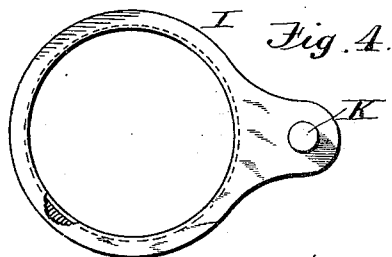
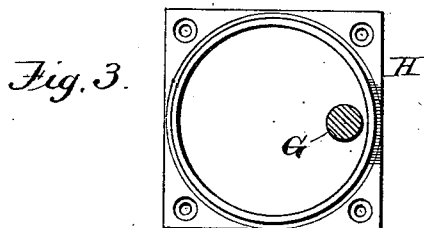
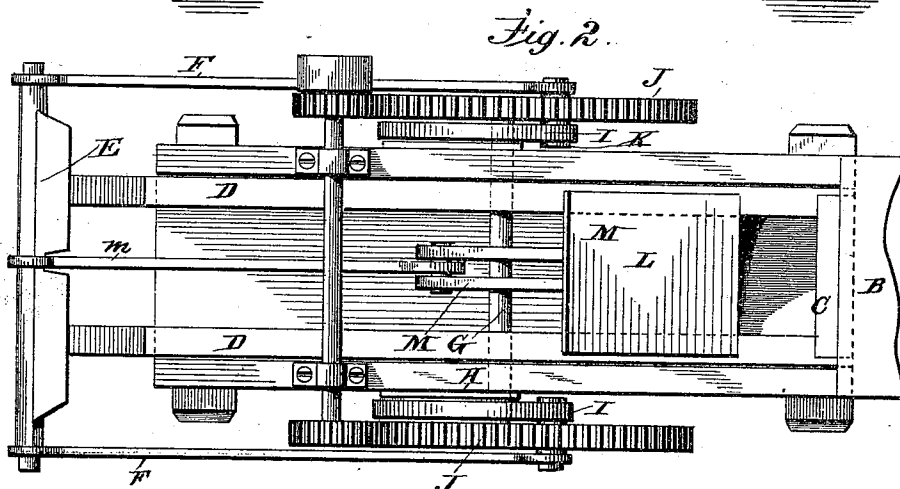
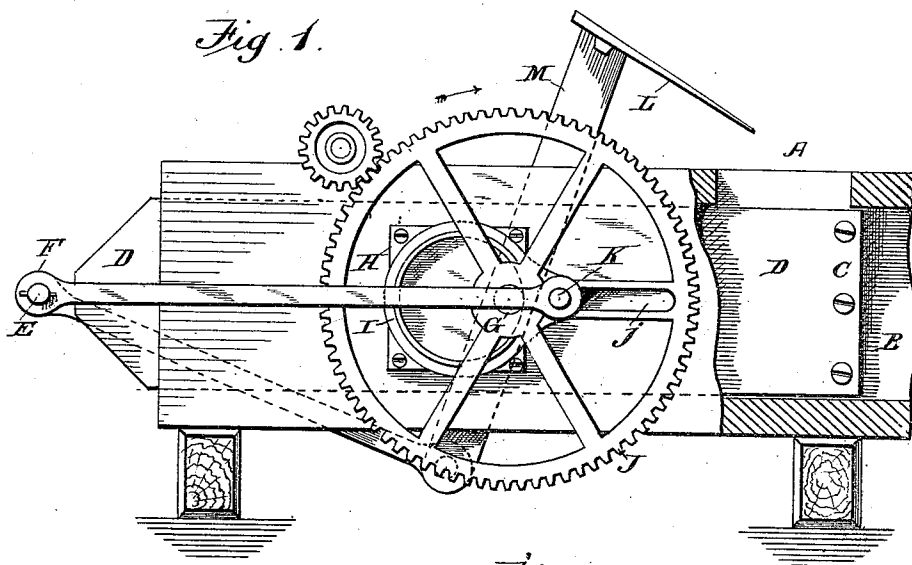


(No Model.)

E. E. FULLER.
BALING PRESS.

No. 512,182.

Patented Jan. 2, 1894.



Witnesses:

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By his Attorneys
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UNITED STATES PATENT OFFICE.

EBEN E. FULLER, OF MONTICELLO, MINNESOTA.

BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 512,182, dated January 2, 1894.

Application filed July 12, 1893. Serial No. 480,244. (No model.)

To all whom it may concern:

Be it known that I, EBEN E. FULLER, a citizen of the United States, residing at Monticello, in the county of Wright and State of Minnesota, have invented certain new and useful Improvements in Baling-Presses; and I 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.

This invention relates to presses for compacting hay or other fibrous materials into bales, and the improvements relate more particularly to the power mechanism by which the traverser or plunger is reciprocated in the baling chamber, the object of such improvements being to provide a powerful, simple and compact mechanism for imparting such reciprocating movement to the plunger or traverser.

With these ends in view, the improvement consists in the combination with a plunger, and a cross-head connected with said plunger, of a transverse shaft, one or more annular bearings pierced eccentrically for the passage of the shaft and held in fixed relation thereto, one or more master-gears fixed centrally to the shaft alongside of said annular bearings, and each provided with a radial slot, a revolving crank fitted to turn freely on the periphery or edge of the eccentric bearing and carrying a wrist pin which passes through and plays in the radial slot of the master-gear, and a pitman connected to the wrist-pin and to the cross-head, whereby as the master-gear is rotated with the shaft, the wrist-pin is caused, by contact with the walls of the radial slot, to rotate the crank and effect the reciprocation of the pitman, the cross-head and the plunger, and to shorten the throw or stroke of the crank as the plunger approaches the bale in the baling-chamber of the press.

The invention further consists in the combination and organization of parts as will be hereinafter more fully described and pointed out in the claims.

The accompanying drawings, forming a part of this specification, illustrate my improvements, in which—

Figure 1 is a side elevation. Fig. 2 is a top

or plan view with parts of the press or baling chamber in longitudinal section. Fig. 3 is a detail view, in side elevation, of the fixed disk-bearing for the crank, the shaft being shown in cross section, and the eccentric position of the shaft relative to the axis of said crank-bearing. Fig. 4 is a detail view of the crank, inside elevation.

Like letters of reference denote corresponding parts in all the figures of the drawings.

In said drawings, A is a part of an ordinary baling press, only so much of which is illustrated as is necessary to an understanding of my invention, and B is the baling chamber. In this chamber reciprocates the plunger or traverser, C, of any suitable form, and to this traverser or plunger are connected the slides D, D, which may be guided in suitable grooves or ways in the press A, although this is not essential. To the outer ends of the slides D, D, is connected the cross head E which lies outside of the press A, and to the ends of this cross-head are connected the pitmen F, F, which are actuated by the power mechanism forming the subject of my present invention.

G is the shaft which is arranged transversely across the press A, at an intermediate point of the length of the latter, and H, H, are the annular or disk-shaped bearings for the revolving cranks I, I, which are fitted on the annular eccentric bearings H to turn or rotate freely thereon. These bearings H are preferably made in the form of disks, and they are pierced eccentrically for the passage of the ends of the shaft G which turns freely in said bearings H. These bearings H are held in fixed relation to the shaft and to the master-gears by any suitable means, as for instance by transverse bolts that fasten them to the sides of the press; and each bearing has on its circular periphery a flange which fits in a groove in the revolving crank in a manner to prevent the crank from becoming displaced on the bearing H as indicated by Figs. 3 and 4, but the use of this flange is optional and may be dispensed with altogether.

J, J, are the master gears which are of large diameter and fixed centrally to the ends of the shaft G outside of the eccentric bearings H and the revolving cranks I, said master-

gears being thus arranged eccentrically to the bearings H and closely adjacent to or alongside of the revolving cranks. Each of these master gears J, J, is provided with a radial slot *j*, and through the radial slot of each master gear passes the wrist-pin K, each of which has one end fastened to the free end of the revolving crank and the other end fastened to the pitman F so that the master-gears, the cranks, and the pitmen are connected in sets on opposite sides of the press A. The master-gears are each provided with gear teeth on their periphery, and with these teeth mesh pinions on a suitable driving-shaft as indicated by Figs. 1 and 2 for imparting motion to the master-gears, in a manner which will be readily understood. The master-gears rotate in the direction shown by the arrow in Fig. 1, and they carry with them the wrist-pins which in turn move the cranks I on the eccentric annular bearings H. With the master-gears in the position shown by Fig. 1, the wrist-pins are at the inner ends of the radial slots in said master-gears. As the latter turn in the direction indicated by the arrow, and the slots are vertical below the shaft, the wrist-pins move toward the outer ends of the slots. On the half revolution of the master gears, the slots are again horizontal and the wrist-pins are forced by the cranks I to the outer ends of the slots as the wrist-pins are then farthest from the axis of the eccentric annular bearings H, to withdraw the plunger or traverser from the baling chamber; and as the master gears complete the revolution, the wrist-pins are drawn by the cranks I toward the inner end of the slots in the master gears, thus shortening the stroke or throw of the cranks as the plunger or traverser approaches the bale.

L designates the feeder which is carried by a lever M, pivoted at an intermediate point of its length on the shaft G, or adjacent to the shaft, and the heel of this lever is connected by a link *m* to the cross-head so that as the cross-head is reciprocated the lever will be rocked or oscillated to move the feeder L vertically and cause it to descend into the baling chamber and to force the hay or other

material into the chamber in front of the plunger or traverser in the manner similar to the well known style of baling press familiar to those skilled in the art.

I am aware that changes in the form and proportion of parts and details of construction of the devices herein shown and described as an embodiment of my invention can be made without departing from the spirit or sacrificing the advantages thereof, and I therefore reserve the right to make such changes and alterations as fairly fall within the scope of the same.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a baling press, the combination with a plunger and cross head, of a fixed annular crank-bearing, a shaft fitted in said crank-bearing eccentrically to the axis thereof, a master gear carried by said shaft and provided with a radial guide-way, a crank provided with a ring fitted to turn freely on said annular fixed bearing, a pitman, and a wrist-pin fitted to slide in the radial guide way of the master gear and connected with the crank and the pitman, substantially as and for the purpose described.

2. In a baling press, the combination with a plunger and cross-head, of the annular crank-bearings fixed to the press and pierced eccentrically for the passage of a shaft, the shaft fitted in the eccentric openings of the crank-bearings, the cranks constructed to fit around said annular bearings to turn freely thereon, master-gears carried by the shaft and having the radial slots, the pitmen, and the wrist-pins fitted to slide in the radial slots of said master-gears and each connecting the crank and pitman on one side of the press, substantially as and for the purpose described.

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

EBEN E. FULLER.

Witnesses:

CHARLES BRADFORD,
C. R. GOSSLEE.