

HAY PRESS.

Patented Apr. 1, 1913.

2 SHEETS—SHEET 1.

FIG. 1

FIG. 2

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HAY PRESS.
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1,057,592.

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2 SHEETS-SHEET 2.

FIG. 3.

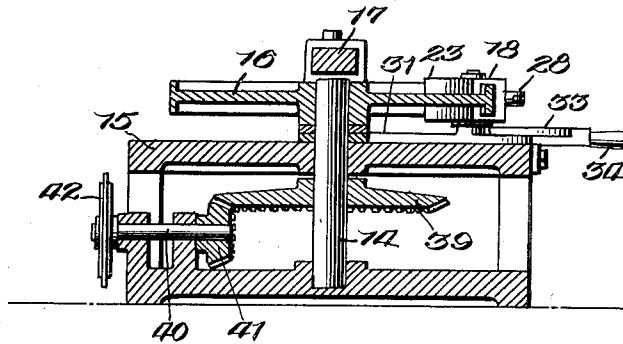


FIG. 4.

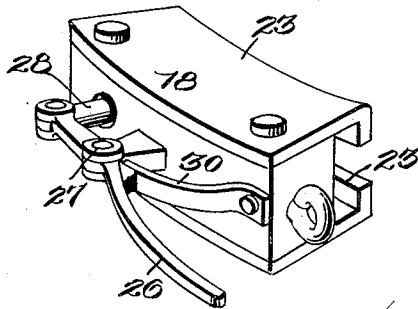


FIG. 5.

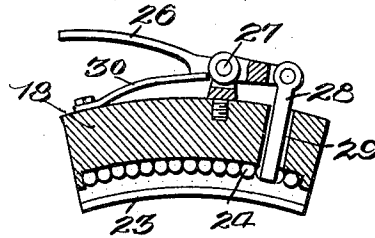
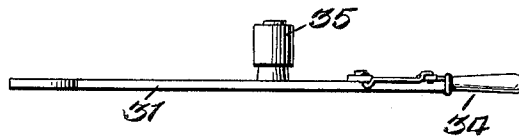


FIG. 6.



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UNITED STATES PATENT OFFICE.

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HAY-PRESS.

1,057,592.

Specification of Letters Patent.

Patented Apr. 1, 1913.

Application filed May 11, 1912. Serial No. 696,683.

To all whom it may concern:

Be it known that I, JAMES M. STOREY, a citizen of the United States, residing at Hoschton, in the county of Jackson and State of Georgia, have invented certain new and useful Improvements in Hay-Presses, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to a new and useful improvement in hay presses and more particularly to an automatic clutch for operating the plunger mounted within the press.

The primary object of the present invention is to construct a clutch for devices of the above character which will transmit a reciprocating motion to the plunger of the press from a rotary member at certain predetermined intervals.

Other objects will appear hereinafter as the description continues.

With the above and other objects in view this invention consists generally of a rotary member having a clutch member mounted thereupon which is connected to the plunger of the hay press, whereby when power is transmitted to said rotary member the clutch will at certain predetermined intervals operate the said plunger.

This invention further consists of novel details of construction, combination, formation and arrangement of parts as will be hereinafter more specifically described, claimed and particularly pointed out in the appended drawings in which,

Figure 1 is a plan view of a hay press embodying my invention; Fig. 2 is a longitudinal sectional view taken through the clutch member as applied to the press frame; Fig. 3 is a transverse extending section of the same; Fig. 4 is a perspective view of the clutch carrying carriage; Fig. 5 is a horizontal longitudinal section taken through the clutch carrying carriage and Fig. 6 is a side elevation of one of the operating levers.

Reference now being had to the accompanying drawings wherein like parts are illustrated by like numerals throughout the several views, the numeral 10 indicates an ordinary hay press of any preferred or well

known design having mounted for reciprocation therein the usual hay pressing plunger 11 having extending therefrom a rod 12 which is mounted in the frame of the press and which has mounted in its outer extremity a roller 13.

Many hay presses now in use are provided with a piston which is connected to the crank shaft mounted in one extremity of the frame of the press and a suitable power is applied to the crank shaft for rotating the same thereby transmitting a reciprocatory movement into said plunger. In the present invention I provide a vertically extending shaft 14 journaled in suitable bearings mounted upon one extremity of the hay press frame 15. Keyed upon the upper extremity of the shaft 14 is a pulley wheel 16 having permanently secured thereto a power actuated lever 17 to which the draft animal is to be attached for rotating this pulley. A carriage 18 is slidably mounted upon the outer periphery of this pulley and has secured thereto a cable 19. This cable 19 is secured at its opposite end as at 20 to the frame of the press and then extends over the pulley mounted in the outer extremity of the rod 12 then over pulleys 21 to a pulley 22 mounted upon the outer frame of the press and is then permanently secured to the carriage 18. This carriage 18 is provided with a clutch member which will be hereinafter described and which engages the rim of the pulley so that as the pulley is rotated it will impart a reciprocation to the plunger. This carriage 18 is provided with a pair of depending flanges 23 which engage the rim of the pulley and are adapted to conform to the configuration of the pulley so that they will be free to slide thereupon. The inner face of the carriage 18 is concaved to form an arc of the same configuration as the rim of the pulley and has mounted therein ball bearings 24 which will permit the carriage to easily return to its normal position. This carriage is provided with a clutch member which is adapted to engage an opening formed in the rim of the pulley. This clutch member comprises a lever 26 fulcrumed adjacent one end as at 27 upon a support mounted on the carriage and piv-

otally secured to the shorter end of this lever is a vertically extending pin 28 which reciprocates in the opening 29 formed within the carriage. A leaf spring 30 is mounted upon the face of the carriage and engages the longer arm of the lever thereby normally holding the link 28 in engagement with the rim of the pulley. It will be seen from this construction that as the pulley 17 is rotated the carriage will be held stationary by the cable 19 and will ride freely over the periphery thereof, but when the opening 25 formed in the rim of the pulley comes in alinement with the pin 28, the same will enter the opening and thereby cause the carriage to rotate with the pulley and to provide means for releasing this carriage and also to prevent the pin from engaging the opening formed in the rim of the pulley I have provided a pair of operating levers 31 and 32 respectively.

The operating lever 31 is fulcrumed at its inner end upon the shaft 14 and is provided adjacent its outer end with a spring actuated pawl which is adapted to engage the segmental rack 33 upon the frame 15. This lever is also provided with an operating handle 34 for moving the said pawl into and out of engagement with the rack. To provide means to prevent the clutch member from engaging the opening formed within the rim of the pulley a roller 35 is mounted upon the upper face of the lever 31 which will engage the longer arm of the lever 26 mounted upon the carriage, but it is apparent that this operating lever 31 can be moved so that the roller 35 will be out of contact with the lever 26 the pin will be permitted to enter the opening formed in the pulley and thereby carry the carriage with the same. To provide means for releasing the clutch member from the pulley 22 when the plunger 11 has traveled its desired distance a similar lever 32 provided with a roller 36 will engage the longer arm of the lever 26 thereby releasing the clutch member and permitting the carriage to return to its original position. This operating lever 32 is also provided with a spring operated pawl which engages the segmental rack 37 mounted upon the frame 15 so that the lever may be adjusted so as to limit or prolong the travel of the carriage upon the rim of the pulley. A coil spring 38 is mounted upon the rod 12 of the plunger so that it will retract the plunger when the carriage has been released and which will also return the carriage to its original position.

When applying steam or gasoline engines for obtaining power to this device a crown gear 39 is keyed upon the shaft 14 which is connected to a transversely extending shaft 40 journaled within bearings mounted

on the frame 14 by means of a pinion 41. The opposite end of this shaft is provided with a sprocket wheel 42 which can be connected to a motor by an endless sprocket chain not shown.

It is obvious that the pulley 16 is mounted above the frame 15 and the power lever 17 is secured to the upper face of this pulley so that when the same is rotated by means of a draft animal power the lever will not come in contact with any of the other working parts of the machine. The operating levers 31 and 32 respectively are also mounted upon the upper face of the frame so the rollers mounted thereon will lie in the line of contact with the operating lever 26.

It is further apparent from the foregoing description taken in connection with the accompanying drawings that I have provided an automatic clutch for hay presses which will be inexpensive in the cost of manufacture, strong, durable and reliable when in use and one which may be adjusted to impart a reciprocating movement in plungers which travel at different lengths in various machines. It is to be further understood that other minor details of construction may be resorted to that come within the scope of the present invention without departing from the spirit thereof.

What I claim is:—

1. The combination of a hay press including a frame, a plunger reciprocatorily mounted therein, a rod extending from said plunger, a roller journaled in the outer end of said rod, a coil spring encircling said rod for holding said plunger in an extended position, of a vertically extending shaft journaled within said frame, a pulley keyed upon said shaft, a flexible member connected at one end to said frame and extending over said roller journaled within said rod, the opposite end of said flexible member being detachably connected to said pulley, levers pivotally mounted upon said vertically extending shaft, one of the said levers adapted to release said flexible member from said pulley and the opposite said lever adapted to hold the said flexible member out of engagement with said pulley, substantially as and for the purpose specified.

2. The combination of a hay press including a frame, a plunger reciprocatorily mounted therein, a rod extending from said plunger, a roller journaled in the outer extremity of said rod, means for holding the said plunger in an extended position, a rotary member journaled within the frame, a flexible member connected at one end to the said frame and extending over said roller journaled within the said rod, the opposite end of said flexible member being detachably connected to the said rotary

member, levers pivotally mounted upon said rotary member, vertically extending rollers journaled upon said levers, one of the said rollers adapted to release said flexible member from said rotary member, the other said lever adapted to hold the flexible member out of engagement with the rotary member and means whereby the said levers may

be adjusted substantially as and for the purpose specified.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.
JAMES M. STOREY.

Witnesses:

JAMES F. BELL,
HOMER CHESNUT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."