

(No Model.)

3 Sheets—Sheet 1.

C. L. BESSONETTE.
ROLLER COTTON COMPRESS.

No. 541,418.

Patented June 18, 1895.

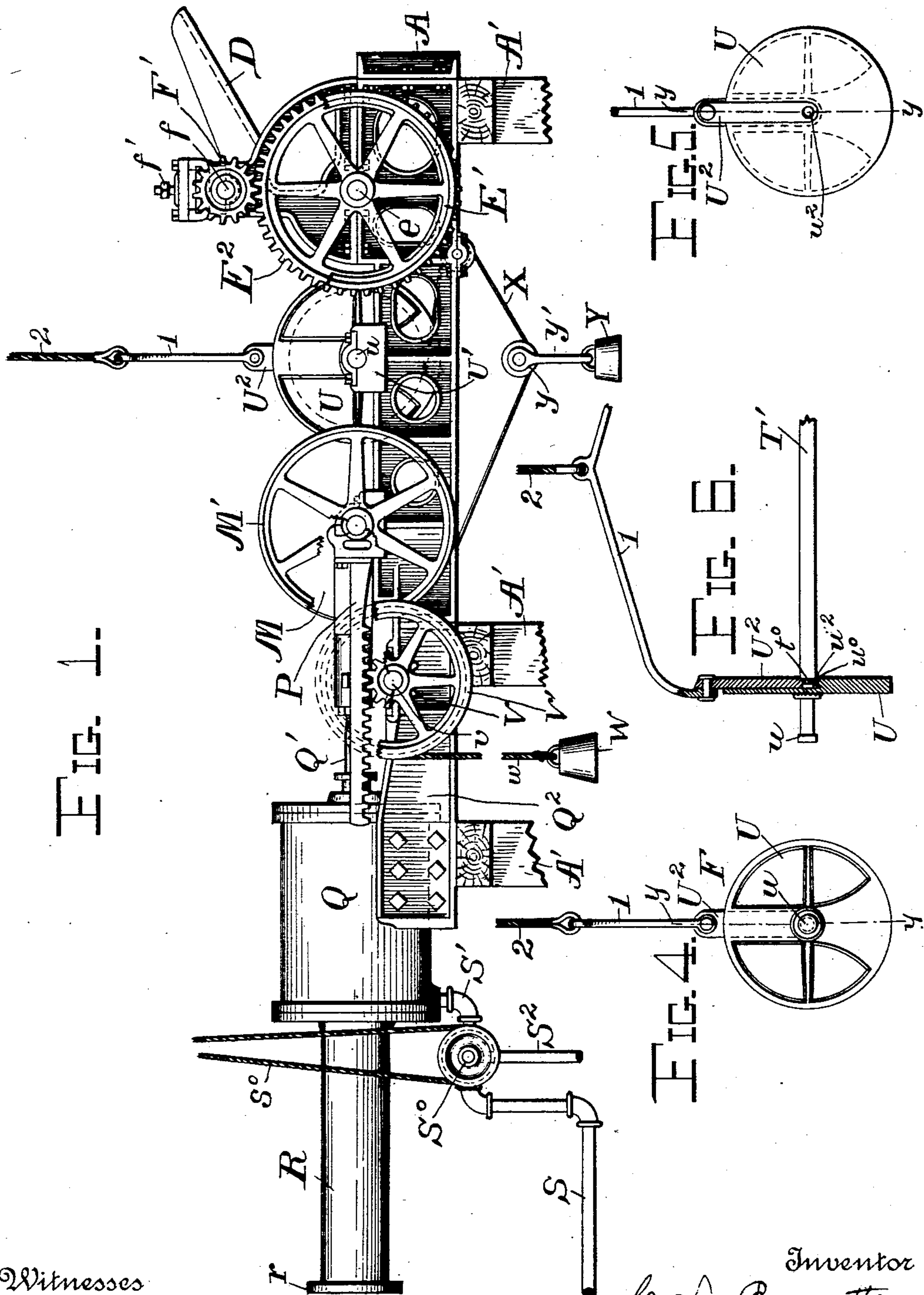


FIG. 1.

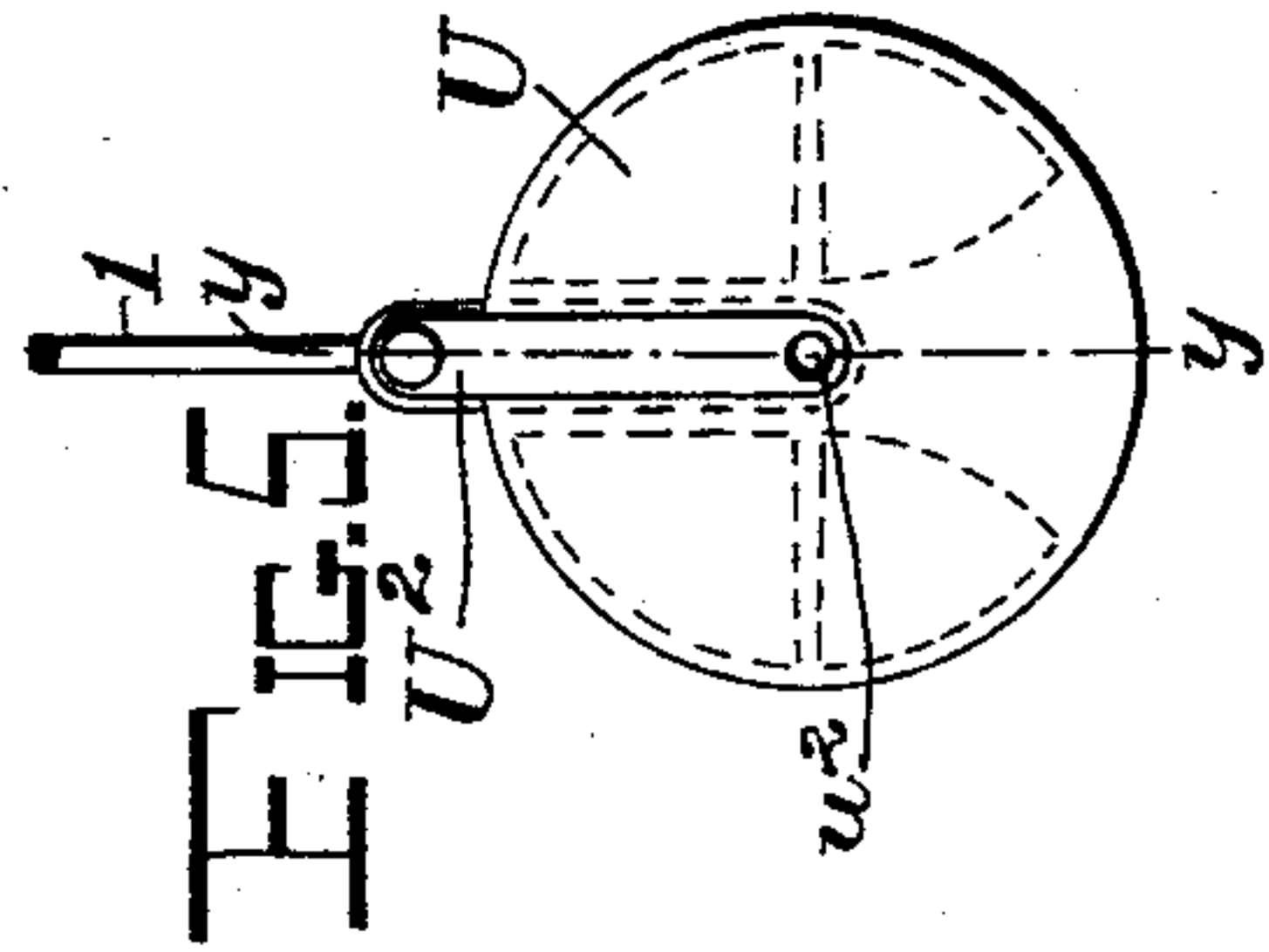


FIG. 5.

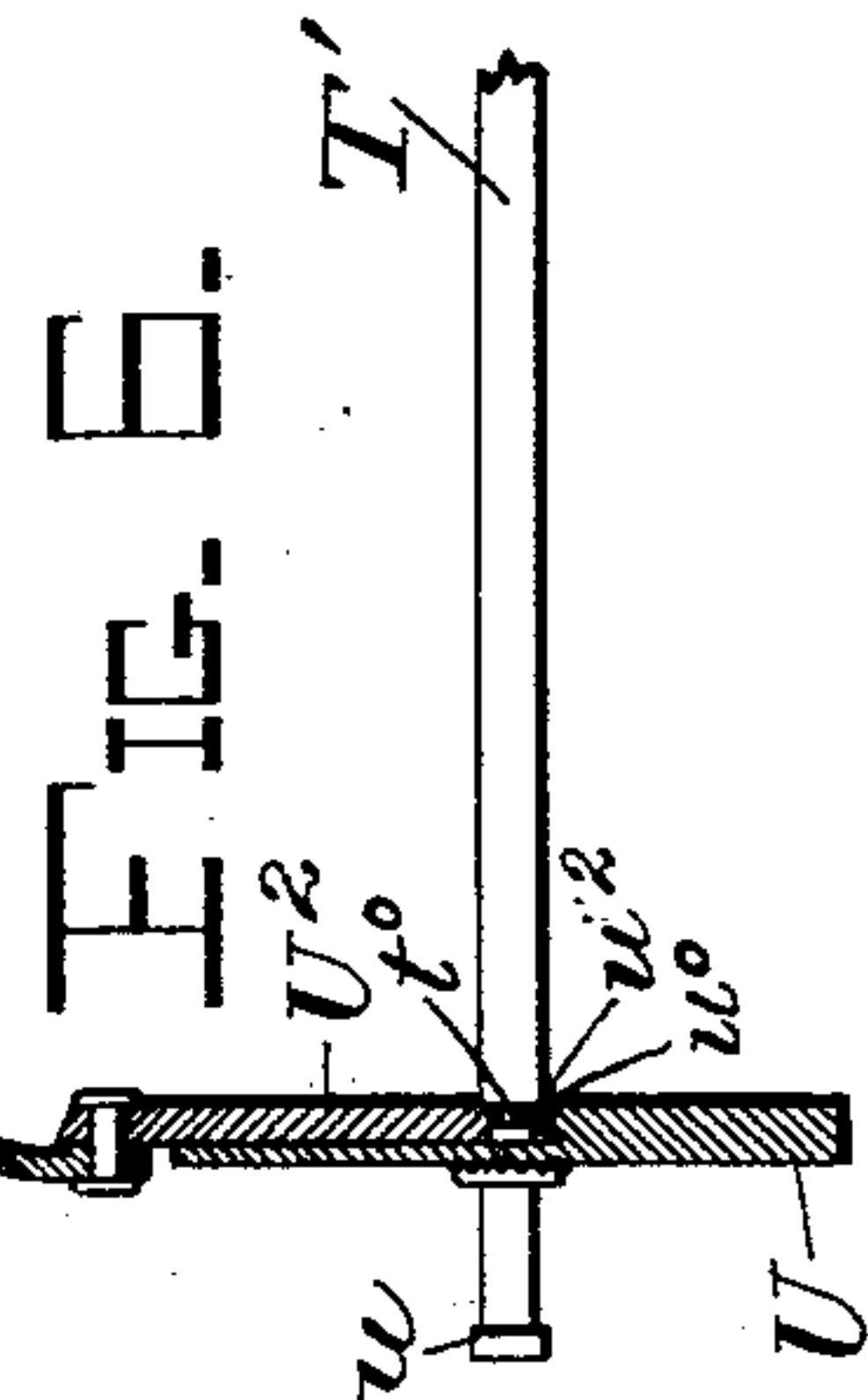


FIG. 6.

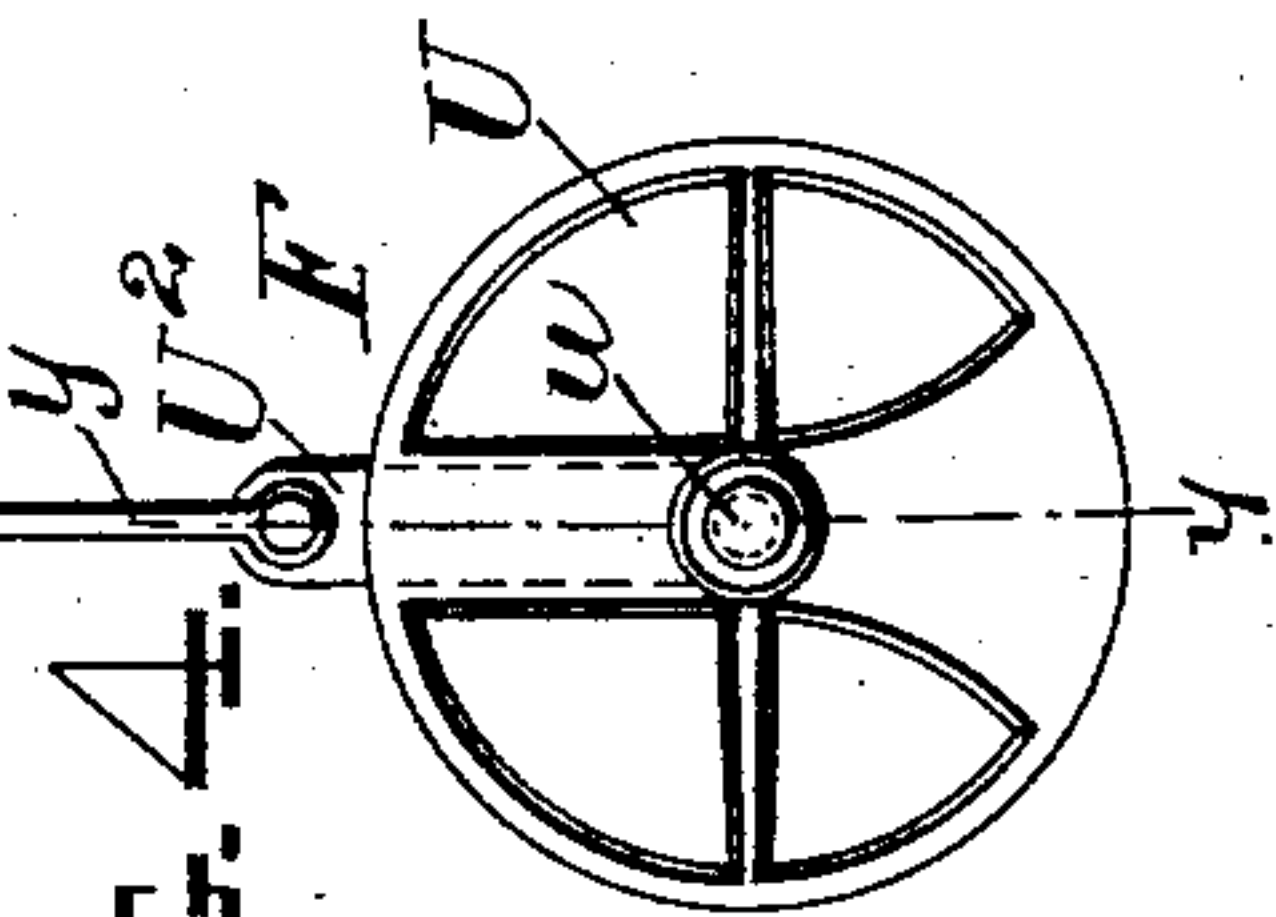


FIG. 4.

Witnesses

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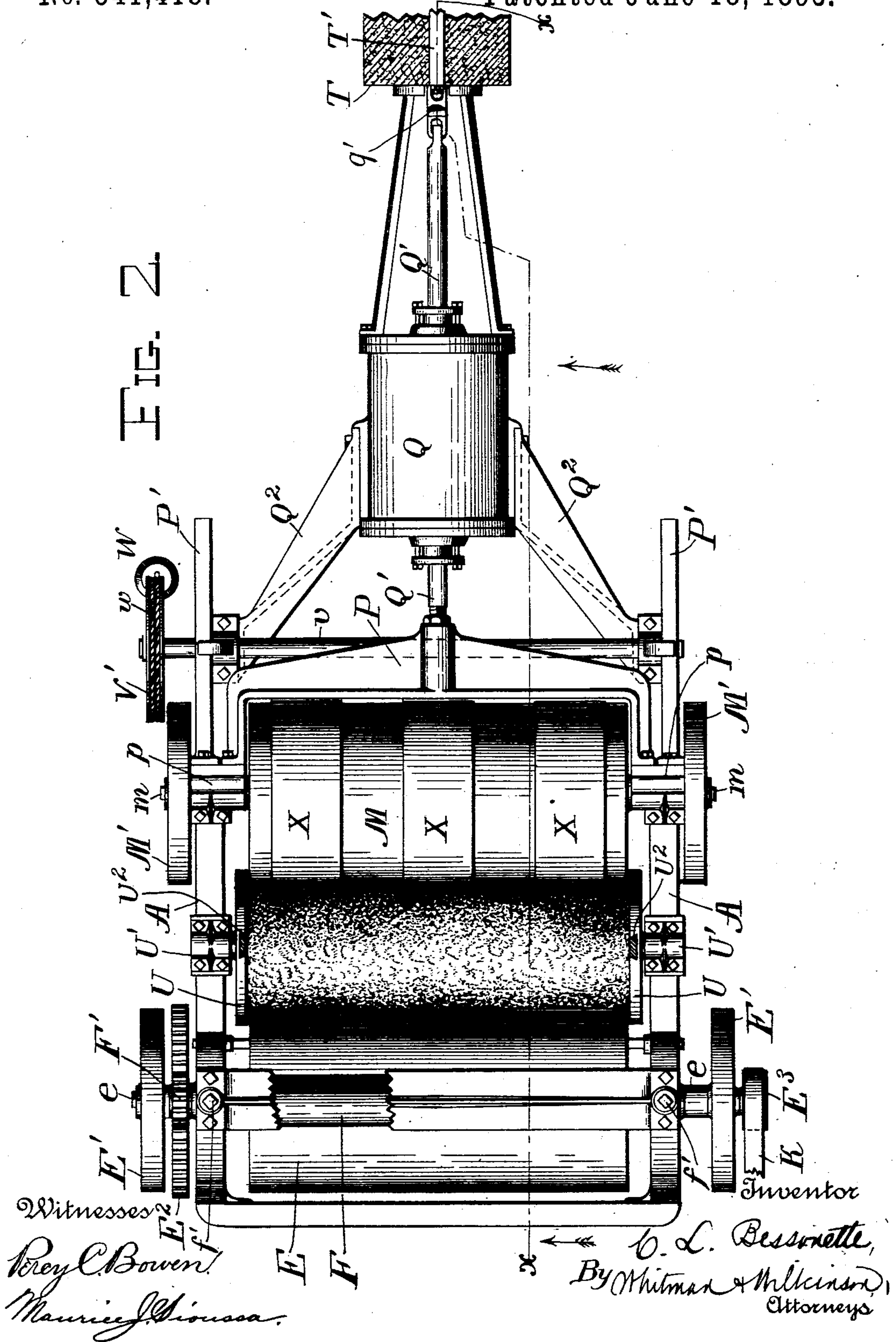
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3 Sheets—Sheet 2.

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Patented June 18, 1895.



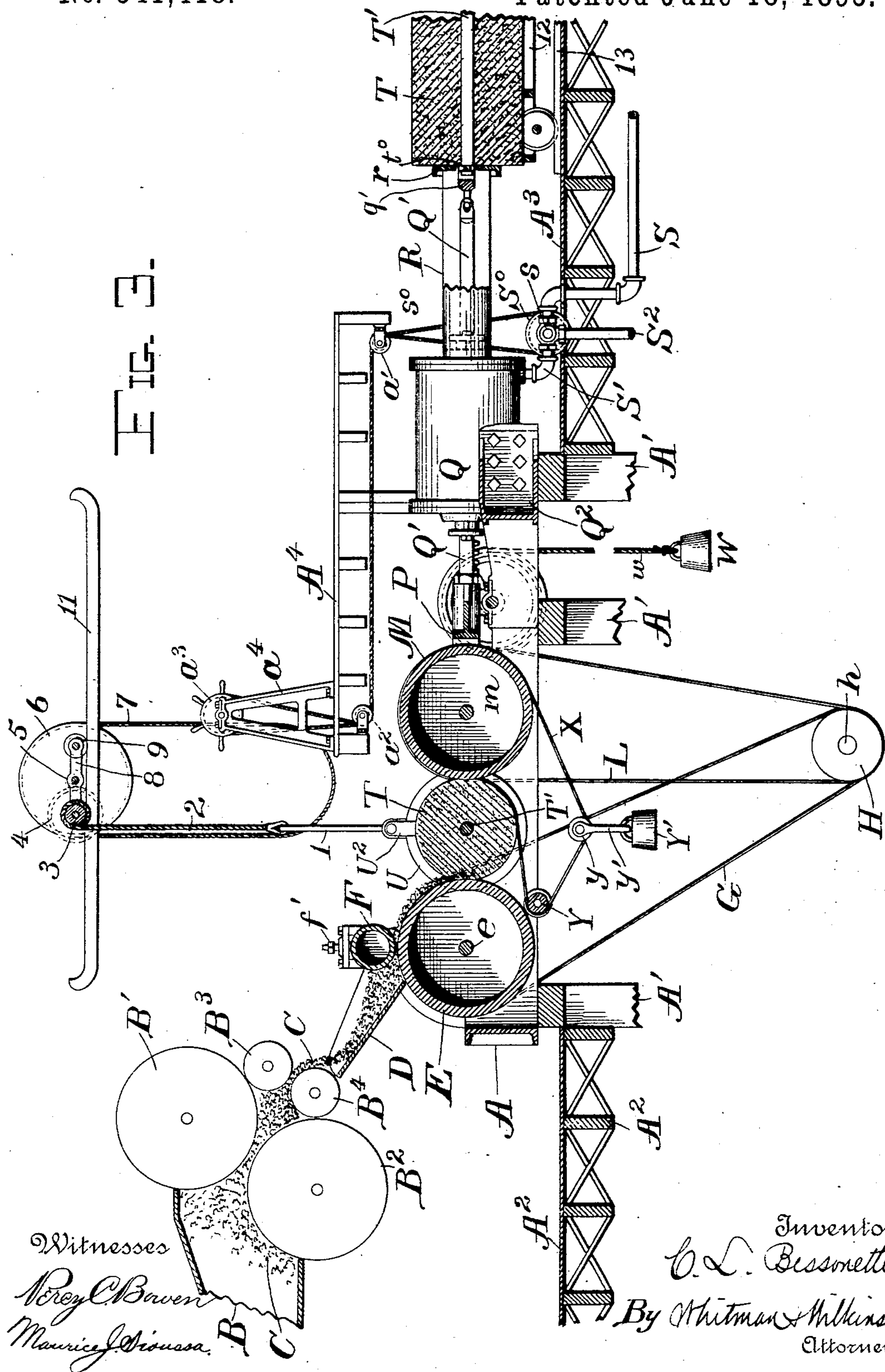
(No Model.)

3 Sheets—Sheet 3.

C. L. BESSONETTE.
ROLLER COTTON COMPRESS.

No. 541,418.

Patented June 18, 1895.



UNITED STATES PATENT OFFICE.

CHARLES L. BESSONETTE, OF WACO, TEXAS, ASSIGNOR TO THE BESSONETTE COTTON COMPRESS MANUFACTURING COMPANY, OF SAME PLACE.

ROLLER COTTON-COMPRESS.

SPECIFICATION forming part of Letters Patent No. 541,418, dated June 18, 1895.

Application filed March 18, 1895. Serial No. 542,195. (No model.)

To all whom it may concern:

Be it known that I, CHARLES L. BESSONETTE, a citizen of the United States, residing at Waco, in the county of McLennan and State of Texas, have invented certain new and useful Improvements in Roller Cotton-Compresses; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in cotton compresses and especially to those compresses in which the cotton is rolled up into a cylindrical bale, the cotton coming in a thin bat from the condenser and being wound up into a cylindrical bale composed of a plurality of superimposed layers.

My present invention particularly relates to improved means and apparatus for accomplishing the work of rolling up the bale, of removing the same from the position between the rolls, and of removing the core.

The herein described apparatus will be understood by reference to the accompanying drawings, in which the same parts are indicated by the same letters and numerals throughout the several views.

Figure 1 represents a side elevation of my improved baling-press. Fig. 2 represents a plan view of the press shown in Fig. 1. Fig. 3 represents a section along the broken line xx of Fig. 2 and looking in the direction of the arrows. Fig. 4 represents a detail view of one of the squaring-heads mounted at either end of the core. Fig. 5 represents an interior view of one of the said squaring-heads, or as seen from the opposite side from that shown in Fig. 4. Fig. 6 represents a section along the line yy of Figs. 4 or 5.

A represents suitable bed plates mounted upon the supports A' , and preferably above the flooring A^2 and A^3 .

A^4 represents a raised platform for the workman who handles the bales.

The cotton C comes from the condenser B between the cylindrical screens B' and B^2 , which being of ordinary construction and operated in the ordinary way are merely indicated in Fig. 3 of the drawings. After leaving the condenser the cotton passes between

the small rollers B^3 and B^4 and falls in a bat on the chute D whence it is drawn between the rollers F and E , and receives sufficient pressure to put it into proper condition for being wound on to the bale.

The roller F is mounted on the shaft f , and is screwed down to the desired position by means of the screws f' . This roller is turned by means of the pinion F' which meshes with the gear wheel E^2 on the shaft e . This shaft e carries the compressor roller E , which is journaled in fixed bearings and also carries the pulleys E' which are driven by means of the belts G from the pulleys H on the main driving shaft h . There is preferably one of these pulleys E' at each end of the shaft e , but one only would be sufficient. The shaft e also carries the pulley E^3 having the belt K adapted to drive the rollers B^3 and B^4 , but this particular part of the machine not being a part of the present invention need be no further described.

The belts L , see Fig. 3, connect the driving shaft h with the movable presser roller M which is mounted on the shaft m and is provided with pulleys M' engaging the belts L . This shaft m is journaled in the sliding boxes p attached to the cross-head P which is connected to the piston rod Q' of the cylinder Q adapted to be operated by steam, compressed air, or other fluid. This cylinder is rigidly connected to the frame work A by the braces Q^2 .

In order to equalize the pressure on the two ends of the shaft m as the bale is wound up, the sliding boxes p carry racks P' which gear into the pinions V on the shaft v ; and thus the transverse motion of the two ends of the shaft m is made uniform; or if the piston rod be made rigid enough the racks may be omitted. This shaft v also carries a drum V' on which is wound a rope w to which is suspended a weight W . The size of the drum and of the pinion as also of the weight is so regulated that when the pressure on the piston in the cylinder Q is released, the weight will cause the piston to move backward dragging with it the roller M , which is thus withdrawn from engagement with the bale.

As the machine is shown in the drawings, the shaft m will move only a short distance to either side of a perpendicular through the

driving shaft h , and thus if the drift between the two shafts be sufficient, the belt L will need no tightening; but it will be obvious that any well known means of tightening the belt may be employed if desired.

The cylinder Q is supplied with fluid pressure through the pipe S which is provided with a three-way cock s operated by the pulley S^0 and rope s^0 connected to the hand wheel a^3 mounted in the bearings a^4 raised above the platform A^4 . The rope s^0 passes through guide pulleys a^2 and a' , and the motion of the hand wheel a^3 in one direction or the other, will either admit fluid pressure from the pipe S into the pipe S' and so into the cylinder, or it will allow the fluid under pressure in the cylinder to escape through the pipe S' and the escape pipe S^2 . Thus the cylinder Q is single-acting.

T represents the bale which is held between the squaring heads U journaled on the short shafts u mounted in the sliding boxes U' .

U^2 are sliding blocks dovetailed into the squaring heads U and passing beyond the center of said heads. Near the ends of said blocks are journal bearings u^2 for the ends of the cores T' , said bearings being preferably provided with a rib u^0 , and these sliding blocks are so arranged with respect to the heads U that the journal bearings of the core shall be concentric with the short shaft u . The ends of the core are preferably provided with an annular groove t^0 adapted to catch on the rib u^0 when the bale is lifted out.

When the bale is completed the slings I are hooked in the ends of the sliding blocks U^2 . These slings are connected to the rope 2 passing over the small drum 3, on the same shaft with the gear wheel 4, which meshes with the gear wheel 5 on the same shaft with the drum 6, which drum is operated by the rope 7, and thus the bale may be lifted from between the rollers.

After the bale is lowered into place on the car 12 or elsewhere, the blocks U^2 may be readily disengaged from the ends of the core.

Rollers 9 support the frame 8 on the overhead track 11, and enable the bale and sling mechanism to be drawn backward out of the way by the workmen on the platform A^4 .

The cylinder Q is provided with a projecting cylinder R having a bearing ring r open at its center, as shown in Fig. 3.

The rear end of the piston rod projects through the rear cylinder head, and into this cylinder R as shown in Fig. 3.

When the finished bale is removed from the press it is put on the car 12 which runs on the tracks 13 on either side of the prolongation of the piston rod Q' . The end of the piston rod Q' is coupled on to the end of the core T' by any suitable coupling such as q' , and when the pressure is supplied for running the piston forward, the piston rod drags the core T' out of the bale on the car 12 as shown in Fig. 3. Thus it will be seen that

the same forward motion of the piston which would be required to move the roller M into the operative position for winding up a new bale would also pull the core out of the bale last finished.

Where screw cores are used a revoluble coupling q' may be used to connect the core to the piston rod, and thus to allow the rotation of the core in the bale as it is being drawn out.

The winding action of the two rollers E and M is supplemented by the belts X which pass over the roller M and over the smaller roller Y journaled in the frame A . These belts are tightened by the rollers y connected by the slings y' with the weights Y' . A single broad belt may be used if desired.

It will be seen that as the size of the bale increases the length of those portions of the belts in contact therewith will also increase and thus the binding effect of the belts will be commensurately increased. Moreover if the belt X be made comparatively short as is shown in Fig. 3, as the diameter of the bale increases that portion of the belt sustaining the weight Y' will be more nearly straightened out, causing the weight Y' to exert a much greater pressure on the bale when the said bale is nearly finished than when it is about begun.

It will be seen that in the herein-described invention the apparatus is almost entirely horizontally disposed which enables the bale to be taken out of the machine very much more readily, and facilitates the putting in of the core, while at the same time the greater strength and weight required in a high structure are, to a large degree, avoided. Moreover the parts are more conveniently arranged, and are more readily assembled or reached for repairs.

Another advantage is that the same cylinder may be used for removing the cores and for operating the compressor rollers, and even the same stroke of the cylinder that is used to remove the core may put the compressor roller into the operative position.

The various other advantages of the herein-described construction will readily suggest themselves to any one skilled in the art.

It will be obvious that many modifications might be made which could be used without departing from the spirit of my invention.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. A roller compress of the character described comprising a compressor roller journaled in fixed bearings, a second compressor roller journaled in sliding bearings and normally pressed toward the first roller, a core having its axis approximately in the plane of the axis of said compression rollers, means for feeding the cotton to be baled to the said core, and a belt under tension passing over one only of said rollers and being in contact

with a portion of the bale while it is being formed, and pressing toward the center of said bale, substantially as described.

2. A roller compress of the character described comprising a compressor roller journaled in fixed bearings, a second compressor roller journaled in sliding bearings and normally pressed toward the first roller, a core having its axis approximately in the plane of the axis of said compression rollers, means for feeding the cotton to be baled to the said core, and a belt passing over one only of said rollers and over a pulley below and on the opposite side of said core, a roller resting on the lower member of said belt, and a weight suspended from said roller and adapted to exert a graded upward pressure on the upper member of said belt, dependent upon the diameter of the bale, substantially as described.

3. A roller compress of the character described comprising a compressor roller journaled in fixed bearings, a second compressor roller journaled in sliding bearings, racks attached to said bearings, a transverse shaft with pinions thereon meshing in said racks, means for applying pressure to said sliding bearings, a core having its axis approximately in the plane of the axis of said compression rollers, means for feeding the cotton to be baled to the said core, and a belt under tension passing over one only of said rollers and being in contact with a portion of the bale while it is being formed, and pressing toward the center of said bale, substantially as described.

4. A roller compress of the character described comprising a compressor roller journaled in fixed bearings, a second compressor roller journaled in sliding bearings, racks attached to said bearings, a transverse shaft with pinions thereon meshing in said racks, means for applying pressure to said sliding bearings, a core having its axis approximately in the plane of the axis of said compression rollers, means for feeding the cotton to be baled to the said core, and a belt passing over one only of said rollers and over a pulley below and on the opposite side of said core, a roller resting on the lower member of said belt, and a weight suspended from said roller and adapted to exert a graded upward pressure on the upper member of said belt, dependent upon the diameter of the bale, substantially as described.

5. A roller compress of the character described comprising a compressor roller journaled in fixed bearings, a second compressor roller journaled in sliding bearings and normally pressed toward the first roller, a core situated between said rollers, the ends of said core and of said rollers being approximately in the same horizontal plane, means for feeding the cotton to be baled to the said core, and a belt under tension passing over one only of said rollers and being in contact with a portion of the bale while it is being formed, and pressing toward the center of said bale, substantially as described.

6. A roller compress of the character described comprising a compressor roller journaled in fixed bearings, a second compressor roller journaled in sliding bearings and normally pressed toward the first roller, a core situated between said rollers, the ends of said core and of said rollers being approximately in the same horizontal plane, means for feeding the cotton to be baled to the said core, and a belt passing over one only of said rollers and over a pulley below and on the opposite side of said core, a roller resting on the lower member of said belt, and a weight suspended from said roller and adapted to exert a graded upward pressure on the upper member of said belt, dependent upon the diameter of the bale, substantially as described.

7. In a roller cotton compress, the combination with a compressor roller journaled in fixed bearings, of a second compressor roller journaled in sliding bearings, a cylinder, a piston rod projecting through each end of said cylinder, and having one end connected to said sliding bearings, with means for coupling the other end to the core of a finished bale, for the purposes of withdrawing the same, substantially as described.

8. In a roller cotton compress, the combination with a compressor roller journaled in fixed bearings, of a second compressor roller journaled in sliding bearings, a cylinder, a smaller bearing cylinder at the outer end of said cylinder with a bearing ring at the end of said smaller cylinder, a piston rod projecting through each end of the main cylinder, and having one end connected to said sliding bearings, and the other end passing into said smaller cylinder, and means for coupling the latter end to the core of the finished bale, substantially as and for the purposes described.

9. In a roller cotton compress, the combination with a compressor roller journaled in fixed bearings, of a second compressor roller journaled in sliding bearings, a horizontal cylinder, a piston rod projecting through each end of said cylinder, and having one end connected to said sliding bearings, with means for coupling the other end to the core of a finished bale, for the purpose of withdrawing the same, substantially as described.

10. In a roller cotton compress, the combination with a compressor roller journaled in fixed bearings, of a second compressor roller journaled in sliding bearings, a horizontal cylinder, a smaller bearing cylinder at the outer end of said cylinder with a bearing ring at the end of said smaller cylinder, a piston rod projecting through each end of the main cylinder, and having one end connected to said sliding bearings, and the other end passing into said smaller cylinder, and means for coupling the latter end to the core of a finished bale, substantially as and for the purposes described.

11. In a roller cotton compress, the combination with a compressor roller journaled in fixed bearings, of a second compressor roller

journalled in sliding bearings, a horizontal single acting cylinder, and means for alternately admitting fluid under pressure into the outer end of said cylinder and allowing it to escape therefrom, a piston rod projecting through each end of said cylinder, and having one end connected to said sliding bearings, with means for coupling the other end to the core of a finished bale, for the purpose of withdrawing the same, substantially as described.

12. In a roller compress, the combination with a compressor roller journalled in fixed bearings, of a second compressor roller journalled in sliding bearings, a horizontal single acting cylinder, a pipe and a three-way cock therein for alternately admitting fluid under pressure into the outer end of said cylinder and for allowing the escape thereof from said cylinder, a piston rod projecting through each end of said cylinder, and having one end connected to said sliding bearings, with means for coupling the other end to the core of a finished bale, for the purpose of withdrawing the same, substantially as described.

13. In a roller cotton compress, the combination with a compressor roller journalled in fixed bearings, of a second compressor roller journalled in sliding bearings, a horizontal single acting cylinder, a pipe and a three-way cock therein for alternately admitting fluid under pressure into the outer end of said cylinder and for allowing the escape thereof from said cylinder, a smaller bearing cylinder at the outer end of said cylinder with a bearing ring at the outer end thereof a piston rod projecting through each end of said cylinder, and having one end connected to said sliding bearings, with means for coupling the other end to the core of a finished bale, for the purpose of withdrawing the same, substantially as described.

14. In a roller compress, the combination with a compressor roller journalled in fixed bearings, of a second compressor roller journalled in sliding bearings, a horizontal single acting cylinder, a pipe and a three-way cock therein for alternately admitting fluid under pressure into the outer end of said cylinder and for allowing the escape thereof from said cylinder, a pulley connected to said three-way cock, a hand wheel mounted on the framework of the apparatus, and an endless rope or chain connecting said pulley and said hand wheel for turning said three-way cock in either direction, a piston rod projecting through each end of said cylinder, and having one end connected to said sliding bearings, with means for coupling the other end to the core of a finished bale, for the purpose of withdrawing the same, substantially as described.

15. In a roller cotton compress, the combination with a compressor roller journalled in fixed bearings, of a second compressor roller journalled in sliding bearings, a horizontal single acting cylinder, a pipe and a three-way cock therein for alternately admitting fluid under pressure into the outer end of said cyl-

inder and for allowing the escape thereof from said cylinder, a pulley connected to said three-way cock, a hand wheel mounted on the framework of the apparatus, and an endless rope or chain connecting said pulley and said hand wheel for turning said three-way cock in either direction, a piston rod projecting through each end of said cylinder, and having one end connected to said sliding bearings, with means for coupling the other end to the core of a finished bale, for the purpose of withdrawing the same, substantially as described.

16. In a roller cotton compress, the combination of two squaring heads, each provided with a radial groove on the inner face thereof, blocks adapted to slide into said grooves and provided with journal bearings for the ends of the core, and means for removing said blocks and with them the core and the bale wound thereon from the said squaring heads, substantially as described.

17. In a roller cotton compress, the combination of two squaring heads, each provided with a radial groove on the inner face thereof, blocks adapted to slide into said grooves and provided with journal bearings for the ends of the core, slings connected to the outer ends of said blocks, and means for hoisting said slings and with them the sliding blocks and the finished bale clear of said squaring heads, substantially as described.

18. In a roller cotton compress, the combination of two squaring heads each journalled in sliding bearings and provided with a dovetailed radial groove extending across the center of said head, dovetailed blocks adapted to slide into said grooves and provided with journal bearings for the ends of the core, of a core provided with journals adapted to enter said bearings in the blocks, and to hold said blocks against spreading apart when the bale is disengaged from the compress, and means for removing said blocks and with them the core and the bale from the said squaring heads, substantially as described.

19. In a roller cotton compress, the combination of two squaring heads each journalled in sliding bearings and provided with a dovetailed radial groove extending across the center of said head, dovetailed blocks adapted to slide into said grooves and provided with journal bearings for the ends of the core, of a core provided with journals adapted to enter said bearings in the blocks, and to hold said blocks against spreading apart when the bale is disengaged from the compress, slings connected to the outer ends of said blocks, and a hoisting apparatus connected to said slings, substantially as and for the purposes described.

20. A roller compress of the character described comprising a compressor roller journalled in fixed bearings, a second compressor roller journalled in sliding bearings, a horizontal cylinder, a piston rod projecting through each end of said cylinder, and hav-

ing one end connected to said sliding bearings, with means for coupling the other end to the core of a finished bale, a core situated between said rollers, means for feeding the
 5 cotton to be baled to the said core, and belts under tension passing over one of said rollers and being in contact with a portion of the bale while it is being formed, and pressing toward the center of said bale, substantially as
 10 described.

21. A roller compress of the character described comprising a compressor roller journaled in fixed bearings, a second compressor roller journaled in sliding bearings, a horizontal cylinder, a piston rod projecting
 15 through each end of said cylinder, and having one end connected to said sliding bearings, with means for coupling the other end to the core of a finished bale, a core situated between said rollers, means for feeding the
 20 cotton to be baled to the said core, and belts passing over one of said rollers and over pulleys below and on the opposite side of said core, rollers resting on the lower members of
 25 said belt, and weights suspended from said rollers and adapted to exert a graded upward pressure on the upper members of said belts, dependent upon the diameter of the bale, substantially as described.

22. A roller compress of the character described comprising a compressor roller journaled in fixed bearings, a second compressor roller journaled in sliding bearings, racks attached to said bearings, a transverse shaft
 30 with pinions thereon meshing in said racks, a horizontal cylinder, a piston rod projecting through each end of said cylinder, and having one end connected to said sliding bearings, with means for coupling the other end
 35 to the core of a finished bale, a core situated between said rollers, means for feeding the cotton to be baled to the said core, and belts under tension passing over one of said rollers and being in contact with a portion of the
 40 bale while it is being formed, and pressing toward the center of said bale, substantially as described.

23. A roller compress of the character described comprising a compressor roller journaled in fixed bearings, a second compressor roller journaled in sliding bearings, racks attached to said bearings, a transverse shaft
 50 with pinions thereon meshing in said racks, a horizontal cylinder, a piston rod projecting through each end of said cylinder, and having one end connected to said sliding bearings, with means for coupling the other end
 55 to the core of a finished bale, a core situated between said rollers, means for feeding the cotton to be baled to the said core, and belts passing over one of said rollers and over pulleys below and on the opposite side of said
 60 core, rollers resting on the lower members of said belts, and weights suspended from said rollers and adapted to exert a graded upward pressure on the upper members of said belts,

dependent upon the diameter of the bale, substantially as described.

24. A roller compress of the character described comprising a compressor roller journaled in fixed bearings, a second compressor roller journaled in sliding bearings, a horizontal cylinder, a piston rod projecting through
 70 each end of said cylinder, and having one end connected to said sliding bearings, with means for coupling the other end to the core of a finished bale, a core situated between said rollers, the ends of said core and of said rollers being approximately in the same horizontal plane, means for feeding the cotton to be
 80 baled to the said core, and a belt under tension passing over one of said rollers and being in contact with a portion of the bale while it is being formed, and pressing toward the center of said bale, substantially as described. 85

25. A roller compress of the character described comprising a compressor roller journaled in fixed bearings, a second compressor roller journaled in sliding bearings, a horizontal cylinder, a piston rod projecting through
 90 each end of said cylinder, and having one end connected to said sliding bearings, with means for coupling the other end to the core of a finished bale, a core situated between said rollers, the ends of said core and of said rollers being approximately in the same horizontal plane, means for feeding the cotton to be
 95 baled to the said core, and a belt passing over one of said rollers and over a pulley below and on the opposite side of said core, a roller resting on the lower member of said belt, and a weight suspended from said roller and adapted to exert a graded upward pressure
 100 on the upper member of said belt, dependent upon the diameter of the bale, substantially as described. 105

26. A roller compress of the character described comprising a compressor roller journaled in fixed bearings, a second compressor roller journaled in sliding bearings, racks connected to said bearings, a transverse shaft
 110 provided with pinions meshing in said racks, a horizontal cylinder, a piston rod projecting through each end of said cylinder, and having one end connected to said sliding bearings, with means for coupling the other end
 115 to the core of a finished bale, a drum mounted on said transverse shaft, a rope or chain wound on said drum and suspending a weight for withdrawing said roller when the pressure thereon is removed, a core situated between
 120 said rollers, the ends of said core and of said rollers being approximately in the same horizontal plane, and means for feeding the cotton to be baled to the said core, substantially as described. 125

27. A roller compress of the character described comprising a compressor roller journaled in fixed bearings, a second compressor roller journaled in sliding bearings, racks connected to said bearings, a transverse shaft
 130 provided with pinions meshing in said racks,

a horizontal cylinder, a piston rod projecting through each end of said cylinder, and having one end connected to said sliding bearings, with means for coupling the other end 5 to the core of a finished bale, a drum mounted on said transverse shaft, a rope or chain wound on said drum and suspending a weight for withdrawing said roller when the pressure thereon is removed, a core situated between 10 said rollers, the ends of said core and of said rollers being approximately in the same horizontal plane, means for feeding the cotton to be baled to the said core, and a belt passing over one of said rollers and over a pulley be- 15 low and on the opposite side of said core, a roller resting on the lower member of said belt, and a weight suspended from said roller and adapted to exert a graded upward pressure on the upper member of said belt, de- 20 pendent upon the diameter of the bale, substantially as described.

28. In a roller cotton compress, the combination with a compressor roller journaled in fixed bearings, of a second compressor roller 25 journaled in sliding bearings, a single acting cylinder, and means for alternately admitting

fluid under pressure into the outer end of said cylinder and allowing it to escape therefrom, a piston rod projecting through each end of said cylinder, and having one end connected 30 to said sliding bearings, with means for coupling the other end to the core of a finished bale, for the purpose of withdrawing the same, substantially as described.

29. In a roller cotton compress, the combination with a compressor roller journaled in fixed bearings, a single-acting cylinder, a pipe and a three-way cock therein for alternately admitting fluid under pressure into the outer 35 end of said cylinder and for allowing the escape thereof from said cylinder, a piston rod projecting through each end of said cylinder, and having one end connected to said sliding bearings, with means for coupling the other 40 end to the core of a finished bale, for the purpose of withdrawing the same, substantially as described. 45

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Witnesses:

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