L. KIRK.

Hay and Straw Presses.

No. 164,922. Patented June 29, 1875.

Fig. 1.

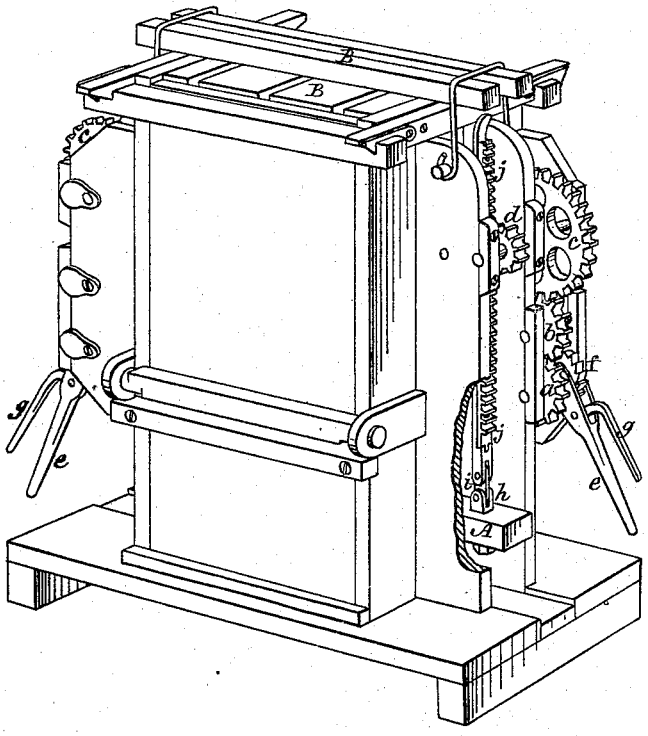


Fig. 2.

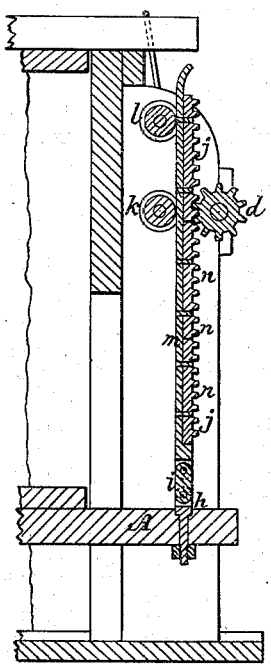
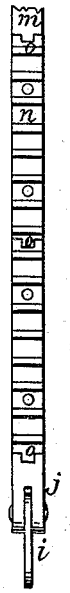


Fig. 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

LEWIS KIRK, OF RISING SUN, MARYLAND.

IMPROVEMENT IN HAY AND STRAW PRESSES.

Specification forming part of Letters Patent No. **164,922**, dated June 29, 1875; application filed May 12, 1875.

To all whom it may concern:

Be it known that I, LEWIS KIRK, of Rising Sun, in the county of Cecil and State of Maryland, have invented certain new and useful Improvements in Hay and Straw Presses; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents the press in perspective. Fig. 2 represents a vertical transverse section through same. Fig. 3 represents one of the rack-bars, and its link detached from the machine.

My invention relates, first, to a plate-link connection between the rack-bars and the follower or presser-platen, so that the rack-bars and the platen, one or both, may swing or yield to any unequal pressures, but not out of the line of strain or draft. It further relates to the rack-bar composed of a wrought-iron back to withstand the strain, and of short cast-iron sections of racks or cogs with interlocked joints for the raising or pressing gears to work in.

The press, as shown in Fig. 1, is furnished with the usual appliances for charging it with the material to be baled, the pressure being applied through a follower or platen, A, upon which the material is placed, and by which it is compressed against the top plate or portion B. At both ends of the press there is a train of gears, *a b c d*, and a lever, ratchet, and pawl arrangement, *e f g*, through or by means of which the power is applied to the platen A. Other well-known means of generating and applying the power may be used, or other arrangements of gears, levers, or cranks be used. At each end of the platen A there is a lug, *h*, to which is pivoted one end of a link-plate, *i*, the other end thereof being pivoted to the lower end of the rack-bar *j*, so that by this double pivot-joint or connection the platen may swing in the line of its length in either direction, and the rack-bars (there being one at each end of the press or platen) swing in the same plane, but not out of it—as would be the case were the connections made of chain-links instead of the plate-link *i*. The object and purpose of this swinging motion of the platen and of the rack-bars are to relieve the press of undue pressure at one of its ends, it being almost impossible to make the two rack-bars move exactly alike, and to prevent breaking of the parts. The rack-bars extend upward, and are held in working position with their pinions *d* by means of the friction-rolls *k l* behind them; but which do not prevent said rack-bars from swaying slightly at their lower ends, and in nowise influence the free swaying or swinging of the platen, or allow it or the rack-bars to swing out of the line of strain or pressure.

The rack-bars *j* are made as follows: The back *m* of the bar is of wrought-iron, so as to stand the strain without breaking, and to this wrought-iron bar are fastened short sections of cast-iron racks or cogs, *n*, with interlocked joints, *o*, to keep them in line, and so that they can be replaced should one or more of the cogs break. Besides, the cast rack is much cheaper and much less liable to wear or cut out.

The sides of the press are furnished with the usual doors and fastenings for gaining access to the interior to put in the material and remove the pressed bale, and to lock up the press to confine the material and bale within its limits.

Having thus fully described my invention, I would state that I am aware that a single joint connection between the rack-bars and the platen, and a common chain connection between said two parts, are not new, and I do not claim them, as they will not accomplish the purpose I aim at; but

What I do claim is—

1. In combination with the platen A and the rack-bars *j*, the plate-link connection *i* forming two pivotal joints, but restraining of the swaying of the platen, to adjust itself to unequal strain, to a movement in the plane of said link only, as and for the purpose described.

2. In combination with the press the rack-bars *j*, composed of the wrought-iron back *m*, and the short cast-iron rack-sections *n* riveted to said back, and interlocked at their junction or ends *o*, as and for the purpose described and represented.

LEWIS KIRK.

Witnesses:

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