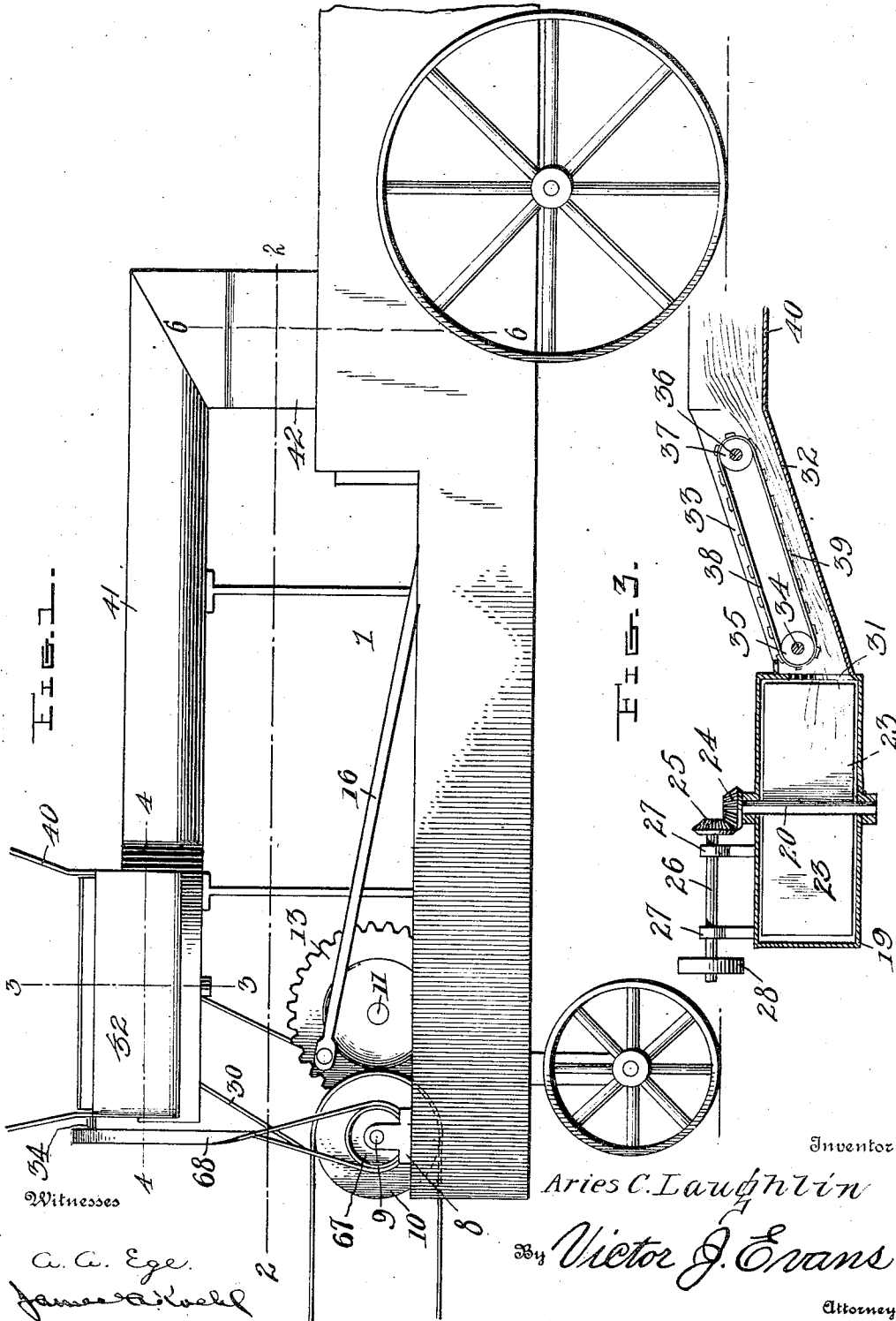


A. C. LAUGHLIN.
 AUTOMATIC HAY PRESS.
 APPLICATION FILED JAN. 12, 1909.

938,252.

Patented Oct. 26, 1909.

4 SHEETS—SHEET 1.



A. C. Ege.
 James A. Ketch

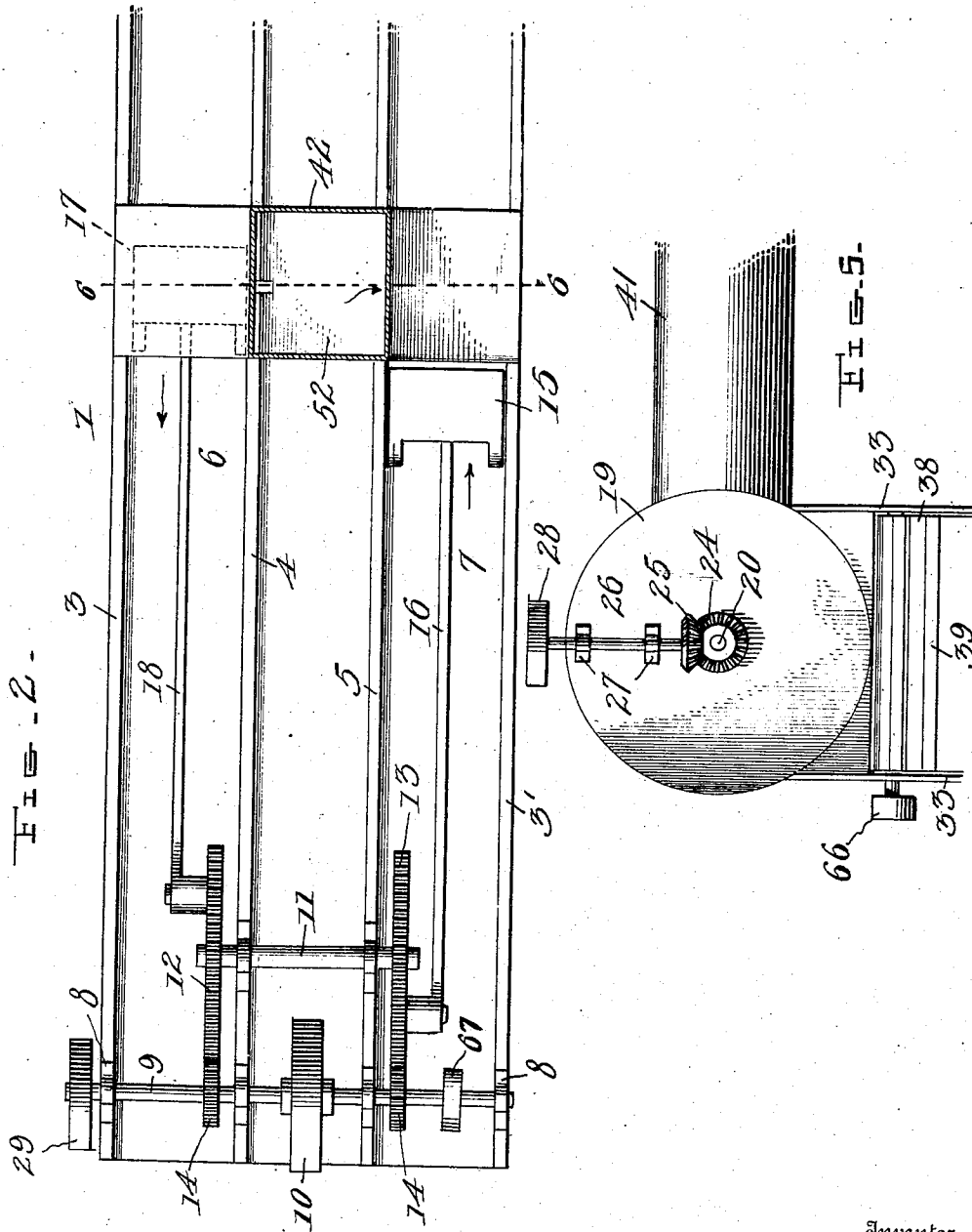
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4 SHEETS—SHEET 2.



Witnesses

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 4 SHEETS—SHEET 3.

FIG. 4.

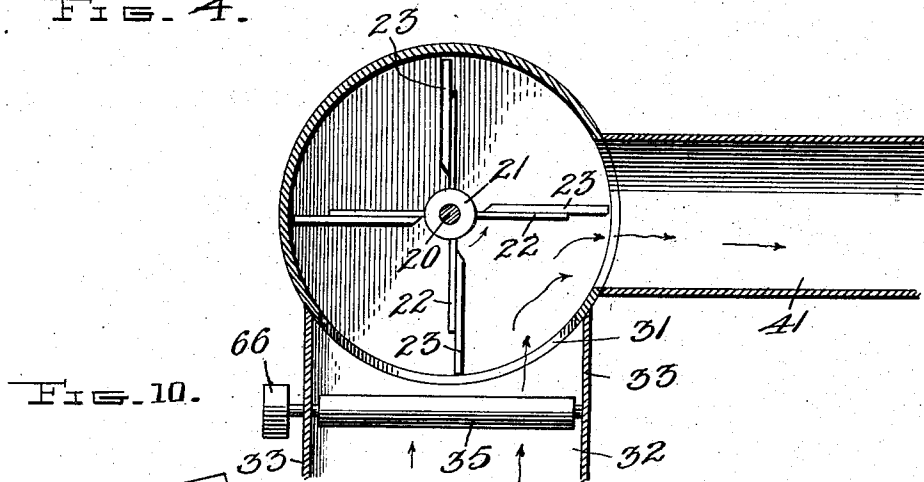


FIG. 10.

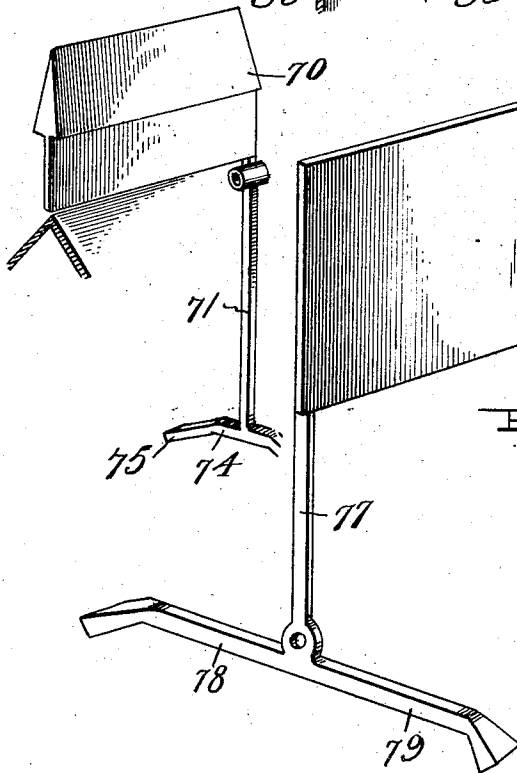


FIG. 8.

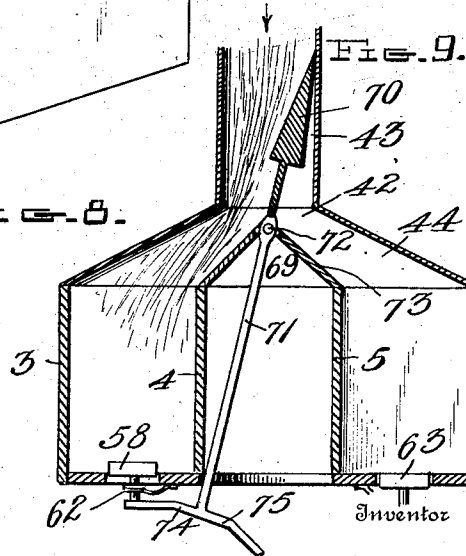


FIG. 9.

Witnesses

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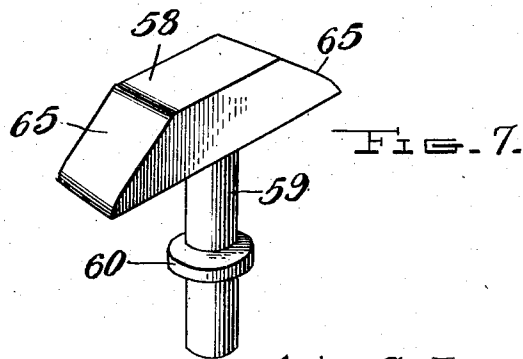
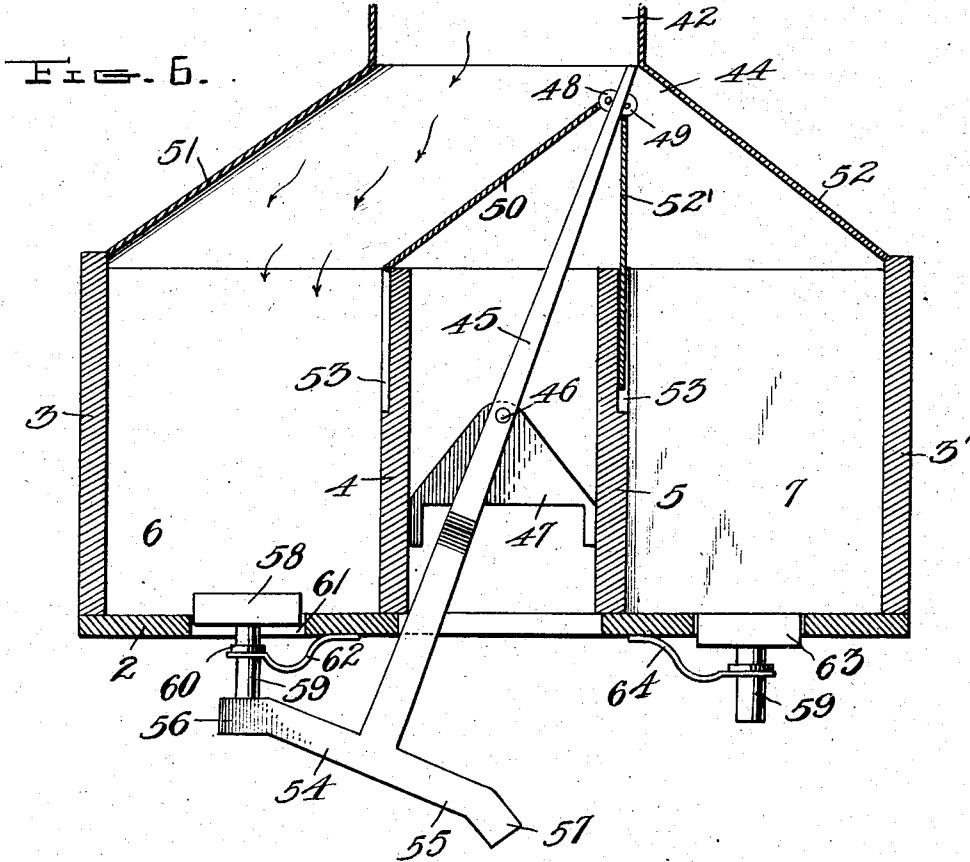
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4 SHEETS—SHEET 4.



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UNITED STATES PATENT OFFICE.

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AUTOMATIC HAY-PRESS.

938,252.

Specification of Letters Patent.

Patented Oct. 26, 1909.

Application filed January 12, 1909. Serial No. 471,943.

To all whom it may concern:

Be it known that I, ARIES C. LAUGHLIN, a citizen of the United States, residing at Alta Loma, in the county of Galveston and State of Texas, have invented new and useful Improvements in Automatic Hay-Presses, of which the following is a specification.

This invention relates to presses, and more particularly to those adapted for use in forming hay or like material into bales, and has for an object to provide a press of this character with a plurality of compression chambers, and means for alternately feeding material into said chambers.

A further object of the present invention is to provide a simple form of hopper into which material may be fed, and from which the material will be delivered to a blower to be automatically carried to the compression chambers.

Another object of this invention is to provide novel means to be alternately operated to provide a chute-forming element so that material to be operated upon can at all times be effectively discharged into its respective compression chamber.

Another object of this invention is to provide a chute-forming element which may be actuated by the compression plungers, and to arrange said means so that upon return movement of one plunger material can be fed into the chamber in which the compression plunger is on its downward stroke.

A still further object is to provide novel mechanism for imparting to the compression plungers reciprocatory movement, providing for movement of said plungers in opposite directions.

A still further object is to provide a driven shaft which may be operated by a suitable motor, and which will supply power for operating the blower, the material feeding belt therefor, and the plungers.

Other objects and advantages will be apparent as the nature of the invention is better disclosed, and it will be understood that changes within the specific scope of the claims may be made without departing from the spirit of the invention.

In the drawings, forming a portion of this specification and in which like numerals of reference indicate like parts of the several views, Figure 1 is a side elevation of my improved hay press. Fig. 2 is a horizontal section taken on the line 2—2 of Fig. 1. Fig. 3 is a vertical section taken on the line 3—3 of

Fig. 1. Fig. 4 is a horizontal section taken on the line 4—4 of Fig. 1. Fig. 5 is a top plan view of the blower casing showing the means for driving the fan. Fig. 6 is a vertical section taken on the line 6—6 of Fig. 1. Fig. 7 is a detail perspective view of one of the plunger engaging blocks. Fig. 8 is a detail perspective view of the modified form of the forming element. Fig. 9 is a view similar to Fig. 6 showing a slightly modified form of chute-forming element. Fig. 10 is a detail perspective view of the chute-forming element shown in Fig. 9.

Referring now more particularly to the drawings, there is shown a hay press 1 comprising a wheeled frame which preferably consists of a bottom 2 having parallel side members 3 and 3', and intermediate similar members 4 and 5 which latter members form with the former members chambers 6 and 7 as clearly shown in Figs. 2 and 6 of the drawings.

Alining bearings 8 are supported upon the press just described and these bearings, as shown, receive a horizontally disposed driven shaft 9 provided preferably midway between its ends with a driving pulley 10 which may be belted to a suitable motor, not illustrated. Forwardly of the bearings 8, the members 4 and 5 support a countershaft 11 provided at its ends with gear wheels 12 and 13 in mesh with pinions 14 upon the shaft 9. A plunger 15 of the form usually employed in presses of this character is mounted in the chamber 7, and is provided with a piston rod 16 loosely connected to the gear wheel 13. A similar plunger 17 is located in the chamber 6 and is connected by a piston rod 18 to the gear wheel 12. The piston rods 16 and 18 respectively are connected to the gear wheels 12 and 13 in such manner that upon rotation of the shaft 9 the plungers will be reciprocated in opposite directions for a purpose to be hereinafter more fully described.

A casing 19 of cylindrical form is disposed directly above the shaft 11, and this casing is provided with a vertical shaft 20 to which is secured a hub 21 having radial spokes 22 to which are secured fan blades 23. The shaft 20, is provided at the upper end thereof with a beveled gear wheel 24 in mesh with a similar gear wheel 25 carried by a horizontally disposed shaft 26 journaled in bearings 27 upon the top of the casing 19. The shaft 26, is provided at its outer end with a pulley 28, and the shaft 9 is provided

with a pulley 29 so that a belt 30 passed over said pulleys 28 and 29 will effectively rotate the shaft 26, and consequently revolve the shaft 20. The casing 19 is provided with a slot 31, and a suitably inclined rack 32 is supported in any suitable manner to the casing and has its lower end disposed directly in line with the slot 31 as clearly shown in Fig. 3 of the drawings. The rack 32 is provided with parallel spaced side members 33, and between these side members adjacent to their inner ends is journaled a transverse shaft 34 having a roller 35 secured thereto. A similar shaft 36 is located adjacent to the rear of the rack 32 and has its ends journaled in the members 33, and this shaft supports a roller 37 identical in construction to the roller 35. An endless belt 38 is passed over the rollers 35 and 37 and carries a plurality of slats 39. As shown, the belt has one lead thereof always spaced from the bottom of the rack 32. The rack 32 supports at its outer end a hopper 40 into which material may be placed and fed between the bottom of the rack 32 and one lead of the belt so that material to be operated upon can be effectively carried in a novel manner to the casing 19. The casing is connected with one end of a conveyer tube 41, and as shown clearly in Fig. 1 of the drawing the said tube discharges into a chute 42 having a vertically disposed throat 43, and a lower enlarged discharge end 44 disposed directly above the chambers 6 and 7 of the press.

An oscillatory arm 45 is pivotally mounted at 46 to a bracket 47 between the members 4 and 5, and this arm, at its upper end is provided with ears 48 and 49, the ear 48 having pivotally connected thereto a chute-forming element 50 adapted to lie at times in parallel relation with respect to the wall 51 of the portion 44 of the chute, and the ear 49 has pivotally connected thereto a chute forming element 52', adapted to lie at times in parallel relation with respect to the wall 52 of the chute 44. The chute-forming elements 50 and 52' respectively are also adapted to lie at times in a vertical position and at right angles with respect to the bottom 2 of the press, and when in these positions they lie in rabbeted portions 53 of the members 4 and 5 which rabbeted portions open into the chambers 6 and 7. The arm 45 is provided, at the lower end thereof with right angularly disposed fingers 54 and 55, the finger 54 being provided with a portion 56 adapted to lie at times in parallel relation with respect to the bottom of the members and directly beneath the chamber 6, and the finger 55 is provided with a portion 57 identical to the portion 56 and is adapted to lie at times in parallel relation beneath the bottom of the press and directly beneath the chamber 7. The chamber 6 is provided with a plunger operated

block 58 having a depending stem 59 formed with a collar 60. The block operates in a passage 61 formed in the bottom and is normally held elevated above the bottom by means of a leaf spring 62 having a portion located beneath the collar 60. The spring is preferably secured to the bottom 2 of the press, but it will of course be understood that it may be secured at any suitable point for accomplishing the desired end. The chamber 7 is provided with a block 63 identical in every detail to the block 58 but adapted to be held elevated in a similar manner as that already described by the provision of a spring 64. The blocks 58 and 63 are preferably provided with beveled portions 65 so that the plungers will more effectively depress said blocks as will be understood.

The shaft 34 which supports the roller 35 for the belt 38 is preferably provided with a pulley 66, and as shown, the shaft 9 is provided with a pulley 67 so that a belt 68 engaged with pulley 67 and with the pulley 66 effectively revolves the shaft 34 to drive the belt 38.

In the modified form of my invention shown in Figs. 9 and 10, I provide a chute-forming element 69 having a weighted upper end 70, and a depending portion 71 pivoted as shown at 72 to a deflector member 73. The portion 71 or arm as it may be called is provided at its lower end with fingers 74 and 75 which are identical in construction to the fingers 54 and 55 described in the preferred form of my invention. The fingers 74 and 75 are operated by the vertical sliding blocks 58 and 63 previously described. The form of elements shown in Fig. 8 is similar to that shown in Figs. 9 and 10, but the element 76 is preferably constructed from a flat rectangular plate having a depending arm 77 with oppositely directed fingers 78 and 79 at its lower end. In other respects the element 76 is identical, and its operation is the same as that previously referred to in Figs. 9 and 10.

In operation of the press, power is supplied to the shaft 9 to revolve the same so that the plungers, as stated, may be reciprocated in opposite directions, and so that the belt 38 may be operated to feed material from the hopper 40 into the fan casing 19, and to also supply power to the shaft 26 to rotate the fan. As soon as material reaches the passage 31 formed in the casing 19 it will be blown into the tube 41 and discharged into the chute 42. Assuming the plunger 15 to be at the forward end of the throat, the sliding block 63 will be depressed as shown in Fig. 6 of the drawings, and incident to the movement of the plunger against said sliding block, the block will be carried downwardly suddenly and will engage the portion 57 of the stem 59 to knock the arm 45 so that

it will assume an inclined position with respect to the bottom of the press, causing the element 50 to lie in parallel relation with respect to the wall 51 of the chute so that the said material to be pressed will be discharged into the chamber 6 to be operated upon by the plunger 17. When the plunger 15 returns to the position shown in Fig. 2, the plunger 17 will operate its sliding block 58 to throw the arm 45 in a reversed position so that the chute-forming element 52 will assume a position parallel with respect to the wall 52 in order that material may be discharged into the chamber 7 and operated upon by the plunger 15.

A press constructed as herein set forth and described is extremely simple, is arranged in a compact manner and may be operated at a minimum expense, utilizing little power, and will effectively serve the purpose intended.

Having thus described my invention what is claimed as new, is:

1. A press having a plurality of compression chambers, plungers operating in said chambers, means for conveying material to the compression chambers, and a plunger operated chute forming element adapted to alternately deflect material into the said chambers.

2. A press having a plurality of compression chambers, reciprocating plungers movable in opposite directions in said chambers, a pivotally mounted chute forming element, and vertically movable blocks located in the chambers adapted to be actuated by the plungers and adapted to actuate the chute forming element so as to alternately feed

material to be compressed into the said chambers.

3. A press having a plurality of compression chambers, reciprocating plungers movable in opposite directions, pneumatic means for conveying material to the compression chambers of the press, and a plunger operated chute-forming element adapted to alternately deflect material to be pressed into the compression chambers.

4. A press having a plurality of compression chambers, plungers operating in said chambers, a material receiving hopper, a chute communicating with the hopper, an oscillatory arm having means for deflecting material alternately into the chambers, and plunger operated means for actuating said arm.

5. A press having compression chambers, oppositely movable plungers in said chambers, a material feeding tube, means for creating an air draft in said tube to convey material to be pressed to the compression chambers, and means for feeding material to the tube.

6. A press having a plurality of compression chambers, oppositely movable plungers in said chambers, a conveyer tube connected with said chambers, a blower connected with the tube for forming an air draft therein, and material feeding means for carrying material into said blower.

In testimony whereof I affix my signature in presence of two witnesses.

ARIES C. LAUGHLIN.

Witnesses:

W. W. SHOCK,
S. S. LINN.