

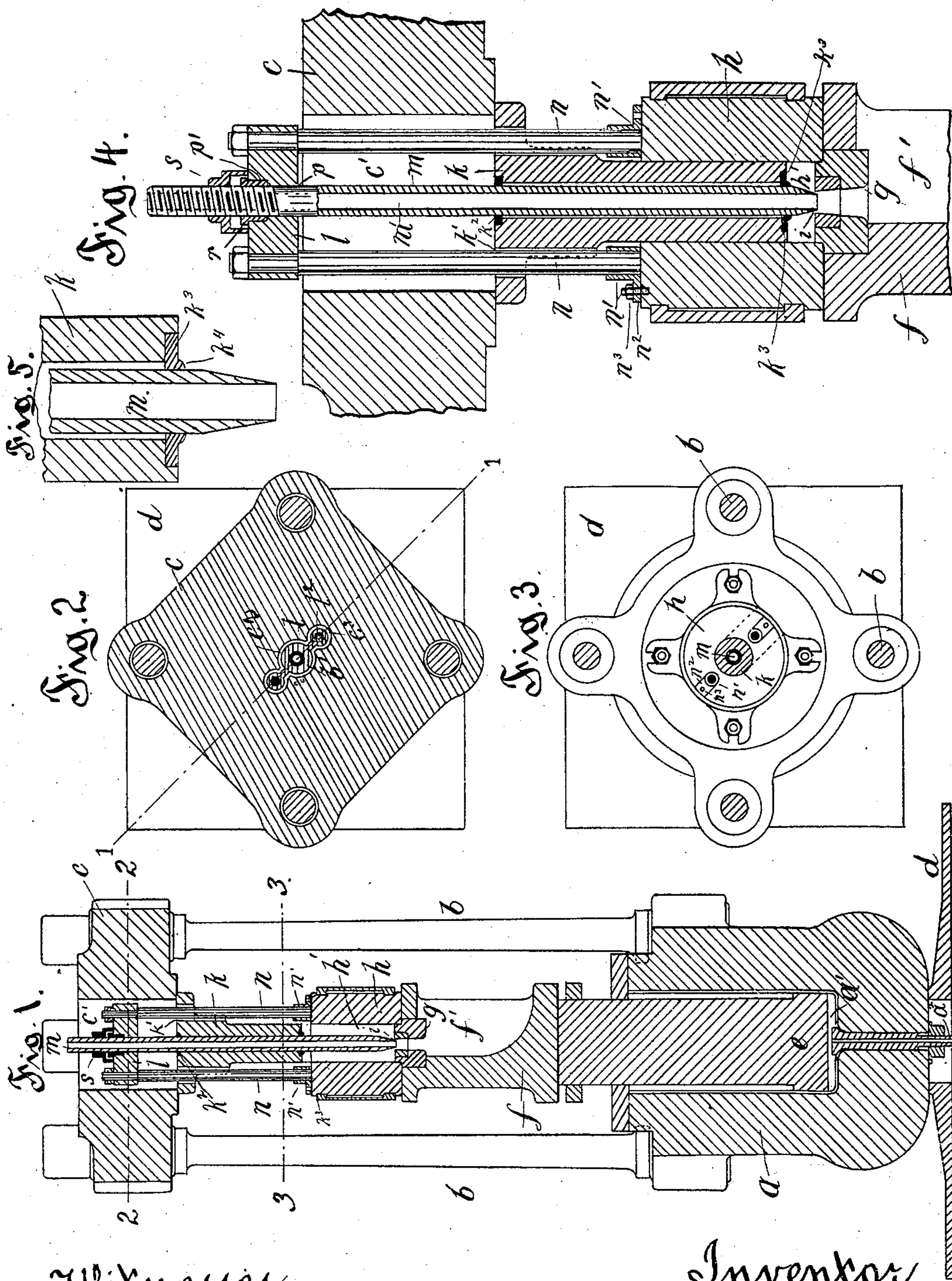
(No Model.)

D. CARLIN.

HYDRAULIC PRESS FOR COVERING CABLES WITH LEAD.

No. 574,132.

Patented Dec. 29, 1896.



Witnesses

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UNITED STATES PATENT OFFICE.

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HYDRAULIC PRESS FOR COVERING CABLES WITH LEAD.

SPECIFICATION forming part of Letters Patent No. 574,132, dated December 29, 1896.

Application filed September 4, 1895. Serial No. 561,385. (No model.)

To all whom it may concern:

Be it known that I, DAVID CARLIN, a resident of Bellevue, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Hydraulic Presses for Covering Cables with Lead; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to hydraulic presses for covering wire cables with lead or like composition, its object being to simplify the construction of such presses and thereby to cheapen their construction, to increase the rigidity of the parts by rendering them more compact, and to overcome such expansion and contraction as will affect the position of the core-bar within the mold and therefore the thickness of lead coating upon the cable.

The particular points in the invention desired to be covered will be hereinafter fully set forth and claimed.

To enable others skilled in the art to make and use my invention, I will describe the same, referring to the accompanying drawings, in which—

Figure 1 is a longitudinal central section on the line 1 1, Fig. 2. Fig. 2 is a cross-section on the line 2 2, Fig. 1. Fig. 3 is a cross-section on the line 3 3, Fig. 1; and Fig. 4 is an enlarged detail vertical central section of the upper part of the press. Fig. 5 is a detail view.

Like letters of reference indicate like parts in each.

The press illustrated in the drawings has the cylinder *a*, which is connected by columns *b* with the top plate *c*, so forming the rigid main structure of the press. The press rests upon any suitable supporting bed-plate *d*, and the pipe *a*², leading from the hydraulic pump or reservoir, is shown as opening into the lower part of the cylinder-chamber *a*'. The ram *e* fits within the cylinder-chamber and is suitably packed therein, special description of these parts not being considered necessary. Above this ram is the block *f*, having the opening *f*' on one side thereof, through which the coated cable passes, and having at its upper end the matrix *g*, which forms the base of the lead-chamber *h*' of the lead-cylinder *h*. Bolted to the under face of the top plate *c* is the lead-cylinder piston *k*,

which enters into the chamber *h*' and is held stationary, so that as the ram is raised the lead-cylinder is forced up around this piston. 55

One part of the present invention relates to the manner in which the core-bar is mounted on the ram, so as to be held in proper position with relation to the matrix *g* at the base of the lead-cylinder, and I will now describe that construction. The core-bar extends up through the central opening of the piston *k* and is there connected to the yoke or cross-bar *l*, and this yoke is in turn connected to the top of the lead-cylinder by columns *n*. The piston *k* has a seat at the upper end thereof to receive the bushing *k*². At the lower end of said piston is a seat to receive the bushing *k*³. This bushing *k*³ has the annular depending lip *k*⁴, which engages the core-bar *m* at a point below said piston, whereby said core-bar is more firmly supported and the lead is prevented from rising in and around the outer walls of said core-bar. The said yoke, with its columns and core-bar, fits within the central opening *c*' of the top plate, which, as shown in the drawings, corresponds generally in shape to the yoke, being formed of a central circular space *c*² to receive the circular portion *b*' of the yoke, which is connected to the core-bar, and like circular spaces *c*³, connected to the central space *c*², to receive the end portions *l*² of the yoke, to which the columns *n* are connected. 60 65 70 75 80

The columns *n* pass upwardly through openings *k*' in the top plate of the lead-cylinder piston *k*, and, as will be seen in the drawings, they fit closely to said piston, so that but a small yoke is required, and this yoke normally plays within the central space *c*' of the top plate, so that the core-bar *m* may be made of but short length, extending but a short distance above the piston *k* and there connecting to the yoke, the shortening of the core-bar preventing great variation in the annular space *i* between the base of the core-bar and the matrix *g*, through which the lead passes around the cable as it passes through the hollow core-bar *m*. That is to say, that by thus shortening the core-bar the serious difficulty heretofore experienced in these machines of the expansion and contraction of the core-bar when exposed to the heat of the lead is reduced in proportion to the shortening of the 85 90 95 100

core-bar as compared with those which extend above the top plate of the main frame. To obtain greater compactness and rigidity of construction, it will also be noticed that the columns n rest directly upon the lead-cylinder h , so that they can be brought close to the core-bar and a yoke of short length be employed to connect them therewith. To support these columns upon the cylinder, I employ the sleeves n' , into which the ends of the columns are screwed, the sleeves n' resting direct upon the lead-cylinder h and having side flanges n^2 , which are bolted, as at n^3 , to the lead-cylinder, on which they rest. The upper ends of these columns extend through the yoke which rests directly on shoulders of the columns and are held in place by nuts screwed thereon.

In order to provide for the easy and accurate adjustment of the core-bar m and hold it rigidly in place, I provide the following construction: The core-bar fits neatly within the central opening p of the yoke, while the upper part of the central opening p is enlarged, as at p' , and the inner face of such enlarged portion is threaded with a left-hand thread. The upper portion of the core-bar is threaded with a right-hand thread, and the nut r has a right-hand thread within the same and a left-hand thread on its outer face, and it engages both with the threaded face of the core-bar and with that of the enlarged portion p' , so that by turning the nut r it will screw or unscrew, according to the direction in which it is turned, along both the core-bar and the enlarged portion p' , and it thus provides for the raising and lowering of the core-bar within the yoke and for the adjustment of the annular opening between the base of the core-bar and the matrix g . To lock the parts in place, I employ the sleeve-nut s , which screws down the core-bar, its sleeve fitting around the head of the nut r and resting upon the top of the yoke l , so locking the parts in place. Another important change in this construction is that the core-bar can be removed without the necessity of removing the yoke from the columns connected to the lead-cylinder, which would be the case if an ordinary nut fitted around the core-bar below the yoke.

When the hydraulic press is in use, the ram e is lowered within the hydraulic cylinder a to its lowest position and the molten lead is introduced into the chamber h' of the lead-cylinder h by suitable means and the wire cable to be coated is passed through the central opening m' of the hollow core-bar m , projecting through the same within the matrix g . As the ram e is then gradually raised the lead or lead composition, whatever it may be, is forced from the lead-cylinder through the annular passage i , and so around the cable, and the lead quickly contracts upon the cable and holds thereto and in its downward movement draws the cable through the hollow core-

bar, the cable passing out through the side opening f' in the block f in the usual way. This operation continues until the entire body of lead within the lead-cylinder is exhausted, when the ram e is again lowered and the chamber of the lead-cylinder is again filled. In this operation, as but a short core-bar is employed, for the reason that the yoke is made to travel within the top plate instead of above the same, and as the columns n , connecting the yoke and lead-cylinder, are brought close to each other and a much more compact construction is obtained, a large portion of the expansion and contraction which has heretofore caused variations in the thickness of the lead coating upon the cable is overcome and a compact and rigid structure is obtained. For the same reason the cost of the press is materially reduced. The core-bar can be easily and accurately adjusted by the removal of the lock-nut s and the turning of the adjusting-nut r around the core-bar.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a hydraulic press for covering wire cables with lead, the combination of a press-frame having a central opening in its top plate, a lead-cylinder piston supported by the top plate, a ram carrying the lead-cylinder, and a yoke supported by the lead-cylinder within the body of the top plate and carrying a hollow core-bar passing down through the lead-piston into the lead-cylinder, substantially as set forth.

2. In a hydraulic press for covering wire cables with lead, the combination of a press-frame having a central opening in its top plate, a lead-cylinder piston supported by the top plate, a ram carrying the lead-cylinder and a yoke supported by the lead-cylinder within the body of the top plate and carrying a hollow core-bar passing down through the lead-piston into the lead-cylinder, the columns connecting the yoke and lead-cylinder resting upon the top of the cylinder and passing through openings in the top plate of the lead-cylinder piston, substantially as set forth.

3. In a hydraulic press for covering wire cables with lead, the combination of a press-frame having a central opening in its top plate, a lead-cylinder piston supported by the top plate, a ram carrying the lead-cylinder, said lead-cylinder piston having a seat at the lower end thereof, a bushing with a lip extending therefrom into said seat, and a yoke supported by the lead-cylinder within the body of the top plate and carrying a hollow core-bar passing down through the lead-piston into the lead-cylinder, substantially as set forth.

In testimony whereof I, the said DAVID CARLIN, have hereunto set my hand.

DAVID CARLIN.

Witnesses:

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