D. C. McCAN.

FUEL PRESS.

APPLICATION FILED FEB. 28, 1911.

998,625.

Patented July 25, 1911.

2 SHEETS—SHEET 1.

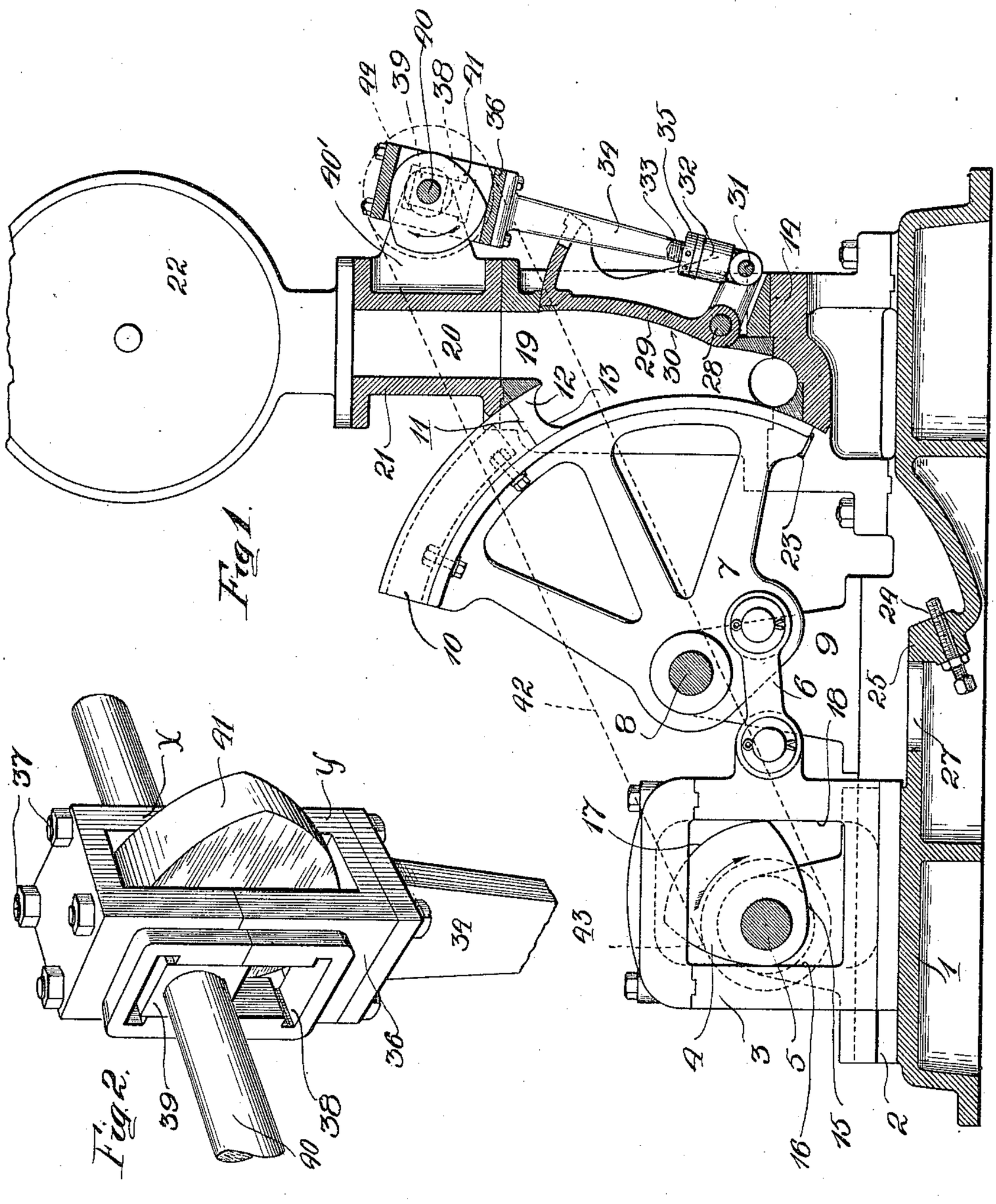

Fig 1.

Fig 2.

Witnesses

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COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

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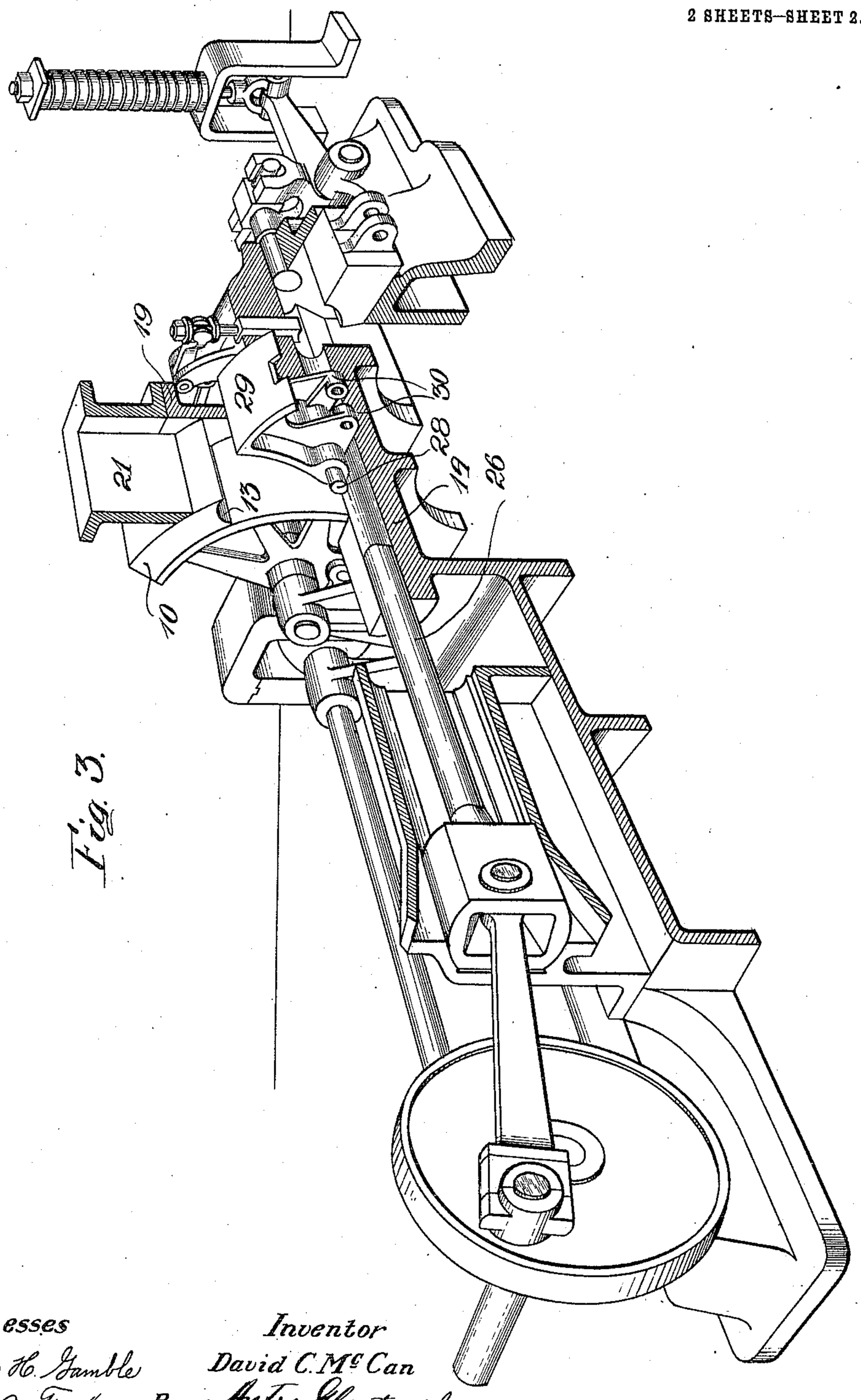

Fig. 3.

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UNITED STATES PATENT OFFICE.

DAVID C. McCAN, OF LOS ANGELES, CALIFORNIA.

FUEL-PRESS.

998,625. Specification of Letters Patent. Patented July 25, 1911.

Application filed February 28, 1911. Serial No. 611,526.

To all whom it may concern.

Be it known that I, DAVID C. McCAN, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a certain new and useful Fuel-Press, of which the following is a specification.

This invention relates to a fuel press for wood shavings and like refuse material, and has especial reference to a mold mechanism for compressing to a slight degree the wood shavings and holding them compressed during the compressive stroke of the compression plunger.

One of the objects of this invention is to provide a mold mechanism in which one section is positively actuated and held in position during the compression stroke of the plunger that serves to form the waste material into solid blocks.

Another object of this invention is to provide in connection with the aforementioned mechanism, a gate that cuts off the feed at a determined period and that also serves to slightly compress the bulk before and while the movable mold section is descending.

With these and other objects in view, the invention consists of the features, details of construction and combination of parts, described in connection with the accompanying drawing, and then more particularly pointed out in the claims.

In the drawing—Figure 1 is a sectional elevation showing the segmental mold section, the boxing and cam for moving same, the position of the segmental mold being that preparatory to closing; a gate for closing the outlet from the feed, and an actuating mechanism for such gate, dotted lines indicating a chain for imparting motion to both said segmental mold and gate; Fig. 2 is a fragmental perspective view showing the boxing connected with the end of the operating rod for the gate, the cam mounted on the shaft and operating in the boxing, and the guides mounted slidably in said boxing, and Fig. 3 is a sectional perspective view showing the compressing plunger, and the position of the segmental mold section and gate in a fuel press.

Specifically referring to the drawing, 1 designates a sole plate provided with a guideway 2, in which is mounted a boxing 3, reciprocable therein by a cam 4 keyed to a shaft 5 which is driven by any suitable means, not shown. 6 designates a link pivotally connected with said boxing 3 and with a sector 7, which is carried by a shaft 8 journaled in a support 9. Said sector 7 is provided on the periphery thereof with a removable boss 10, fastened thereto by bolts, the face of such boss being grooved to receive the tongue 11 of a shoe 12 which is secured to said boss by screws or in any other manner. Said shoe 12 is concaved as seen at 13 and forms one-half of the mold, while the other half is formed in the cylinder casting 14. When the cam 4 is rotated by the shaft 5, the face 15 thereof is brought in contact with the wall 16 of the boxing 3. By the continued rotation of said cam, the boxing is moved in its guideways, pulling said link 6 which moves said sector 7 in a circular path. When the sector is in its lowest position, the complete cylindrical mold is formed, and the cam face 17 then traversing the wall 16 of the boxing 3, remains in such position until the said cam face 17 is free of engagement with the said wall 16.

When the cam face 15 engages the wall 18 of the boxing 3 the sector 7 is circularly moved in the reverse direction, such movement continuing until the cam face 17 contacts with the wall 18 of the boxing, at which time the revolution of the cam has no effect on the sector 7, which is then in open position, substantially as shown in Fig. 1. It will be seen that the sector 7 constitutes not only a portion or one-half of the mold, but also forms one entire wall of the feed chamber 19 into which the wood shavings or other waste are let through the throat 20 provided in the filler piece 21, which forms a support for the waste-supply hopper 22. The bottom of said sector 7 is provided with an abutment 23 which is arranged to strike against an adjustable stop 24 screwed in a boss 25 in the sole plate 1, and thereby prevent the sector 7 from falling farther than is necessary to form a perfect cylindrical bore or mold, as would be the case where some of the parts became worn or out of adjustment. Such provision is made for the purpose of preventing fracture or breakage of the plunger 26 that operates in said bore to compress the shavings deposited therein into a compact fuel block. Through an opening 27 in the sole plate, the stop 24 may be adjusted according to need.

Mounted on a trunnion 28 which extends through the walls of the feed chamber 19, is

a gate 29 having a curved face 30, corresponding to the curvature of the sector 7, and forming one side of the feed chamber, the other side being formed by the sector 7. On the bottom said gate 29 is provided with two spaced ears 30, which are bored to receive a pintle 31, on which is mounted an internally threaded cup 32 into which is screwed the threaded end 33 of a connecting rod 34. An annular nut 35 is used to tighten the connecting rod 34 in the cup 32 and prevent loosening. Bolted onto the upper end of said connecting rod 34 is a boxing 36 consisting of two sections X and Y, bolted together by the bolts 37. The side walls of said boxing 36 are provided with vertical elongated slots 38 forming guideways for the plates 39 which are loosely mounted on an operating shaft 40 journaled in a boss 40^1 on the filler piece 21. Between the walls of said boxing and keyed to said shaft 40 is a cam 41, revoluble with said shaft 40, and serving to reciprocate said connecting rod 34. When the cam 41 is revolved the boxing 36 is reciprocated sliding along the stationarily mounted plates 39 on the shaft. This gate 29 serves to cut off the flow of material from the feed supply and also to slightly compress the deposited material, before the descent of the sector 7. A chain 42 connecting the sprockets 43 and 44 shown in dotted lines in Fig. 1, controls the movement of said gate 29 at the proper time.

In the position shown in Fig. 1, the material to be compressed will drop through the throat 19, into the half of the mold formed in the bottom of the cylinder casting 14. The gate 29 is held in open position as shown, by the cam 41, which, moving in the direction of the arrow, is about to engage the upper face of the boxing 36, whereby the gate 29, through its connections, will be operated to close the throat of the feed chamber. During the closing movement of the gate, the sector 7, remains in the position illustrated in Fig. 1, until the gate has completely closed the throat of the feed chamber and compressed the material against the face of the sector. The face 17 of the cam 4, traversing the wall 18 of the boxing 3, holds the sector in the illustrated position until said cam face 17 engages the wall 16 of the boxing 3. Such engagement causes the sector 7, to be moved in a circular path, compressing during such movement the material deposited between its face and the face of the gate 29, into the cylindrical mold in the casting 14. During the respective movements of the gate and sector, the compressing plunger 26, is in substantially the position shown in Fig. 3, being then on the retractive stroke. When the gate has closed, and the sector descended, the plunger 26, begins its forward movement and compresses the material in the mold into a final solid block. On the retractive movement of the plunger, the sector and gate open consecutively to allow additional material from the feed chamber to drop between the gate and the sector.

What I claim is—

1. In a fuel press, the combination with a casting having a semi-cylindrical groove and a feed chamber mounted thereon, of a sector provided with a shoe having a semi-circular groove, and arranged to form with said semi-circular groove in said casting, a complete cylindrical mold, a gate to close the feed chamber and compress the material against said sector and means to operate said gate and sector.

2. In a fuel press the combination with a casting having a semi-cylindrical groove, and a feed chamber mounted on said casting, of a sector forming one side of said feed chamber, said sector having a shoe provided with a semi-circular groove, and arranged to form with said semi-circular groove in said casting, a complete cylindrical mold, a gate pivoted on said feed chamber and forming another side of said feed chamber, means to operate said gate to cut off the supply to said feed chamber and compress material against said sector, and means to operate said sector when said gate has closed.

3. In a fuel press, the combination with a casting having a semi-circular groove, and a feed chamber mounted on said casting, of a sector forming one side of said feed chamber, said sector having a shoe provided with a semi-circular groove and arranged to form with said semi-circular groove in said casting, a complete cylindrical mold, a gate pivoted on said feed chamber and forming another side thereof, means to operate said gate to cut off the supply to said feed chamber and compress material against said sector said means also serving to hold said gate closed for a determined period, and means to operate said sector to compress the material deposited against it while said gate is held closed.

4. In a fuel press, the combination with a casting having a semi-circular groove and a feed chamber mounted on said casting, having a feed inlet, of a sector forming one side of said feed chamber and provided with a shoe having a semi-circular groove, means to periodically operate said sector to at one time compress material in the groove of said casting whereby to form with said casting groove a cylindrical mold, and at another time to leave said casting groove free to receive material, a gate to shut off the feed inlet to said feed chamber and compress the material in said feed chamber against said sector, means to periodically operate said gate in one direction to close said feed

inlet while said sector is operating in one direction, and in another direction while said sector is operating in another direction.

5. In a fuel press, the combination with a casting having a semi-circular groove, and a feed chamber mounted thereon provided with a feed inlet, of an oscillatory element forming one side of said feed chamber and provided with a shoe arranged to form with said casting groove a cylindrical mold, means to periodically oscillate said element, a gate forming another side of said fuel chamber and means to operate said gate to at one time cut off the feed inlet and compress material against said oscillatory element, and at another time to leave said inlet free to discharge material between said element and gate.

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

DAVID C. McCAN.

Witnesses:

E. Lois Boucher,

Anton Glotzner, Jr.