

G. S. WILSON & E. F. MATHEY.
BRAKE.

APPLICATION FILED AUG. 7, 1909.

1,021,962.

Patented Apr. 2, 1912.

2 SHEETS—SHEET 1.

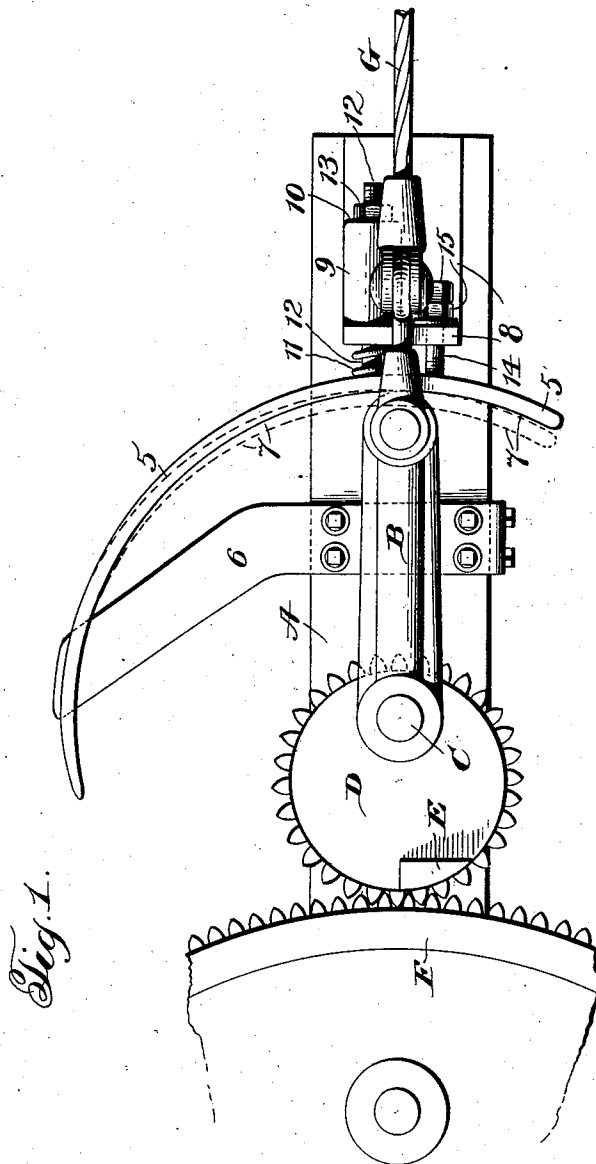


Fig. 1.

Witnesses:

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Geo. Earl Clement

Inventors:

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By Joel R. Morris Attorney:

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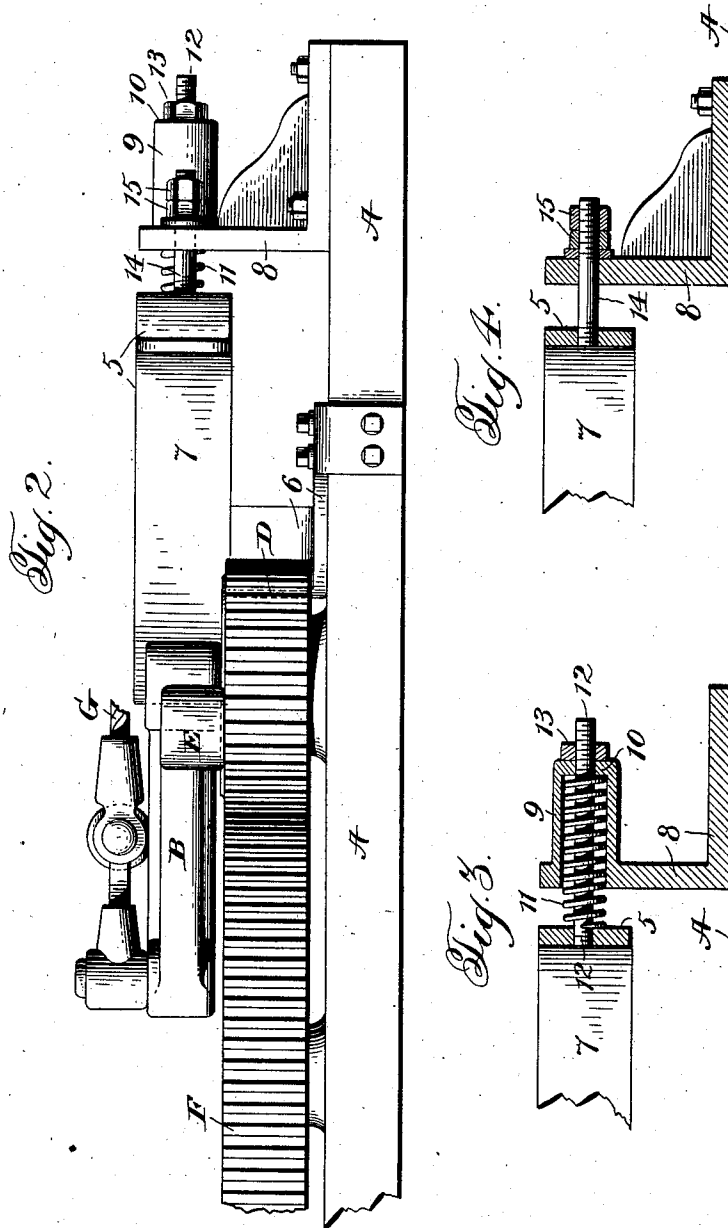
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UNITED STATES PATENT OFFICE.

GEORGE S. WILSON AND EUGENE F. MATHEY, OF MUSKOGEE, OKLAHOMA, ASSIGNORS
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BRAKE.

1,021,962.

Specification of Letters Patent.

Patented Apr. 2, 1912.

Application filed August 7, 1909. Serial No. 511,796.

To all whom it may concern:

Be it known that we, GEORGE S. WILSON and EUGENE F. MATHEY, citizens of the United States, residing at Muskogee, in the county of Muskogee and State of Oklahoma, have invented certain new and useful Improvements in Brakes, and do hereby declare the following to be 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.

The brake provided by this invention is adapted, among other things, for use with those balers wherein the plunger is permitted to quickly retract after each compression movement. It is particularly susceptible of employment with a plunger-actuating mechanism in which an arm or other equivalent element, when it reaches the end of its movement in imparting compression traverse to the baler-plunger, is released and the plunger thereby permitted to quickly return to the position from which compression movement is commenced. The sudden retractive movement of the plunger carrying with it a part of the actuating mechanism with which it is connected is usually caused by a spring, weight, or the resiliency of the material being compressed. The sudden rebound is apt to cause the arm or equivalent portion of the actuating mechanism to fly past the position from which compression movement is commenced and to jerk the plunger in the direction of compression.

The brake provided by this invention is so constructed as to permit a quick movement of the arm or other part, after its release at the end of compression, for a considerable portion of its retractive course and then to be gradually restrained in its movement until it is stopped at the point of commencement of compression, its continuance past this point and jerk against the plunger being avoided.

When read in connection with the description herein, the details of construction and arrangement of parts contemplated by this invention will be apparent from the accompanying drawings, forming part hereof, wherein an embodiment of the invention is disclosed for purposes of illustration.

Like reference-characters refer to corre-

sponding parts in the several views of the drawings, of which—

Figure 1 is a plan view of the brake and so much of the associated parts of a baler as are necessary for illustrative purposes; Fig. 2 is an elevation of one side; Fig. 3 is a sectional view through the buffer-spring casing; and Fig. 4 is a sectional view through the stem for retaining the brake-shoe against pressure of the spring.

While the form of brake shown in the drawings is at present preferred, as that embodiment of the invention gives reliable and satisfactory results in practice, it is to be understood that the several instrumentalities of which the invention consists can be variously arranged and organized without departing from the nature and spirit of the invention, and that the invention is not limited to the precise delineation herein.

The plunger-actuating mechanism set forth is merely explained in the furtherance of a full exposition of the invention, it being apparent that the brake may be used with a number of different forms of compression devices and other mechanisms. This operating mechanism is carried by a bed member A, and includes an arm B pivoted upon a pin C, and upon which pin a pinion D is eccentrically journaled in proximity to the arm. A stop E is located laterally on pinion D in such a position as to engage one side of the arm during half its circumference of movement to compress the plunger and at the end of that movement to permit the arm to be released and fly back to place of commencement of compression movement. Pinion D is rotated by an elliptical drive-gear F in mesh therewith or in any other suitable manner. The plunger is connected with the free end of the arm by a cable or other suitable connection G. Compression is given through this connection by the arm to the plunger of a baler (not shown), and by the connection retraction is caused in the arm at the end of compression movement.

The brake provided by the invention is arranged to gradually decrease the speed of retraction of the arm and to stop it at the end of its retractive arc. The brake includes a brake-shoe 5 positioned to engage

the free end of arm B during the latter portion of its retractive travel.

The shoe is firmly supported at its forward end by a laterally-disposed bracket 6 fastened to bed member A. The shoe is made of a solid piece of metal having a curved bearing surface 7 of approximately the same radius as the free end of arm B. Rising from the bed member approximately in the line of draft of connection G is a bracket 8. This bracket carries a casing 9, having a head 10 at its outer end, within which casing is disposed a coiled buffer-spring or other suitable resistive element 11. This spring extends forwardly and contacts the rear side of the brake-shoe. A bolt or shaft 12 extends movably through the head 10 and through the casing, and is secured to the brake-shoe, as clearly shown in Fig. 3. A nut 13 on the screw-threaded end of the bolt projecting from the head 10 is adapted to hold the brake-shoe against undue extension by the spring 11, and the tension of the spring may be adjusted by turning the nut to increase or decrease the projection of the spring outwardly with the shoe.

In order to further prevent undue extension of the brake-shoe and to take up some of the shock of movement resulting from the quick action of the spring upon the sudden passing of the arm B from the shoe, a stem 14 is attached to and extended rearwardly from the shoe through bracket 8, the stem passing through an aperture in the bracket sufficiently large to permit a slight amount of play therein. The free or rear end of the stem is threaded and engaged by one or more nuts 15. In order to cause the rear end of the brake-shoe to be moved forwardly or rearwardly, and thereby alter its projection into the path of arm B and its resistance to the swing of that arm, set-screw or nut 13 and nuts 15 are turned.

When arm B, at the end of its compression movement, is moved in its travel to a point where the connection G operates to

cause it to fly back toward the place of initial compression movement, it will be free to retract quickly until its end comes in contact with the bearing-surface of the brake-shoe, and as it moves along the surface its speed will be gradually reduced until it is stopped at the proper position for again commencing the compression movement when engaged by the more slowly-following stop E. The friction between the arm and shoe will be increased as the arm moves along the shoe, by reason of the increasing resistance of the shoe and spring 13 on account of the greater and greater amount of movement necessary to bring the bearing surface of the shoe from its increasing intersection into coincidence with the path of travel of the arm at the point of contact.

Having thus described the invention, what is claimed to be new, and desired to be covered by Letters Patent, is—

In a baling-press, the combination, with a bed member and a swinging arm, of a support extending laterally from said bed member, a shoe supported near one end by said support and made of a solid piece of metal having a curved bearing surface of approximately the same radius as the free end of said arm and open at the front and rear ends to permit passage of the end of the arm thereonto and therefrom, respectively, a bracket on said bed member near the other end of said shoe, a casing on said bracket to the rear of said shoe, a spring in said casing having an end in contact with said shoe, means on said casing whereby tension of said spring is altered, and a bolt connected to said shoe beyond the casing and passing through the bracket and carrying means for further adjusting tension of said spring and for retaining said shoe against such tension.

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Witnesses:

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