

No. 891,436.

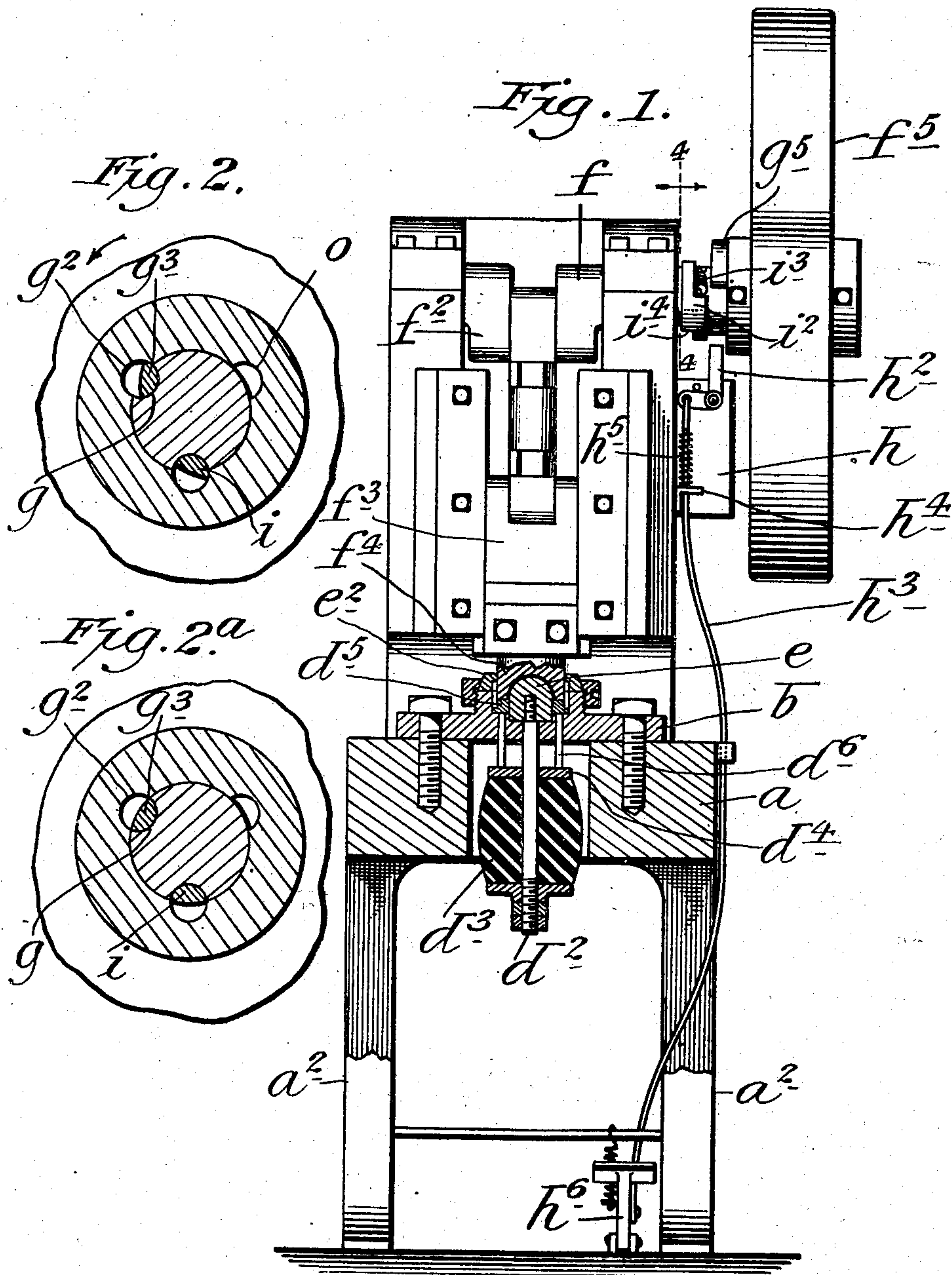
V. K. V. PALMER.

PATENTED JUNE 23, 1908.

POWER PRESS.

APPLICATION FILED NOV. 27, 1907.

2 SHEETS—SHEET 1.



WITNESSES

C. E. Mulreany  
M. E. Roody

INVENTOR,

Victor K. V. Palmer,  
BY Edgar Tate & Co.,  
ATTORNEYS.

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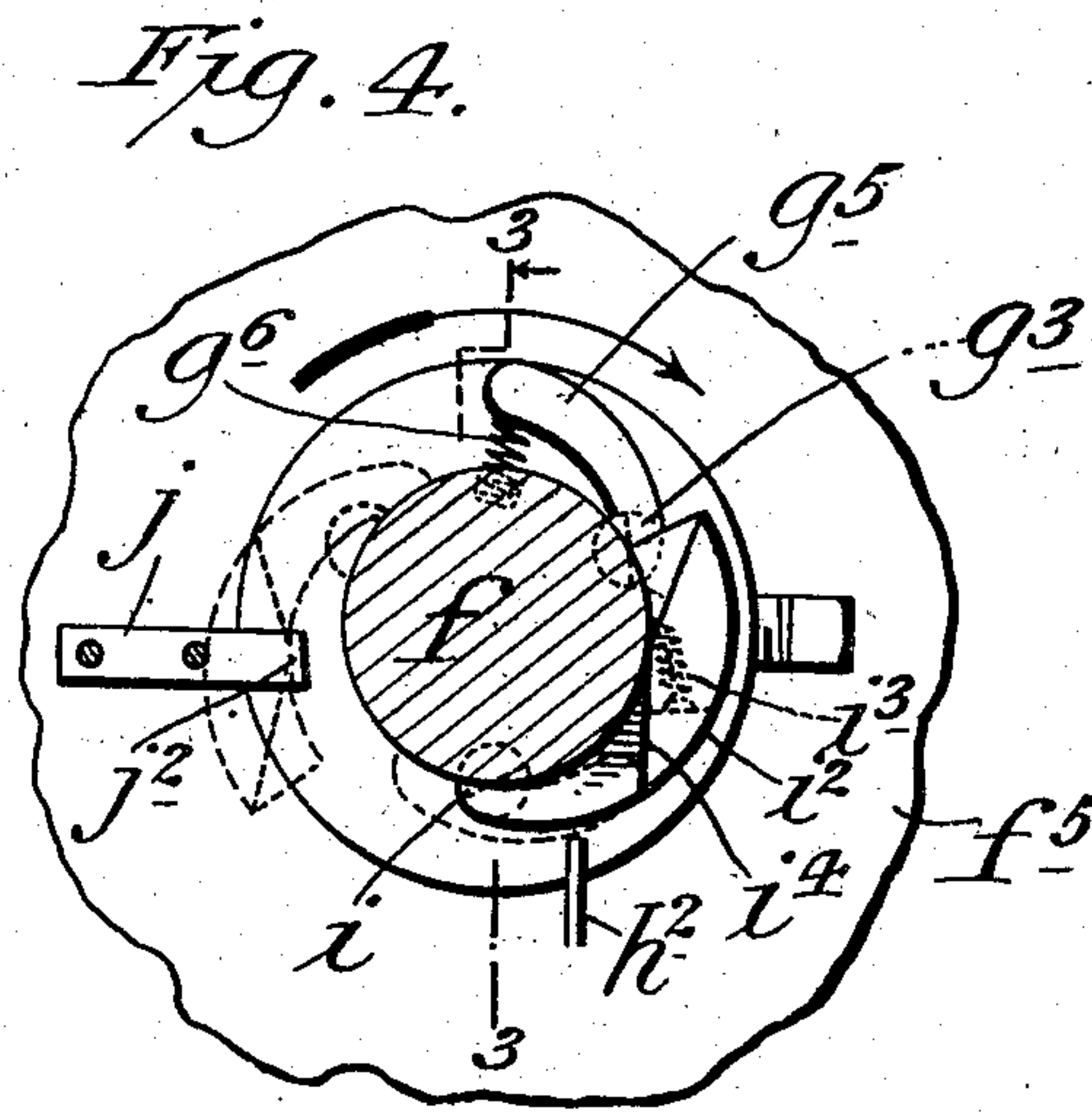
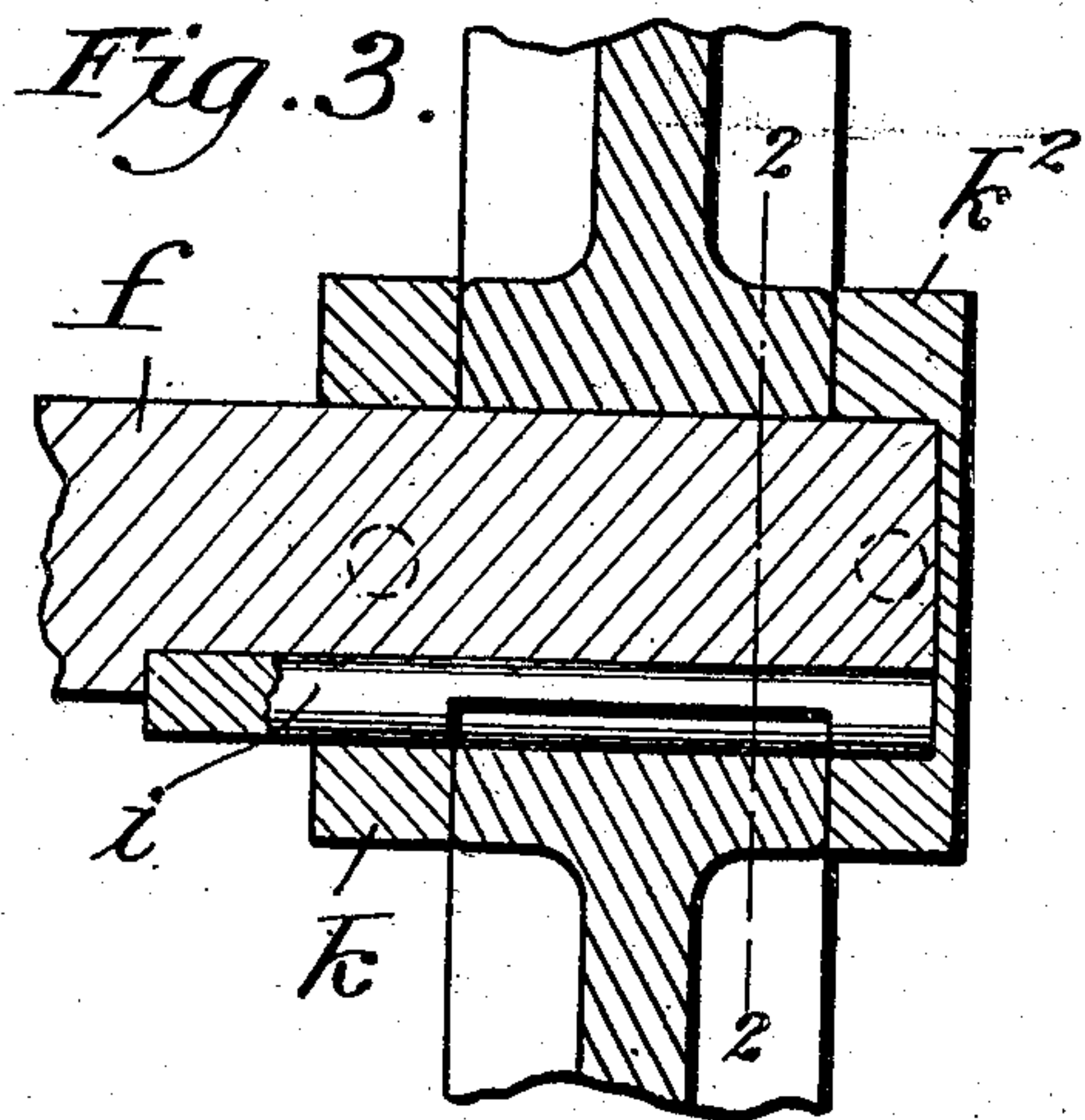
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# UNITED STATES PATENT OFFICE.

VICTOR K. V. PALMER, OF BROOKLYN, NEW YORK.

## POWER-PRESS.

No. 891,436.

Specification of Letters Patent.

Patented June 23, 1908.

Application filed November 27, 1907. Serial No. 404,103.

*To all whom it may concern:*

Be it known that I, VICTOR K. V. PALMER, a citizen of the United States, and residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Power - Presses, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

10 This invention relates to power presses of the class used for cutting, stamping or drawing sheet metal; and the object thereof is to provide clutch devices for locking the crank shaft, while the machine is in operation, 15 against rotation independent of the drive wheel in both directions; a further object being to provide a press of the class specified with a double acting clutch mechanism for preventing the independent rotation of the 20 power wheel on the crank shaft in both directions while the press is in operation, and in this manner also prevent the jolt, jar and noise occasioned by the operation of presses of this class and prevent the racing of the 25 crank shaft and accidental injury to operators; and with these and other objects in view the invention consists in the construction, combination and arrangement of parts, in connection with a power press hereinafter de- 30 scribed and claimed.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which the separate parts of my improvement are designated by suitable reference characters in 35 each of the views, and in which:—

40 Figure 1 is a front view of a power press of well known construction provided with my improvement; part of the construction being in section, Fig. 2 a section on the line 2, 2 of Fig. 3, Fig. 2<sup>a</sup> a view similar to Fig. 2 but showing the parts thereof in a different position, Fig. 3 a section on the line 3, 3 of Fig. 4, 45 Fig. 4 a section on the line 4, 4 of Fig. 1.

45 In the drawing forming part of this specification reference being made to Fig. 1, I have shown a well known form of power press involving a base table *a* supported by legs *a*<sup>2</sup> and on which is secured the bolster *b* 50 through which passes the spring buffer stud *d*<sup>2</sup> which carries the spring buffer *d*<sup>3</sup> which in this case consists of a rubber barrel or drum-shaped device. Above the spring buffer *d*<sup>3</sup> and resting thereon is the metal washer *d*<sup>4</sup> 55 with which is connected the blank holding

ring *d*<sup>5</sup>, this connection being made by means of pins *d*<sup>6</sup>.

The spring buffer stud is provided at its upper end with the usual draw die or punch *e*, and the bolster *b* is provided with a screw 60 threaded collar in which the blank holding ring *d*<sup>5</sup> is movable and to which is secured the collar *e*<sup>2</sup> which limits the upward movement of the blank holding ring *d*<sup>5</sup>, all these parts 65 being of the usual construction. The press is also provided with the usual crank shaft *f* having the crank *f*<sup>2</sup> with which is connected the vertical movable plunger *f*<sup>3</sup> which carries the punch *f*<sup>4</sup>, and said crank shaft is provided 70 with the usual drive wheel *f*<sup>5</sup>, all these parts being of the usual construction.

It is customary, or has been heretofore, to provide the crank shaft where it passes through the hub of the drive wheel with a 75 groove *g* as shown in Fig. 2, and the hub of the drive wheel with a corresponding groove *g*<sup>2</sup> and place therein a key clutch *g*<sup>3</sup> which is segmental in cross section and provided with cylindrical heads, and this clutch key is pro- 80 vided at its inner end with a segmental arm *g*<sup>5</sup> between which and the shaft is placed an expansion spiral spring *g*<sup>6</sup>, one end of which enters a socket formed in said shaft.

Secured to the side of the frame of the press adjacent to the power wheel is a bracket *h* to 85 which is pivoted a bell crank *h*<sup>2</sup> with which is connected a rod *h*<sup>3</sup> which passes downwardly through a keeper *h*<sup>4</sup>, and a spring *h*<sup>5</sup> mounted on said rod over said keeper and serves to force the said rod upwardly. The rod *h*<sup>3</sup> is 90 carried downwardly to the bottom of the frame of the press and connected with a treadle *h*<sup>6</sup>, all of these parts being also of the usual construction and operation, and in the operation of this press the arm *g*<sup>5</sup> of the clutch 95 key *g*<sup>3</sup> operates in connection with the bell crank *h*<sup>2</sup> to release the clutch and permit the drive wheel to rotate independent of the crank shaft, or to permit the crank shaft to turn independent of the drive wheel. 100

In the practice of my invention I employ another clutch key *i* the same in all respects as the clutch key *g*<sup>3</sup>, and provided with cylindrical end portions, and mounted in corresponding recesses in the crank shaft and in 105 the hub of the drive wheel, and this clutch key *i* is provided at its inner end with a segmental arm *i*<sup>2</sup> which projects in the same direction as the arm *g*<sup>5</sup> of the clutch key *g*<sup>3</sup>, and connected with the arm *i*<sup>2</sup> and the crank 110



shaft is a pull spring  $i^3$ , and the arm  $i^2$  is provided with a cam face  $i^4$  which operates in connection with a tripper  $j$  secured to the frame work of the press and provided with a nose at  $j^2$  which engages the cam surface  $i^4$  on the arm  $i^2$  and pulls said arm out into the dotted position shown in Fig. 4, and rocks the clutch  $i$  in a direction opposite to that in which the clutch  $g^3$  is rocked when said clutches are designed to disengage the hub of the drive wheel.

It will be observed that in Fig. 2 both the clutches or clutch keys are shown in operative position, in which the drive wheel is locked to the crank shaft, but in Fig. 3 they are both shown in inoperative position, in which the drive wheel is independent of the crank shaft. The hub of the drive wheel is also provided, as shown in Figs. 2 and 2<sup>a</sup>, with a supplemental recess  $o$ , or in other words said hub is provided with three similar recesses, and the keys  $g^3$  and  $i$  may operate in either of said recesses.

In the operation of this apparatus, the clutch keys  $i$  and  $g^3$  are both held in operative position as shown in Fig. 2 by the springs  $g^6$  and  $i^3$ . When the machine is in operation the operator's foot is bearing on the treadle  $h^6$  and the crank lever  $h^2$  is thrown inwardly so that the arm  $g^5$  of the clutch key  $g^3$  will not strike it. When the operator desires to stop the press he moves his foot from the treadle  $h^6$  and the crank  $h^2$  is thrown back into the position shown in Fig. 1, and the arm  $g^5$  of the clutch key  $g^3$  will strike said bell crank and throw the clutch key  $g^3$  into the inoperative position as shown in Fig. 2<sup>a</sup>, and at the same time the arm  $i^2$  of the clutch key  $i$  is engaged by the tripper  $j$  and the clutch key  $i$  is turned in a direction opposite that of the clutch key  $g^3$  and the drive wheel is unlocked from the crank shaft as shown in Fig. 2<sup>a</sup>. In this construction I also provide the crank shaft  $f$ , inside of the drive wheel  $f^5$ , with a collar  $k$  and outside of said wheel with a cap  $k^2$ , said parts being designed to hold the drive wheel in proper position, and the cap  $k^2$  also serving to conceal the end of said shaft and the ends of the clutch keys and to hold said clutch keys in proper position longitudinally of the shaft.

While operating a combination die which will draw a shell of considerable depth, as for instance, three-quarters of an inch or more, a powerful rubber buffer similar to that shown at  $d^3$  or a powerful spring buffer, forces the washer  $d^4$  upwardly with great force and this washer strikes the bolster  $b$  with corresponding force at the upward motion of the crank, and this force is also imparted to the ring  $d^5$  by the rod  $d^6$  which is forced upwardly in a similar manner, and this movement of said parts forces the plunger  $f^3$  upwardly and imparts a quick movement to the crank shaft  $f$  and causes

said shaft to race in the drive wheel  $f^5$ . The constant repetition of this operation by reason of the washer  $d^4$  striking the bottom of the bolster  $b$  produces a violent and oft-repeated hammering similar to that given by the use of a sledge or other heavy hammer, and when a number of these presses are employed the result is very annoying and objectionable. This continuous pounding also results in throwing the die out of its true adjustment and the punch will begin to shear or shave off on one side and will rapidly become impaired; but by means of my improvement which consists in providing the supplemental clutch key, I prevent the racing of the crank shaft in the drive wheel and prevent the washer  $d^4$  from striking the bottom of the bolster a violent blow and thus avoid the hammering result referred to and also avoid the throwing out of operative position of the separate parts of the apparatus including the die and plunger and secure a uniform rotation of the crank shaft and a constant and steady operation of the press without danger of injury thereto and also without danger of injury to the operator.

It will be seen that both of the keys extend through the entire length of the hub, and both of said keys may be conveniently reached and manipulated, and this is one of the important features of my construction.

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

1. A power press of the class described, provided with a crank shaft and a drive wheel mounted thereon, the hub of the drive wheel being provided in its inner face with a plurality of longitudinal recesses which are segmental in cross section, the crank shaft being also provided where it passes through the hub of the drive wheel with two similar recesses which are longer than the hub of the drive wheel, and two clutch keys mounted in said recesses, and longer than the hub of the drive wheel, the end portions of said clutch keys being cylindrical in cross section, and that part thereof within the hub of the drive wheel being segmental in cross section, one of said keys being operated in the usual manner to secure said wheel to the shaft in the operation of the machine when the shaft is turned in one direction, and the other key being automatically operated for locking said wheel to said shaft and prevent the rotation of the shaft in said wheel in the opposite direction.

2. A power press of the class described, provided with a crank shaft and a drive wheel mounted thereon, the hub of the drive wheel being provided in its inner face with a plurality of longitudinal recesses which are segmental in cross section, the crank shaft being also provided where it passes through the hub of the drive wheel with two similar



recesses which are longer than the hub of the drive wheel, two clutch keys mounted in said recesses and longer than the hub of the drive wheel, the inner ends of said clutch  
5 keys being provided with segmental arms which extend in the same direction, the arm of one of said keys being connected with the shaft by an expansion spring, and the arm of the other by a pull spring, and pedal  
10 operated devices for operating one of said keys to secure said wheel to the shaft in the operation of the machine when the shaft is

turning in one direction, and automatically operating devices for securing said wheel to said shaft when the said shaft is turning in 15 the opposite direction.

In testimony that I claim the foregoing as my invention I have signed my name in presence of the subscribing witnesses this 23rd day of November, 1907.

VICTOR K. V. PALMER.

Witnesses:

C. E. MULREANY,  
M. E. DOODY.