

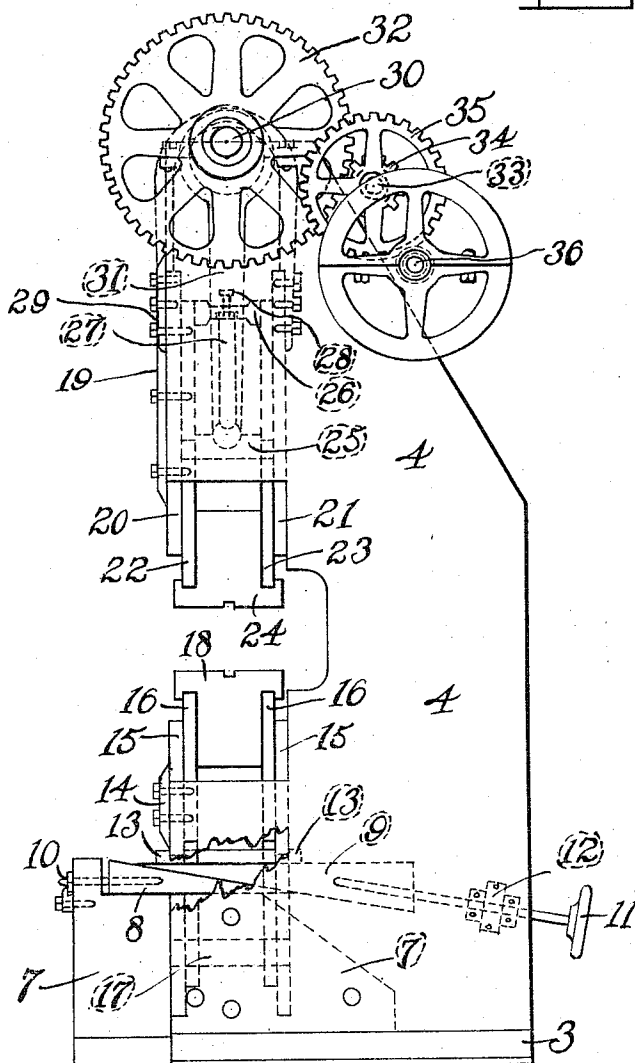
PRESS.

983,218.

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2 SHEETS—SHEET 1.

Fig-1-



Intresses

Thomas J. Morgan Jr.

Thomas J. Morgan Jr.
Thomas S. Morgan

Inventor _____

Herman C. Dreisvoigt

Morgan & Rubinstein.

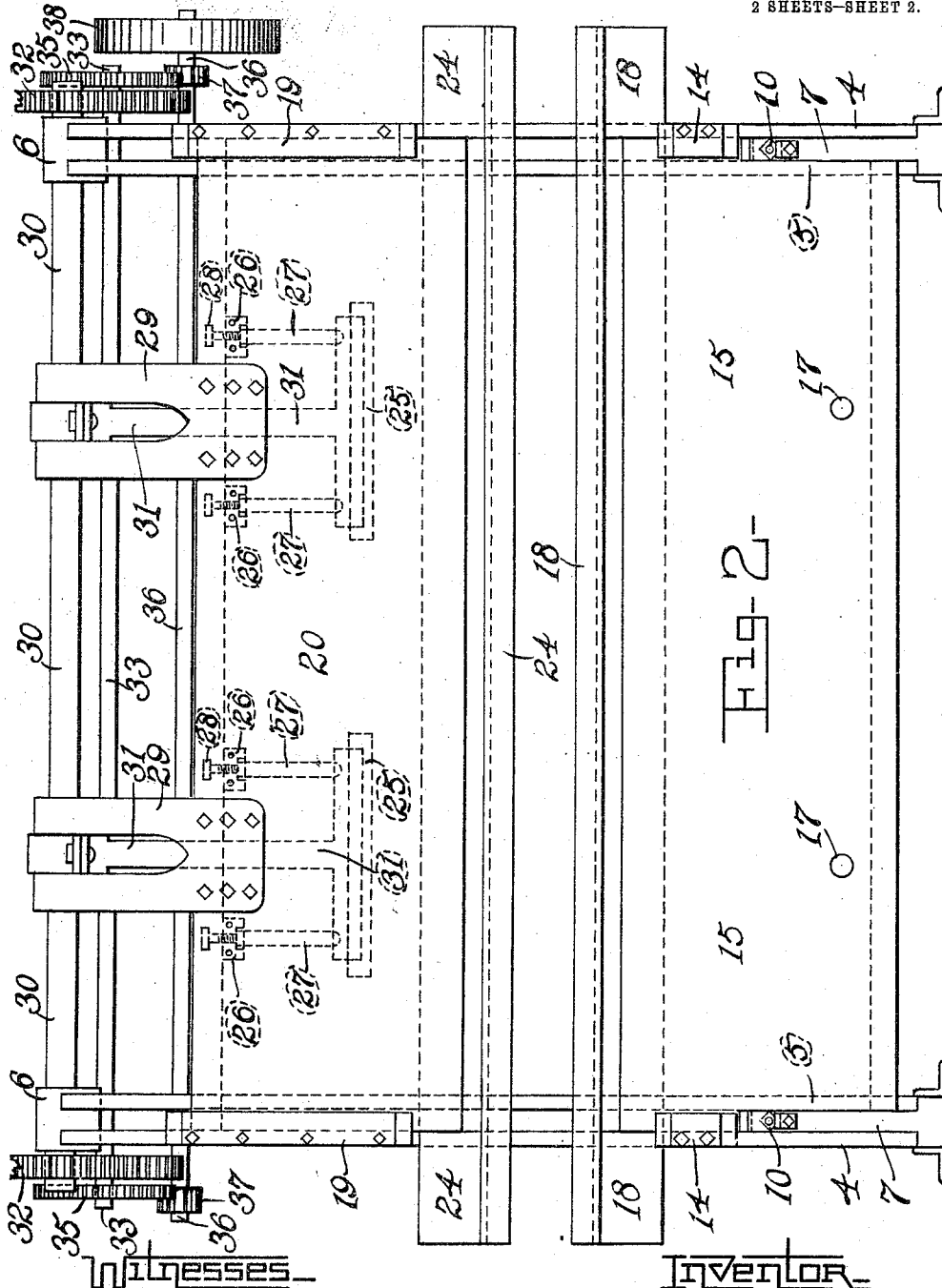
Atty.

H. C. DREISVOGT.
PRESS.
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2 SHEETS-SHEET 2.



Witnesses
Thomas J. Morgan Jr.
Thomas C. Morgan

INVENTOR
Herman C. Dreisvagt
Morgan & Rubinstein
ATTY

UNITED STATES PATENT OFFICE.

HERMAN C. DREISVOGT, OF SANTA CLARA COUNTY, CALIFORNIA.

PRESS.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HERMAN C. DREISVOGT, a citizen of the United States, and residing in Santa Clara county, in the State of California, have invented a new and useful Improvement in Presses, of which the following is a specification.

My invention relates particularly to that class of presses known as punching presses, or power presses, constructed for bending, shearing, forming and punching metal.

The object of my invention in general is to increase the strength and power of the machine, having regard for the size, weight and use of the machine, and in particular to preserve the alinement of the upper and lower beams under the maximum pressure applied in the operation of the machine.

The manner in which I attain my object is described in the following specification and illustrated in the accompanying drawings in which:

Figure 1 is an end elevation and Fig. 2 a front elevation.

The numeral 3 indicates the feet or base of the machine.

4 indicates the outside and 5 the inside end plates which constitute the main portions of the frame or housings of the machine. Each pair of these plates are spaced from each other. Secured between each pair of these plates are wedge blocks 7. Adjustably supported on these blocks are wedges 8 and 9. The wedge 8 is adjusted by screws 10 supported in the blocks 7. The wedges 9 are supported by the screws 11 supported in the bearing 12 which are fixed between the plates 4 and 5 as shown by the dotted lines in Fig. 1. Supported on the wedges 9 are parallel bars 13 which are retained in place by the plates 14. Resting on the bar 13 in each end of the frame are two beam plates 15. In contact with the inside of each of the plates 15 are two more beam plates 16. The plates 16 are supported on two transverse bars 17. The bars 17 extend through and are supported in the outside plates 15 and through which all the pressure developed in the operation of the machine is transmitted from the plates 16 to the plates 15 supported at the ends on

the bars 13, wedges 9 and 8 and wedge blocks 7. The ends of the plates 16 are adapted to clear the wedges 8 and 9, and the bar 13. As shown in Fig. 1, the plates 16 project above the plates 15 and support the die plate 18, part of which extends downward between the plates. The lower beam thus constructed is held against transverse movement by the plates 14. Secured in the upper part of the frame by the plates 19 is the upper beam. This beam like the lower beam, is constructed of four plates and a die plate. The outside plates 20 and 21 are fixed as hereinafter described, and the inside plates 22 and 23 are movable vertically between the plates 20 and 21. The inside plates project below the outside plates and support the die plate 24. Secured between the plates 22 and 23 are two bearing blocks 25. Secured between the plates 22 and 23 above the blocks 25 are transverse screw blocks 26. The undersides of these blocks are bored to admit the head of a connecting rod 27, and to support an adjustinent screw 28 as shown in Fig. 2. Secured to the plates 20 and 21 are forked shaft bearings 29 in which the shaft 30 is journaled. On the shaft 30 between forked portions of the bearings 29 are eccentric connecting rods 31, the heads of which are adapted to fit into the bearing blocks 25. Fixed on the ends of the shaft 30 are gears 32. Rotatably supported on the frame, parallel with and to the rear of the shaft 30, is a shaft 33. On this shaft are two gears 34 enmeshed with the gears 32 shown in Fig. 1. Fixed on each end of the shaft 33 is a gear 35. Rotatably supported on the frame parallel with the shaft 30, behind and below the shaft 33 is a shaft 36. Fixed on this shaft are two gear wheels 37 enmeshed with the gears 35 on the shaft 33. On one end of the shaft 36 is a driving pulley 38.

When the machine is constructed as described and illustrated the adjustment and operation of its parts are as follows: The beam plates 15 and 16 are placed separately together into the frame. The ends of the plates 15 are recessed so that the upper part extends over and rests on the bars 13 and the lower part clears the inside plate

5 of the frame. The plates 5 are recessed to admit the beam plates 15 and to form the inside vertical supporting surface for the lower beam. The upper part of the plates 16 also extends over but clears the bars 13. The supporting points of the plates 16 are on the bars 17. The bed 18 on which the dies are secured is placed between the plates 16 on which it rests. The lower beam formed by the plates described is secured in place by the plates 14. The vertical adjustment of this lower beam is effected by the movement of the screws 10 and 11, by which the wedges slidable on each other and between the top of the blocks 7 on which they rest, and the bar 13 on which the completed beam is carried. The upper beam consists of the plates 20 and 21 and 23. These plates are inserted in the frame in the same way as the lower beam. The plates 19 are secured in position; the eccentric connecting rods 31 are placed in position on the shaft 30 and in the bearings 25. The parts 29 are secured to the plates 20 and 21. The connecting rods 27 are placed in shallow bore in the heads of the eccentric connecting rods 31 and in the like recesses in the blocks 26. The screws 28 are then adjusted to thrust the head of the rods into close movable contact with the blocks 25. When the parts are so connected, the rotation of the shafts operate the connecting rods 31. The downward thrust of these rods on the bearing blocks 25 fixed in the plates 20 and 21 force down those plates and the die plate 24, by which the material inserted between the dies secured on the die plates 18 and 24 is formed, cut or pierced. The upward movement of the rods 31 acting through the connecting rods 27 and blocks 26 lifts the plates 20, 21 and 24. The screws 28 are adapted to take up all lost motion between bearing blocks 25 and head of the rods 31.

What I claim as new and desire to secure by Letters Patent is:

1. In a machine of the kind described, the combination with a frame consisting of two pairs of end plates, the plates of each pair being spaced; of adjustable means secured in said space between each pair of said plates, adapted to support the lower beam and die plate, and a beam and die plate adjustably supported on said means, an upper beam and die plate movably supported in said frame and rotary means connected with said upper beam whereby said beam can be moved vertically as described.

2. In a machine of the kind described the combination with a frame consisting of end plates, adjustable means secured to said plates adapted to support the lower beam of said machine; of a lower beam consisting of two outside plates adapted to rest ver-

65 tically on said supporting means, and two inner plates supported vertically on two transverse bars extending through said outer and inner plates; said inner plates being adapted to support a die plate above said outer plates as described.

3. In a machine of the kind described the combination with a frame, and adjustable means therein adapted to support the lower beam; of a lower beam consisting of a plurality of plates adapted to rest on said supporting means in said frame, and a plurality of plates adapted to support a die plate, said plurality of plates being supported by said first mentioned plates, and means adapted to form the supporting connection between said supporting and supported plates.

4. In a machine of the kind described the combination with a supporting frame; of a lower beam consisting of a plurality of plates arranged vertically together, a part of said plates being adapted to rest in said frame, and the other part adapted to support a die plate being supported by the plates resting in said frame, and means connecting said plates.

5. In a machine of the kind described, the combination with a frame, and lower die plate beam supported therein; of an upper beam consisting of two outer plates and two inner plates, said plates being disposed vertically in relation to said frame and to each other, means adapted to secure said outer plates to said frame, and means whereby said inner plates can be connected together and means adapted to move said inner plates vertically between said outer plates, said inner movable plates being adapted to support a die plate.

6. In a machine of the kind described, the combination with a frame and a lower die plate beam supported therein; of an upper beam consisting of a plurality of plates vertically disposed in said frame, a part of said plates being fixed in said frame, and the other part being connected together and movable vertically between said fixed plates; and means adapted to move said connected plates as described, said movable plates being adapted to support a die plate.

7. In a machine of the kind described, the combination with a frame and a lower die plate beam supported therein, and an upper beam consisting of a plurality of outer plates fixed in said frame, and inner plates movable vertically between said outer plates, and means adapted to move said inner plates; of adjustable means connecting said inner plates and said means for moving said plates, as described.

8. In a machine of the kind described, the combination consisting of a frame, a lower die plate supporting beam consisting of outer plates supported in said frame and

inner plates supported by said outer plates,
means adapted to adjust said beam in said
frame, an upper die plate supporting beam
consisting of outer and inner plates, said
5 outer plates being fixed in said frame, and
said inner plates being movable vertically
between said outer plates, means adapted to

move said inner plates, and means adapted
to adjust the positions of said beams in rela-
tion to each other as described.

HERMAN C. DREISVOGT.

Witnesses:

THOMAS J. MORGAN,
JULIUS RUBINSTEIN.