B. C. BRADLEY.

HAY PRESS.

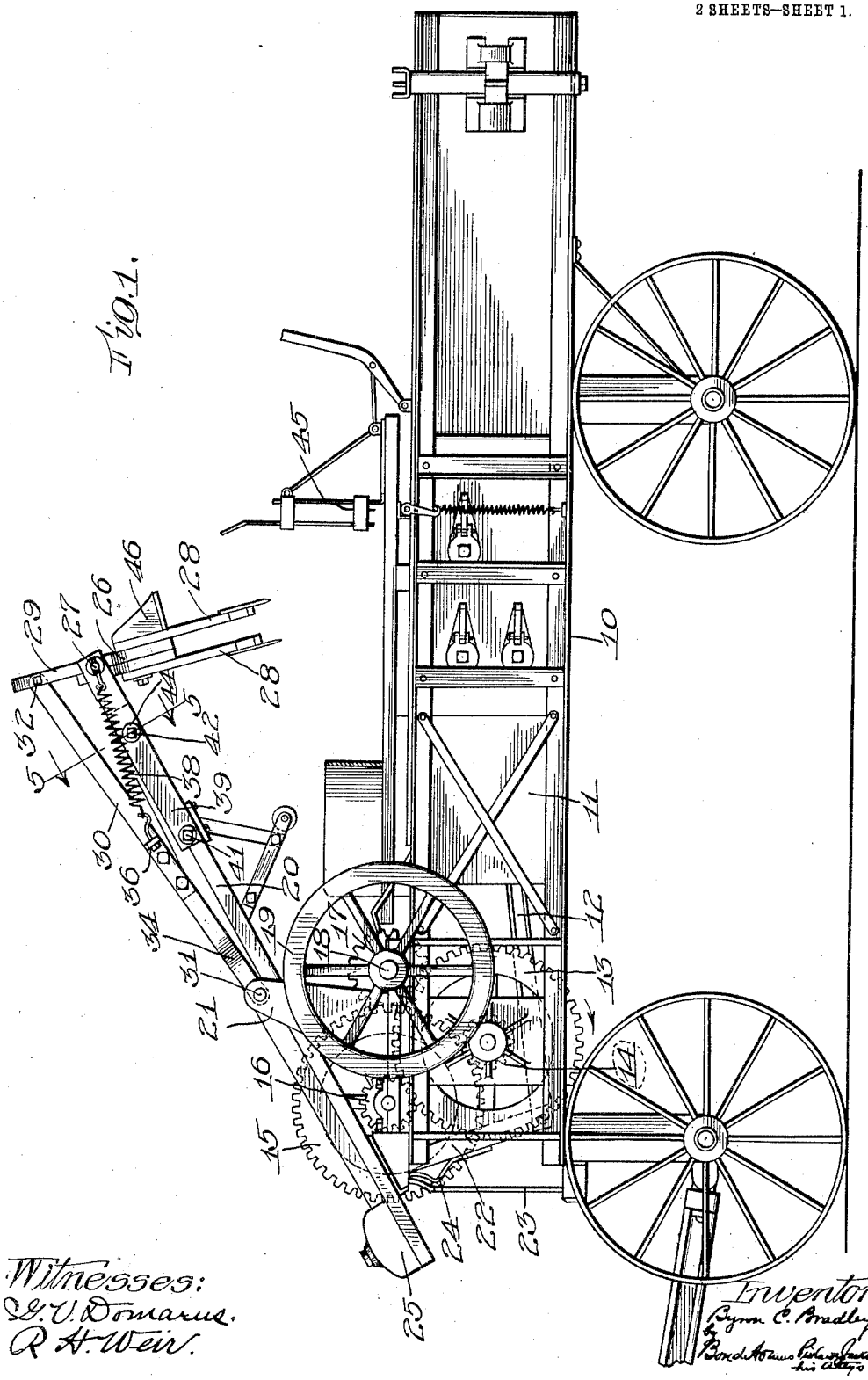
APPLICATION FILED APR. 16, 1906.

**1,009,719.**

**Patented Nov. 28, 1911.**

2 SHEETS—SHEET 1.

Fig. 1.




Witnesses:
G. V. Donahue.
R. H. Weir.

Inventor:
Byron C. Bradley,
by Bond Adams Parker & Larson
his Attys.

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

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2 SHEETS—SHEET 2.

Fig. 2.

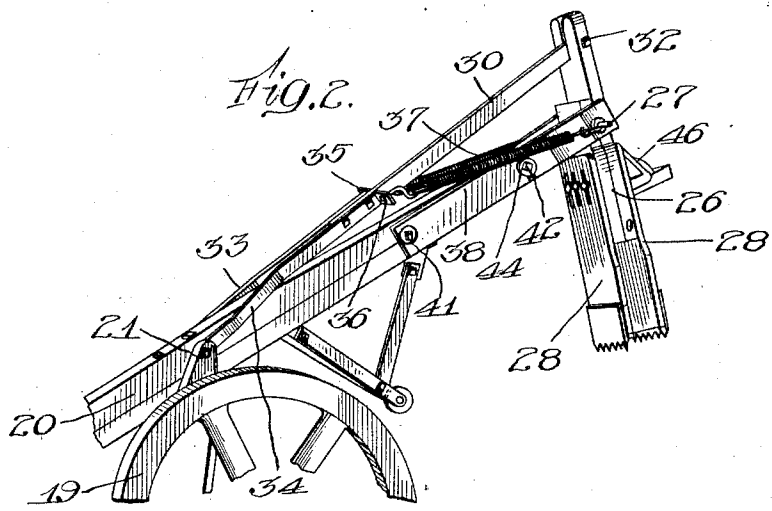



Fig. 3.

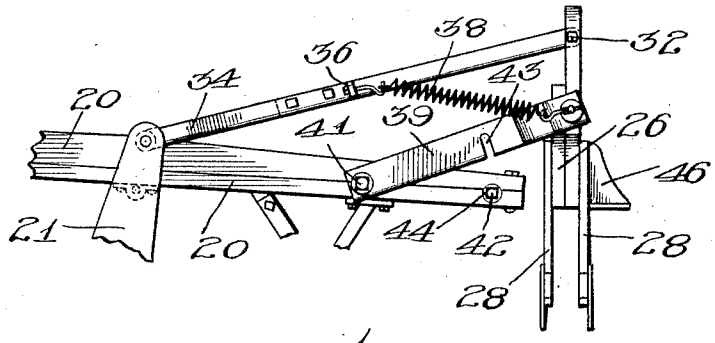



Fig. 4.

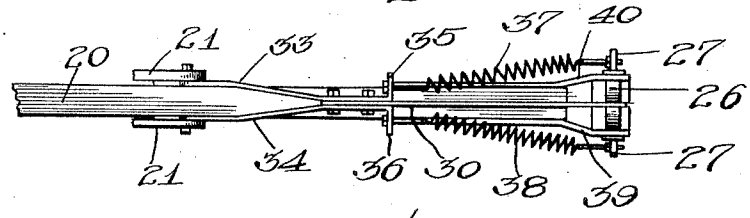
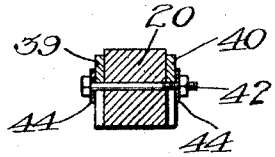



Fig. 5.




Witnesses:
P. J. Donahue.
R. H. Weir.

Inventor:
Lynn C. Bradley,
by Bond Adams Pickering & Jackson,
his Attys.

# UNITED STATES PATENT OFFICE.

BYRON C. BRADLEY, OF BRADLEY, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO SEARS, ROEBUCK & CO., OF CHICAGO, ILLINOIS, A CORPORATION OF NEW YORK.

## HAY-PRESS.

1,009,719. Specification of Letters Patent. **Patented Nov. 28, 1911.**

Application filed April 16, 1906. Serial No. 311,936.

*To all whom it may concern:*

Be it known that I, BYRON C. BRADLEY, a citizen of the United States, residing at Bradley, in the county of Kankakee and State of Illinois, have invented certain new and useful Improvements in Hay-Presses, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to hay-presses, and has for its object to provide certain improvements in presses provided with means for automatically pressing down the hay in the baling-chamber.

In many presses as heretofore constructed it has been customary to provide a rocking arm, termed a "beater" arm, having a head adapted to be thrust downward upon the hay in the hopper and force it into the baling-chamber in front of the plunger in position to be compressed by the operation of the plunger. An apparatus of this character is disclosed in my pending application, No. 222,361, filed August 27, 1904. In the construction of my said application any obstruction stopping the beater-head in its downward movement is apt to break the beater-arm, as no provision is made whereby the beater-head may yield if such an obstruction be encountered. My present invention avoids this objection by providing means whereby the beater-head is held with sufficient rigidity for ordinary operation but is so arranged that if an obstruction be encountered the head may yield without throwing extraordinary strain on the beater-arm, thereby avoiding danger of breaking it. It should be understood that my present improvements, while they are peculiarly suitable for use in connection with a beater-arm and a head of the construction illustrated in my said application, may nevertheless be adapted to other forms of beater-arms, and my invention is therefore not restricted to use in connection with any particular construction of beater-arm, but may be used in any situation to which it is adapted.

In the accompanying drawings,—Figure 1 is a side elevation of a hay-press, illustrating my invention; Fig. 2 is a perspective view of the beater-arm and some of the adjacent parts; Fig. 3 is a partial side elevation, showing a different position of the beater-head; Fig. 4 is a plan view of a part of the beater-arm and head; and Fig. 5 is a cross-section on line 5—5 of Fig. 1.

Referring to the drawings,—10 indicates the press frame; 11 a plunger which is adapted to reciprocate therein; 12 a pitman by which the plunger is connected with a drive-wheel 13; and 14, 15, 16 and 17 a series of gears through which the wheel 13 is driven from a drive-shaft 18 which carries a pulley 19 by which connection may be made with any suitable source of power. The parts of the driving mechanism may be varied as desired, as they have nothing to do with my present invention.

20 indicates a beater-arm pivoted between its ends upon a suitable support 21. Said beater-arm is provided at its front end with a depending bar 22, which is adapted to engage the front end of the pitman 12, as shown in dotted lines in Fig. 1,—the arrangement being such that as the pitman is actuated by the rotation of the gear 13 in the direction indicated by the arrow in Fig. 1 the bar 22 is forced upward, thereby rocking the beater-arm 20.

23 indicates a spring, which is adapted to engage a stop 24 carried by the bar 22 to normally hold the beater-head in its elevated position, as shown in Fig. 1.

25 indicates a counterbalance carried at the forward end of the beater-arm 20.

26 indicates the beater-head, which is pivotally mounted at 27 upon the rear end portion of the beater-arm 20 and carries depending arms 28 which are adapted to enter the baling-chamber to force the charge of hay down thereinto. The beater-head is also provided with an upwardly-projecting arm 29, which is connected by one or more links 30 with the support 21, as shown at 31 in Fig. 1.

32 indicates the pivot which connects the outer end of the connecting bar 30 with the beater-head. As best shown in Fig. 2, I prefer to make the inner portion of the connecting bar 30 bifurcated, as shown at 33—34 in Figs. 2 and 4, and to provide said bar with laterally-projecting lugs 35—36 to serve as connections for springs 37—38, the other ends of which connect with the pivot 27, as shown in the drawings. Said springs serve

to assist in elevating the beater-head since their tendency is to draw the beater-arm and connecting bar 30 more nearly into parallelism, a relation which they more nearly sustain when the beater-arm is in its elevated position.

As best shown in Fig. 3, the beater-head 26 is not pivoted directly to the rear end portion of the beater-arm 20, as is the case in my former application, above referred to, but is pivotally mounted in auxiliary supports or plates 39—40, the opposite ends of which are pivotally connected at 41 with the beater-arm 20, as shown. The arrangement is such that the plates or supports 39—40 may swing upward in vertical planes independently of the beater-arm. Their normal position, however, is in alinement with the beater-arm, against the sides of which they fit closely, as shown in Figs. 4 and 5. The latter is their operative position, and they are normally held in such position by means of a bolt 42 fitted in the rear end portion of the beater-arm 20 so that its ends project and enter downwardly-open slots 43 in the supports 39—40. The degree of firmness with which the plates 39—40 are held in operative position is dependent upon the friction between said plates and the beater-arm and the head and nut of the pivot 41, which is preferably a bolt. By tightening the nut upon said pivot the friction is increased and greater power required to move the plates 39—40 out of operative position, but the amount of power required may be regulated as desired by simply tightening or loosening said bolt. Preferably washers 44 are provided on the bolt 41, as shown in Fig. 5.

45 indicates a block-setter, which may be of any suitable construction, as it forms no part of my present invention.

46 indicates a projection carried by the beater-head, which is adapted to force the division board or block into the baling-chamber. The bolt 41 is so adjusted that the resistance of the division board is not sufficient to release the auxiliary support which carries the beater-head.

The operation of my improved apparatus will be readily understood from the foregoing description, as obviously in the ordinary operation of the machine the beater-head will occupy the position shown in Figs. 1 and 2, the auxiliary supports being substantially a part of the beater-arm. If, however, an obstruction be encountered, which presents unusual resistance to the beater-head, said support is released, permitting the beater-arm to descend independently of the beater-head, which may remain supported by the obstruction while the beater-arm accomplishes its normal stroke without injury.

So far as I am aware I am the first in the art to provide friction operated means for normally holding the beater-head in operative relation to the beater-arm and permitting it to yield under extraordinary resistance, and I wish it to be understood therefore that my invention is generic in character and is not restricted to the specific embodiment thereof illustrated in the drawings or herein described, except in so far as such construction is particularly claimed.

That which I claim as my invention and desire to secure by Letters Patent is,—

1. In a press, an actuating member, a support mounted on and movably connected with said actuating member, a head movably connected with said support, and friction means normally holding said support in a fixed relation to said actuating member and arranged to permit said support to move relatively thereto when said head encounters extraordinary resistance.

2. In a press, an actuating member, a support pivotally connected with said actuating member, a beater head pivotally connected with said support, and friction means normally holding said support in a fixed relation to said actuating member and arranged to permit said support to rock relatively thereto when said beater head encounters extraordinary resistance.

3. In a press, a rocking arm, a support pivotally connected with said arm, a beater head pivotally connected with said support, and friction means normally holding said support in a fixed relation to said arm and arranged to permit said support to rock relatively thereto when said beater head encounters extraordinary resistance.

4. In a press, a beater-arm, a support carried by said arm, a beater-head pivotally carried by said support, friction means normally holding said support in alinement with said beater-arm and adapted to yield when said beater-head encounters extraordinary resistance, and a spring acting to move the beater-head out of operative position when said friction holding means are released.

5. In a press, a beater-arm, a support movably connected with said arm, a head carried by said support, and friction mechanism for normally holding said beater-arm and support in fixed relation to each other.

6. In a press, a beater-arm, a support carried by said arm, a beater-head pivoted intermediately to said support, means normally holding said support in alinement with said beater-arm and adapted to yield when said beater-head encounters extraordinary resistance, and a link connected with the upper portion of said beater-head and with a suitable support.

7. In a press, an actuating member, a support mounted on and movably connected with said actuating member, a head movably connected with said support, and ad-

justable friction means normally holding said support in a fixed relation to said actuating member and arranged to permit said support to move relatively thereto when said head encounters extraordinary resistance.

8. In a press, a beater-arm, slotted plates pivotally connected with said arm, a bolt carried by said arm and adapted to enter said slots, and a head connected with said plates.

9. In a press, a beater-arm, a support pivotally connected therewith, a head pivotally carried by said support, and friction clamping device for normally holding said beater-arm and support in fixed relation to each other.

10. In a press, a beater-arm, an auxiliary support carried by said arm, a beater-head pivotally carried by said auxiliary support, means normally holding said auxiliary support in alinement with said beater-arm and adapted to yield when said beater-head encounters extraordinary resistance and a spring acting to move the beater-head out of operative position when released.

11. In a press, a swinging beater arm, a beater head, and a swinging friction-operated connection between said arm and head, said connection being arranged to yield when said head encounters extraordinary resistance.

12. In a press, a beater-arm fulcrumed intermediately, means for rocking said arm, a support mounted on and movably connected with said beater-arm, said support being normally in alinement therewith, a head movably connected with said support and being normally angularly disposed relatively thereto, means normally holding said support in alinement with said beater-arm and arranged to permit said support to move relatively thereto when said head encounters extraordinary resistance and a spring acting to move the beater-head out of operative position when released.

13. In a press, a beater-arm, an auxiliary support carried by said arm, a beater-head pivotally carried by said auxiliary support, friction means normally holding said auxiliary support in alinement with said beater-arm and adapted to yield when said beater-head encounters extraordinary resistance, and a spring acting to move the beater-head out of operative position when said auxiliary support is released.

14. In a press, a beater-arm fulcrumed intermediately, means for rocking said arm, a support mounted on and movably connected with said beater-arm, said support being normally in alinement therewith, a head movably connected with said support and being normally angularly disposed relatively thereto, friction means normally holding said support in alinement with said beater-arm and arranged to permit said support to move relatively thereto when said head encounters extraordinary resistance, and a spring acting to move the beater-head out of operative position when said support is released.

15. In a baling press, in combination, a feeder blade having a shank, a feeder lever to which said shank is pivoted, and means for frictionally engaging the feeder shank with the feeder lever adapted to permit the release of the shank when subjected to abnormal resistance.

16. In a press, a swinging beater-arm, a beater-head, and a friction-operated connection between said arm and head, said connection being arranged to yield when said head encounters extraordinary resistance.

BYRON C. BRADLEY.

Witnesses:
T. N. MAINS,
F. W. BICKNELL.