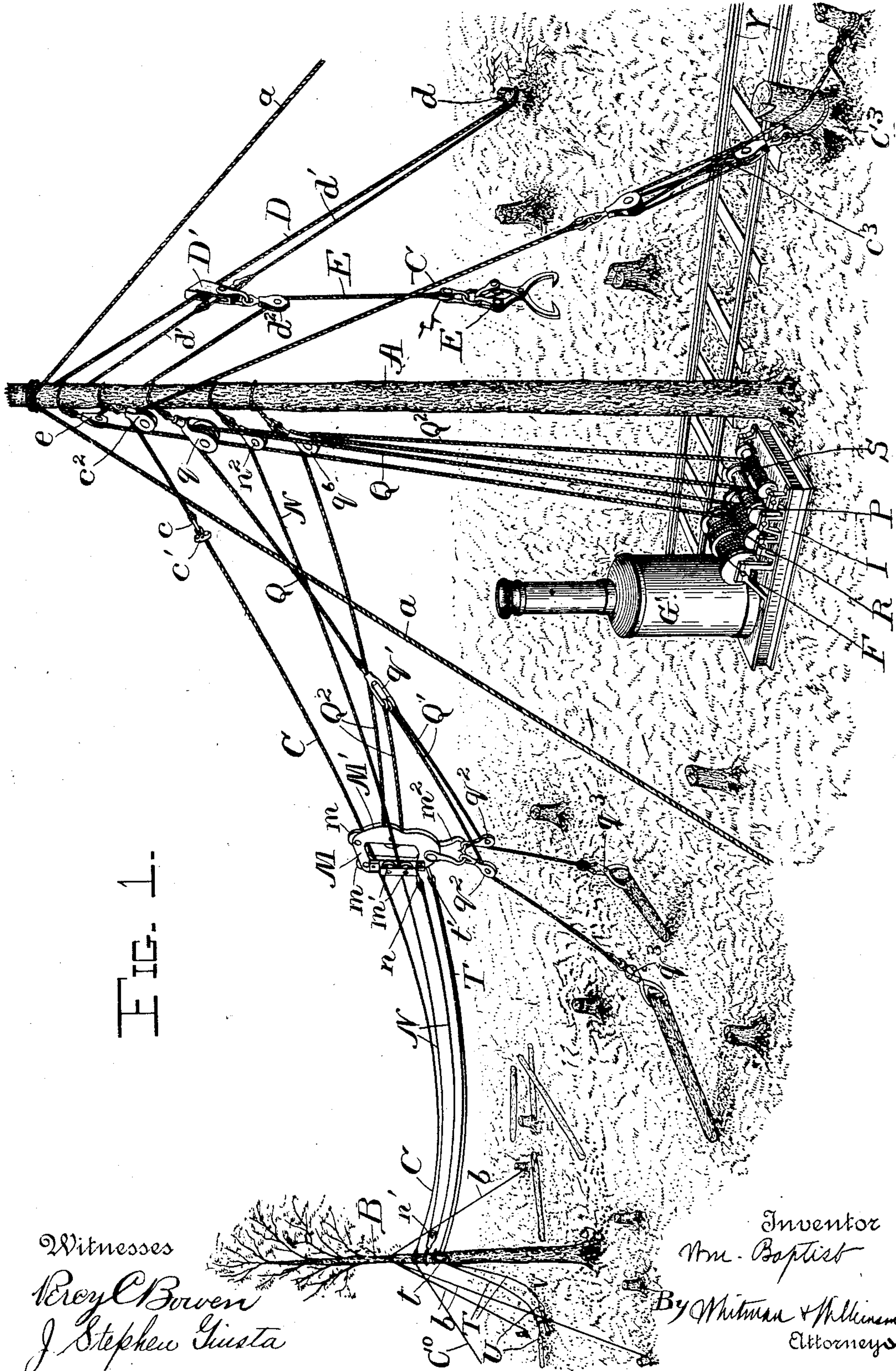


W. BAPTIST.
APPARATUS FOR SKIDDING LOGS.

No. 561,855.

Patented June 9, 1896.

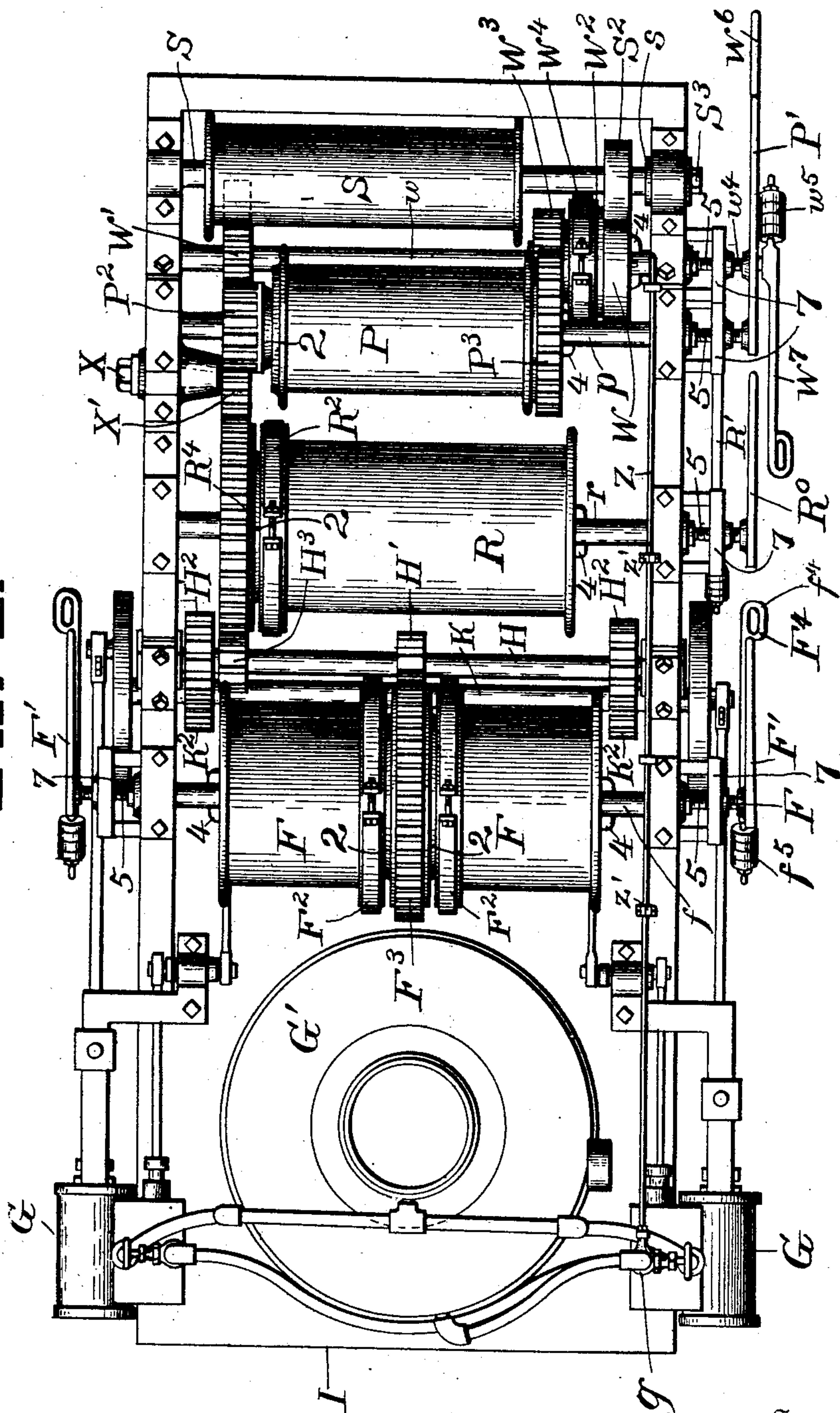


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APPARATUS FOR SKIDDING LOGS.

No. 561,855.

Patented June 9, 1896.

FIG. 2.



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(No Model.)

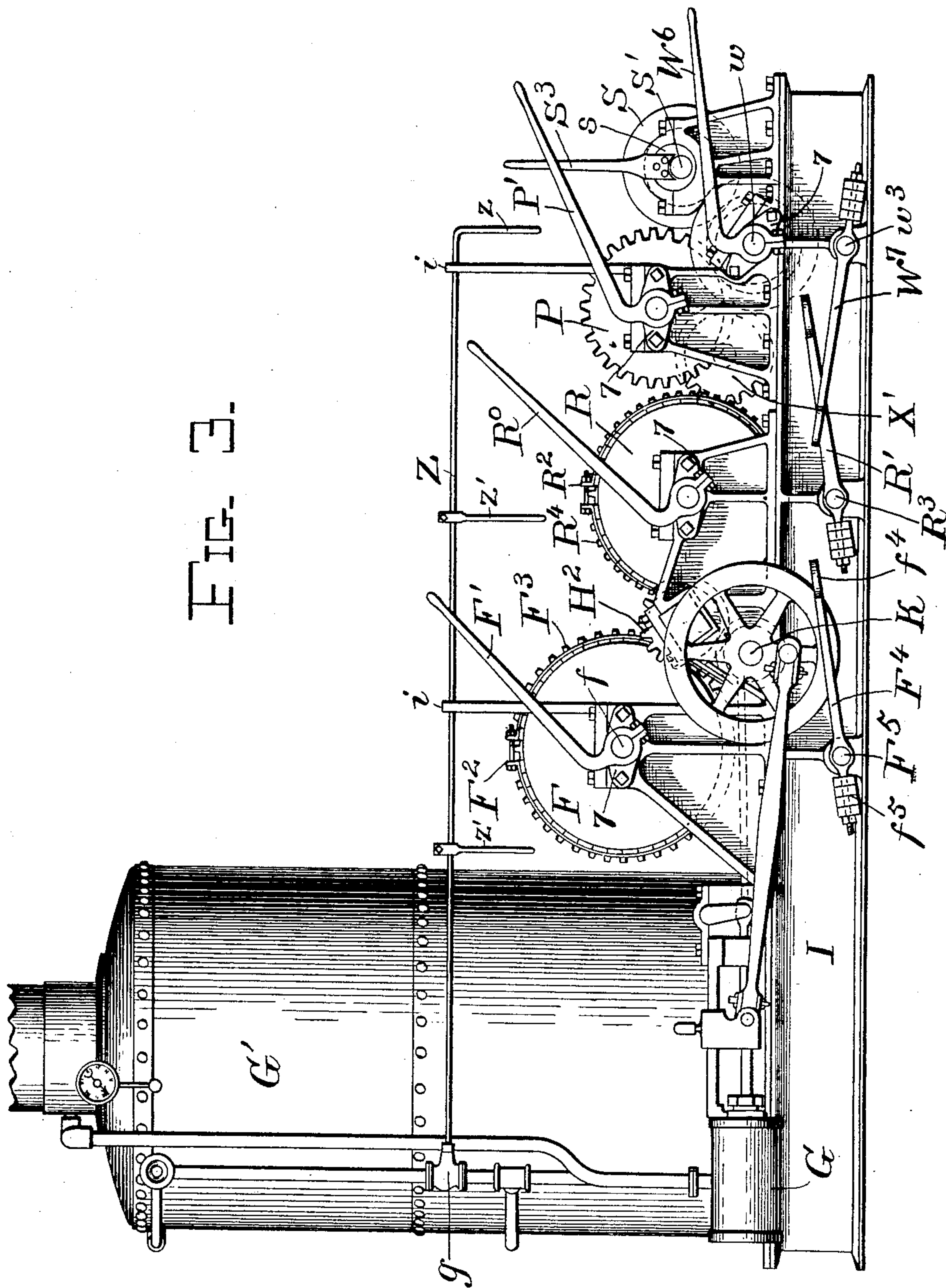
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Patented June 9, 1896.

四



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W. BAPTIST.
APPARATUS FOR SKIDDING LOGS.

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FIG. 4

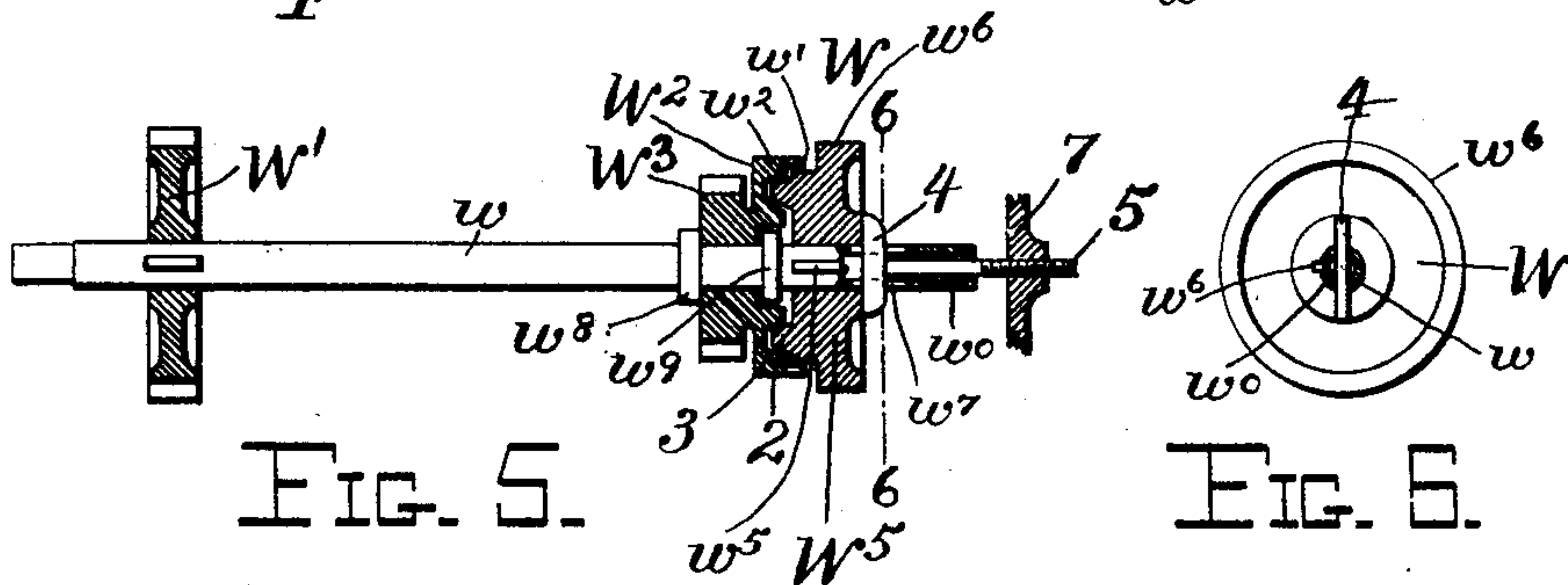
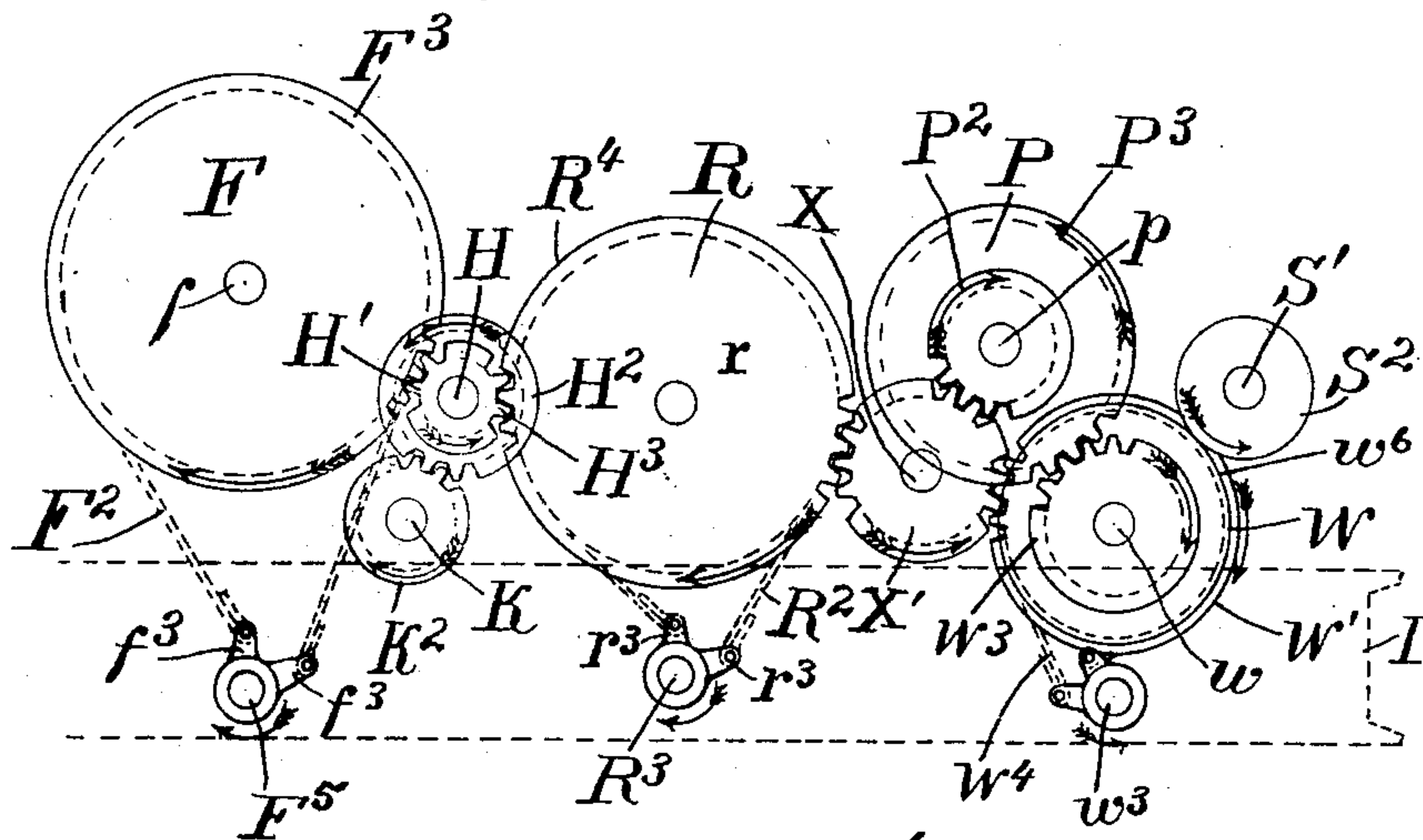


FIG. 5.

FIG. 6.

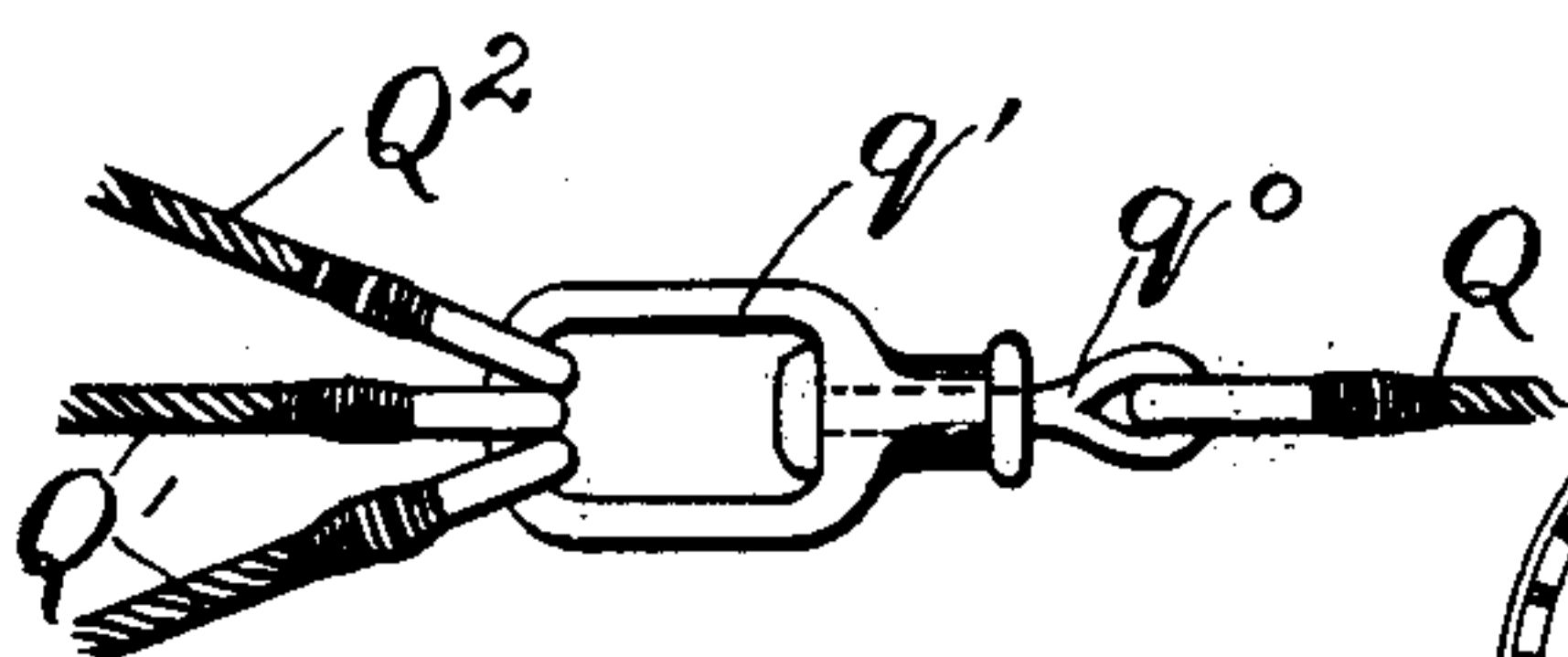


FIG. 8.

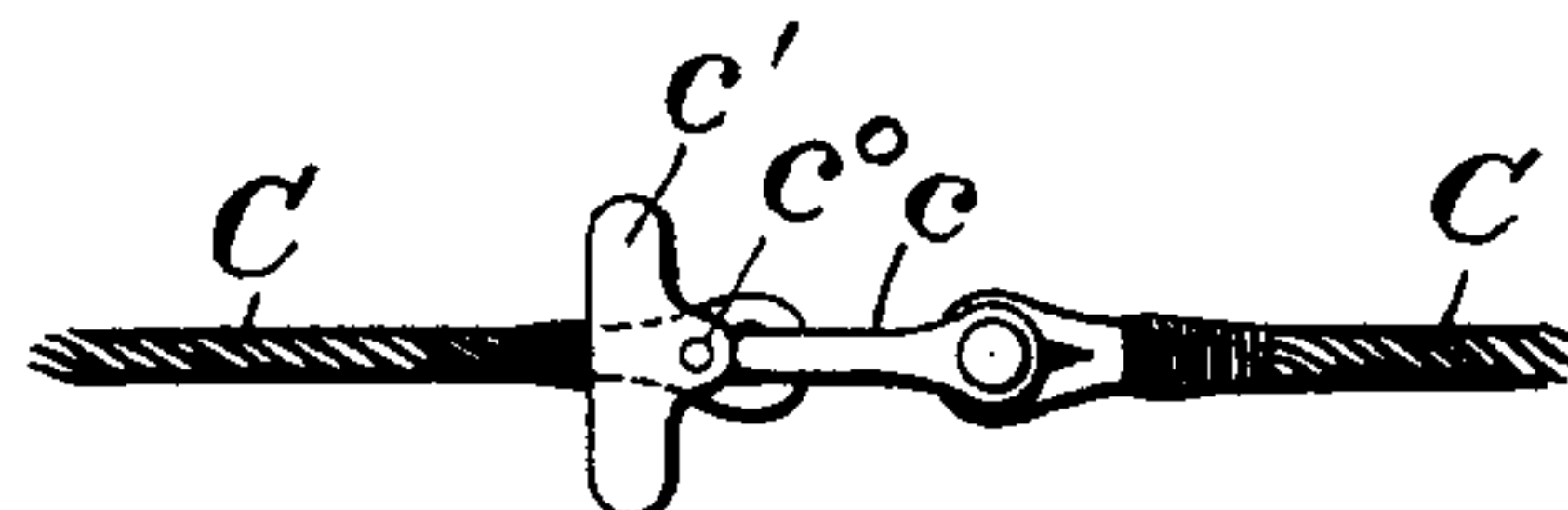


FIG. 10.

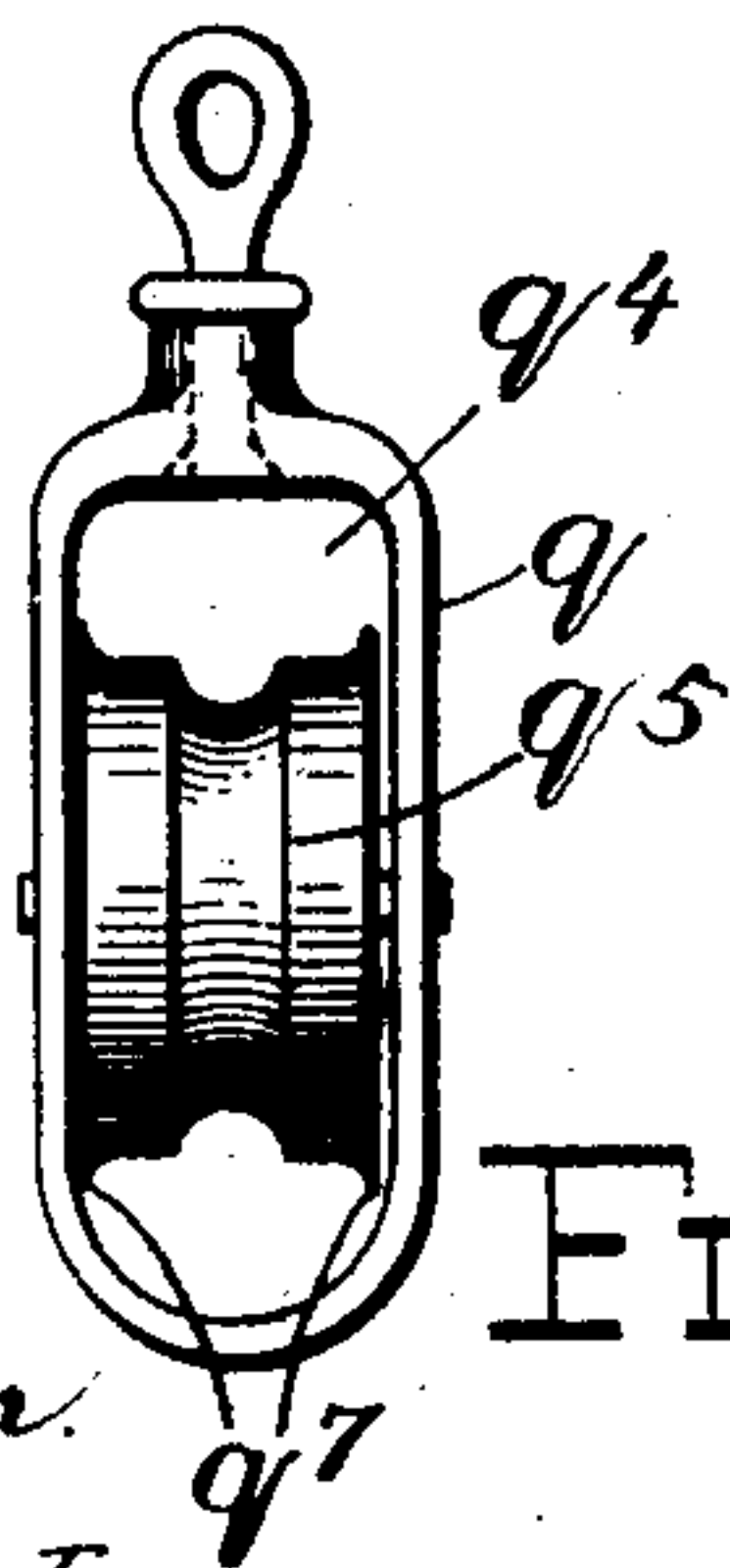


FIG. 9.

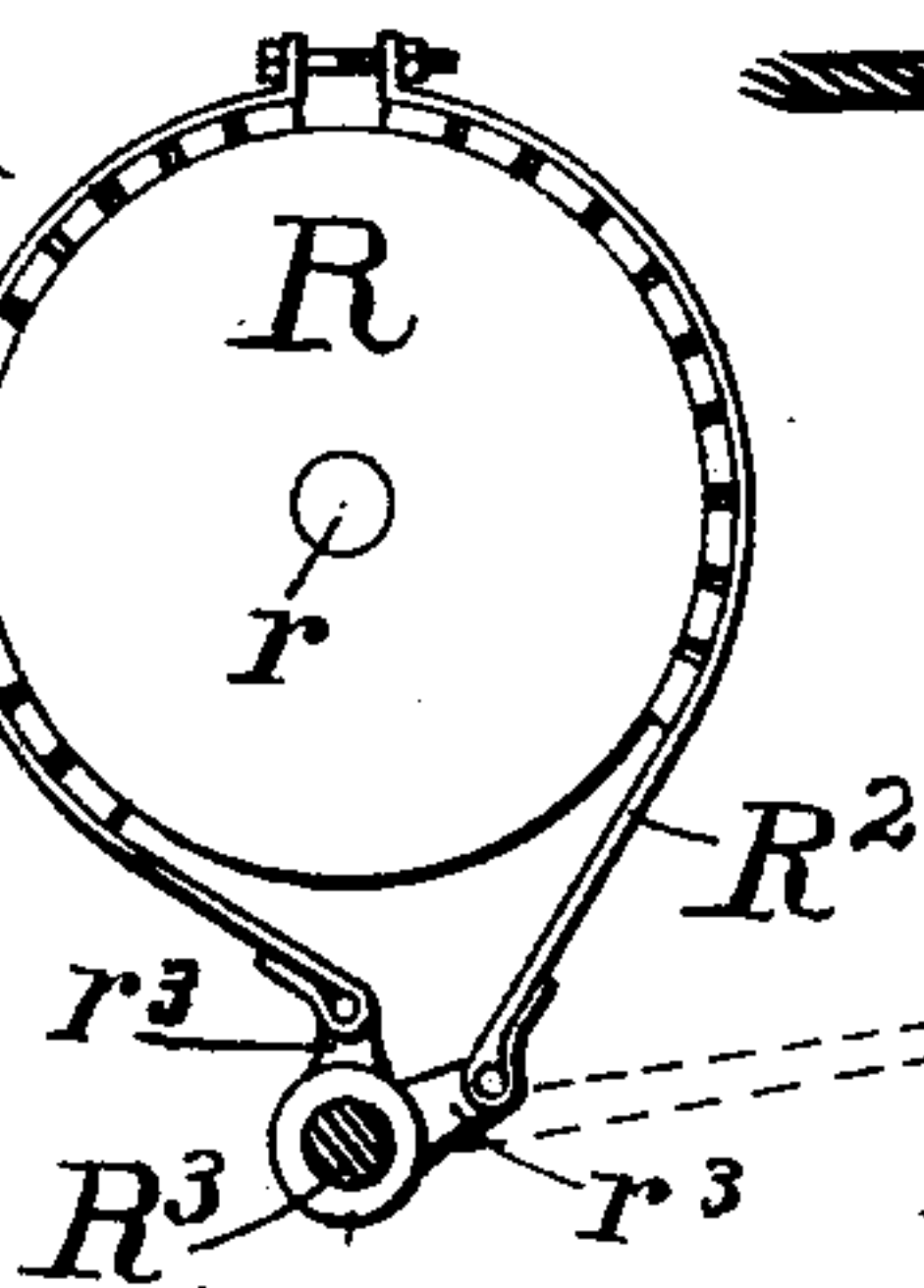


FIG. 7.

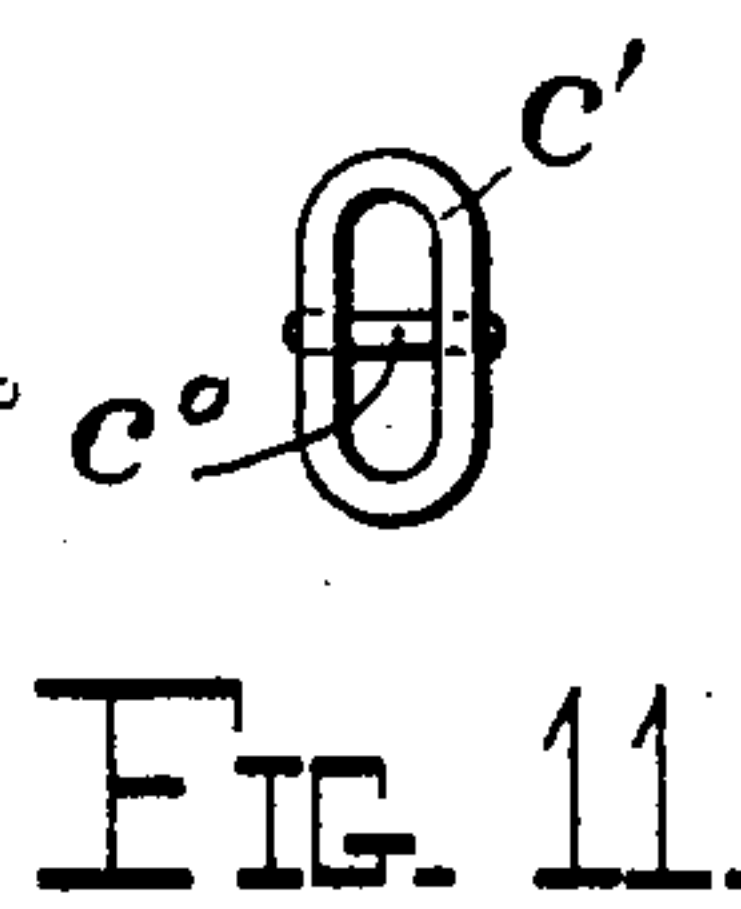


FIG. 11.

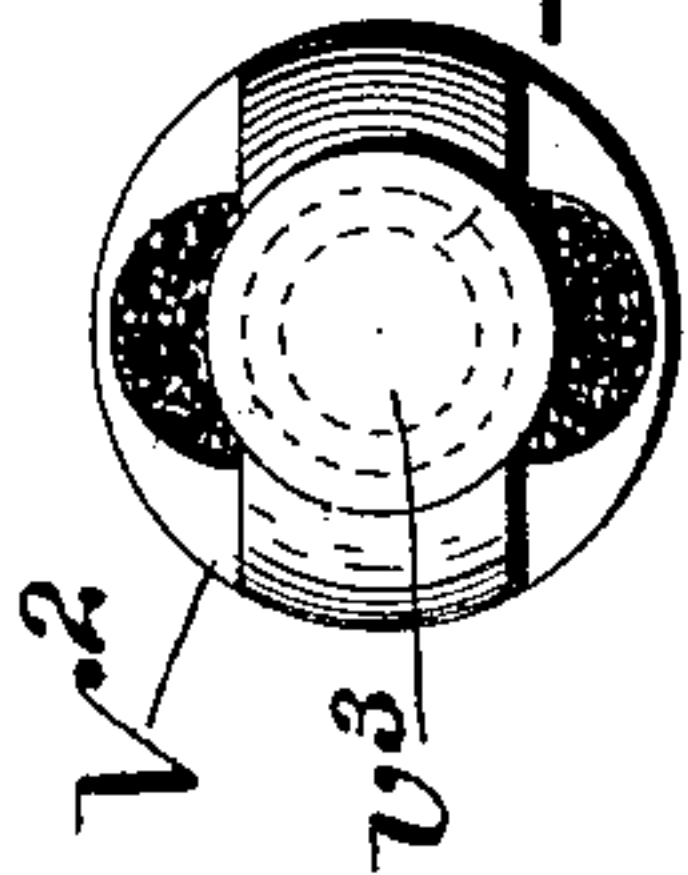
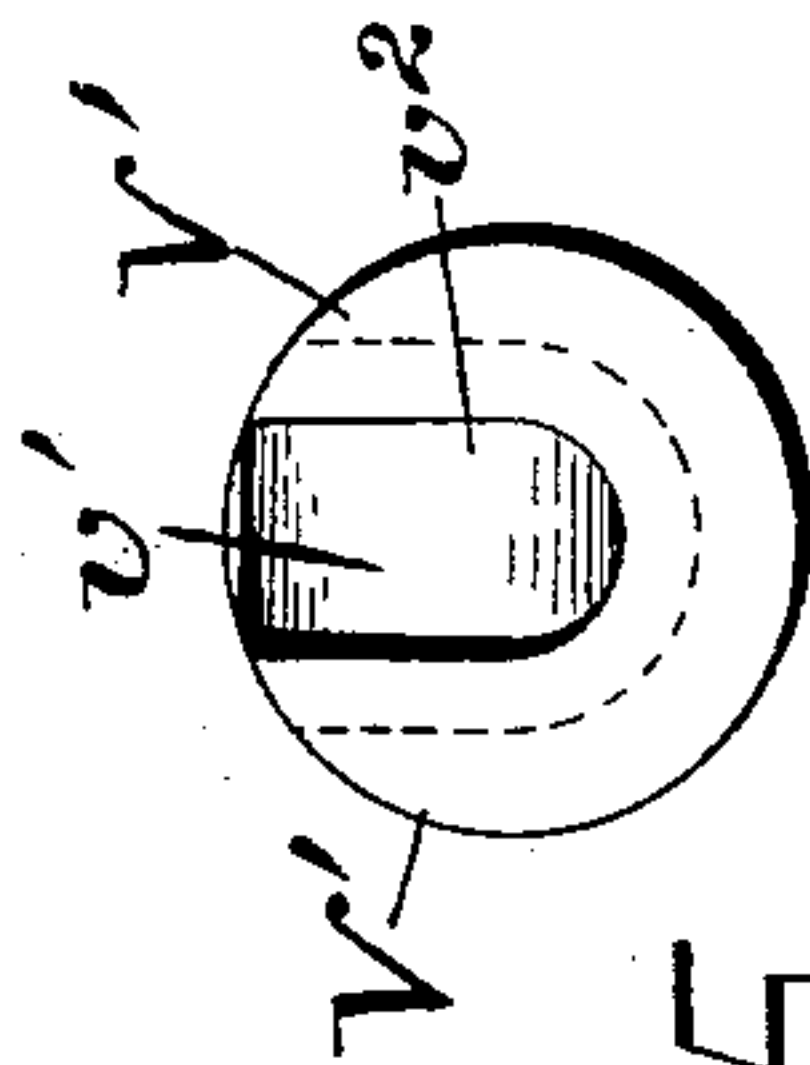
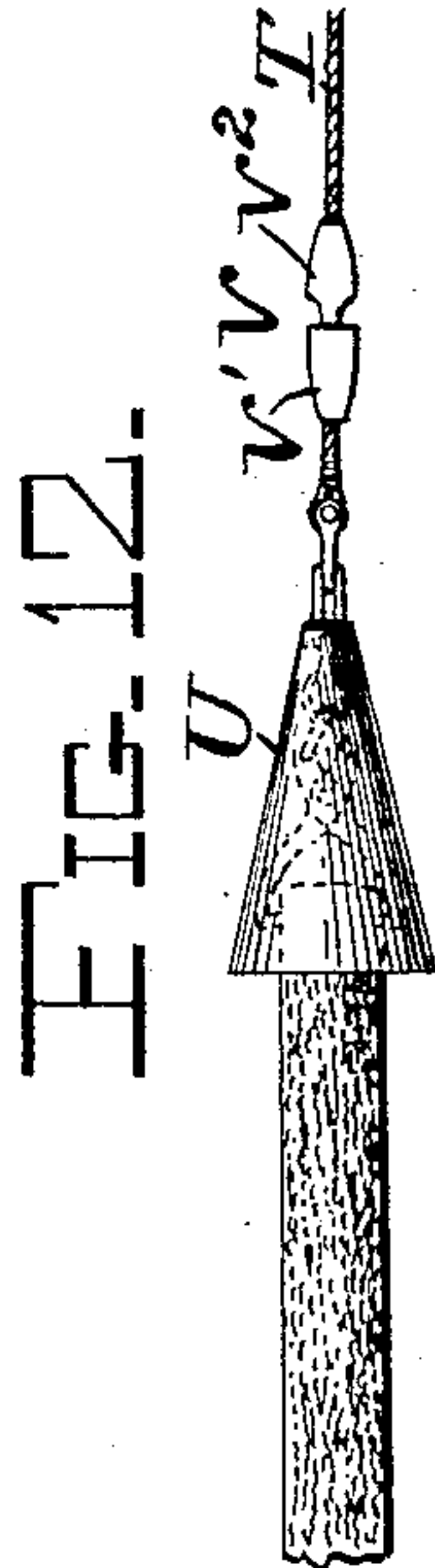
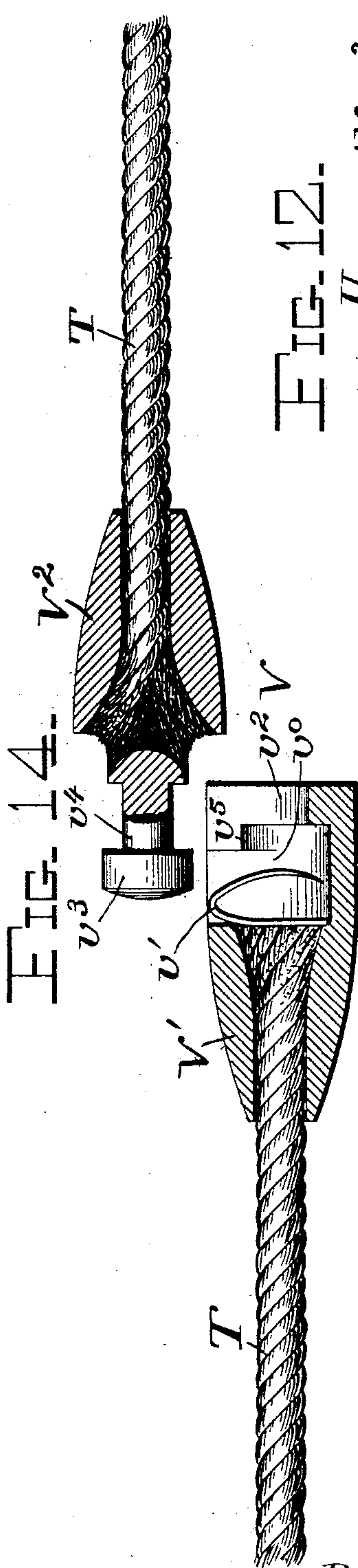
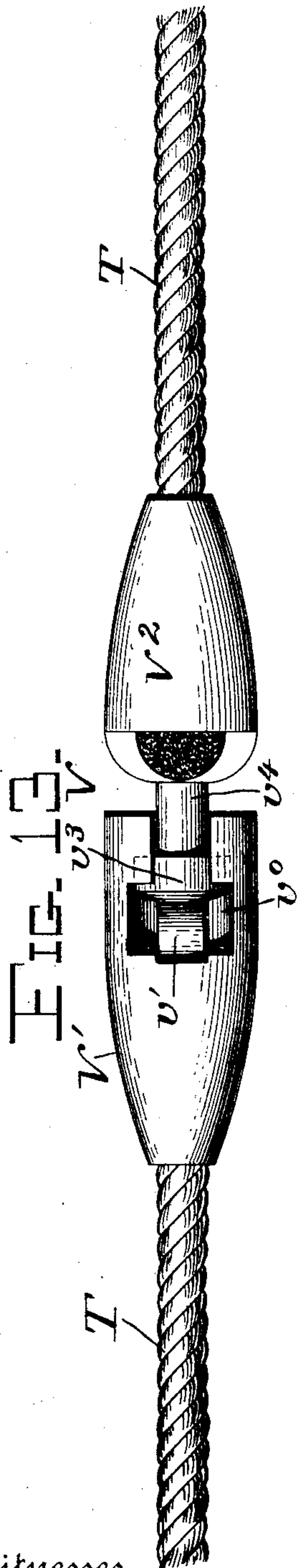
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W. BAPTIST.
APPARATUS FOR SKIDDING LOGS.

No. 561,855.

Patented June 9, 1896.



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UNITED STATES PATENT OFFICE.

WILLIAM BAPTIST, OF LUTCHER, LOUISIANA.

APPARATUS FOR SKIDDING LOGS.

SPECIFICATION forming part of Letters Patent No. 561,855, dated June 9, 1896.

Application filed February 10, 1896. Serial No. 578,750. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM BAPTIST, a citizen of the United States, residing at Lutchet, in the parish of St. James and State of Louisiana, have invented certain new and useful Improvements in Apparatus for Skidding Logs; 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 skidding-engines and cableway systems for handling logs; and it consists of certain novel features herein-
after described.

Reference is had to the accompanying drawings, wherein the same parts are indicated by the same letters and figures throughout the several views.

Figure 1 is a perspective view of a log-skidding system constructed in accordance with my invention, the position of the engine and drums being shown by a conventional representation of the engine only. Fig. 2 is a plan view of the engine and drums. Fig. 3 is a side elevation of the same. Fig. 4 represents a diagram of the gearing of the same. Fig. 5 is a view of the central longitudinal section of one of the shafts and the clutch-operating mechanism. Fig. 6 is a sectional view of the same, taken on the line C C of Fig. 5. Fig. 7 represents a side elevation of one of the band friction-brakes used upon the drums. Fig. 8 is a detail view of a swivel-joint on the main hauling-cable, and Fig. 9 represents an elevation of the pulley-block on the "spar-tree" designed for the said swivel-joint to pass through. Fig. 10 represents a detail side elevation of the stop on the main cable, and Fig. 11 represents a detail front elevation of the same detached from the cable. Fig. 12 represents a detail view of a detachable coupling, core, and tongs, such as are used for hauling logs from behind the tail-tree, showing the same attached to the end of a log. Fig. 13 is a plan view of the detachable coupling. Fig. 14 represents a longitudinal section of the two members of the coupling detached. Fig. 15 represents an end elevation of one member of the coupling, and Fig. 16 is a similar view of the other member.

Referring now more particularly to Fig. 1,

A designates the head or spar tree, held steady by suitable guy-ropes *a*, and B designates the tail-tree, also held by suitable guy-ropes *b*. 55

The main cable C is secured to the tail-tree and extended back of the said tail-tree, as at C⁰, and is anchored in any suitable manner. The forward end of the said main cable C passes through a pulley-block *c*², secured to the head-tree A, and extends to a suitable anchoring device, as C³, a block and tackle or other tightening device being provided, as at *c*³. 60

The carriage M is mounted upon the grooved wheels *m*, which travel on the main cable C. The said carriage is provided with a clevis *m*² at the lower end of its frame, to which clevis are attached two or more pulley-blocks *q*². 65

The main hauling-cable Q has a swivel-coupling *q*¹ attached to its end, and to this coupling *q*¹ are attached the two hauling-ropes Q¹ and the outhaul Q² for pulling out the slack. The main cable Q passes through a wide pulley-block *q* (shown in detail in Fig. 9) and down to the hauling-drum R of the engine. The pulley *q* has a wide sheave grooved around the center, as at *q*³, and provided with side flanges *q*⁷. The block is made large to allow a sufficiently large opening *q*⁴ over the sheave to allow the coupling *q*¹ to pass through the block when it is necessary to draw the logs very close to the head-tree. 70

The rope Q² from the coupling *q*¹ passes round a sheave M' in the frame of the carriage M and then through a pulley-block *q*⁶, attached to the head-tree, and is secured to the drum S on the engine. 85

The main outhaul N is secured to the carriage at *n* and passes back through a pulley-block *n*¹, secured to the tail-tree, then through fair-leaders *m*¹ on the frame of the carriage M, and through a pulley-block *n*² to the drum P on the engine. 90

To the ends of the ropes Q¹ are attached the tongs *q*³, which, when the carriage has been run out by the outhaul, are connected to the logs to be hauled in. The main hauling-rope is then wound in by the drum R, and the drum P of the outhaul is held from unwinding the said rope until the ends of the logs have been raised from the ground, as shown in Fig. 1. The two drums are then geared together so that the inhaul-rope Q will wind 100

in a very little faster than the outhaul-rope N will unwind. Thus as the carriage becomes lower by reason of the sag in the main cable the ends of the logs will be held at approximately the same height from the ground. As the carriage ascends the main cable nearing the head-tree the clutch on the outhaul-rope drum P is loosened sufficiently to allow the said drum to slip a little and thus keep the ends of the logs from being elevated too high as they approach the head-tree. The gearing and clutches to accomplish this result will be hereinafter described in connection with the engine.

A track Y is laid out to the head-tree and a rope D extends from the head-tree over the said track, and is secured to any suitable place (as, for instance, a stump d) to keep it taut. A sliding block D' is placed on the rope D and held in the proper position by the ropes d' . The loading-rope E passes through a pulley-block d^2 , secured to the end of the block D', and through the pulley-block e on the head-tree to one of the loading-drums F of the engine. This loading-rope E carries the tongs E' at its outer end and is used to lift the logs upon the cars after they have been hauled up to the head-tree.

The main cable C has a coupling c near the head-tree, secured to which is a stop c' . (Shown in detail in Figs. 10 and 11.) This stop c' passes over the coupling and is secured thereto by a pin c^0 .

The engine (shown in Figs. 2 and 3) has its several parts mounted upon the base I, which may be placed upon a truck or other suitable device for transportation, and has the usual boiler G' and a cylinder G on each side, provided with the usual valve mechanism and connected to transmit rotary motion to a shaft K, mounted in suitable boxes on the base I.

The driven shaft K has a toothed pinion K² on each end, which pinions mesh with gear-wheels H² on each end of a shaft H', also mounted in journal-boxes on the base I. The several shafts f , r , p , and S' of the drums F, R, P, and S, respectively, are all journaled in boxes on the base I, and the said drums are all loosely mounted on their respective shafts. The shaft f carries two loading-drums F F, mounted one on each side of a central gear-wheel F³, which latter is rigidly fixed to the shaft f , and has on each side an annular friction-ring 2, approximately V-shaped in cross-section and adapted to engage in corresponding annular grooves in the ends of the drums F F, thus forming a friction-clutch when the drums are forced against the rings 2 of the gear-wheel. This friction-clutch and the means for operating the same are shown in detail in Fig. 5, which illustrates the clutch on the shaft w ; but is a type of the clutches on all the shafts.

The end of the shaft is made hollow, as at w^0 , and is also slotted through from side to side, as at w^7 . Within this slot is arranged a cross-piece 4, which rests against the slid-

ing member of the clutch. A rod 5 enters the hollow end of the shaft and is screw-threaded on its outer end to engage corresponding screw-threads in a nut 7, secured outside of the journal-box of each shaft. By turning the rod 5 by means of a suitable handle the said rod may be screwed down upon the cross-piece 4 and thus force the sliding member of the clutch against the fixed member.

The loading-drums F F are forced into engagement with the friction-ring 2 on the gear-wheel F³ by means of the handles F', one for each drum, and the gear-wheel F³ is driven by a pinion H' on the shaft H.

A pinion H³ on the shaft H meshes with and drives a gear-wheel R⁴ on the shaft r , and is provided with a friction-ring 2 to engage in a corresponding annular groove in the end of the inhaul-drum R, which is loosely mounted upon the shaft r . This drum is arranged to be forced against the friction-ring 2 on the gear-wheel R⁴ by means of the cross-piece 4 and rod 5, operated by the handle R⁰.

The gear-wheel R⁴ meshes with the pinion X' on a short shaft X, projecting inward from one side of the base I, and this pinion X' in turn meshes with a pinion P² on the shaft p and also with a gear-wheel W' on the shaft w , by which means both the shafts p and w are rotated in the same direction.

On the opposite end of the shaft w is a friction-clutch W, one member W² of which is loosely mounted on the shaft, but held from longitudinal movement along the shaft by the collars w^8 and w^9 . This member carries a pinion W³, meshing with a gear-wheel P³ on the end of the outhaul-drum P, and also has a surface w^2 for the band-brake W⁴. The other member W⁵ of the clutch W has a friction-surface w^6 and the friction-ring 2 to engage in a corresponding groove 3 in the member W² when the two members are pressed together. The member W⁵ is mounted on the shaft w by a feather-key w^5 , so as to rotate with the shaft, but to slide freely thereon, and the cross-piece 4, rod 5, and handle W⁶ are the means for forcing the two members of the clutch together.

The drums F F and R are provided with friction band-brakes F² and R², respectively, connected with the shafts F⁵ and R³, which latter have on their ends treadles F⁴ and R', arranged so that downward pressure on the said treadles will cause the band-brakes to tighten and thus hold the rollers. A similar band-brake W⁴ is placed on the member W² of the friction-clutch W on the shaft w and connected to a shaft w^3 , which is operated by a treadle W⁷, and as this member is geared to the drum P through the pinion W³ and the gear-wheel P³ the band-brake W⁴ serves to hold the drum P.

The shaft S', carrying the drum S, is mounted at one end in an eccentric-box s , and has secured thereto, near the said eccentric-box, a friction-pulley S². By turning the eccentric-

box *s* by the handle *S*³ the said friction-pulley may be pressed against the friction-surface *w*⁶ to impart motion to the shaft *S*' and drum *S*.

5 *Z* designates a rod supported in suitable bearings *i*, above the base *I* of the engine, and extending into a valve *g*. This rod is bent at right angles at its end to form a handle *z*, and also provided at suitable points along its
10 length with handles *z*'. By turning the rod *Z* the valve *g* may be closed to shut off the steam and stop the engine in case of an emergency.

The operation of the invention is as follows:

15 The carriage is carried out on the main cable by the outhaul *N* being wound upon the drum *P*, which drum is caused to rotate by being forced upon the friction-ring 2 of the pinion *P*², as hereinbefore described, (the engine being in motion,) the drum *R* being allowed to
20 rotate to pay off the inhaul *Q*. When the carriage has reached the desired position, the drum *P* is released from the pinion *P*², and the friction-pulley *S*² of the drum *S* is brought
25 against the friction-surface *w*⁶ of the clutch *W* to rotate the said drum *S* and wind up the rope *Q*², which will pull out the main inhaul-rope *Q* until the tongs *q*³ can be carried to the logs and secured thereto. The drum *R* is
30 then forced upon the friction-ring 2 of the gear-wheel *R*⁴ to rotate the said drum and wind up the inhaul. When the inhaul begins to pull upon the logs, the drum *P* is held from rotation by the application of the band-brake
35 *W*⁴ to the member *W*² of the friction-clutch *W*, which is geared by its pinion *W*³ to the gear-wheel *P*³ of the drum *P*. This prevents the running out of the outhaul, and holds the carriage until the ends of the logs have been
40 raised above the ground, as shown in Fig. 1, at which time the member *W*⁵ is forced upon the friction-ring 2 of the member *W*² of the clutch *W*, and at the same time the band-brake is released therefrom, thus leaving the
45 drum *P* geared to the drum *R* through the shaft *w*, gear-wheel *W*¹, pinion *X*¹, and gear-wheel *R*⁴. The sizes of the gear-wheels are so proportioned that as the drum *R* winds up the inhaul-rope the drum *P* will pay out the
50 outhaul-rope a very little slower than the inhaul-rope is wound in, thus elevating the ends of the logs a little more as they travel toward the head-tree. This will keep the ends of the logs at approximately the same height from
55 the ground as the carriage travels toward the middle of the main cable, where the sag is greatest. As the carriage proceeds toward the head-tree, where the cable is higher and the ends of the logs become too high, the friction-clutch *W* is slightly loosened to allow the
60 clutch to slip a little, and thus keep the ends of the logs at the right height to allow the logs to slide freely over obstructions. When the logs have been brought near enough to the
65 head-tree, the tongs *q*³ are released and the operation is repeated.

When it is desired to draw up logs some dis-

tance behind the tail-tree, one or more ropes, as *T* in Fig. 1, may be secured to the carriage, as at *t*', and passed over pulley-blocks *t* on the
70 tail-tree. These ropes have the usual tongs secured to their ends by the couplings *V*, which are shown in detail in Figs. 12 to 16.

The coupling *V* is composed of two members *V*¹ and *V*², both of which are bored out
75 to receive the ends of the cables or ropes *T*, which are secured therein in any suitable manner. The member *V*² is provided with a head or button *v*³, connected to the body by a neck or stem *v*⁴, and the member *V*¹ is re-
80 cessed, as at *v*⁰, to receive the head *v*³ and is provided with a smaller aperture *v*² through its end to receive the neck *v*⁴. Both of the openings *v*⁰ and *v*² open through one side of
85 the member *V*¹ of the coupling, and the opening *v*⁰ is provided on the open side with a shoulder *v*⁵. Thus it will be seen that the head *v*³ of one member may be inserted from
90 the side in the recess *v*⁰ of the other member, the neck *v*⁴ passing into the aperture *v*², and the head when it is all the way in resting under the shoulder *v*⁵. This coupling *V* is secure while there is a pull on the cable, but
95 may be readily detached by first pulling the two members together and then lifting the head *v*³ out.

To prevent the two members from being accidentally shaken apart, a spring *v*¹ is inserted in the recess *v*⁰ to press the head *v*³
under the shoulder *v*⁵, and thus make the
100 coupling more secure.

In practice a steel cone *U* is slipped over the tongs and ends of the logs when the cables *T* are used, to enable the logs to be more
105 easily drawn over obstructions on the ground.

By use of the cables *T* logs may be drawn from twice the distance possible by use of the system between the head and tail trees only, as when the carriage is run out the cables *T*
110 may be carried back as far behind the tail-tree as the carriage travels from the head-tree, and two logs may be hauled up to the tail-tree ready to be taken by the ropes *Q*' at the same time that two other logs are being
115 hauled to the head-tree by the ropes *Q*', thus effecting a great saving of time and labor.

The logs after being drawn to the head-tree are loaded upon the car or truck (not shown) upon the railway *Y* by means of the
120 loading-rope *E*, which is guided by the block *D*' and is wound upon the loading-drum *F* of the engine.

It will be obvious that various modifications in the herein-described apparatus might be made which could be used without departing
125 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. In an apparatus of the character de-
130 scribed, the combination with an inhaul-rope, and an outhaul-rope for hauling out the carriage, of a carriage, an inhaul-rope drum, an outhaul-rope drum, gearing driven by the

source of power connected with said inhaul-rope drum, and two friction-clutches interposed between said outhaul-rope drum and said gearing; said friction-clutches being respectively adapted to drive said outhaul-rope drum in opposite directions, substantially as described.

2. In an apparatus of the character described, the combination with an inhaul-rope, and an outhaul-rope for hauling out the carriage, of a carriage, an inhaul-rope drum, an outhaul-rope-drum gearing driven by the source of power and connected with said inhaul-rope drum, two friction-clutches interposed between said outhaul-rope drum and said gearing, said friction-clutches being respectively adapted to drive said outhaul-rope drum in opposite directions, and means for causing said outhaul-drum to move at a slower circumferential speed than said inhaul-drum, substantially as described.

3. In a log-skidding system, the combination with a head and tail tree or support, of a cable extending from one of said supports to the other, and a carriage adapted to travel on the said cable; an inhaul-rope, passing through pulleys on the said carriage and having tongs to grasp the logs, an outhaul-rope connected to the said carriage, and passing around a pulley on the tail tree or support and then to the head tree or support, a drum to which the inhaul-rope is attached, and a drum to which the outhaul-rope is attached, the said drums being mounted loosely on their shafts, clutches to clutch the drums to their shafts, a shaft parallel with the outhaul-rope-drum shaft and driven in the opposite direction thereto, a clutch and gearing to gear the outhaul-rope drum, to the latter shaft, and means for driving the shafts, substantially as described.

4. In a log-skidding system, the combination with a head and tail tree or support, of a cable extending from one of said supports to the other, and a carriage adapted to travel on the said cable; of an inhaul-rope passing through pulleys on the said carriage and having tongs to grasp the logs, an outhaul-rope connected to the said carriage, and passing around a pulley on the tail tree or support and then to the head tree or support, a drum to which the inhaul-rope is attached, and a drum to which the outhaul-rope is attached, a shaft r on which the inhaul-drum is loosely mounted, a shaft p on which the outhaul-drum is loosely mounted, and a shaft w , parallel to the said shafts, a train of gearing connecting the three shafts, clutches to clutch the drums R and P to their respective shafts to make them turn therewith, means for clutching the drum P to the shaft w to reverse the movement of the said drum, and means for driving the shafts, substantially as described.

5. In a log-skidding system, the combination with a head and tail tree or support, of a cable extending from one of said supports to

the other, and a carriage adapted to travel on the said cable, an inhaul-rope, passing through pulleys on the said carriage with means for grasping the logs, an outhaul-rope connected to the said carriage, and passing around a pulley on the tail tree or support, and then to the head tree or support, a drum to which the inhaul-rope is attached, and a drum to which the outhaul-rope is attached, a shaft r on which the inhaul-drum is loosely mounted, a shaft p on which the outhaul-drum is loosely mounted, and a shaft w , parallel to the said shafts, a train of gearing connecting the three shafts, clutches to clutch the drums R and P to their respective shafts to make them turn therewith, a clutch on the shaft w , the loose member of which is geared to the drum P , a friction-brake to hold the loose member of the clutch, means for forcing the fast member against the loose member of the clutch, and means for driving the shafts, substantially as described.

6. In a log-skidding system, the combination with a cableway, a carriage to travel on said cableway, an inhaul-rope passing through a pulley on the said carriage and means for grasping the logs, an outhaul-rope secured to the carriage and passing over a pulley at the distant end of the cableway, and a rope Q^2 to pull out slack in the inhaul-rope; and means for operating said ropes, substantially as described.

7. In a log-skidding system, the combination with a cableway, a carriage traveling thereon, an inhaul-rope passing through a pulley on said carriage, and means for grasping the logs, an outhaul-rope secured to the carriage and passing over a pulley at the distant end of the cableway, of an engine, a drum R for the inhaul-rope mounted loosely upon a shaft r , a friction-brake R^2 to control the drum R , a drum P for the outhaul-rope mounted loosely on a shaft p , a gear-wheel R^4 upon the shaft r geared to the driving-shaft of the engine, a friction-clutch on the gear-wheel R^4 by which it may be clutched to the drum R , a short shaft X having a pinion X' thereon meshing with the gear-wheel R^4 , a pinion P^2 on the shaft p meshing with the pinion X' and having a friction-clutch to engage the drum P , a shaft w geared to the pinion X' , a friction-clutch on the said shaft w provided with a loose member geared to the drum P , a friction-brake on the said loose member of the clutch to hold the drum P , and means for operating the said clutches and brakes to cause the drum P to wind up the outhaul-rope independently of the drum R , and to cause the drum R to wind up the inhaul-rope slightly faster than the drum P will pay off the outhaul-rope; substantially as described.

8. In a log-skidding system, the combination with a cableway, a carriage traveling thereon, an inhaul-rope passing through a pulley on said carriage, and means for grasping the logs, an outhaul-rope secured to the carriage and passing over a pulley at the dis-

tant end of the cableway, and a rope Q^2 to pull out slack in the inhaul-rope; of an engine, a drum for the inhaul-rope, a drum for the outhaul-rope, a drum S for the rope Q^2 , 5 an eccentric journal-box and hand-lever for throwing said drum S into and out of operation, and means for rotating all of said drums, substantially as described.

9. In a log-skidding system, the combination with a head and tail tree or support, of a cable extending from one of said supports to the other, and a carriage adapted to travel on the said cable; an inhaul-rope, passing through pulleys on the said carriage and provided with means for grasping the logs, an outhaul-rope connected to the said carriage, and passing round a pulley on the tail tree or support, and then to the head tree or support, a drum to which the inhaul-rope is attached, means for operating said drums, and ropes T connected to said carriage and leading beyond the tail-tree, substantially as described. 15

10. In a log-skidding system, the combination with a head and tail tree or support, of a cable extending from one of said supports to the other, and a carriage adapted to travel on the said cable; an inhaul-rope, passing through pulleys on the said carriage and having tongs to grasp the logs, an outhaul-rope connected to the said carriage, and passing round a pulley on the tail tree or support, 25

and then to the head tree or support, a drum to which the inhaul-rope is attached, means for operating said drums, a pulley t on the tail-tree, a rope T secured at one end to the carriage and passing over said pulley, and tongs at the other end of said rope, substantially as described. 35

11. In a system of the character described, a rope-coupling consisting of two members secured to the opposing ends of the rope, a head and a reduced stem upon one member, the other member having a recess for the head and a slot for the stem and means for retaining the head in place, substantially as described. 40

12. In a system of the character described, a coupling consisting of two members secured to the opposing ends of the rope, a head and a stem upon one member; the other member having a recess somewhat longer than the said head and stem and adapted to receive the head, and a slot for the stem, a shoulder near the end of said recess to retain the head, and a spring tending to press the head beneath the shoulder, substantially as described. 50

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM BAPTIST.

Witnesses:

RUFUS E. FOSTER,
WM. H. WRIGHT.