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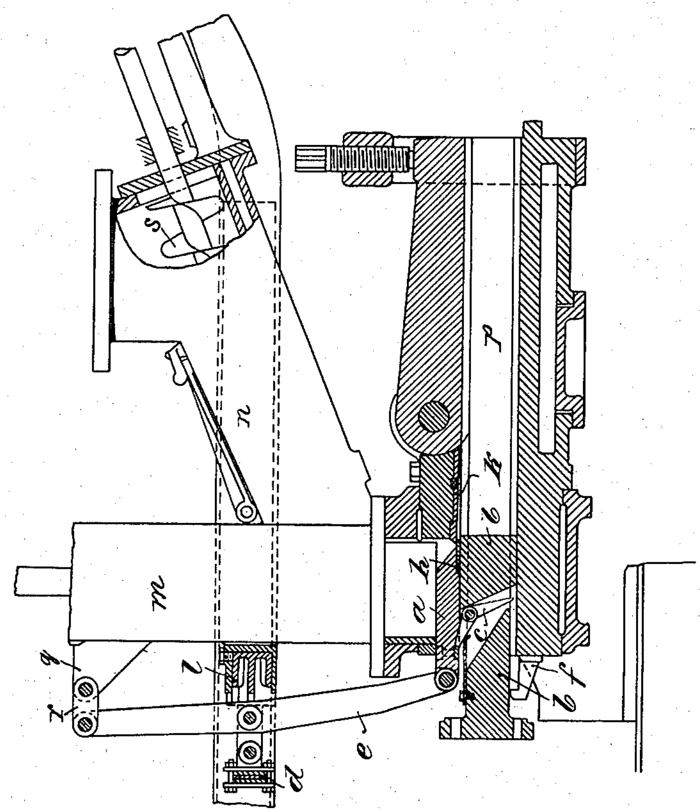
C. LUZZATTO.

APPARATUS FOR COMPRESSING HAY, &c.

(Application filed Nov. 14, 1899.)

(No Model.)



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UNITED STATES PATENT OFFICE.

CESARE LUZZATTO, OF MILAN, ITALY.

APPARATUS FOR COMPRESSING HAY, &c.

SPECIFICATION forming part of Letters Patent No. 649,413, dated May 8, 1900.

Application filed November 14, 1899. Serial No. 736,962. (No model.)

To all whom it may concern:

Be it known that I, CESARE LUZZATTO, a subject of the Emperor of Austria-Hungary, residing at Milan, in the Kingdom of Italy, have invented certain new and useful Improvements in Apparatus for Compressing Hay, Straw, and Like Materials, of which the following is a specification.

This invention relates to apparatus for compressing hay, straw, husks, and like bulky materials, but more particularly to that type of press in which the material is conveyed by a screw or conveyer into a preliminary pressing-chamber, where it is partly compressed, and fed from there in a well-known manner and by well-known means into the compression-chamber proper. A serious disadvantage in these presses is that during the forward motion of the plunger in the compressing-chamber proper a portion of the material returns into the preliminary chamber, and thereby unfavorably affects the size of the cake of compressed material, as well as the working of the press. These disadvantages are obviated, according to this invention, by closing or shutting off the compression-chamber from the preliminary chamber by means of a slide during the operation of compressing the material, thus preventing the latter from finding its way back into the preliminary chamber.

The invention will be readily understood by reference to the accompanying drawing, which represents a sectional side elevation of a portion of the compressing apparatus.

In said drawing, *m* is the preliminary compressing-chamber, and *n* is the supply-trough, communicating with the preliminary chamber *m* near its lower end and in which is mounted a screw conveyer *s*, which may be driven by any suitable means. The preliminary compressing-chamber is shown as arranged vertically and communicates at its lower end with the main compressing-chamber *p*, in which the press-plunger *b* reciprocates.

As the press-plunger *b*, which is operated in a well-known manner and by known means, moves outward from the main compression-chamber it moves the slide *a* from the entrance to the preliminary chamber by means of a pawl *c*, carried by the plunger *b*, engaging a recess in the said slide, thereby allowing material from the said preliminary chamber to be fed into the compression-chamber proper. When the plunger *b* arrives at the rear end of its stroke, the pawl *c*, operating the slide *a*, is disengaged from this latter by striking against a catch *f*, fixed to the frame of the press. The slide *a* is then forced inward above the plunger by the action of a spring *d*, suitably mounted, and which has been compressed or placed in tension by a lever *e*, pivotally connected to the slide *a* and to a bracket *q* or other suitable part of the structure, as by a link *r*. This slide cuts through the material, which is fed into the compression-chamber in the usual manner by the action of a vertically-moving plunger, thus closing the compression-chamber and preventing the material under treatment from reëntering the preliminary chamber situated above, so that all the material is now subjected to compression by the press-plunger.

The slide *a* is fitted with a steel cutter or knife *h*, which acts in conjunction with another cutter *k*, fixed to the upper portion of the compression-chamber, for cutting material and providing a perfect separation between the compression-chamber and the preliminary chamber.

As the press-plunger *b* arrives at the end of its forward stroke the pawl *c* engages in the recess formed in the slide *a*, and when the said plunger again moves rearward it carries with it the slide, which is relieved from the pressure of the compressed material and so enables the same operations to be repeated.

To prevent the slide *a* when the press is running idle—*i. e.*, when all the material has been fed in—from striking against the inner end of the chamber, it is advantageous to provide the lever *e* with a dash-pot or air-buffer *l*.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. In an apparatus for compressing hay, straw and other bulky materials, the combination with the preliminary compression-chamber, main compression-chamber, and plunger, of a slide for closing or shutting off the main compression-chamber from the preliminary compression-chamber, and means for moving the said slide outward as the plunger moves outward and for returning said

slide, substantially as and for the purpose hereinbefore described.

2. In an apparatus for compressing hay, straw and other bulky materials, the combination with the preliminary compression-chamber, main compression-chamber, and plunger, of a slide for shutting off the main compression-chamber from the preliminary compression-chamber, a pawl pivoted to the plunger and adapted to engage in said slide during the rearward motion of the said plunger so as to cause the slide to move outward with the plunger, and means for returning said slide when released from the pawl, substantially as and for the purpose hereinbefore described.

3. In an apparatus for compressing hay, straw and other bulky materials, the combination with the preliminary chamber, the compression-chamber and the plunger, of a slide for shutting off the compression-chamber from the preliminary chamber, a pawl pivoted to the plunger and adapted to engage said slide, a disengaging-catch for the said pawl and a spring-controlled lever pivoted to the frame of the press and serving first to compress its spring and upon its release to move the slide, connected with it, inward, substantially as and for the purpose hereinbefore described.

4. In an apparatus for compressing hay, straw and other bulky materials, the combination with the preliminary chamber, the compression-chamber, and plunger, of a slide for shutting off the compression-chamber from the preliminary chamber, a pawl carried by the plunger and adapted to engage said slide, a disengaging-catch for the pawl, spring-controlled lever pivoted at one end to the said slide and at its other end to the walls of the press, and knives or cutters fixed to the slide and the press respectively, substantially as and for the purpose hereinbefore described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

CESARE LUZZATTO.

Witnesses:
C. B. HURST,
ALVESTO S. HOGUE.