

S. M. BALL.

BAT FORMER.

APPLICATION FILED MAY 20, 1909.

987,789.

Patented Mar. 28, 1911.

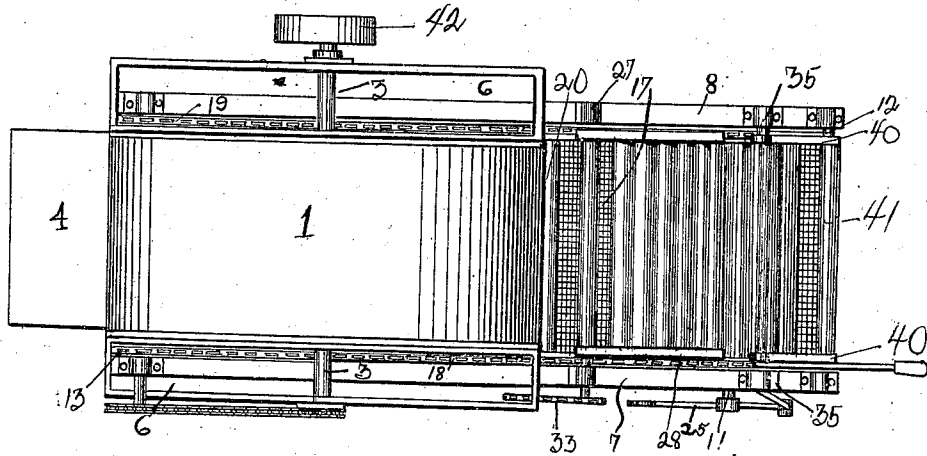


FIG 1

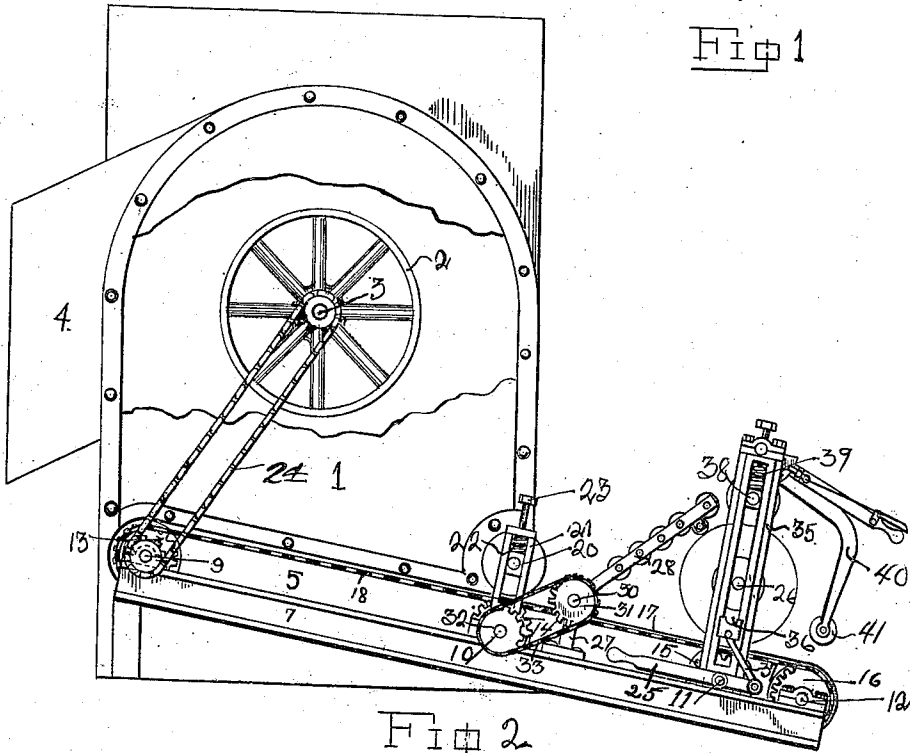


FIG 2

WITNESSES:
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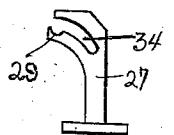


FIG 3

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BAT-FORMER.

987,789.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, SAMUEL M. BALL, a citizen of the United States, residing at Houston, in the county of Harris and State of Texas, have invented certain new and useful Improvements in Bat-Formers, of which the following is a specification.

My invention relates to new and useful improvements in bat formers, and more particularly to such devices as are used for forming bats of cotton in a condenser such as is usually used in connection with a cotton gin.

The object of the invention is to provide a device of the character described which will form a uniform bat and which has a storage roller to take up the bat being formed while the press is not in operation.

The ordinary bat former requires at least two presses, one to take up the bat, while the other one is being relieved of the bale, or is not in operation. With my improved bat former, only one press is necessary.

Finally, the object of the invention is to provide a device of the character described that will be efficient and at the same time simply and easily constructed and easily kept in repair.

With the above and other objects in view, my invention has particular relation to certain novel features of construction and operation an example of which is given in this specification, and illustrated in the accompanying drawings, wherein:—

Figure 1 is a plan view of my device, and Fig. 2 is a side elevation thereof, with one of the air ducts removed, and a portion of the side broken away to expose the drum, and also showing the cotton batting wound around the storage roller. Fig. 3 is a detail of the support for the auxiliary carrier frame.

Referring now more particularly to the drawings, wherein like numerals of reference designate similar parts in each of the figures, the numeral 1 refers to the condenser casing in which the wheel or drum 2 is revolvably mounted. This drum is mounted on a suitable shaft 3, which carries a drive wheel, 42. A suitable air duct, 4, leads from the gin to the condenser. Through this duct the cotton is carried from the gin by an air current, against drum, 2. This drum is constructed of a suitable frame-work, having its periphery composed of

wire gauze or screen through which the air may pass. The current passing through the flue, 4, carries the ginned cotton to the drum whose gauze catches the same and the formation of the bat is thereby started. As the drum rotates the cotton held upon the gauze thereof is carried around to the opposite side and out of the entering current and falls down upon the endless belt or apron 17 at the bottom of the condenser, and is formed into a bat in the manner hereinafter described. The air current passes down through said apron and enters space 5, and then ascends through air outlets 6, located on either side of the condenser, and passes to the free atmosphere.

Suitable supporting members, 7 and 8 are provided to support the condenser and bat former, and upon these are mounted, by means of suitable bearings, four transverse shafts, 9, 10, 11 and 12. All of these shafts carry rollers, and upon their respective ends, sprocket wheels 13, 14, 15, and 16 are mounted. These rollers are designed to support said apron 17, which is composed of wire gauze and which carries at either side, sprocket chains, 18 and 19, designed to mesh with sprocket wheels 13, 14, 15 and 16. The rollers carried by shafts 10, and 11 are designed to support apron 17 against sagging and are each provided with sprocket wheels 15 and 16 which mesh with chains 18 and 19.

Oppositely disposed to shaft 10 is a transverse roller 20, mounted at either end in supports 21. The bearings of said roller in said supports have a limited vertical play, and are provided with resilient cushions 22, the tension of which is regulated by thumb screws 23. This roller is provided to press against the cotton passing along with apron 17 and to partially compress the same into a bat.

The shaft 9 is operated by means of a sprocket chain 24, connecting said shaft and drive shaft 3, or in some other suitable manner, and motion is thus imparted to the apron 17. The discharge of the cotton from the drum, 2, will be assisted by the downward air current and the cotton will be caught by the apron 17, the air current passing on through said apron. As portions of the apron become covered with the cotton, the air current will thereby be diverted and forced through portions of the belt which are free from any cotton and these free por-

tions will then receive the deposits of cotton. It is readily apparent that the cotton will thus be deposited on the belt uniformly, and an even bat will be formed. The bat thus
 5 deposited, passes between roller on shaft 10 and roller 20 and is compressed, to a certain extent, by reason of spring 22, and passes, unobstructed, into the compress, and is rolled into the bale. When the bale is complete
 10 and ready to be removed from the press, the bat which continues to form is rolled around a storage roller, 26, in the manner and by the mechanism presently described.

A pair of supports, 27, shown in detail in
 15 Fig. 3, support an auxiliary carrier composed of suitable side members 28, and a plurality of transverse rollers. The supports, 27, rest on the supporting members 7 and 8 and extend upwardly on either side of the
 20 apron. The auxiliary carrier is disposed to rotate on a suitable shaft and may be given any desired inclination in the construction of the machine while the transverse rollers thereof are located close together so as to
 25 prevent the bat from passing therebetween. The rollers are secured to the side members by suitable bearings in which they are readily rotatable, so that the bat may pass along said carrier without resistance.

The supports 27, are provided with bearings 29, in which the shaft of the roller 30 of the auxiliary carrier rotates. This roller 30 carries a sprocket wheel 31 to which rotation is imparted from sprocket wheel 32, carried
 35 by shaft 10, through sprocket chain 33. The roller 30 is journaled in the side members of the auxiliary carrier and when operating in bearings 29, is held elevated above the bat which passes thereunder, unobstructed; but
 40 when the press is stopped, and no longer receives the bat, the shaft of roller 30 is lifted out of the bearings 29 by means of handle 43, and is lowered into the arcuate downwardly extending slots, 34, and roller 30 is
 45 thus permitted to come into contact with the bat; and as the rotation of roller 30 is against the movement of the bat, the same is broken and passes up over the roll 30 and then over the series of rolls journaled in the side mem-
 50 bers 28 and thence to the storage roller 26.

Near the outer end of supporting members 7 and 8, are two uprights, 35, one on either member, provided with longitudinal slots into which the ends of shaft or roller 26
 55 protrude. Bearings 36 are slidably mounted in these uprights, in which the shafts of said roller normally rest. Those bearings may be raised and lowered by means of hand levers 25, pivoted to the supporting members 7 and
 60 8 and operating through links 37, having connection with said lever and said bearings.

When the bat is broken by roller 30 and forced up the auxiliary carrier, it falls over
 65 the free end of said carrier and over storage

roller 26. At the top of uprights 35, I have pivotally mounted elbows 40. These elbows are secured to a shaft 40', the ends of which extend laterally beyond said elbows and rest on bearings carried by the upper end of up-
 70 rights 35. The upper end of one of these uprights also carries a rack 40'' in which a dog 41' carried by the corresponding elbow is designed to engage. Said dog is operated
 75 by a hand lever 41'' in the usual manner and thus the elbows are held in position by said rack-and-dog arrangement and carry at their free ends, a roller 41. When the bat passes
 over roller 26, the elbows are lowered and roller 41 is thus interposed between belt 17
 80 and storage roller 26. When said elbows are lowered the roller 41, carried by the free ends thereof is brought into contact with the belt 17 and a rotation is imparted thereto
 by reason of the friction. Said roller also
 85 may be made to contact with storage roller 26 by lowering said last mentioned roller through the operation of hand lever 25 and the rotation imparted to roller 41 by belt 17
 is transmitted to storage roller 26 by reason
 90 of the friction between these two rollers, and the rotation imparted to said roller is opposite to the movement of the belt and the bat is thus wound around the storage roller. As the roll of cotton around storage roller
 95 26 increases in diameter, it comes into contact with compression roller 38 carried by the uprights 35. This compression roller has vertical play in the uprights and is held
 against the cotton rolled around roller 26 by
 100 means of compression springs 39, and makes said roll compact. When the bale has been removed from the press and it is desired to again feed the bat thereto, the roller, 30 is
 again raised until its shafts rest in bearings
 105 39 and the bat then takes its usual course along belt 17 and into the press. The elbows 40, are then elevated, the bearings 36 are raised and the rotation of storage roller 26 is stopped. The free end of the bat on the
 110 storage roller is then fed into the press and the bat is unwound from the storage roller 26, a double bat thus being fed into the press until the bat is unwound from the storage
 roller. This is accomplished by manually
 115 taking hold of the outer or free end of the bat on the storage roller and starting the same in the direction of the movement of the apron 17, until the double bat is taken hold
 of by the mechanism of the compress. As
 120 the storage roller is now free to rotate, the storage bat will be unwound by the mere pull exerted on the bat by the compress.

I claim—

1. In a device of the character described
 125 a condenser including a casing, an air flue leading thereto, a hollow cylinder adapted to rotate therein having a perforated periphery, all in combination with a carrier belt
 arranged to receive cotton therefrom, sup- 130

porting means for said belt, means for imparting motion thereto, a storage roller disposed relative to the belt, so as to receive the bat therefrom, a support for said roller, 5 formed to permit the vertical play of said roller with respect thereto, a compression roller connected to said support, means carried by said support and so disposed as to be readily interposed between said belt and 10 said storage roller and transmit motion from the former to the latter, means for holding said means withdrawn from contact with said storage roller and belt, a carrier disposed to conduct a bat to said storage roller 15 and means for supporting said carrier so that its lower end may be alternatively in and out of contact with said carrier belt.

2. In a device of the character described the combination with a condenser of a carrier belt adapted to receive cotton therefrom, a supporting means for said belt, a storage roller for receiving a bat from the belt, a support for said storage roller mechanism arranged to be readily interposed between said belt and roller and adapted to 25 transmit motion from the former to the latter, means for holding said mechanism withdrawn from contact with said roller and said belt, and a carrier whose lower end is adapted 30 at times to be brought into connection with

said belt and to transmit the bat from the belt to the storage roller.

3. In a device of the character described the combination with a condenser of a carrier belt arranged to receive cotton therefrom, supporting means for said belt, means for imparting motion thereto, a storage roller disposed relative to the belt so as to receive the bat therefrom, a support for said roller, formed to permit the vertical play of 40 said roller with respect thereto, a compression roller connected to said support, means carried by said support and so disposed as to be readily interposed between said belt and said storage roller and transmit motion 45 from the former to the latter, means for holding said last mentioned means withdrawn from contact with said storage roller and belt, a carrier disposed to conduct a bat to said roller, and means for supporting the 50 lower end of said carrier in and out of contact with said carrier belt.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

SAMUEL M. BALL.

In the presence of—

FLYNN DAVIS,
WM. A. CATHEY.