

No. 658,050.

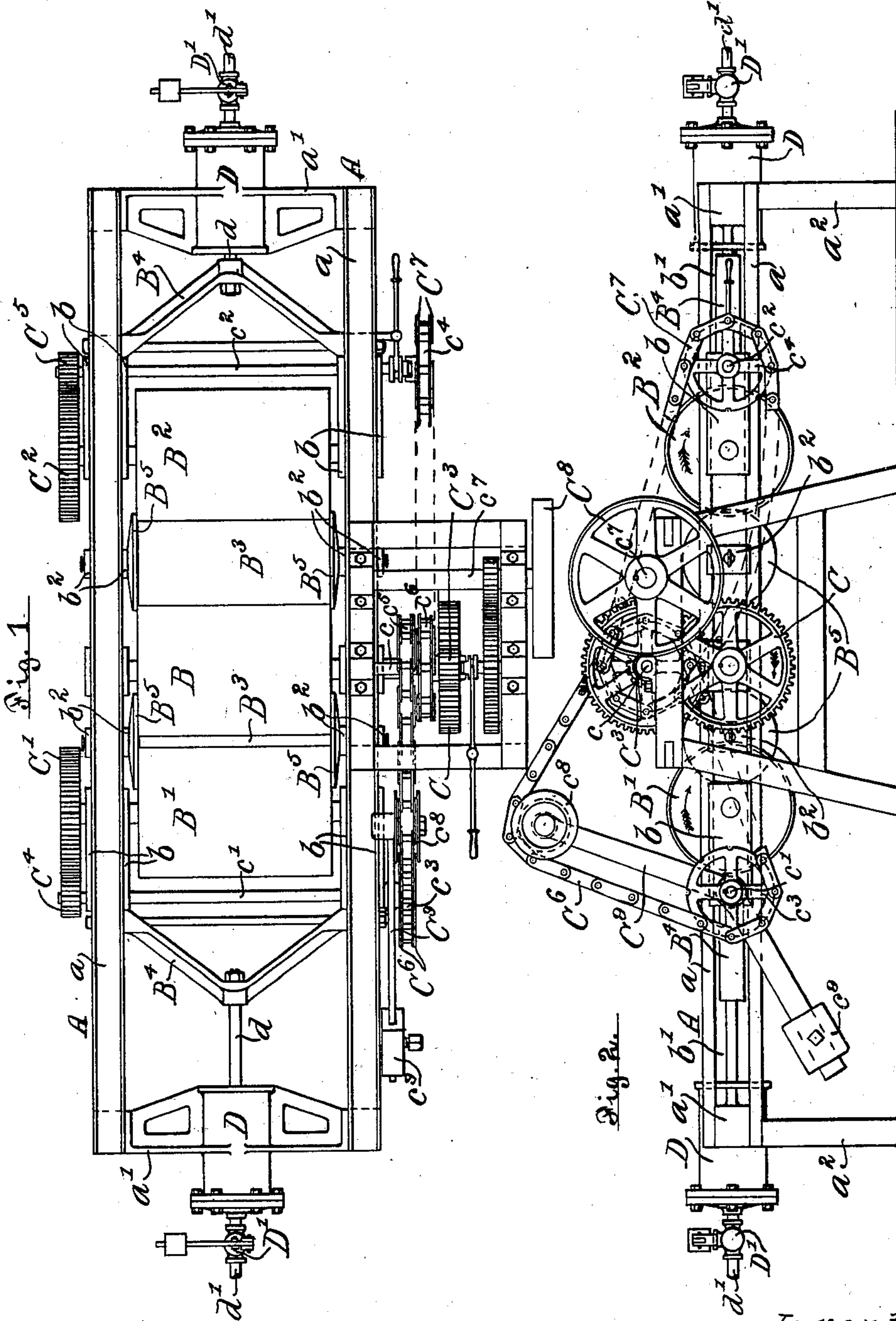
Patented Sept. 18, 1900.

M. SWENSON.
COTTON PRESS.

(Application filed Apr. 11, 1895.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses.
Maud Patterson
J. Williams

Inventor
Magnus Swenson
by Gustav Valdo.
his Atty.

No. 658,050.

Patented Sept. 18, 1900.

M. SWENSON.
COTTON PRESS.

(Application filed Apr. 11, 1895.)

2 Sheets—Sheet 2.

(No Model.)

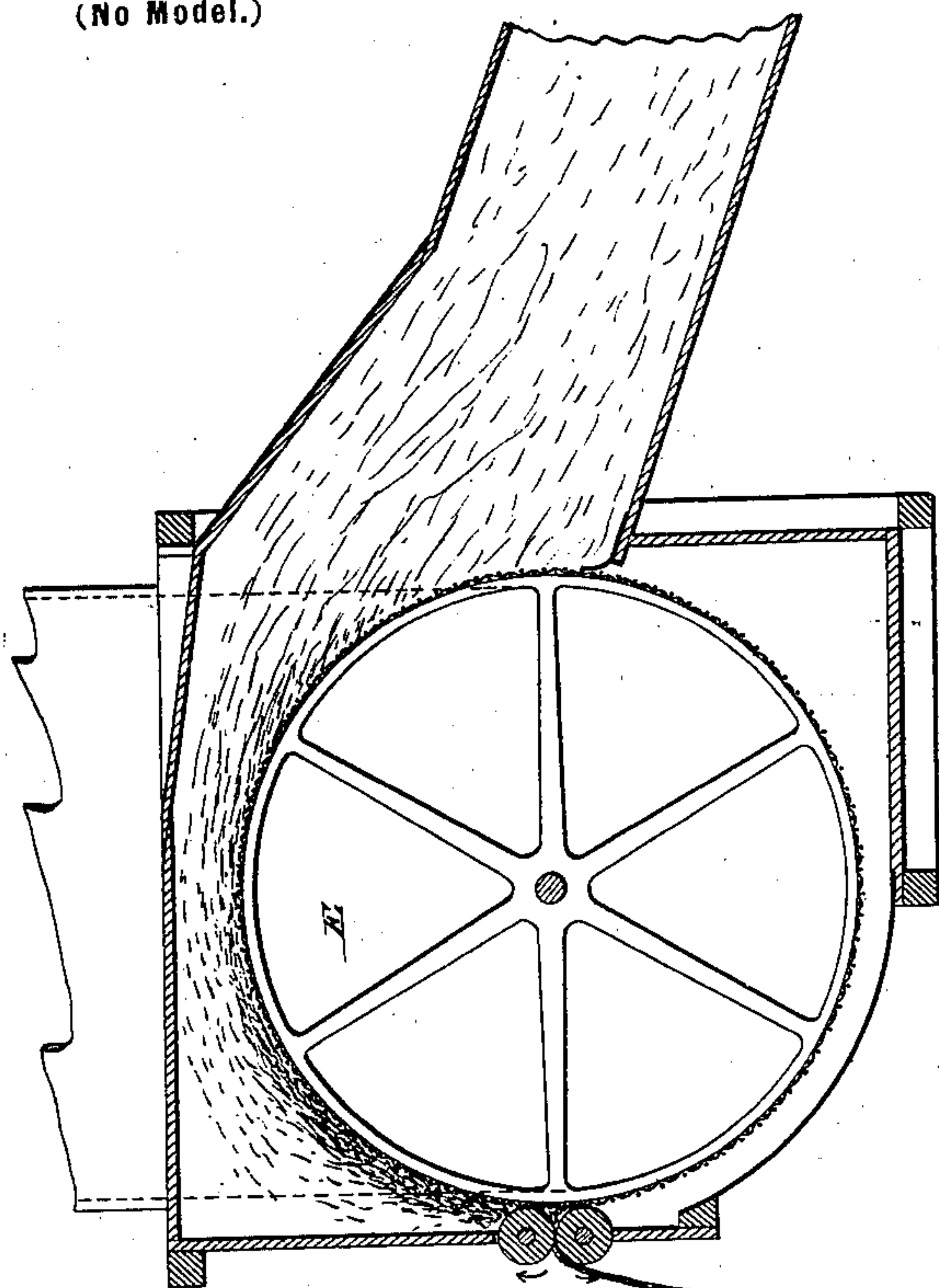
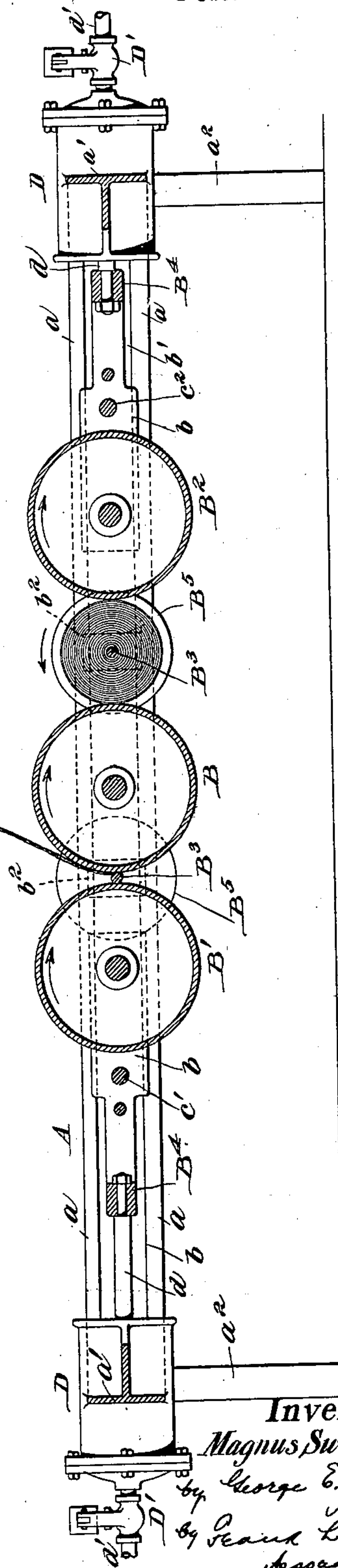


Fig. 3



Witnesses:

James F. Coleman
John R. Taylor

Inventor

Magnus Swenson

by *George E. Traldo*

Att'y.

by *Frank L. Myers*

Associate Att'y.

UNITED STATES PATENT OFFICE.

MAGNUS SWENSON, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE AMERICAN COTTON COMPANY, OF NEW YORK, N. Y.

COTTON-PRESS.

SPECIFICATION forming part of Letters Patent No. 658,050, dated September 18, 1900.

Application filed April 11, 1895. Serial No. 545,303. (No model.)

To all whom it may concern:

Be it known that I, MAGNUS SWENSON, a resident of Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Cotton-Presses, of which the following is a specification.

This invention relates to improvements in what may be termed "rotary" cotton-presses, comprising a spool on which a cylindrical bale is formed and driven compression-rolls arranged on opposite sides of said spool and adapted to subject the bale formed thereon to the desired pressure. Presses of this type are specially designed and adapted for use at the place of ginning in combination with the gin and condenser, the bat of cotton passing directly from the condenser to the press, thus necessitating but a single handling of the cotton. As heretofore constructed, however, presses of this type have been objectionable for the reason that their operation has not been continuous—that is, after the formation of a bale of desired size it has been necessary to stop the gin and condenser while the bale was being covered and discharged, which involved a great waste of time.

The object of the present invention is to provide a press in which the baling shall proceed continuously, thereby obviating the necessity of stopping the gin and condenser. In the preferable form thereof now known to me a press embodying my invention comprises a middle stationary roll, movable compression-rolls arranged on each side thereof, and baling-spools supported on movable centers, one on each side of the stationary roll, between said stationary roll and the movable compression-rolls.

The invention also covers the various other features, combinations of features, and details of construction hereinafter described, and pointed out in the claims.

In the accompanying drawings a press embodying my improvements is fully described. Figure 1 is a top plan view of said press. Fig. 2 is a side elevation thereof, and Fig. 3 a longitudinal section showing the press in use with an ordinary condenser for forming a bat.

Referring now to the drawings, A is the frame of the machine, in which the operative parts thereof are supported, said frame con-

sisting of horizontally-disposed side pieces a , end pieces a' , connecting the same at their ends, and supporting-legs or standards a^2 . Supported so as to rotate freely in suitable bearings formed in the side frame-pieces a is a stationary compression-roll B, on each side of which are arranged compression-rolls B' B^2 , revolvably supported in suitable bearing-blocks b , fitted to and longitudinally movable in guide slots or ways b' , formed in the side frame-pieces a , and a baling-spool B^3 , supported so as to rotate freely upon withdrawable centers mounted in sliding blocks b^2 , fitted to and longitudinally movable in the guide slots or ways b' in the same manner as the blocks b , said baling-spools B^3 being located between the stationary roll B and the movable compression-rolls B' B^2 . The bearing-blocks b of the rolls B' B^2 are connected by cross-heads B^4 , while the blocks b^2 , supporting the baling-spools, are disconnected and freely movable independently of each other. In the construction shown the spool-supporting centers instead of being mounted directly in the bearing-blocks b^2 are fitted to bearings formed longitudinal through the hubs of disks B^5 , which are fitted to suitable bearings formed in said blocks b^2 , so that said disks shall be freely revoluble. Rotary movement in the same direction is imparted to the compression-rolls in the following manner: Secured to the shafts of the compression-rolls are spur-gears C C' C^2 , which mesh with pinions C^3 C^4 C^5 , secured to pinion-shafts c c' c^2 , of which the shaft c is stationary and the shafts c' c^2 are mounted in the movable bearing-blocks b . Secured to the shafts c' c^2 , respectively, are sprocket-wheels c^3 c^4 , corresponding sprocket-wheels c^5 c^6 being secured to the shaft c , and chain belts C^6 C^7 are adjusted thereto.

The press is driven from any suitable source of power by means of a belt adjusted to a driving-pulley C^8 , secured to a shaft c^7 , a pinion on which meshes with a gear-wheel secured to the shaft c , all in an obvious manner.

To facilitate the discharge of the bale formed between the compression-rolls B B^2 , means are provided for stopping the roll B^2 independently of the other driven parts. This can be effected in a simple manner by

driving said roll through the medium of a clutch mechanism. In the drawings I have shown the clutch as applied to the sprocket-wheel c^1 . In like manner in order to facilitate the discharge of the bale formed on the front spool the pinion C^3 is secured to its shaft by means of a suitable clutch. In discharging the forward bales, however, it is necessary that both the roll B and the roll B^2 be stopped, and this is effected in a simple manner as follows:

The sprocket-wheel c^6 instead of being secured directly to the shaft c is rigidly secured to a sleeve formed integral with the hub of the pinion C^3 . Engaging or disengaging the clutch applied to the pinion C^3 will thus operate to start or stop the rolls B and B^2 simultaneously.

In order to provide for movement of the rolls B' B^2 to form a bale of desired size, the chain belts C^6 C^7 are much longer than necessary at the initial point in the baling operation, and the return side thereof will hang loose. In the case of the chain belt C^7 , which drives the rear roll, the duty comes on the upper side thereof, the lower side being the return side and hanging free. In the case of the chain belt C^6 , which drives the forward roll, however, the duty comes on the lower side thereof, and the upper side, being the return side, will hang loose, and unless the sprocket-wheels are made much larger than is desirable will when the rolls are close together come into contact with the lower section of said chain belt, thus creating a strong liability of its becoming entangled therewith, as a result of which the press would either be stopped or broken. To prevent this, means are provided for supporting the upper loose section of the chain belt C^6 , as follows:

Pivotally supported between its ends upon the shaft c' is a lever C^9 , adjacent to one end of which is pivoted an idle pulley c^8 , over which the chain belt C^6 passes, said pulley being preferably provided with guide-flanges, whereby said chain belt will be prevented from running off from said pulley. Secured to the opposite end of said lever C^9 is a weight c^9 , which is sufficiently heavy to counterbalance the pulley and the loose section of the chain belt, and by making the weight adjustable toward and from the pivotal point of the lever the tension on said loose section of the chain belt may be regulated, as desired, within limits.

The means for generating the pressure on the bale are the same as shown and claimed in an application for Letters Patent heretofore filed by me on the 26th day of March, 1895, Serial No. 543,244, and are as follows:

A rod or bar d connects each of the cross-heads B^4 with a piston fitted to a cylinder D, secured to the frame of the machine in proper position. The end of the cylinder adjacent to the cross-head will preferably be open, and a pipe d' communicates with the closed end of said cylinder. In said pipe d' is a safety-

valve D' , which may be adjusted so as to open at any desired pressure in the cylinder. Preferably, also, water or other substantially-inelastic liquid will be employed to generate the pressure in the cylinder. It is thus evident that as the size of the bale increases the pressure thereupon will be generated automatically.

By forming bales on the spools B' B^2 alternately it is obvious that the baling can proceed practically as a continuous operation, the only occasion for delay being the very short space of time required to discharge the bale formed on the front spool, it being possible to discharge a bale formed on the rear spool without stopping the front baling-rolls. Thus, referring to Fig. 3, showing an ordinary condenser E for forming a sheet or bat of cotton, it will be noted that the sheet or bat is first directed to the spool between the central roll B and one of the movable rolls and that after the bale is formed on that spool the bat is directed to the other spool and a new bale started thereon. This alternate formation of the bales on the two spools makes it possible to carry on practically a continuous operation, the condenser or other bat-former running continuously.

I claim—

1. The combination with a single bat-forming apparatus, of two sets of rotary cotton-pressing appliances to which the bat is alternately fed, a bale being first formed in one of said appliances and then in the other of said appliances, whereby the process of forming a bale in either one may go on while a previously-finished bale is being removed from the other.

2. In a cotton-press, three compressing-rolls having their axes substantially in line with each other, mechanism for operating said rolls to provide for the formation of a bale alternately between the intermediate roll and each of the other two rolls, and a core-rod supported at each side of said intermediate roll.

3. In a rotary cotton-press, the combination of a stationary compression-roll, compression-rolls movable toward and from said stationary roll, movably-supported baling-spools arranged, one between the stationary roll and each movable roll, means to hold the movable rolls yieldingly in contact with their respective baling-spools, or the bale formed thereon, and means to rotate said compression-rolls, substantially as described.

4. In a rotary cotton-press, the combination of a middle stationary compression-roll, compression-rolls movable toward and from said stationary roll, baling-spools arranged, one between the stationary roll and each movable roll, said rolls and spools forming substantially a horizontal series, means to hold the movable rolls yieldingly in contact with their respective baling-spools, or with the bales formed thereon, means to rotate said compression-rolls, means to independently en-

gage and disengage the rear compression-roll from the driving mechanism and means to simultaneously engage and disengage the middle and rear compression-rolls from the driving mechanism, substantially as described.

5. In a rotary cotton-press, the combination of a middle stationary compression-roll, compression-rolls movable toward and from said stationary roll, baling-spools, arranged, one between the stationary roll and each movable roll, said compression-rolls and baling-spools forming a substantially - horizontal series, means to hold the movable rolls yieldingly in contact with their respective spools, or with the bales formed thereon, means to rotate said compression-rolls, the movable rolls being driven from a shaft located between them through the medium of chain belts, a clutch whereby the rear roll may be engaged and disengaged with the driving mechanism, the sprocket-wheel on the middle shaft, from which the rear compression-roll is driven, being secured to a pinion on said shaft, through the medium of which the stationary roll is driven, and a clutch whereby said pinion may be engaged and disengaged from the driving mechanism, substantially as described.

6. In a rotary cotton-press, the combination of a middle stationary compression-roll, compression-rolls movable toward and from said stationary roll, baling-spools arranged, one between the stationary roll and each movable roll, said compression-rolls and spools forming a substantially-horizontal series, means to hold the movable compression-rolls yieldingly in contact with their respective spools, or with the bales formed thereon, means to rotate said compression-rolls, the movable compression-rolls being driven from a shaft located between them through the medium of chain belts and means being provided to support the loose upper section of the chain belt on which the duty comes on the under section, substantially as described.

7. In a rotary cotton-press, the combination of a middle stationary compression-roll, com-

pression-rolls, arranged on opposite sides of said stationary roll and movable toward and from the same, baling-spools arranged, one between the stationary compression-roll and each movable roll, said compression-rolls and spools forming substantially a horizontal series, means to hold the movable rolls yieldingly in contact with their respective spools, or the bales formed thereon, means to rotate said compression-rolls, the movable rolls being driven from a shaft between them through the medium of chain belts, and means being provided to support the loose upper section of the chain belt on which the duty comes on the under section, said means comprising a lever pivoted between its ends, an idle pulley pivoted to one end thereof, over which said loose upper section of said chain belt passes and a counterweight at the other end of said lever, substantially as described.

8. In a rotary cotton-press, the combination of a middle stationary compression-roll, compression-rolls arranged on opposite sides thereof, and baling-spools arranged, one between said stationary roll, and each movable roll, said rolls and spools forming a substantially-horizontal series, means to rotate said compression-rolls and means to hold the movable compression-rolls yieldingly in contact with their respective baling-spools, or the bales formed thereon, said means comprising a cross-head connecting the bearing-blocks of each movable roll, a rigid rod or bar connecting said cross-head with the piston of a cylinder secured to the end of the press-frame, a pipe connecting said cylinder with a source of supply of some suitable inelastic medium and safety-valve in said pipe, substantially as described.

In testimony that I claim the foregoing as my invention I hereunto set my hand this 6th day of April, 1895.

MAGNUS SWENSON.

Witnesses:

B. A. JOHNSTON,
J. H. GIBSON.