechanism connected to and movable with said standards, and means for moving said standards vertically with respect to the platform, all substantially as and for the purpose specified.

2. The combination of stationary guides C , supports F vertically adjustable in said guides, wheel-press mechanism secured to and moving with said supports, and mechanism for moving the supports and the press supported thereon substantially as specified.

3. The combination of stationary guides C , supports F vertically adjustable in said guides, wheel-press mechanism secured to and moving with said supports, pulleys O O' O^2 secured to the guides, chains P P' attached to the supports and working over the pulleys as described so that both supports will move up or down simultaneously and mechanism for moving the supports and the press supported thereon substantially as specified.

4. The combination of stationary guides C , supports F vertically adjustable in said guides, lock mechanism for securing said supports at any desired points to the guides, wheel press mechanism secured to and moving with said supports, and mechanism for moving the supports and the press supported thereon substantially as specified.

5. The combination of stationary guides C , supports F vertically adjustable in said guides, lock mechanism for securing said supports at any desired points to the guides, wheel press mechanism secured to and moving with said supports, pulleys O O' O^2 secured to the guides, chains P P' attached to the supports and working over the pulleys as described so that both supports will move up or down simultaneously, and mechanism for moving the supports and the press supported thereon substantially as specified.

6. The combination with stationary guides C C supports F vertically adjustable in said guides, wheel press mechanism secured to and moving with said supports, hydraulic presses situated below the supports and arranged to actuate them.

7. The combination with stationary guides C C supports F vertically adjustable in said guides, wheel press mechanism secured to and moving with said supports, a pump secured

to and forming part of the press and connections from said pump to the hydraulic cylinders aforesaid.

5 8. In an adjustable wheel-press the combination of guides C having racks C² connected therewith, supports F vertically movable in said guides, pawls R pivoted to support F and

means for simultaneously engaging and disengaging said pawls with the racks substantially as specified.

HENRY D. GORDON.

Witnesses:

E. WENSEL,

H. A. ANDERSON.