

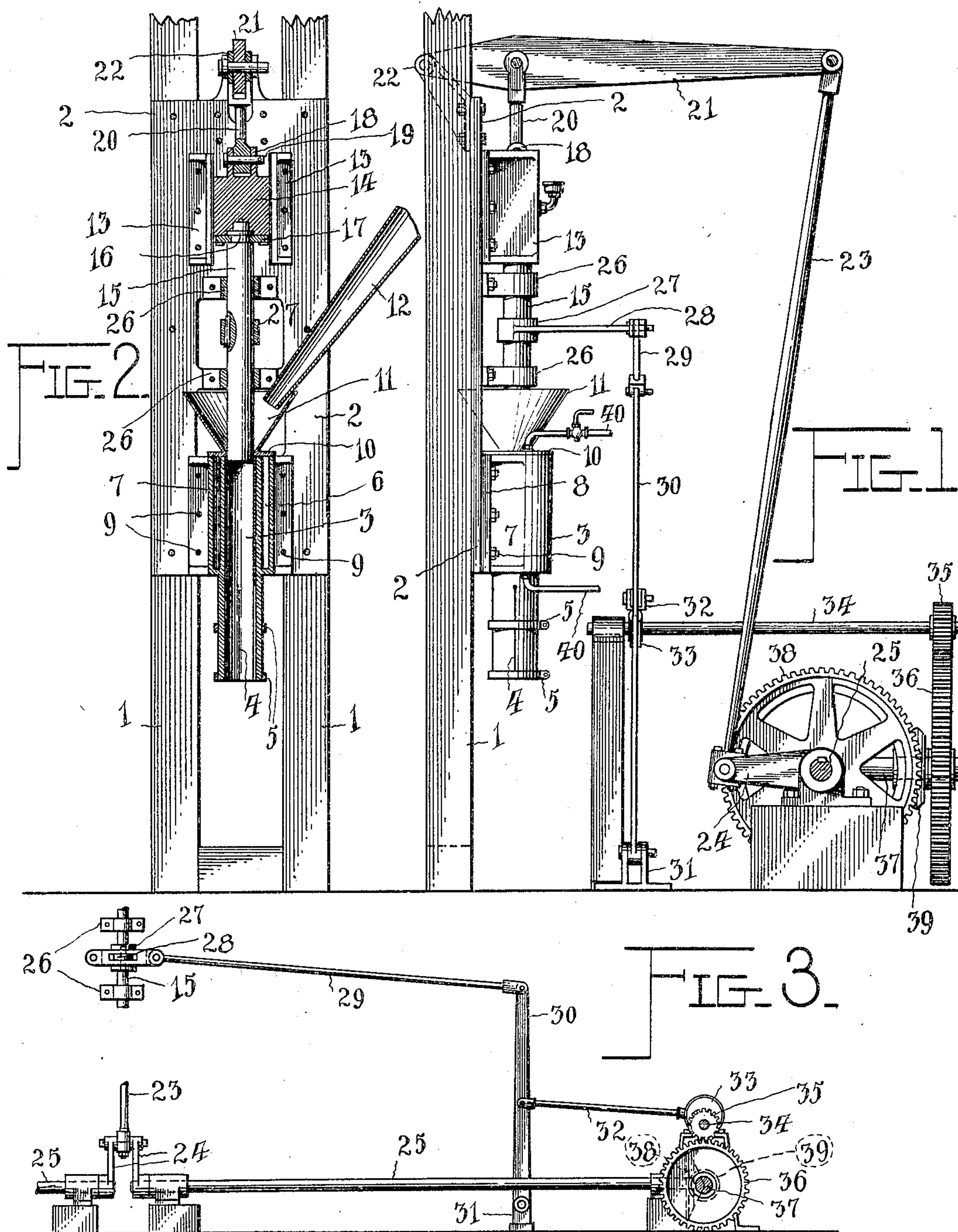
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P. REYNOLDS & J. A. R. BEDARD.

BRIQUET PRESS.

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PATRICK REYNOLDS, OF FARNHAM, AND JOSEPH ALPHONSE RAOUL BEDARD, OF QUEBEC, CANADA; SAID BEDARD ASSIGNOR OF HIS RIGHT TO JOSEPH WILLIAM HARRIS, OF MONTREAL, CANADA.

BRIQUET-PRESS.

SPECIFICATION forming part of Letters Patent No. 789,759, dated May 16, 1905.

Application filed June 2, 1904. Serial No. 210,788.

To all whom it may concern:

Be it known that we, PATRICK REYNOLDS, of Farnham, county of Missisquoi, and JOSEPH ALPHONSE RAOUL BEDARD, of Quebec, county of Quebec, in the Province of Quebec, Canada, subjects of the King of Great Britain, have invented certain new and useful Improvements in Briquet-Presses; and we do hereby declare that the following is a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to new and useful improvements in presses designed especially for use in forming briquets from peat; and it consists in certain features of novelty in the detail construction and in the operation thereof, all as hereinafter more fully described, and specifically pointed out in the claims.

The object of the invention is to produce a press of the character described which will be simple in construction and durable in operation, and which by means of a reciprocating and rockable plunger will press briquets of peat into form, projecting the same through a cylinder of unequal bore from end to end, and consists in certain features of novelty in the construction thereof, all as hereinafter more fully described, and specifically pointed out in the claims.

In the annexed drawings similar numerals of reference indicate corresponding parts in all the views, wherein—

Figure 1 is a side elevational view of our improved press. Fig. 2 is a front elevational view shown partly in section; and Fig. 3 is a detail view of the means for reciprocating and rocking the plunger, all as hereinafter more fully described.

Referring to the parts, 1 1 are uprights or supporting-standards, which are illustrated for convenience as a suitable means for supporting the operative mechanism of the press, though it will be understood that the press may be supported in any convenient or desirable manner best adapted to render it effective. Supported upon the standards 1 is a plate 2, to which plate is secured a compres-

sion-cylinder 3, which cylinder, as will be noted in Figs. 1 and 2, is split at its lower or discharge portion by means of the slots 4, and such discharge portion is thereby rendered of less internal diameter and clamped together by means of the securing clamps or bands 5. Above the discharge portion the cylinder is provided with a circumferentially-disposed steam-jacket 6, which partly or wholly surrounds the upper portion of the cylinder, and said steam-jacket is inclosed by means of a casing 7, provided with laterally-projecting flanges 8, through which bolts 9 are projected into the cylinder-flange for the purpose of securing such jacket in position. The upper end of the steam-jacket, as will be noted, is closed by means of the plate 10, which serves as a hopper-supporting plate, upon which rests the hopper 11. Supported in convenient proximity to the hopper 11 is a feed-chute 12, the lower end of which projects into such hopper, and through said feed-chute the supply of material to be pressed is fed. Supported above the said hopper upon the plate 2 are guideways 13, within which is held the block 14. The lower portion of said block 14 is cut out, as best shown in the sectional view, Fig. 2, and inserted in said cut-out portion is the upper end of a plunger 15, which is provided with a reduced upper portion having the collar 16 thereon, which collar rests upon a plate 17, secured to the lower portion of said block 14, and thereby forms a swivel support for the said plunger 15, so that such plunger is freely rockable within the block 14. The block 14 terminates in upwardly-extending lugs or ears 18, which are conveniently perforated for the passage of the securing-bolt 19, which bolt projects through such ears and through the lower portion of the short drive-rod 20, which drive-rod is in turn connected pivotally to the rocking beam 21, said rocking beam being pivotally supported at its inner end to the bracket 22 and extending thence outwardly, as shown in Fig. 1, and to the long arm of such beam is pivotally connected the actuating-rod 23, which rod is in turn pivotally connected to the crank-

arms 24 of the actuating-shaft 25, as shown in Fig. 3. The said actuating-shaft 25 may extend thence to any suitable source of power, and for the purposes of illustration the shaft 25 may be considered, if desired, as a main driving-shaft. Carried by the plate 2 are bearings 26, within which the plunger 15 may travel, and between the bearings 26 a collar 27 is shrunk or keyed upon the plunger 15. Connected with the said collar 27 is a lever 28, (best shown in Fig. 1,) said lever projecting laterally from the plunger 15 and being hereinafter referred to as a "rocking" lever. Connected with the rocking lever, as shown in Fig. 3, is an actuating-lever 29, which is pivotally connected with the vertical lever 30, which latter lever is pivotally supported at its lower end by means of the upright 31, and intermediate the connection of the lever 30 with its support and such lever 29 there is pivotally connected an actuating-lever 32, which extends away from the lever 30 and which carries at its outer end an eccentric 33, which eccentric is actuated by the shaft 34, as shown in the drawings. For the purpose of driving the shaft 34 the pinion 35 is provided, which pinion is in mesh with the gear 36, which gear is carried on a shaft 37, which shaft is connected, by means of the bevel-gears 38 and 39, with the shaft 25, so that when the shaft 25 is rotated the shaft 37 is rotated with it at approximately the same speed, and owing to the reduced pinion 35 being in mesh with the gear 36 it will be evident that a number of rotations will be imparted to the shaft 34 with each rotation of the shaft 25. The result of this connection is as follows: When the shaft 25 is caused to rotate, each rotation thereof will impart a complete movement to the plunger 15—that is, a compression-stroke and a return stroke—and during such movement of the plunger 15 it will be evident that the member 30 will be rocked upon its support a number of times, corresponding to the relative proportions of the gear and pinion 35, so that a plurality of rocking movements will be imparted to the plunger during each complete reciprocation thereof through the medium of the rocking-lever 28 and the connections above described. It has been found that by applying this rocking movement to the plunger a more compact briquet is produced than was hitherto possible by a plunger which rotated continuously.

The operation of the press is as follows: Peat is fed to the hopper 11 through the supply-chute 12 during the movement of the machine, whereupon the plunger 15 will drive such peat into the cylinder 3, preferably while such peat is in a heated condition, and heat will be retained therein owing to the fact that steam is conducted to the steam-jacket through the pipes 40. The peat will be compressed within the compression-chamber upon each reciprocatory movement of the plunger and

will be gradually forced from the top toward the portion of said cylinder having the reduced bore, such reduced bore assisting in the compression of the material therein, and during the reciprocatory movements of the plunger in both directions a multiple rocking movement will be imparted thereto, whereby a squeezing and torsional compression of the peat will be produced, thereby obtaining the most perfect results for the purpose of producing briquets to be adapted for use as a fuel, as the application of the torsional compression in alternately opposite directions tends to avoid the formation of lumps and presses the peat evenly, which result is not obtained by a plunger which simply rotates.

While we have shown in the accompanying drawings the preferred form of our invention, it will be understood that we do not limit ourselves to the precise form shown, for many of the details may be changed in form or position without affecting the operativeness or utility of our invention, and we therefore reserve the right to make all such modifications as are included within the scope of the following claims or of mechanical equivalents to the structures set forth.

Having described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a press, a rockable plunger, and means for rocking and reciprocating the same.
2. In a press, a cylinder, with reduced bore at its discharge portion, a rockable plunger reciprocating therein, and means for rocking the plunger a plurality of times during each reciprocation thereof.
3. In a press, a rockable plunger, means for reciprocating the same, and means for imparting a plurality of rocking movements during each compression-stroke thereof.
4. In a press, a cylinder with a split and reduced discharge end, clamps thereon, a rockable plunger, a rocking lever, and means for actuating said lever a plurality of times during each movement of the plunger.
5. In a press, a compression-chamber, a reciprocatory plunger operable therein, means for actuating the plunger a number of times during each reciprocation of the plunger, and means for rocking said plunger.
6. In a press, the combination comprising a compression-chamber, a steam-jacket surrounding its upper portion and said chamber being split for a part of its lower portion, clamps surrounding said split portion, a reciprocatory plunger operable in said chamber, means for reciprocating said plunger, and means for causing partial rotation of the plunger while descending.
7. In a press, a support, a compression-chamber mounted on the support, a slidable block mounted on the support above the chamber, a plunger rockably mounted in said block, means for reciprocating the plunger, and

means for rocking the plunger while being reciprocated.

5 8. In a press, a compression-chamber, a plunger, a rocking beam pivotally connected therewith, an actuating-rod therefor, a crank-shaft, a gear rotatable therewith, a pinion of less diameter in mesh with said gear, an eccentric actuated by said pinion, and a rocking lever extending laterally from the plunger
10 which lever is actuated by said eccentric.

9. In a press, a compression-chamber, a plunger, a slide-plate, a slidable member guided thereby, a plunger rockably mounted in said slidable member, a compression-chamber in alinement with the plunger, and means
15 for rocking said plunger while being actuated.

10. In a press, a compression-chamber, a plunger, means for reciprocating said plunger, and means for causing a multiple rocking of the plunger during each single thrust thereof.
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11. In a press, a compression-chamber, a plunger, means for reciprocating said plunger, a collar attached intermediate the ends
25 of the plunger, a lever extending therefrom, a rocker-arm connected with the lever, and an eccentric adapted to actuate the rocker-arm.

12. In a press, a compression-chamber hav-

ing a reduced bore at its discharge portion, a reciprocatory plunger operable in said chamber, means for reciprocating the plunger, and means for rocking the plunger a plurality of times during a single stroke thereof. 30

13. In a press, a compression-chamber, a plunger operable therein, means for reciprocating the plunger, a rocking lever connected therewith and extending laterally therefrom, and means for actuating said rocking lever. 35

14. In a press, a compression-chamber, a steam-jacket surrounding a portion thereof, the other portion of said chamber being of reduced bore, clamping-rings about said reduced portion, a hopper-plate serving as a closure for said steam-jacket, a plunger, means for reciprocating said plunger, a rocking lever connected with the plunger intermediate
40 its length, and means cooperating therewith adapted to actuate said lever more frequently than the number of strokes of the plunger. 45

In witness whereof we have hereunto set our hands in the presence of two witnesses. 50

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