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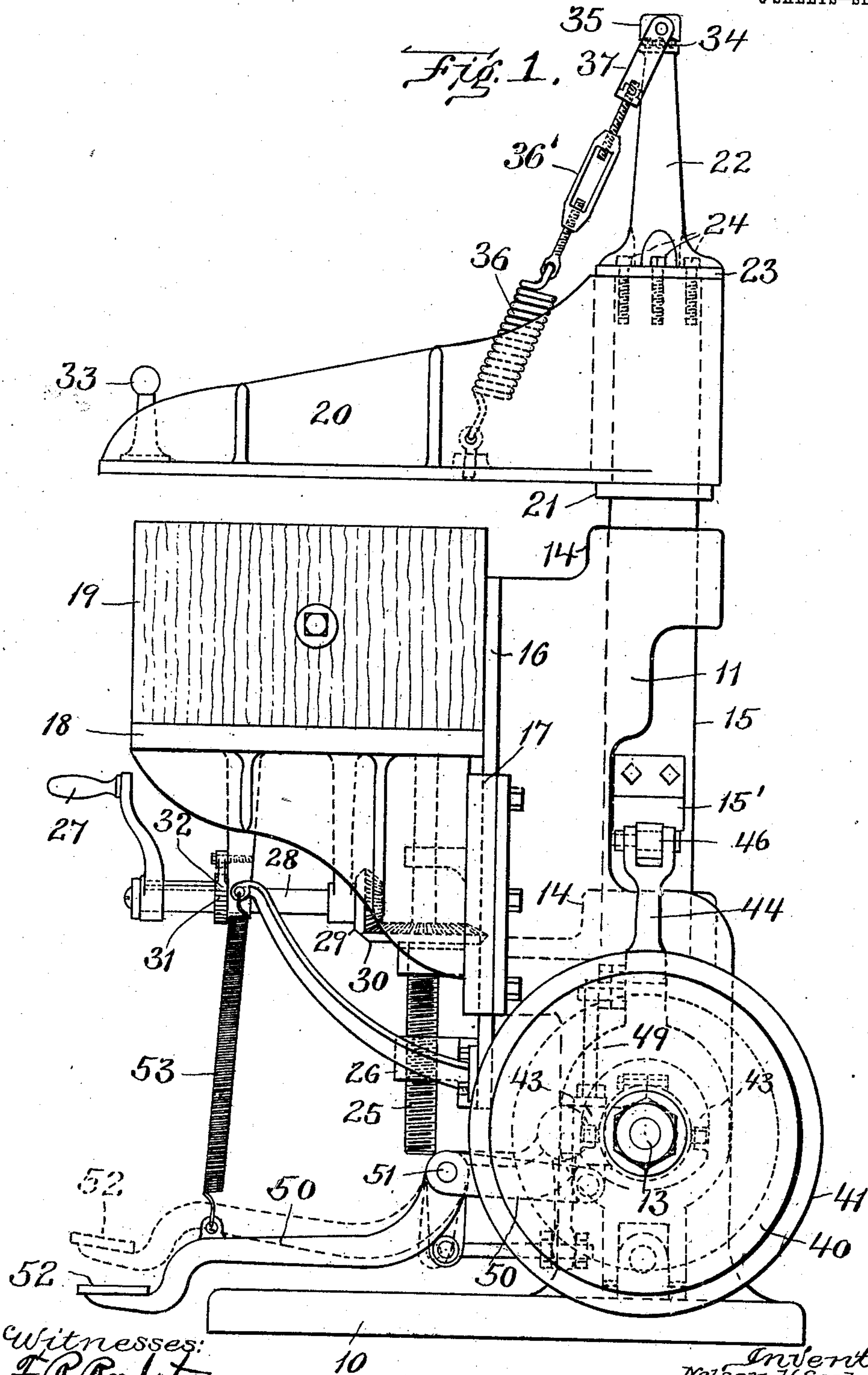
DIE PRESS.

APPLICATION FILED DEC. 29, 1909.

969,412.

Patented Sept. 6, 1910.

3 SHEETS—SHEET 1.



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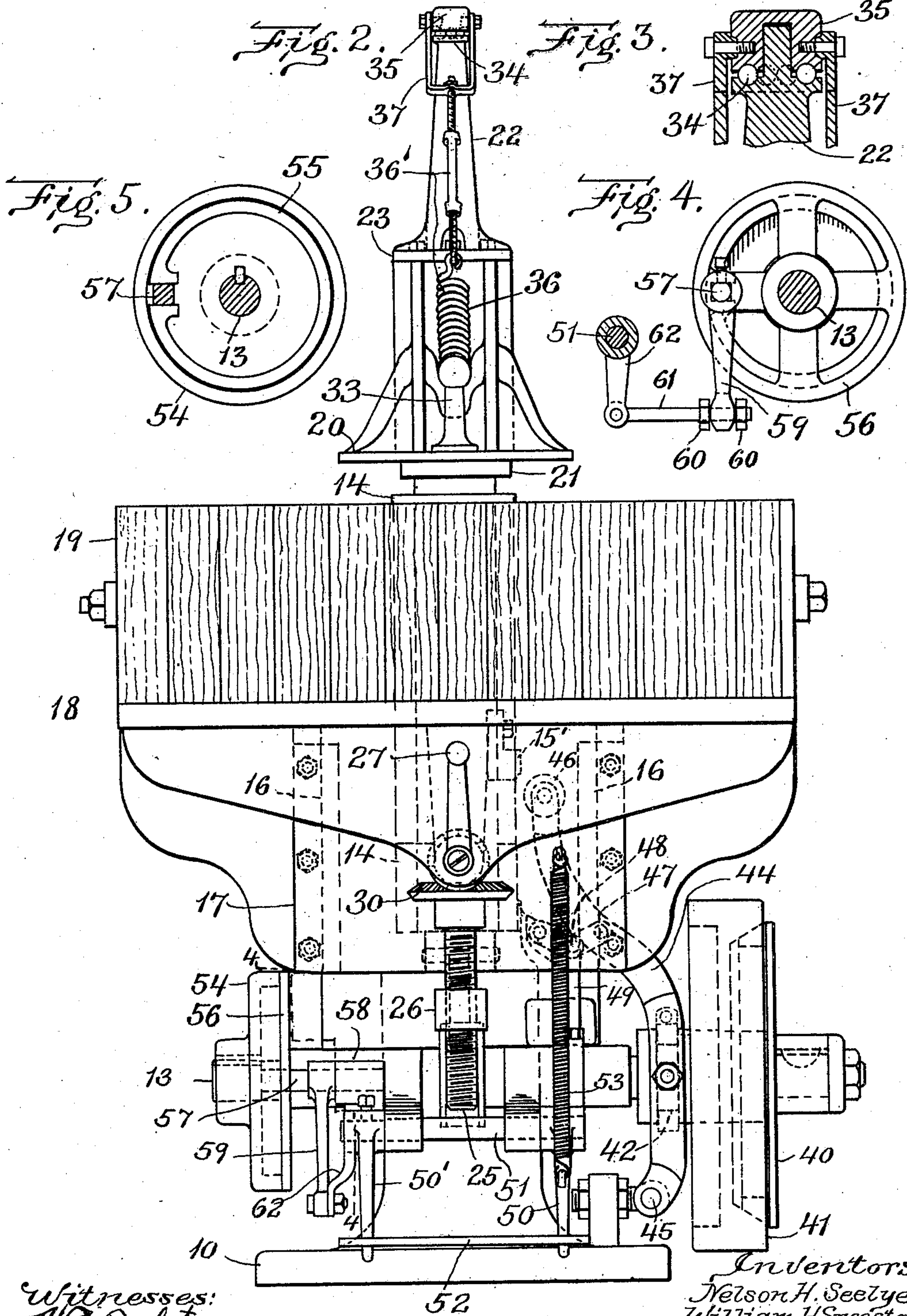
DIE PRESS.

APPLICATION FILED DEC. 29, 1909.

Patented Sept. 6, 1910.

969,412.

3 SHEETS—SHEET 2.



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DIE PRESS.

APPLICATION FILED DEC. 29, 1909.

Patented Sept. 6, 1910.

3 SHEETS—SHEET 3.

969,412.

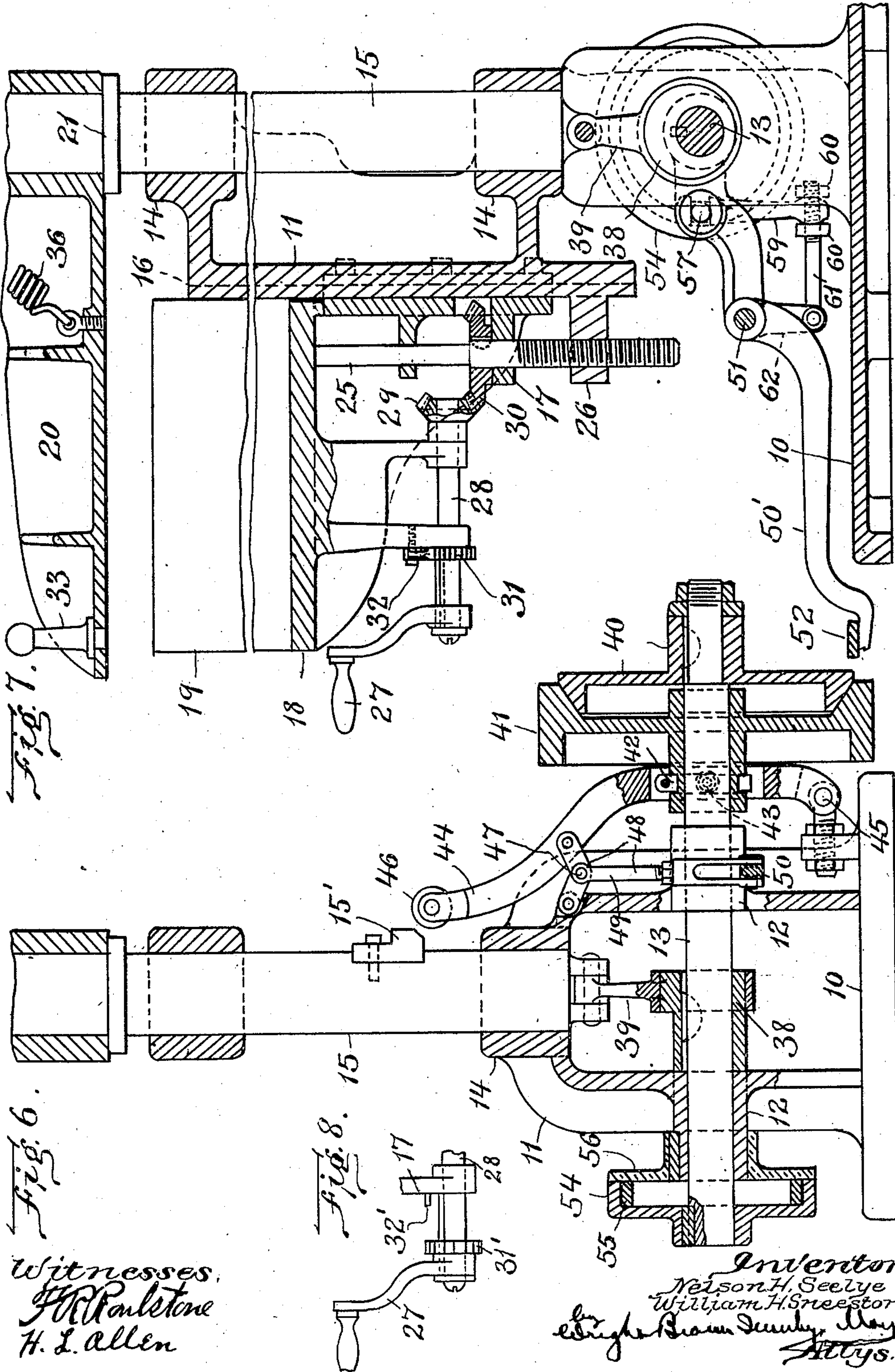


Fig. 6.

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Fig. 8.

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UNITED STATES PATENT OFFICE.

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DIE-PRESS.

969,412.

Specification of Letters Patent.

Patented Sept. 6, 1910.

Application filed December 29, 1909. Serial No. 535,476.

To all whom it may concern:

Be it known that we, NELSON H. SEELYE and WILLIAM H. SNEESTON, respectively of Winchester and Somerville, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Die-Presses, of which the following is a specification.

This invention relates to die presses and particularly to that type of die press which is employed for cutting out shoe uppers.

The invention is embodied in a press machine having a bed and a head movable toward and from each other with means for adjustably supporting the bed and means for reciprocating the head.

The object of the invention is to provide a die press so constructed as to be operated more easily than machines of this type hitherto in use, and to embody in the construction, features by which the life and general wearing qualities of the mechanism are prolonged.

In this embodiment of the invention the head is pivotally mounted upon the column and is adapted to be moved laterally so as to cooperate with the entire upper surface of the bed. The joint of the head with the column is subject to excessive wear and is liable to soon become loose and to be unfit for use unless some means is provided for preventing undue wearing of the joint. For this reason, the invention embodies yielding means connecting the column and the head in such manner as to exert at all times tension on the head tending to move the head away from the bed, that is, in the same direction as the pressure which is exerted upon the head by opposition of the bed and cutting die. The tension of the yielding means for this purpose is so strong as to support the weight of the head and to thereby maintain continuous contact between those cooperative surfaces of the head and column which receives the cutting strain. By providing means of this character, the head is at all times prevented from wobbling and its pivotal connection with the column is thereby prevented from becoming unduly worn. The yielding means serves another purpose, which renders the operation of the machine much less difficult. The head is, of course, so heavy as to require great manual force for moving it laterally, or would require great force if it

were supported at its edge solely by the column. The yielding means, however, in the present invention is connected at a point of the head as near the center of gravity as can be estimated, and the head is therefore balanced instead of being permitted to bind upon the column with great force.

Of the accompanying drawings, which illustrate one form in which the invention may be embodied,—Figure 1 represents a side elevation of a die press. Fig. 2 represents a front elevation thereof. Fig. 3 represents a vertical section of a swiveled joint by which the yielding head-supporting means is connected to an extension of the column. Fig. 4 represents a section on the line 4—4 of Fig. 2. Fig. 5 represents a section in a different plane including a part of the mechanism shown by Fig. 4. Fig. 6 represents a vertical transverse section of that portion of the machine which includes the column actuating means and the clutch mechanism therefor. Fig. 7 represents a vertical section from front to rear of portions of the machine. Fig. 8 represents a detail of a retaining device for holding the bed-adjusting mechanism.

The same reference characters indicate the same parts wherever they occur.

On the drawings a base is indicated at 10, said base being provided with an upstanding frame portion 11, in which the mechanism hereinafter described is mounted. The frame includes bearings 12 for a power shaft 13, and bearings 14 for a vertically movable column 15. The frame is further provided with guides 16 which are likewise vertical and which are provided for a sliding carriage 17 formed with a bed 18. A cutting block 19 may be attached to the bed in any suitable way.

A head 20 is pivotally mounted at the upper end of the column 15 and is confined between a collar 21 and a column extension 22 having a flange 23 affixed to the column by bolts 24. It is evident that the head 20 and bed 18 are movable toward and from each other. The bed is adjustably supported by an adjusting screw 25 which is threaded in an ear 26 formed on the frame. By means of a hand crank 27, a crank shaft 28 and beveled gears 29 and 30 connecting the crank shaft and the screw shaft, the position of the bed may be adjusted. The crank

shaft is shown as provided with a ratchet 31 which is engaged by a pawl 32 pivotally mounted upon a portion of the bed frame and adapted to hold the ratchet so as to prevent downward movement of the bed.

5 The crank is splined on the shaft and may be moved under the bed when not in use, to avoid interference with the leg of the operator.

10 A modified form of retaining device is shown by Fig. 8 in which the crank shaft is provided with a longitudinally movable toothed disk 31' affixed to the hub of the crank 27. This crank is also connected to the shaft by a spline and is adapted to move toward and from a fixed pin 32' which is arranged to be engaged by the teeth of the disk.

20 The head 20 is adapted to be oscillated about the column so as to cooperate with the entire area of the bed. For this purpose, it is provided with a handle 33. The extension 22 of the column has provision for a ball-bearing 34 which supports a cap 35. The cap is connected to the head 20 by a spring 36, turnbuckle 36' and a yoke 37. The strength of the spring is preferably such as to be adapted to support the weight of the head and is preferably attached to the head at the center of gravity of the head. A very slight excess tension of the spring eliminates lost motion which might otherwise occur in the joint of the head.

35 The column is provided with reciprocating means shown by Figs. 6 and 7 and comprising an eccentric 38 affixed to the shaft 13 and an eccentric rod 39 connecting the eccentric and the lower end of the column. The driving shaft is provided with a friction clutch which includes an internal member 40 affixed to the shaft and a pulley 41 loosely mounted on the shaft and having an internal face adapted to cooperate with the member 40. According to the position of the clutch in Figs. 1, 2 and 6, the two members are in cooperative relation. The hub of the pulley member is formed with a peripheral groove which is occupied by a split collar 42 carried by a shipper 44 pivoted at 45. The shipper surrounds the hub and extends upwardly and is provided with a roll 46 at its upper end. Toggle links 47 are pivoted respectively to the frame 11 and to the shipper and they are joined by a pivot stud 48 which also engages one end of the link 49. The other end of the link is pivotally connected to a treadle lever 50 which is pivoted at 51 and which is provided with a treadle 52. A spring 53 is connected to the treadle lever so as to exert tension tending to separate the clutch members 40, 41.

65 The column 15 is provided with a block 15' which is adapted to engage the roll 46 at the end of the shipper and to hold the clutch members in cooperative relation. The

clutch controlling mechanism may be operated to effect a single reciprocation of the head by depressing the treadle and holding it in the position shown by solid lines in Fig. 1 until the column is so far depressed as to move the block 15' into engagement with the roll 46. If the treadle is immediately released after engagement of the roll by the block, the clutch members are held in cooperative relation until the column rises sufficiently to move the block away from the roll. The spring 53, when the shipper is released restores the clutch-setting mechanism to its initial inoperative position.

80 The machine illustrated upon the drawings includes a friction brake which is adapted to be automatically operated to arrest rotation of the power shaft when the clutch members are separated. The brake mechanism is shown in Figs. 4, 5 and 6 and includes a brake drum 54 affixed upon the shaft and an expansible shoe 55 adapted to be expanded within the drum. The shoe 55 is confined in the drum by a disk or cover 56 and is engaged by an angular stud 57 inserted between its ends (see Fig. 5). The stud is mounted in a bearing 58 and is provided with a lever 59 by which it may be oscillated to expand or release the shoe. The free end of the arm 59 is confined between collars 60 affixed upon a link 61 which extends through the arm and which is pivotally connected to a second arm 62. The arm 62 is formed upon a treadle lever 50' and is adapted to effect the expansion of the shoe when the treadle is up and to release the shoe when occupying the position shown by Figs. 1, 4 and 5.

10 Although the machine herein illustrated includes only one shaft which is both the pulley shaft and crank shaft, it is not intended that the invention shall be limited to a machine of this type. It is apparent that all of the features of the present invention are equally applicable to a press machine having one shaft for the driving pulley and another shaft for the crank or eccentric, with transmission gearing connecting them.

Having thus explained the nature of our said invention and described a way of constructing and using the same, although without attempting to set forth all of the forms in which it may be made or all of the modes of its use, we declare that what we claim is:

1. In a die press, a bed and head relatively movable, one toward and from the other, adjustable means for supporting the bed at various distances from the head, an actuator for said adjustable means, said actuator being movable to and from a position under the bed, an abutment under the bed, and a retaining member adapted to contact with said abutment to lock said adjustable means, said retaining member being

connected with said actuator to be thereby moved to and from engagement with said abutment.

2. In a die press, a bed, a column, means
5 for reciprocating the column, a head pivotally mounted on the column, and yielding means attached to the head tending to support the head independently of its bearing upon the column.

10 3. In a die press, a bed, a column, means for reciprocating the column, a head pivotally mounted on the column, a swiveled member on the column, and yielding means connecting said member and the head for
15 exerting tension to support the head independently of its bearing upon the column.

4. In a die press, a movable bed, a column, a head pivotally mounted on the column, means for reciprocating the column, a
20 clutch for said reciprocating means, a shipper for the clutch, and means movable with the column and adapted to engage and move the shipper to clutch-setting position.

5. In a die press, a horizontal bed, a verti-

cally and horizontally movable head ar- 25
ranged above the bed, yielding means connected to said head at the center of gravity thereof for holding the head away from the bed, and means permitting horizontal movement of the head for depressing the head 30
toward the bed against the tension of said yielding means.

6. In a die press, a bed, a column movable up and down, a movable head above the bed, said head having a portion embracing the 35
column, means attached to said head at the center of gravity for supporting the same, and means on the column for preventing relative movement up or down of said embracing portion of the head. 40

In testimony whereof we have affixed our signatures, in presence of two witnesses.

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WILLIAM H. SNEESTON.

Witnesses:

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P. W. PEZZETTI.