

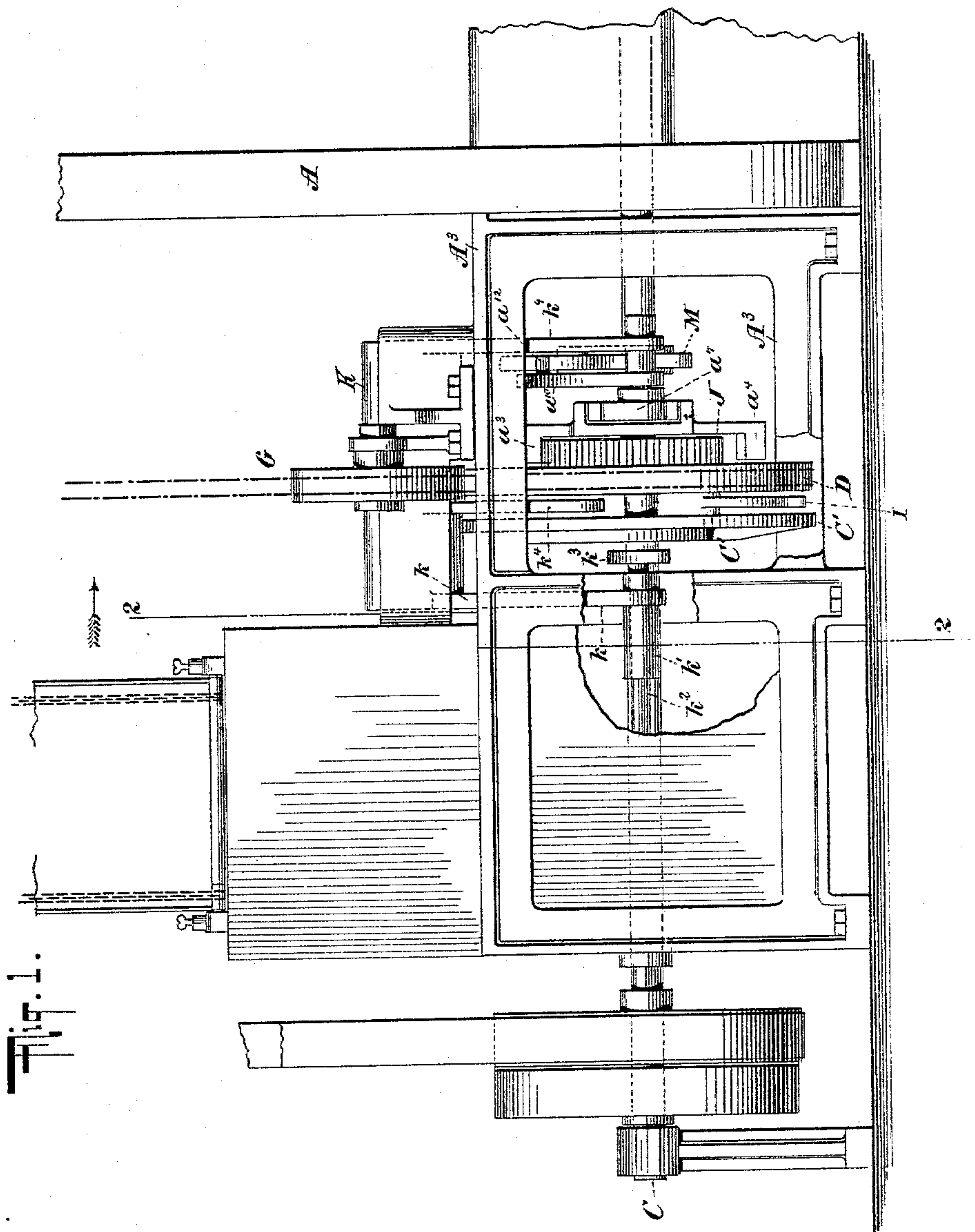
(No Model.)

5 Sheets—Sheet 1.

J. A. GROEBLI.  
EMBROIDERING MACHINE.

No. 593,208.

Patented Nov. 9, 1897.



**WITNESSES**

Gustave Kittenich  
Ed C. Moore.

**INVENTOR**

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**ATTORNEYS.**

(No Model.)

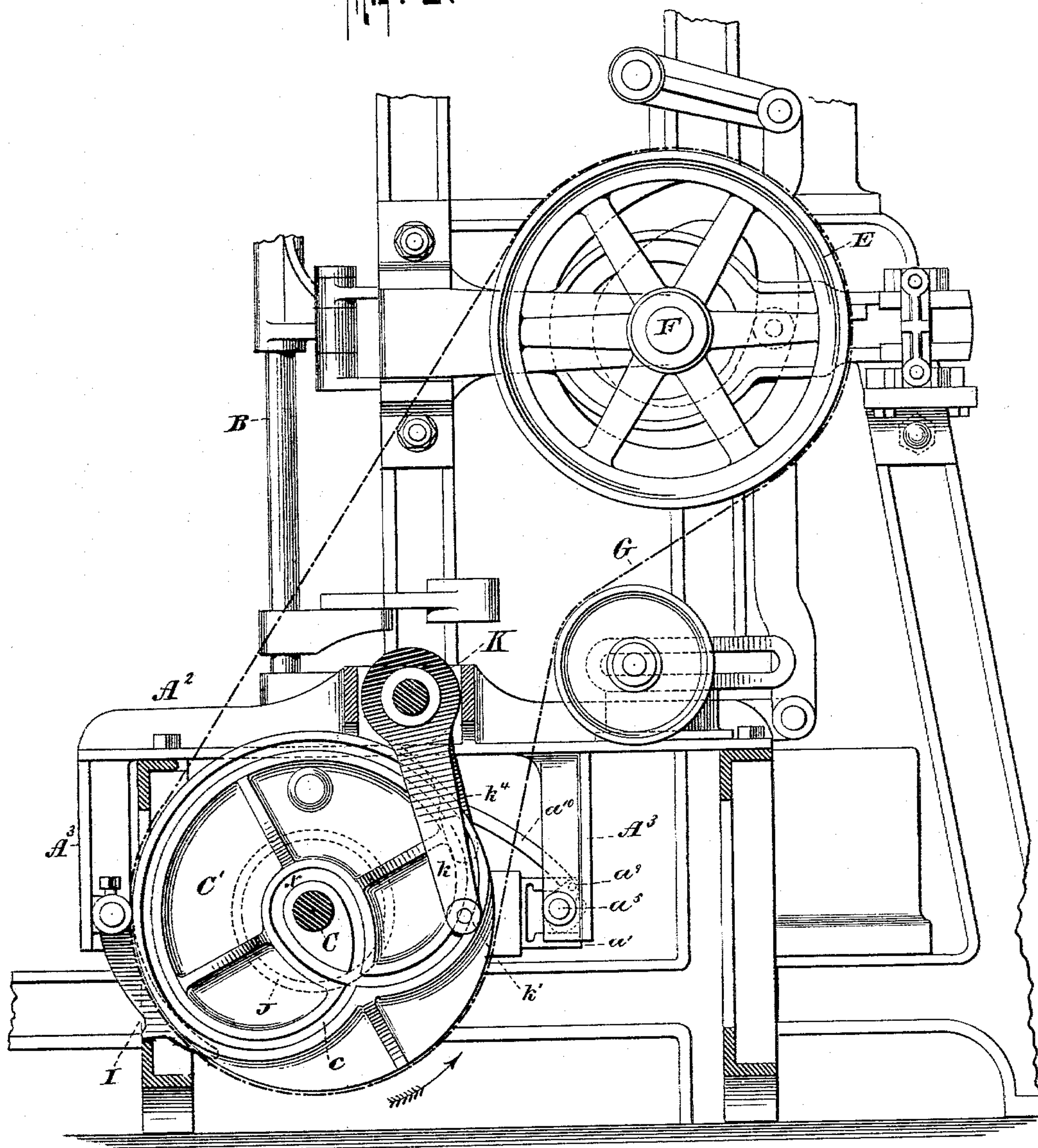
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Fig. 2.



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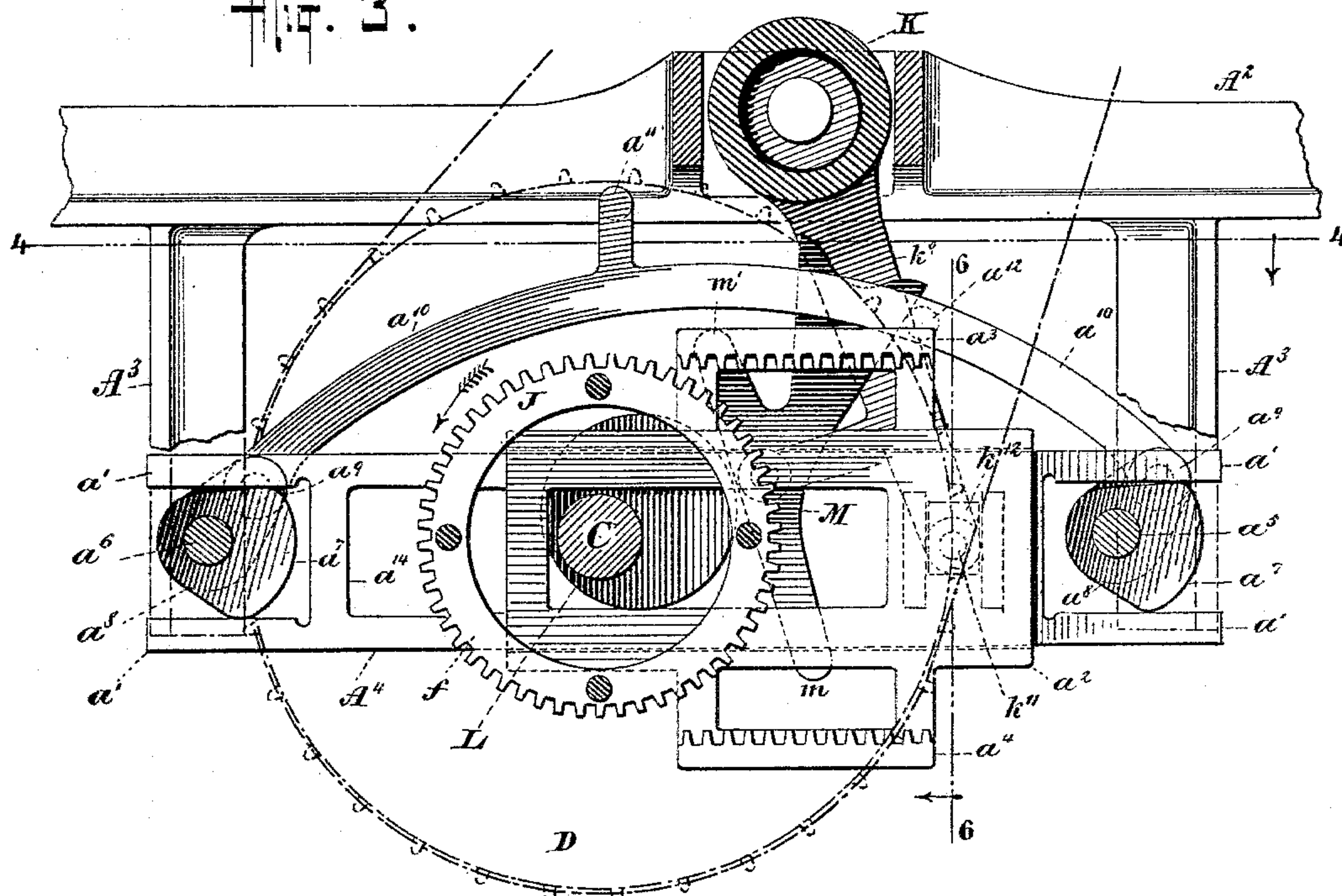


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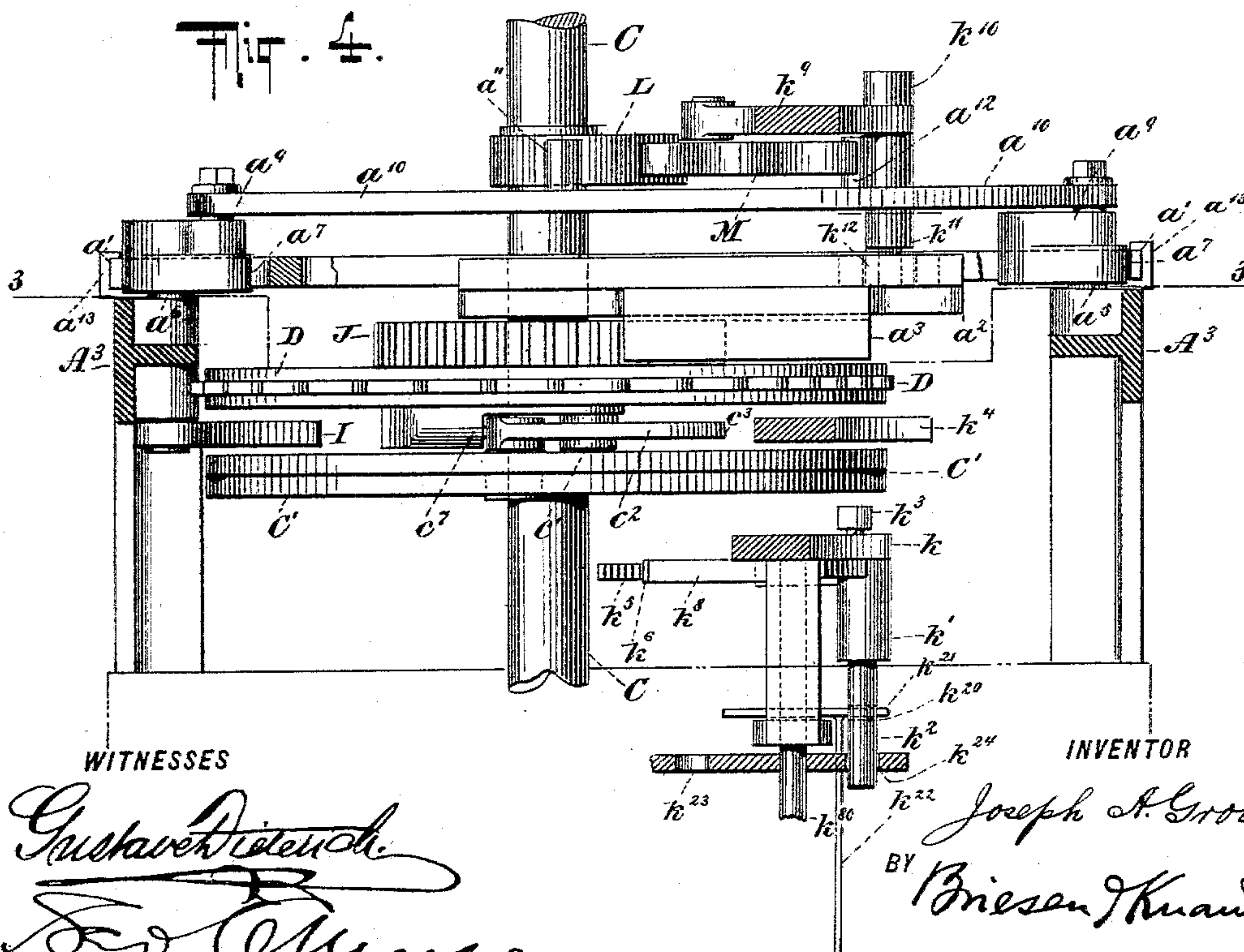
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Fig. 3.



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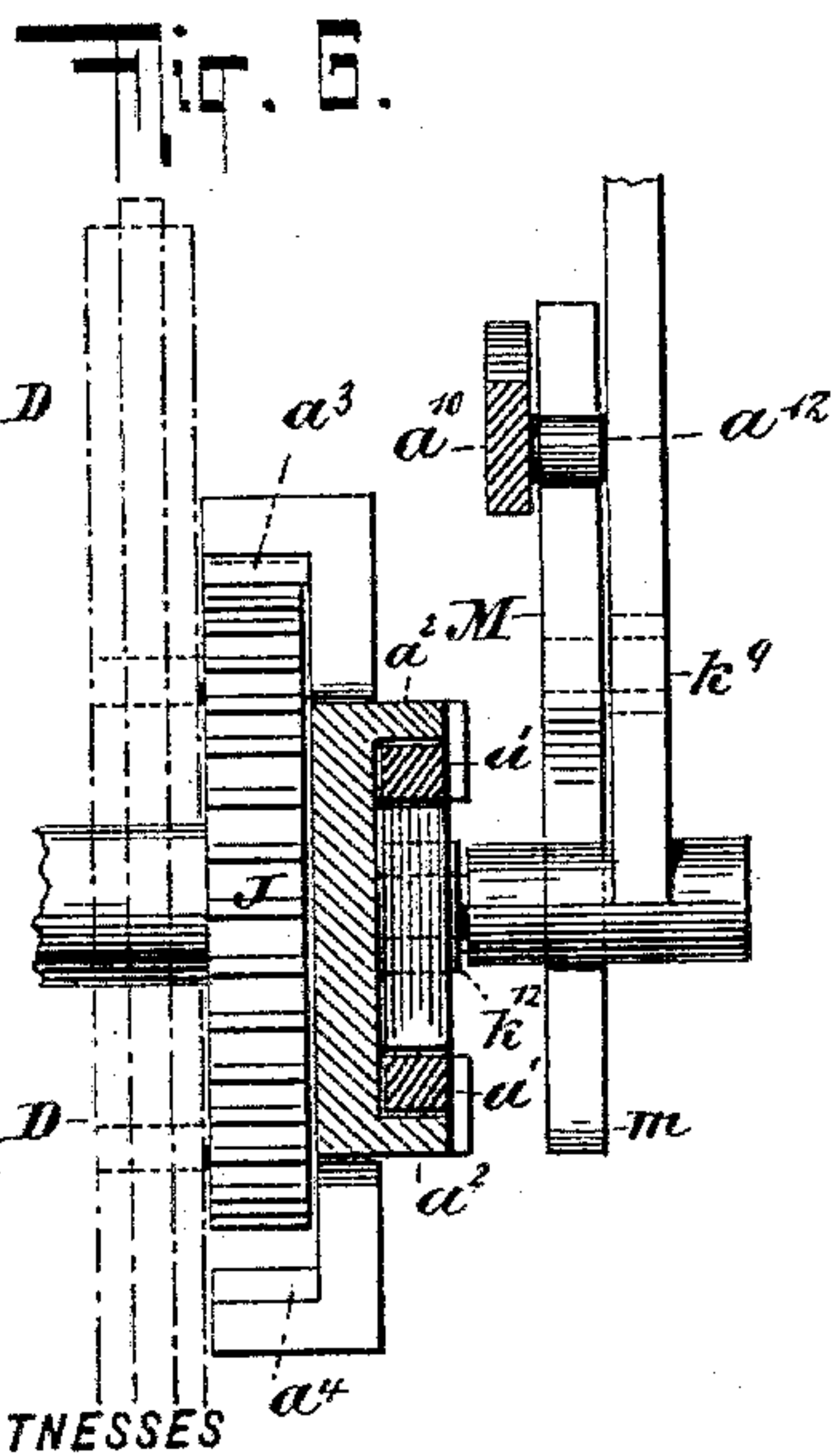
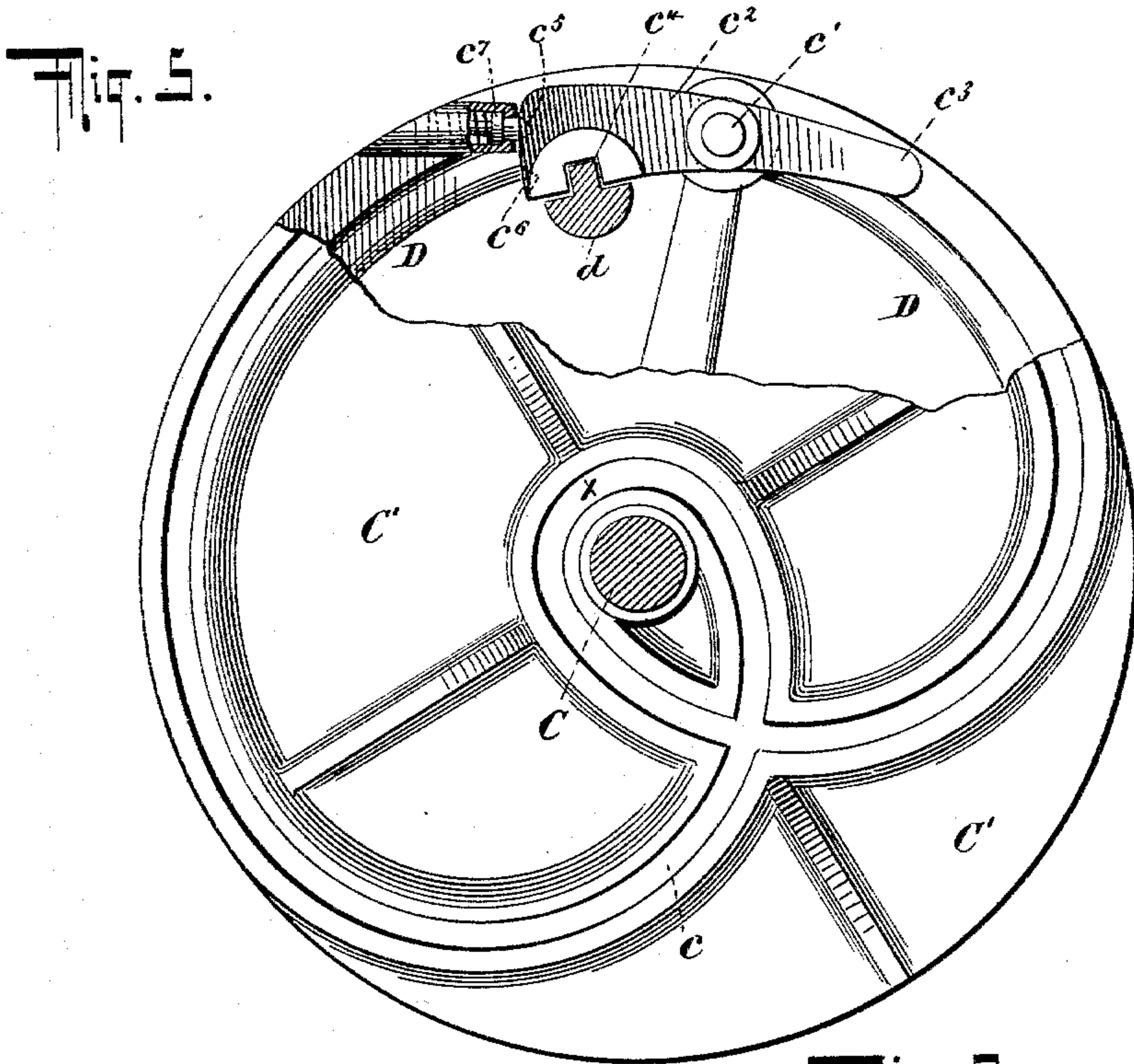
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J. A. GROEBLI.  
EMBROIDERING MACHINE.

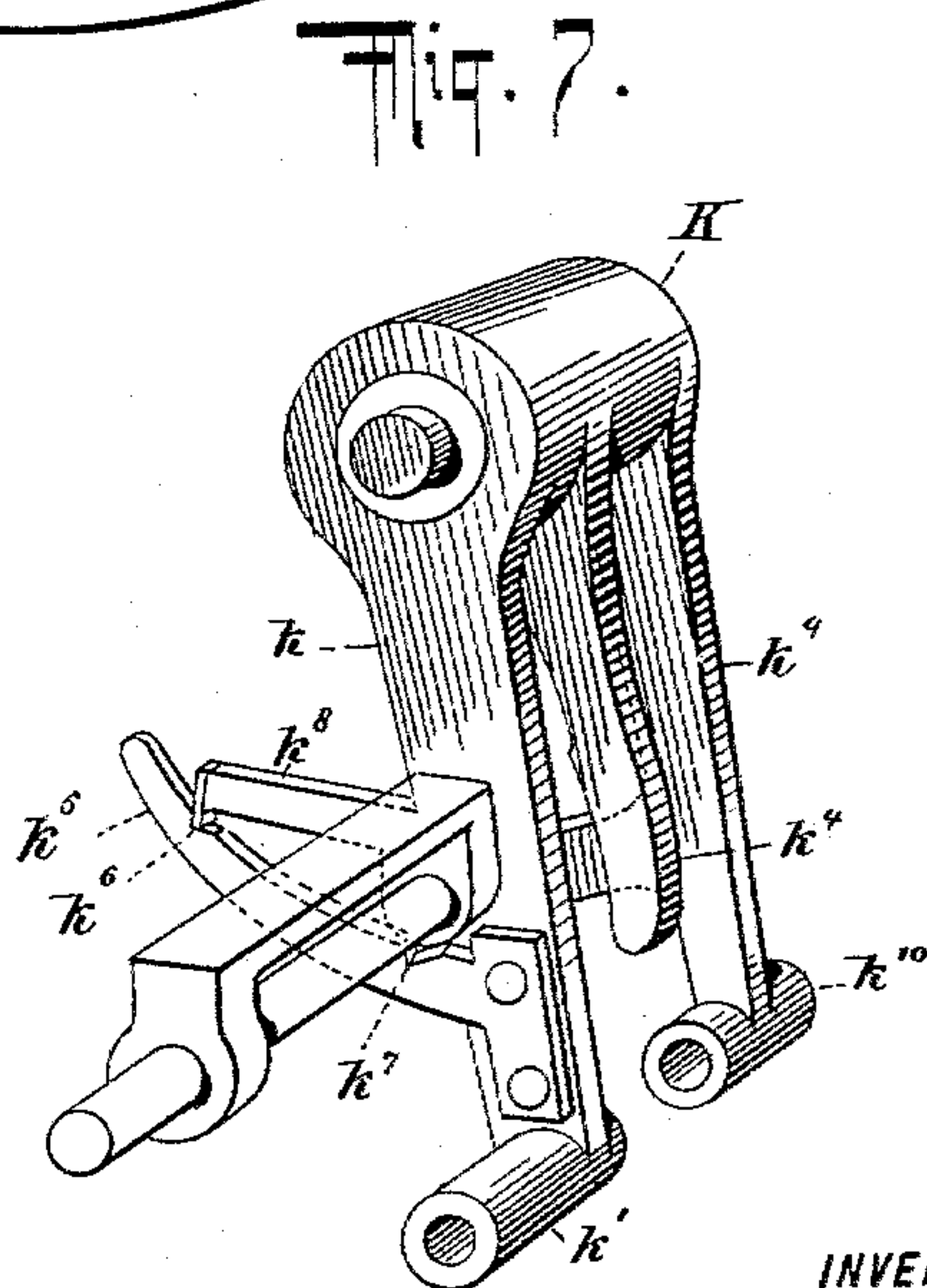
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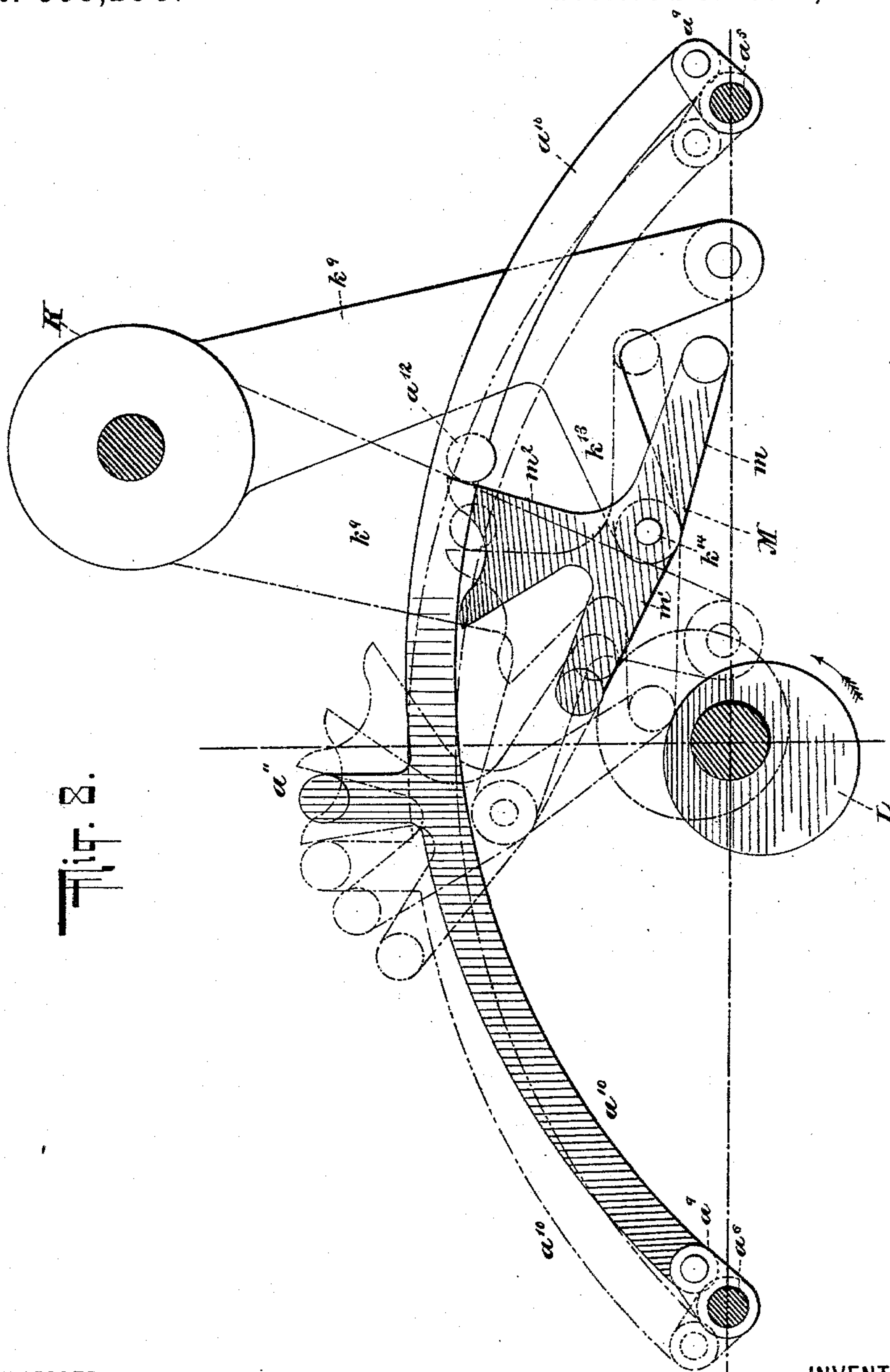
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# UNITED STATES PATENT OFFICE.

JOSEPH A. GROEBLI, OF NEW YORK, N. Y., ASSIGNOR TO THE KURSHEEDT MANUFACTURING COMPANY, OF SAME PLACE.

## EMBROIDERING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 593,208, dated November 9, 1897.

Application filed March 19, 1897. Serial No. 628,238. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH A. GROEBLI, a resident of the city, county, and State of New York, have invented certain new and useful  
5 Improvements in Embroidering-Machines, of which the following is a specification.

My invention relates to embroidering-machines, and has for its object to produce a mechanism for disconnecting the embroidering-machine-operating mechanism from its  
10 driving mechanism, so that operations other than the needle-stitching operations can be effected during such stoppage. For instance, suppose it is desired to bore out parts of the  
15 fabric, then by my device the embroidering-machine mechanism can be disconnected, leaving the fabric-frame-moving mechanism still connected with a prime mover and operative, so that during the stoppage of the em-  
20 broidering mechanism the fabric-frame-moving mechanism and the boring mechanism may still be operated conjointly.

To this end I have shown in the accompanying drawings an embroidering-machine  
25 and a disconnecting mechanism for disconnecting the said embroidering-machine from its prime mover and a jacquard device for controlling all the actions.

My invention will be understood by referring to the accompanying drawings, wherein  
30 I have shown mechanism embodying my invention.

In the drawings, Figure 1 is an elevation of the left-hand end of an embroidering-machine, together with its prime mover or moving mechanism, mechanism for disconnecting the said embroidering-machine from its prime mover, and a jacquard device for governing the connection and disconnection of the last-  
40 named mechanism. Fig. 2 is an end elevation of the embroidering-machine and the disconnecting mechanism, the jacquard device being omitted and connecting parts shown in section, the said section being taken on line  
45 2 2 of Fig. 1, looking in the direction of the arrow. Fig. 3 is an enlarged detail sectional elevation of the stopping mechanism forming part of the disconnecting mechanism, all of which will be clearly described hereinafter.  
50 Fig. 4 is a sectional plan view of the parts shown in Fig. 3 and their adjunctive parts,

the section being taken on line 4 4 of Fig. 3, and exhibits also the section-line 3 3, on which the section of Fig. 3 is taken. Fig. 5 is a broken-away side elevation of the cam and  
55 sprocket-wheel, showing their intermediate connector. Fig. 6 is a section on line 6 6 of Fig. 3, showing the parts in their proper relative positions. Fig. 7 is a perspective view of the main lever, and Fig. 8 is an enlarged  
60 sectional side elevation of the rack-shifting mechanism.

In the drawings, A is an embroidering-machine provided with any usual needle or shuttle driving mechanism, such as B, which em-  
65 broidering-machine is driven from a main shaft or prime mover C through the medium of a sprocket-wheel D, which is geared to another sprocket-wheel E on a driving-shaft F of the embroidering-machine by means of  
70 a suitable sprocket-chain G or otherwise. The sprocket-wheel D is carried loosely upon the shaft C, which also carries a cam C', which is provided with a cam-groove c, and by referring to Fig. 5 it will be noted that the  
75 sprocket-wheel D is provided with a pivot c', which carries a latch c<sup>2</sup>, having a trip c<sup>3</sup>, and engaging with a pin d on the cam C'. The latch c<sup>2</sup> is recessed at c<sup>4</sup> to fit over the pin d and is provided with recesses c<sup>5</sup> c<sup>6</sup>, into which  
80 recesses a spring-bolt c<sup>7</sup> enters to hold the latch in either of its extreme positions, as will be explained. This latch c<sup>2</sup>, cooperating with the pin d, serves to couple or uncouple the  
85 cam and the sprocket-wheel D, so that by working the latch the said cam C' can be coupled or uncoupled from the sprocket-wheel, and it being remembered that the cam C' is secured to the main shaft C the embroidering-machine will be connected or disconnect-  
90 ed from the said main driving-shaft or prime mover C.

The means for effecting the coupling and uncoupling will now be described.

Supported in bearings on the frame A<sup>2</sup> is a  
95 three-armed lever K, which is shown in Fig. 1 as of considerable length. This three-armed lever K is shown clearly in perspective in Fig. 7. One of its depending arms k is provided with a sleeve k', (see Figs. 4 and 7,) in  
100 which a stem k<sup>2</sup> works. This stem k<sup>2</sup> connects with a crescent k<sup>3</sup>, carried by the lever



K for entry into the cam-groove  $c$  of the cam  $C'$ , and is slotted at  $k^{20}$  to receive a stud  $k^{21}$  on a jacquard-rod  $k^{22}$ . This jacquard-rod  $k^{22}$  is operated by the jacquard to enter or  
 5 remove the crescent  $k^3$  from the cam at the proper times and to enter the stem of the crescent into a hole  $k^{23}$  or  $k^{24}$  to secure it in position to reënter the cam, so as to render the mechanism operative. The depending arm  
 10  $k^4$  of the three-armed lever K is in such position as to strike the trip  $c^3$  of the latch  $c^2$  when the arm has been swung, as will be explained. The arm  $k$  is shown as provided with an arc  $k^5$ , notched at  $k^6/k^7$  to receive a latch  $k^8$ , which,  
 15 entering either notch, serves to hold the three-armed lever stationary, so that the crescent will be properly positioned for entrance into the cam. The restoring mechanism for the latch  $c^2$  is shown as consisting of an arm I,  
 20 projecting into the path of the latch  $c^2$  to restore the same, as will be explained.

Having got thus far, it will be profitable to explain the action of the parts heretofore described in order that the subsequent explanation of their interaction with the other parts  
 25 may be fully understood. This operation is as follows: We will suppose the shaft C to be rotating and the latch to be in the position shown in Fig. 5, when it will couple the cam  
 30  $C'$  and the sprocket-wheel D, so that from the said shaft C, cam, and sprocket-wheel the shaft F will be driven, thereby driving the embroidering-machine. When it is desired to  
 35 disconnect the embroidering-machine from its driving mechanism, the jacquard acts to reciprocate the rod  $k^2$ , entering the crescent  $k^3$ , into the cam-groove  $c$  of the cam  $C'$ , and as the cam revolves the three-armed lever K  
 40 will be swung to the left, bringing the arm  $k^4$  into position to strike the trip  $c^3$  of the latch to swing the same free of the pin  $d$  on the cam  $C'$ , so as to swing the latch on its pivot into such a position as to engage the notch  $c^6$   
 45 with the spring bolt or latch  $c^7$ , thus holding the latch clear of the pin  $d$  and allowing the cam to run free from the sprocket-wheel, so that the shaft C will revolve the cam without producing any motion of the sprocket-wheel,  
 50 and hence the embroidering-machine being deprived of its power will stop. This stopping, however, should be gradual and should be brought about in a certain and positive fashion, so that the parts will always stop in  
 55 the same position ready for reengagement with the cam. This is effected in the present instance by suitable stopping mechanism, which will now be described. Secured to or  
 60 made integral with the sprocket-wheel D is a gear J, which rotates with the said sprocket-wheel. Working vertically in guides  $a^{13}$  on the brackets  $A^3$  of the frame  $A^2$  is a frame  $A^4$ , composed of ways  $a'$   $a'$ , joined by bars  $a^{14}$  and carrying a slide  $a^2$ , which slide carries oppositely-placed racks  $a^3$   $a^4$ . These oppositely-  
 65 placed racks are adapted to be alternately engaged with the gear J. The frame  $A^4$  is freely movable vertically on the guides  $a^{13}$  and the

slide  $a^2$  is freely movable laterally on the said frame, so that the rack may be raised and lowered by raising and lowering the frame 70 and the slide may move laterally on the said frame, the said racks being, as aforesaid, rigidly secured to the slide  $a^2$ . Mounted in proximity to the frame are shafts  $a^5$   $a^6$ , (see Figs. 3 and 8,) the shaft  $a^5$  carrying a cam  $a^7$ , 75 entered and working between the ways  $a'$   $a'$  of the frame  $A^4$  at one end thereof and the shaft  $a^6$  carrying a cam  $a^8$ , likewise entered between and working in the ways  $a'$  at the other end of the frame. Each of these cams 80 is provided with an arm  $a^9$ , which arms are connected by a yoke  $a^{10}$ , carrying pins  $a^{11}$  and  $a^{12}$ .

The third arm  $k^9$  of the three-armed lever K is provided at its lower end with a hub  $k^{10}$ , 85 which carries a pin  $k^{11}$ , provided with a loose block  $k^{12}$ , (see Figs. 3 and 4,) which block enters a slot in the slide  $a^2$ , so that when the three-armed lever is swung, as before described, the slide  $a^2$  and racks will move with 90 it. One of these racks at a time meshes with the gear J, so that the rotation of the said gear is governed by the action of the cam  $C'$  on the three-armed lever K, so that when disconnecting is being effected the arm K, swinging slowly to the left under the action of the cam, will gradually decrease the speed of the gear J, and consequently gradually bring the  
 95 embroidering-machine to rest. When the machine starts up again, it is necessary to disengage the upper rack from the gear and engage the lower rack therewith. As the gear always turns in the direction of the arrow in Fig. 3, it will be necessary to engage the lower rack  $a^4$  with the gear, so that as the arm K 105 moves to the right under the action of the cam  $C'$  it will impart motion to the said gear J, so as to speed it up from a position of rest to a speed equal to that of the rotating cam  $C'$ , so that when the head of the latch  $c^2$  strikes the arm I the cam  $C'$  and sprocket-wheel D will be running at the same rate of speed and there will be no shock when the connection is made. This shifting of the rack is effected by turning the cams  $a^7$   $a^8$  on little 115 shafts  $a^5$   $a^6$  to raise the frame  $A^4$ , carrying with it the slide  $a^2$  and racks  $a^3$   $a^4$ . This swinging of the cams  $a^7$   $a^8$  is accomplished by swinging the yoke  $a^{10}$  by means of a three-armed fish-tail lever M, pivoted upon an extension  $k^{13}$  of the arm  $k^9$ . This three-armed lever is shown as pivoted at the point  $k^{14}$  and provided with arms  $m$   $m'$  and a fish-tail or wedge piece  $m^2$ , which coöperates with either pin  $a^{11}$  or  $a^{12}$  to swing the yoke  $a^{10}$  to the right 125 or to the left. The various positions of the lever  $k^9$  and the pivoted fish-tail piece M are shown in dotted lines in Fig. 8, the two extremities of the throw of said lever being clearly shown. As shown in full lines, the arm  $m'$  of the fish-tail lever has just been actuated to swing the said fish-tail lever on its pivot to throw the fish-tail piece  $m^2$  to the right, thus carrying the yoke  $a^{10}$  with it and 130



lowering the slide carrying the racks, so as to mesh the upper rack  $a^4$  with the gear J. When in its opposite or dotted-line position, the arm  $k^9$  brings the fish-tail lever into contact with the pin  $a^{11}$ , and the cam L, rotating, acts upon the arm  $m$  of the fish-tail lever so as to swing the same on its pivot, causing the fish-tail piece  $m^2$  to push against the pin  $a^{11}$  to throw the yoke  $a^{10}$  to the left, thus raising the slide carrying the racks by the mechanism described to bring the lower rack into mesh with the gear. I will now proceed to describe a complete cycle of operations, so that the *seriatim* operations just set forth may be understood.

We will suppose the parts to be in the position shown in Fig. 2. The jacquard acts and enters the crescent  $k^3$  into the cam-groove  $c$  of the cam  $C'$ , which, rotating in the direction of the arrow in Fig. 2, causes the said crescent to traverse the said groove and to swing the three-armed lever K to the left at a progressively-decreasing rate of speed. As the three-armed lever K swings it brings its arm  $k^4$  into a position where it will strike the trip  $c^3$  (see Figs. 4 and 5) of the latch  $c^2$ , thus raising the said latch clear of the pin  $d$  and engaging the recess  $c^6$  of the latch, with the spring-bolt  $c^7$  holding the said latch clear of the pin  $d$ . The cam  $C'$  and the sprocket-wheel D have now been disconnected and the cam  $C'$ , being rigidly connected to the shaft C, will revolve free of the said sprocket-wheel, which is loose on the shaft. At about the time the latch  $c^2$  is worked by the arm  $k^4$  the upper rack, which, as will be understood, is being moved to the left by the swinging arm  $k^9$  of the three-armed lever K, will mesh with the gear J, and as the rack moves progressively slower under the impulse and government of the progressively-slower-moving three-armed lever K the said gear, and consequently its connected embroidering-machine, will be brought gradually to rest. As the arm  $k^9$  is about to reach the left extremity of its swing or stroke the fish-tail piece  $m^3$  of the three-armed fish-tail lever M is thereby brought against the pin  $a^{11}$  and the cam L will come against the arm  $m$  of the three-armed fish-tail lever M and, swinging it upward, will cause the fish-tail piece to thrust the pin  $a^{11}$  and its connected yoke to the left, thereby swinging the said yoke into the position shown in dotted lines and causing the cams  $a^7 a^8$  to raise the frame  $A^4$ , carrying with it the slide  $a^2$ , to disengage the rack  $a^3$  from the gear J and to engage the rack  $a^4$  with the said gear, the parts having now come to rest. When the parts have been brought to rest, the crescent has reached about the point  $x$  in the cam-groove  $c$ , at which instant the jacquard again acts to withdraw the crescent from the cam and enter its stem into a hole to secure it in position.

The embroidering-machine being brought to a standstill, any desired manipulation of the fabric-frame may be effected and actions

performed on the fabric, if desired—for instance, bore-points may be operated to pierce the fabric while the embroidering-needles no longer operate.

It will be remembered that the three-armed lever K having been moved to the left the crescent or arc  $k^5$ , carried thereby, will have been moved sufficiently far to the left to allow the latch  $k^8$  to drop into the notch  $k^7$ , so that the said arm will be held at the left extremity of its swing by the latch  $k^8$  entering the said notch  $k^7$ .

When the proper moment for reconnecting the embroidering-machine has arrived, the jacquard operates at such an instant of time as to enter the crescent  $k^3$  into the rotating cam at the point  $x$  and to withdraw its stem  $k^2$  from the hole, and at the same time rocking the latch  $k^8$  by any suitable means, such as the arm  $k^{80}$ , to release the arm from its locked position. Then as the cam revolves it will carry the three-armed lever to the right. The first effect of this movement to the right is to start the wheel J through the medium of the rack  $a^4$ , and as the speed of the arm K gradually increases the speed of the rack  $a^4$ , connected thereto, and wheel J, meshing therewith, will likewise gradually increase until in a few tenths of a second the wheel J is being driven at the same rate of speed as the cam  $C'$ , at which instant the latch  $c^2$ , carried by the sprocket-wheel D, which moves with the gear J, will be just passing under the arm I, which arm will force the said latch inward at the proper instant to engage the said latch  $c^2$  over the pin  $d$  on the cam, so that the sprocket-wheel D and the cam  $C'$  are now again coupled. The last part of the movement of the arm K serves to bring the slide, &c., to rest and to bring the fish-tail lever into position (see Fig. 8) to be struck by the rotating cam L to throw the yoke  $a^{10}$  into the position shown in Fig. 3, where the racks will be completely disengaged from the rotating gear, but will be in such a position that the upper rack will engage the said gear when the lever  $k^9$  shall again begin to move to the left in obedience to the action of the jacquard. As soon as the yoke has been thrown, as just described, the jacquard operates to withdraw the crescent  $k^3$  from the cam  $C'$  and enter the stem  $k^2$  in a hole to receive it, so that the embroidering-machine will proceed to do its work in the ordinary manner until at a predetermined time the jacquard again acts to set the disconnecting mechanism into operation.

What I claim, and desire to secure by Letters Patent, is—

1. In an embroidering mechanism, the combination of an embroidering-machine and a jacquard-controlling mechanism therefor operated from a common source of power, and disconnecting mechanism intervening between the source of power and the embroidering-machine for disconnecting the embroidering-machine from the source of power without disconnecting the jacquard.



2. In an embroidering mechanism, the combination of an embroidering-machine and a jacquard-controlling mechanism therefor operated from a common source of power, disconnecting mechanism for disconnecting the  
5 embroidering-machine from its source of power without disconnecting the jacquard mechanism therefrom, and a connection intervening between the jacquard mechanism  
10 and the disconnecting mechanism for effecting the disconnection.
3. In an embroidering mechanism, the combination of an embroidering-machine having driving mechanism, a prime mover or mov-  
15 ing mechanism for the driving mechanism and disconnecting mechanism intervening between the prime mover and the driving mechanism and means for bringing the driving mechanism and embroidering-machine gradu-  
20 ally to rest.
4. In an embroidering mechanism, the combination of an embroidering-machine having driving mechanism, a prime mover or mov-  
25 ing mechanism for the driving mechanism and disconnecting mechanism intervening between the prime mover and the driving mechanism and means driven by the prime mover for bringing the driving mechanism and em-  
broidering-machine gradually to rest.
- 30 5. In an embroidering mechanism, the combination of an embroidering-machine having a driving mechanism, a prime mover or moving mechanism for the said driving mechanism, jacquard-operated disconnecting mech-  
35 anism intervening between the prime mover and the driving mechanism and means for bringing the embroidering-machine gradually to rest.
- 40 6. In an embroidering mechanism, the combination of an embroidering-machine and a jacquard-controlling mechanism therefor operated from a common source of power, and disconnecting mechanism intervening be-  
45 tween the embroidering-machine and its source of power for disconnecting the said embroidering-machine from its source of power without disconnecting the jacquard mechanism, and means for moving the said discon-  
necting mechanism from the source of power.
- 50 7. In an embroidering mechanism, the combination of an embroidering-machine, a jacquard-controlling mechanism therefor, a common source of power for driving both the em-  
broidering-machine and the jacquard mech-  
55 anism, and disconnecting mechanism disconnecting the embroidering-machine from the common source of power without disconnecting the jacquard mechanism therefrom, and means for automatically operating the said  
60 disconnecting mechanism.
8. In an embroidering mechanism, the combination of an embroidering-machine-driving mechanism, and a prime mover or moving mechanism for driving the said driving mech-  
65 anism, and disconnecting mechanism intervening between the prime mover and the em-  
broidering mechanism, together with inde-
- pendently-moving jacquard mechanism controlling the disconnecting mechanism, and itself unaffected by the disconnected mech- 70  
anism.
9. In an embroidering mechanism, the combination of an embroidering-machine and a jacquard mechanism, a common source of power for driving both the embroidering-ma- 75  
chine and the jacquard mechanism, comprising in its structure a prime mover C' and a driving-wheel D' for driving the embroidering-machine only, a movable connection in-  
tervening between the prime mover and the 80  
driving-wheel, and automatic means for operating the said connection to disconnect the driving-wheel from the prime mover, whereby the connection may be operated to discon-  
nect the driving-wheel from the prime mover 85  
so as to stop the embroidering-machine without affecting the movement of the jacquard mechanism.
10. In an embroidering mechanism, the combination of an embroidering-machine and a 90  
jacquard mechanism, a common source of power for driving both the embroidering-machine and the jacquard mechanism, comprising in its structure a prime mover C' and a driving-wheel D' for driving the embroidering- 95  
machine only, a movable connection intervening between the prime mover and the driving-wheel, and a jacquard-operated connection for moving the said movable connection to disconnect the driving-wheel from the 100  
prime mover, whereby the connection may be operated to disconnect the driving-wheel from the prime mover so as to stop the embroidering-machine without affecting the movement of the jacquard mechanism. 105
11. In an embroidering mechanism, the combination of a source of power, an embroidering-machine and a jacquard mechanism in-  
dependently connected to the same, and means for disconnecting the embroidering- 110  
machine from the source of power by the action of the jacquard mechanism.
12. In an embroidering mechanism, the combination of a source of power, an embroidering-machine driven therefrom, a jacquard 115  
mechanism for effecting functions in the operation of the embroidering-machine and likewise connected to the source of power, and means for disconnecting the embroidering-machine from the source of power without 120  
disconnecting the jacquard mechanism therefrom, whereby the embroidering operations of the embroidering-machine may be suspended and the jacquard mechanism will still be effective to effect functions and operations of 125  
the embroidering-machine other than making stitches.
13. In an embroidering mechanism, the combination of an embroidering-machine, a driving-wheel D driving the embroidering-ma- 130  
chine, a prime mover, a connection between the prime mover and the driving-wheel, means for automatically connecting and disconnecting the said driving-wheel and prime mover



and means operated by the prime mover for controlling the motion of the driving-wheel when disconnected.

14. In an embroidering mechanism, the combination of an embroidering-machine, a driving-wheel D, a prime mover, a connection between the prime mover and the driving-wheel, means for automatically connecting and disconnecting the said driving-wheel and prime mover and means for controlling the motion of the driving-wheel when disconnected, and for starting the said driving-wheel, substantially as described.

15. In an embroidering mechanism, the combination of an embroidering-machine, a driving-wheel D, a prime mover, a connection between the prime mover and the driving-wheel, means for automatically connecting and disconnecting the said driving-wheel and prime mover and means for controlling the motion of the driving-wheel when disconnected and for starting and moving the same at gradually-increasing speed as and for the purposes set forth.

16. In an embroidering mechanism, the combination of an embroidering-machine provided with a driving device, a prime mover or moving mechanism and connecting mechanism intervening between the prime mover and the driving device and a gear and rack mechanism for controlling the motion of the driving-wheel when disconnected.

17. In an embroidering mechanism, the combination of an embroidering-machine provided with a driving device, a prime mover or moving mechanism and connecting mechanism intervening between the prime mover and the driving device and a gear and rack mechanism under control of the prime mover for controlling the motion of the driving-wheel when disconnected.

18. In an embroidering mechanism, the combination of an embroidering-machine provided with a driving device, a prime mover or moving mechanism and connecting mechanism intervening between the prime mover and the driving device and a gear and rack mechanism for controlling the stopping and starting of the embroidering-machine.

19. In an embroidering mechanism, the combination of an embroidering-machine provided with a driving device, a prime mover or moving mechanism and connecting mechanism intervening between the prime mover and the driving device and a gear and rack mechanism actuated from the prime mover for controlling the stopping and starting of the embroidering-machine.

20. In an embroidering mechanism, the combination of an embroidering-machine provided with a driving device, a prime mover or moving mechanism and connecting mechanism intervening between the prime mover and the driving device and a gear and a shiftable rack mechanism, combined with means for shifting the said rack mechanism to engage different parts thereof with the gear.

21. In an embroidering mechanism, the combination of an embroidering-machine provided with a driving device, a prime mover or moving mechanism and connecting mechanism intervening between the prime mover and the driving device and a lever moved from the prime mover and moving gear and rack mechanism under the control of the prime mover for controlling the motion of the driving-wheel when disconnected.

22. In an embroidering mechanism, the combination of an embroidering-machine provided with a driving device, a prime mover or moving mechanism and connecting mechanism intervening between the prime mover and the driving device, a lever moved from the prime mover and moving gear and rack mechanism under the control of the prime mover for controlling the motion of the driving-wheel when disconnected, combined with rack-shifting mechanism for changing the meshing of the racks with the gear.

23. In an embroidering mechanism, the combination of an embroidering-machine provided with a driving device, a prime mover or moving mechanism and connecting mechanism intervening between the prime mover and the driving device, a lever moved from the prime mover, and moving gear and rack mechanism under the control of the prime mover for controlling the motion of the driving-wheel when disconnected and rack-shifting mechanism under the control of the prime mover for shifting the racks to regulate the meshing thereof with the gear.

24. An embroidering-machine combined with a driving-wheel and a prime mover therefor, a connection intervening between the prime mover and the driving-wheel, a cam driven by the prime mover, an arm cooperating with the connection between the driving-wheel and the prime mover and jacquard mechanism for controlling the movement of the arm, whereby the said arm may throw the connecting mechanism to disconnect the prime mover and the driving-wheel.

25. In an embroidering mechanism, the combination of a prime mover comprising a cam, a driving-wheel for the embroidering-machine, a coupling between the prime mover and the driving-wheel, an arm for throwing the coupling and jacquard mechanism for operatively engaging the arm with the cam so as to move the said arm to throw the coupling.

26. In an embroidering-machine, the combination of embroidering devices and a driving-wheel, a prime mover, a coupling between the prime mover and the driving-wheel, an arm for throwing the coupling and a locking device for locking the arm in two positions.

27. In an embroidering-machine the combination of a prime mover and a driven mechanism, a connection between them for transmitting motion, means for operating the connection, a secondary mechanism operated by the prime mover, at times, for moving and controlling the movement of the driven mechanism.



anism when the connection is inoperative, substantially as described.

28. In an embroidering-machine the combination of a prime mover and a driven mechanism, a coupling between them for transmitting motion, means for connecting or disconnecting the coupling, a cam on the prime mover operating a secondary driving mechanism for controlling the movement of the driven mechanism at the time when the coupling is disconnected, substantially as described.

29. The combination in an embroidering-machine of a prime mover and a driven mechanism, a coupling between them for transmitting motion, means for connecting and disconnecting the coupling, a cam on the prime mover and a gear on the driven mechanism and connections between the cam and the gear, all arranged so, that the cam will control the movement of the gear at times, when the coupling is disconnected, substantially as described.

30. The combination of a prime mover and a driven mechanism and a coupling between them for transmitting motion, a cam on the prime mover, a gear on the driven mechanism, a double rack adapted to mesh with one or the other side of said gear, a connection between the cam and the double rack to control its

longitudinal motion, mechanism for moving it laterally to mesh it with the gear, and means for connecting the cam with the double rack to move the same longitudinally at desired times and mechanism to disconnect the coupling at such times, substantially as described.

31. The combination of a prime mover and a driven mechanism and a connection between them for transmitting motion, a cam on the prime mover, a gear-wheel on the driven mechanism, a double rack adapted to mesh with the gear-wheel, movable longitudinally to control the rotation of the gear-wheel and laterally to determine the direction of rotation, a lever provided with an adjustable bowl or crescent adapted to engage with the cam and connected to the double rack, so that the cam may control the movement of the double rack, a cam and connections for shifting the rack laterally, means for engaging the bowl with the cam and means for operating the connection between the prime mover and the driven mechanism, all arranged so that at times the cam may control the motion of the driven mechanism, substantially as described.

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Witnesses:

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MAURICE BLOCK.