

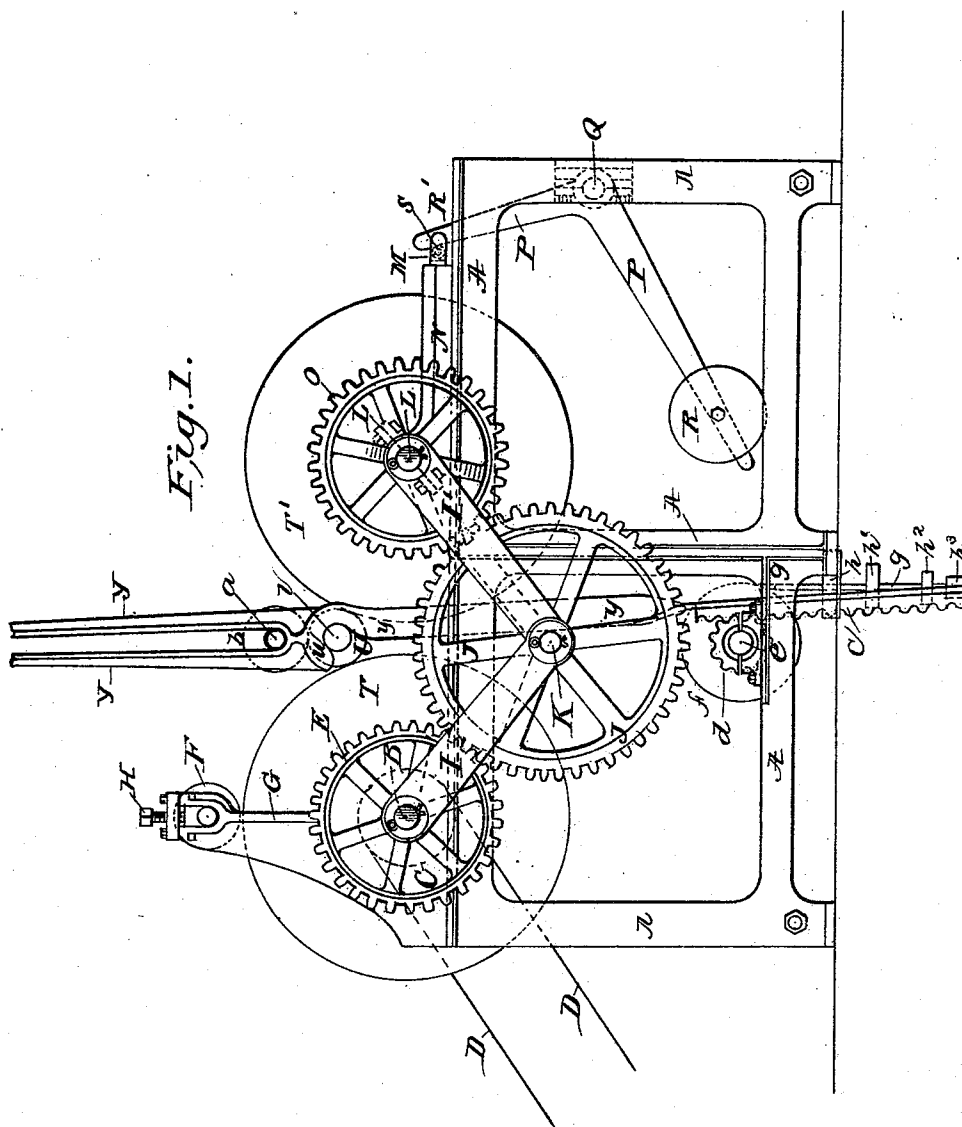
(No Model.)

2 Sheets—Sheet 1

J. L. HAYWARD.
COTTON PRESS.

No. 501,419.

Patented July 11, 1893.



WITNESSES:

Edward A. Rowland.
J. E. Hoffman.

INVENTOR

Jacob L. Hayward
BY *Phillips Abbott*
ATTORNEY

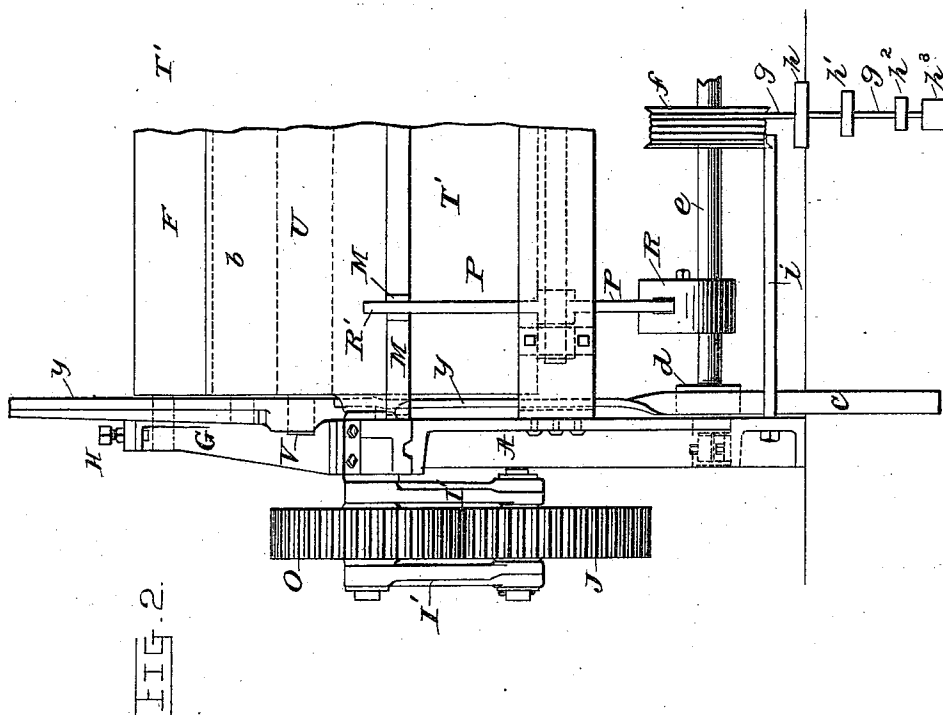
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UNITED STATES PATENT OFFICE.

JACOB L. HAYWARD, OF WADEVILLE, NORTH CAROLINA, ASSIGNOR OF TWO-THIRDS TO W. B. CRITTENDEN AND A. B. STETSON, OF BUCYRUS, OHIO.

COTTON-PRESS.

SPECIFICATION forming part of Letters Patent No. 501,419, dated July 11, 1893.

Application filed February 17, 1893. Serial No. 462,782. (No model.)

To all whom it may concern:

Be it known that I, JACOB L. HAYWARD, a citizen of the United States, and a resident of Wadeville, in the county of Montgomery and State of North Carolina, have invented certain new and useful Improvements in Cotton-Presses, of which the following is a specification.

My invention relates to improvements in the construction of rotary cotton presses and it consists generally stated in so constructing the apparatus that the cotton is fed to the press in a continuous web or bat; also that the bale is automatically formed by the operation of the machine; also that as the bale is formed and gradually grows larger the pressure upon it is proportionately increased by the operation of the machine itself, thus securing equal density and great solidity in the bale.

In the drawings, Figure 1, illustrates an elevation of the machine. Fig. 2 illustrates an end view taken from the right of Fig. 1. In Fig. 2, I show one half of the machine only, the other half being an exact duplicate of it, and in the description hereof, I shall refer to one half of the machine only, to avoid confusion, it being understood that the parts are in duplicate throughout.

A is the frame of the machine.

B is a shaft upon which the driving pulley C is keyed.

D is the belt which drives the machine.

E is a gear keyed to the shaft B, there being another on the other side of the machine.

F is a pressure roller supported upon up-rights G at each side of the machine.

H are set screws whereby the vertical position of the roller F can be adjusted.

I, I' are links which support gear wheels J at their meeting ends on a shaft K which passes through the links and to which the gear J is keyed; the other ends of the links respectively engage with and are loose upon the shafts B and L respectively. The latter shaft turns in boxes or journals L' which are set on the upturned ends of slide bars M which are adapted to slide rearwardly on slideways N made on the frame of the machine.

O are gears like the gears E but set upon

the shaft L and these gears and the gears J intermesh as shown.

P are bell crank levers pivoted or journaled on the machine as at Q and on their longer ends are weights R which are or may be adjustable on the end of the levers, and the short ends R' of these levers abut against small friction wheels S set in the ends of the sliding bars M. All of the above recited parts are in duplicate on the two sides of the machine.

T, T' are the two bale forming cylinders of the machine; the cylinder T is keyed to the shaft B and T' to the shaft L.

U is a shaft on which the bale is formed, the ends whereof are reduced or turned down to form journals V which engage with hooks *w* or similar devices, made on or forming part of two pressure bars Y which are bifurcated at their upper ends as shown, in the bifurcations of which the trunnions or journals *a* of a pressure roller *b* turn. This roller of course has vertical movement through the bifurcations in the pressure bars. These bars extend downwardly and at or near their lower ends are provided with racks *c*, which engage with pinions *d* set on a cross shaft *e* and on this shaft is placed a drum *f* which winds up or unwinds, depending on the direction of its movement, a chain *g* upon which are placed weights *h*, *h'*, *h²*, *h³* which have holes made through them of such size that the chain can readily pass through but here and there on the chain below each weight there are cross pins, not shown, forged into place, which successively engage with the weights as the chain is wound up. Thus these weights are successively added to the chain as it is wound up on the drum, and I prefer although it is not essential that these weights should be of different sizes. The rack bar is prevented from moving away from the pinion by the cross bar *i* of the machine frame (see Fig. 2) against which the back of the rack bar rests. Any other suitable guides or supports for the rack bar may be employed.

A feeding belt may be employed in conjunction with my machine arranged in any well known manner if desired.

The operation is as follows: The web of cotton, from the condenser on the gin carried upon an apron or otherwise as preferred, first

passes between the cylinder T and small roller F being compressed to any degree required by means of set-screws H, thence it passes to the shaft U upon which the bale is formed, which is turned by contact with the cylinders T and T'. The pressure roll *b* works on top of the bale, and rises as the bale increases in size. It additionally compacts and rounds the bale. As the bale increases in size the center, in other words the shaft U, rises, which elevates the pressure bars Y and acting through racks and pinions they turn the shaft *e* and drum *f* winding up the chain or rope; and as it is wound upon the drum it comes in contact in turn with the several weights *h*, *h'*, *h*², *h*³, these giving a constantly increasing pressure upon the bale as it increases in size; also as the bale increases in size the cylinder T' will slide backward in the sliding bearings N. This cylinder is held against the pressure of the bale of cotton by means of the bell-cranks P, with weights S. The cylinder T' is driven from T by means of the gearing J, and as the cylinder T' is forced backward the gear J is held in contact by means of the links I and I' giving a uniform motion to the two cylinders.

It will thus be seen that the operation of the machine is such that the bat of cotton is continuously fed to it and that it is automatically rolled up into a bale the pressure upon which gradually increases as its size increases.

I do not limit myself to the details of construction, because they may be somewhat departed from and still the essentials of the invention be employed.

I claim—

1. The combination of two cylinders, a bale forming shaft, an independent pressure roller supported by pressure-bars which are hung upon the bale forming shaft and devices op-

erated by the pressure bars whereby the pressure on the bale is automatically adjusted to the size of the bale, substantially as set forth.

2. The combination of two cylinders linked and geared together, one of them having sliding journals so that it may be forced backwardly under the pressure of the enlarged bale, the links and gears being correspondingly lifted, whereby their weight will tend to force said cylinders toward each other against the bale and intermeshing of the gears be maintained, substantially as set forth.

3. The combination of two cylinders, a bale forming shaft, means whereby one of the cylinders may recede under the pressure of the enlarging bale, means to force the said cylinder against the bale, pressure bars hung upon the bale forming shaft and means operated by the pressure bars whereby the pressure upon the bale is automatically adjusted to its size, substantially as set forth.

4. The combination of two cylinders, a bale forming shaft, means whereby one of the cylinders may recede under the pressure of the enlarging bale, means to force the said cylinder against the bale, pressure bars hung upon the bale forming shaft, a roller adapted to rest upon the surface of the bale, and supported upon the pressure bars, and means operated by the pressure bars whereby the pressure upon the bale is automatically adjusted to its size, substantially as set forth.

Signed at Bucyrus, in the county of Crawford and State of Ohio, this 13th day of February, A. D. 1893.

JACOB L. HAYWARD.

Witnesses:

S. W. BENNETT,
JOHN HARMAN.