

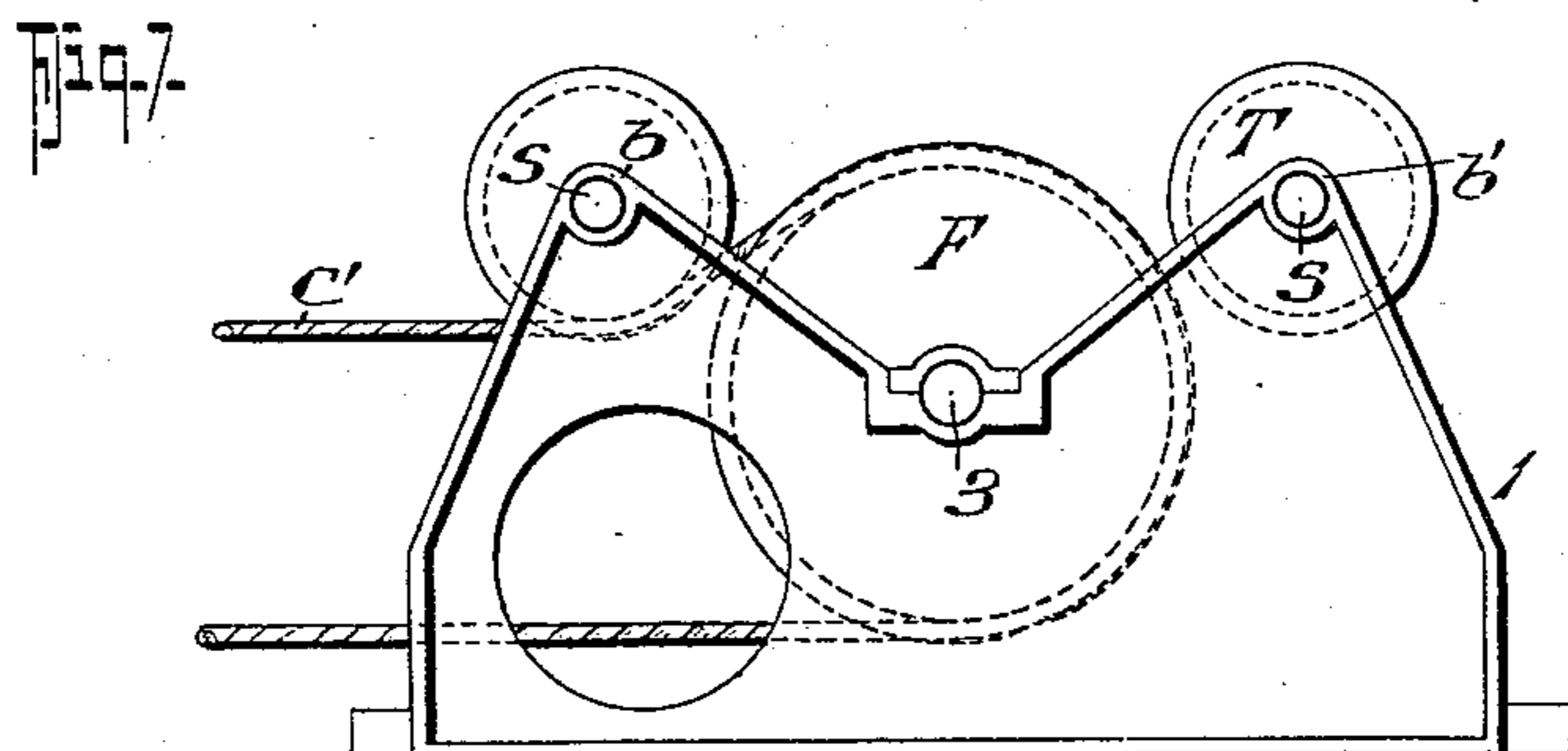
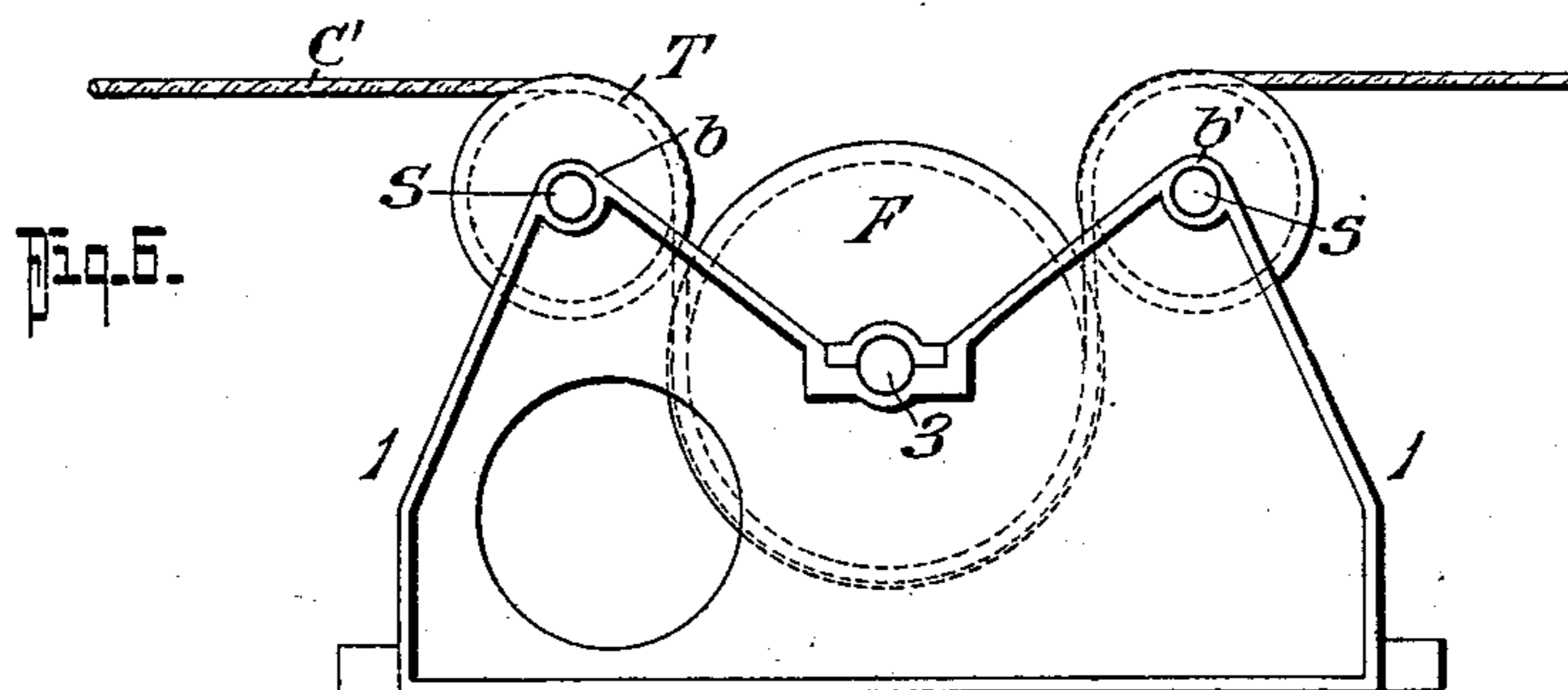
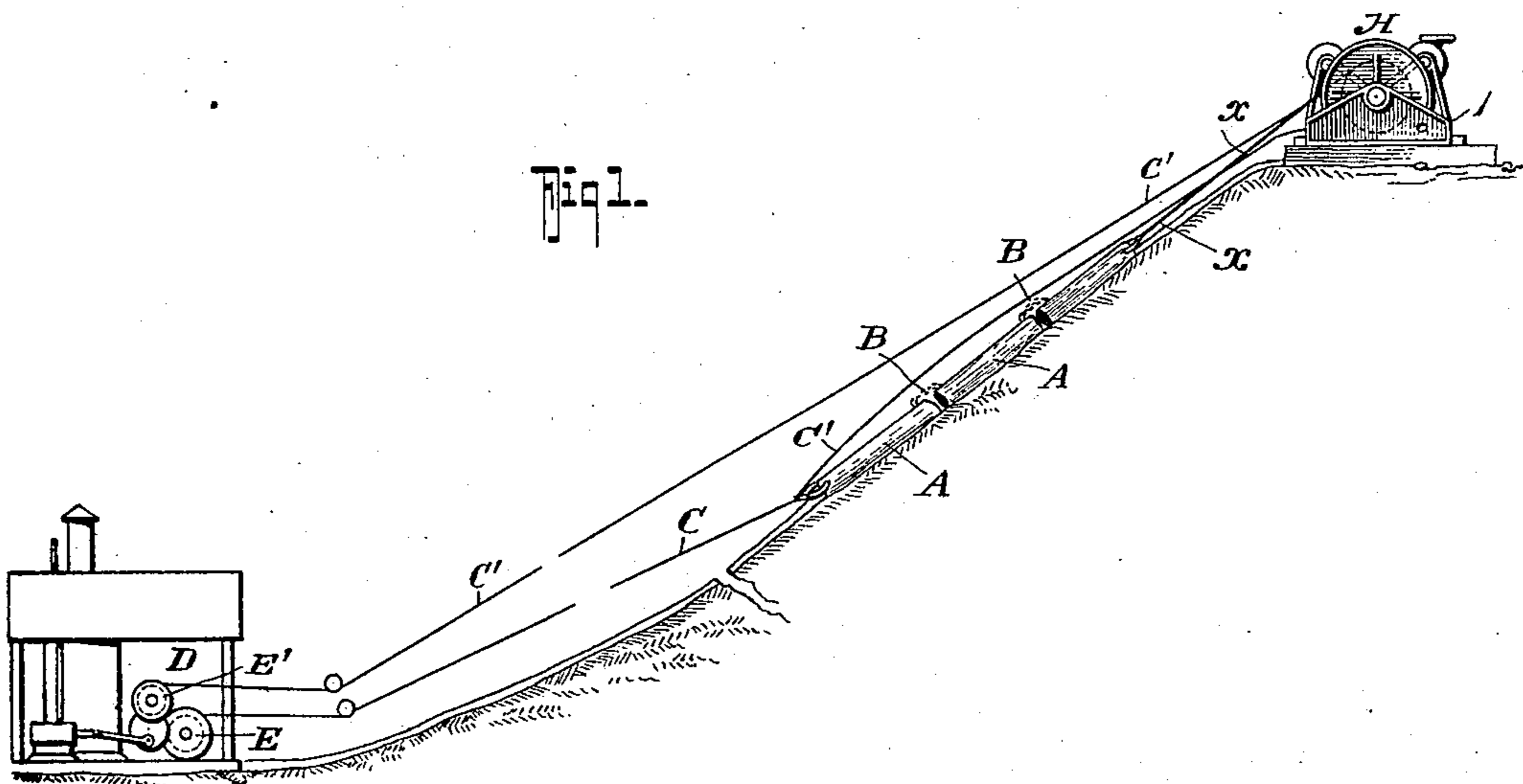
No. 886,287.

PATENTED APR. 28, 1908.

S. J. DAVIS.
LOGGING MEANS.

APPLICATION FILED MAR. 27, 1907.

3 SHEETS—SHEET 1.



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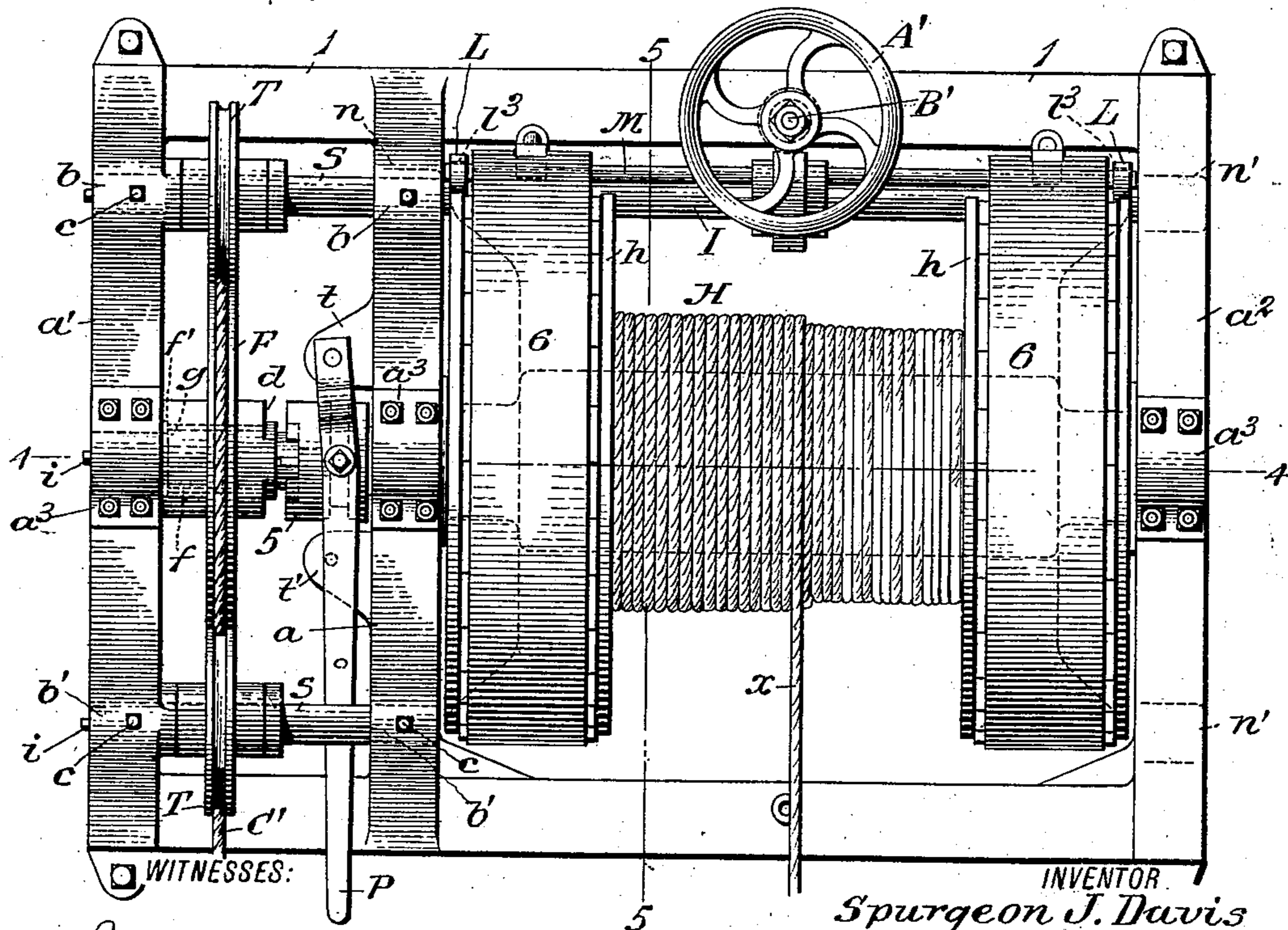
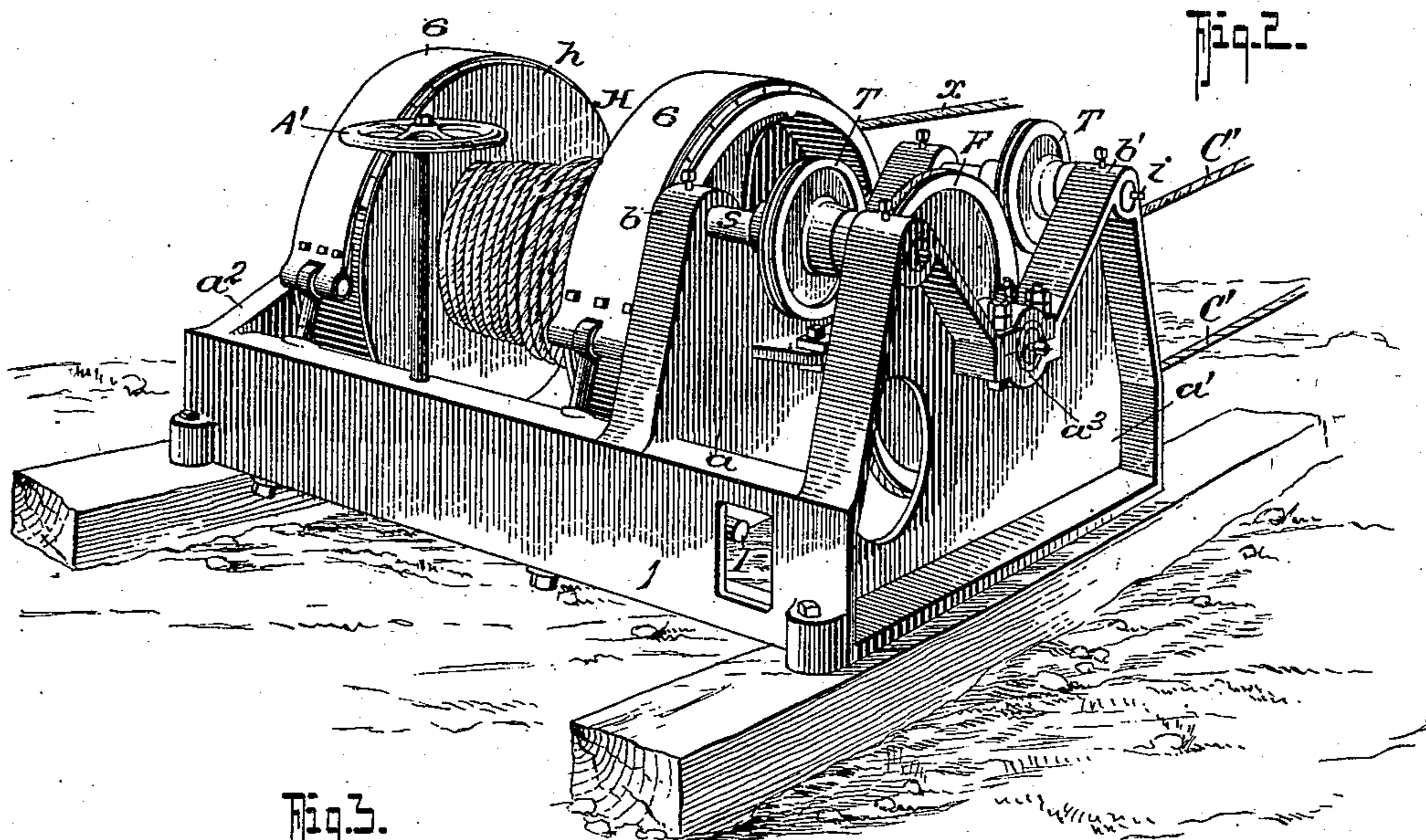
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3 SHEETS—SHEET 2.



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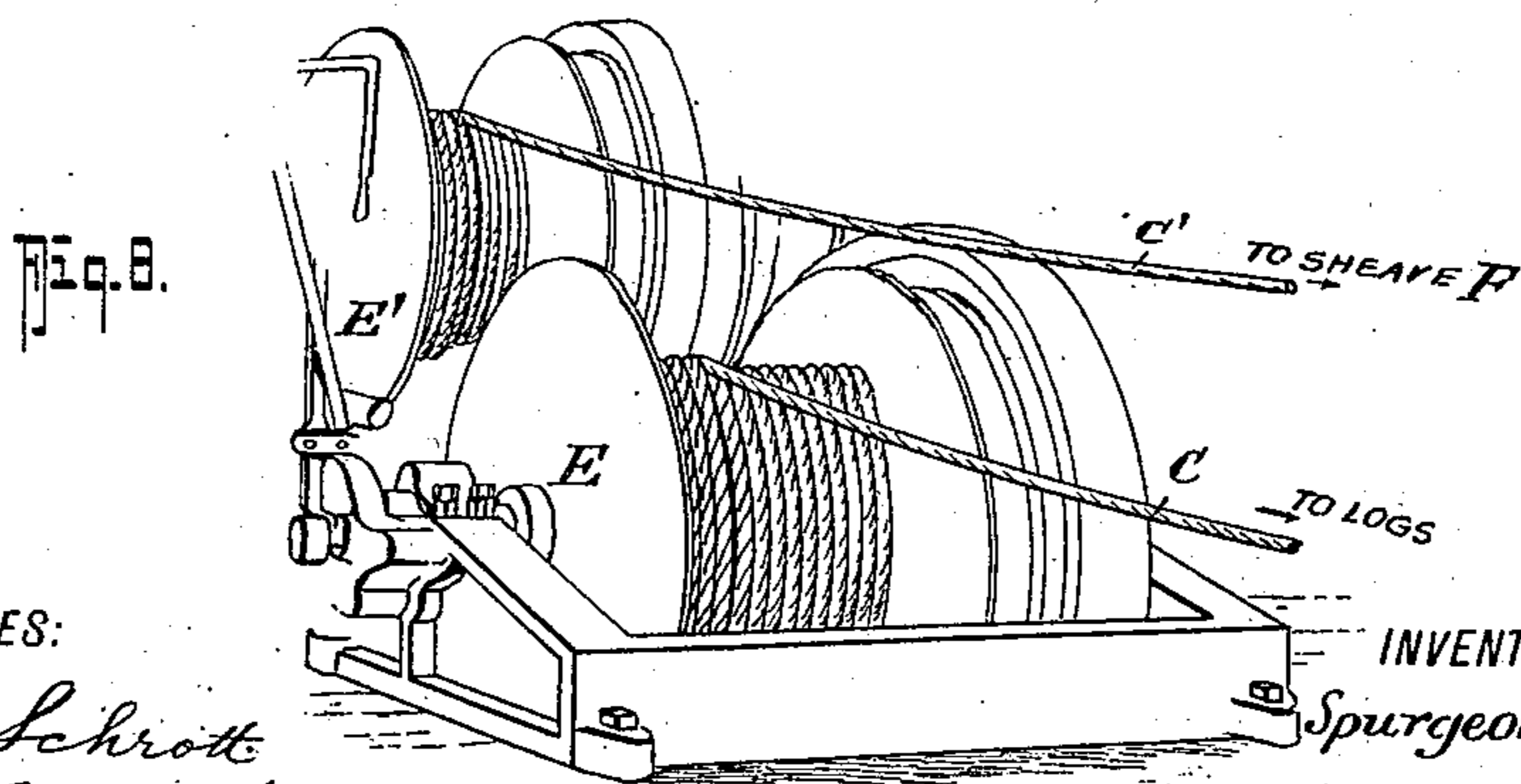
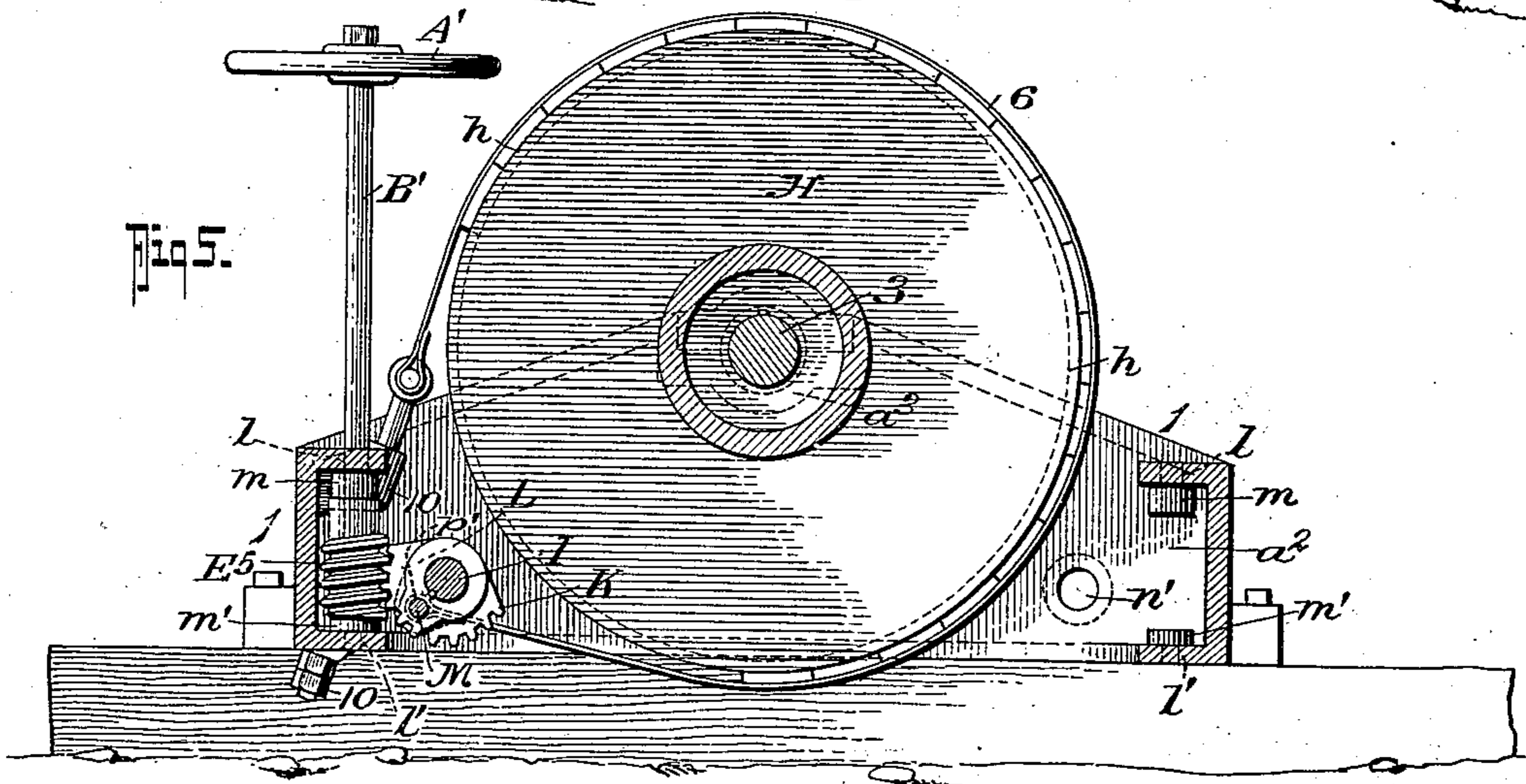
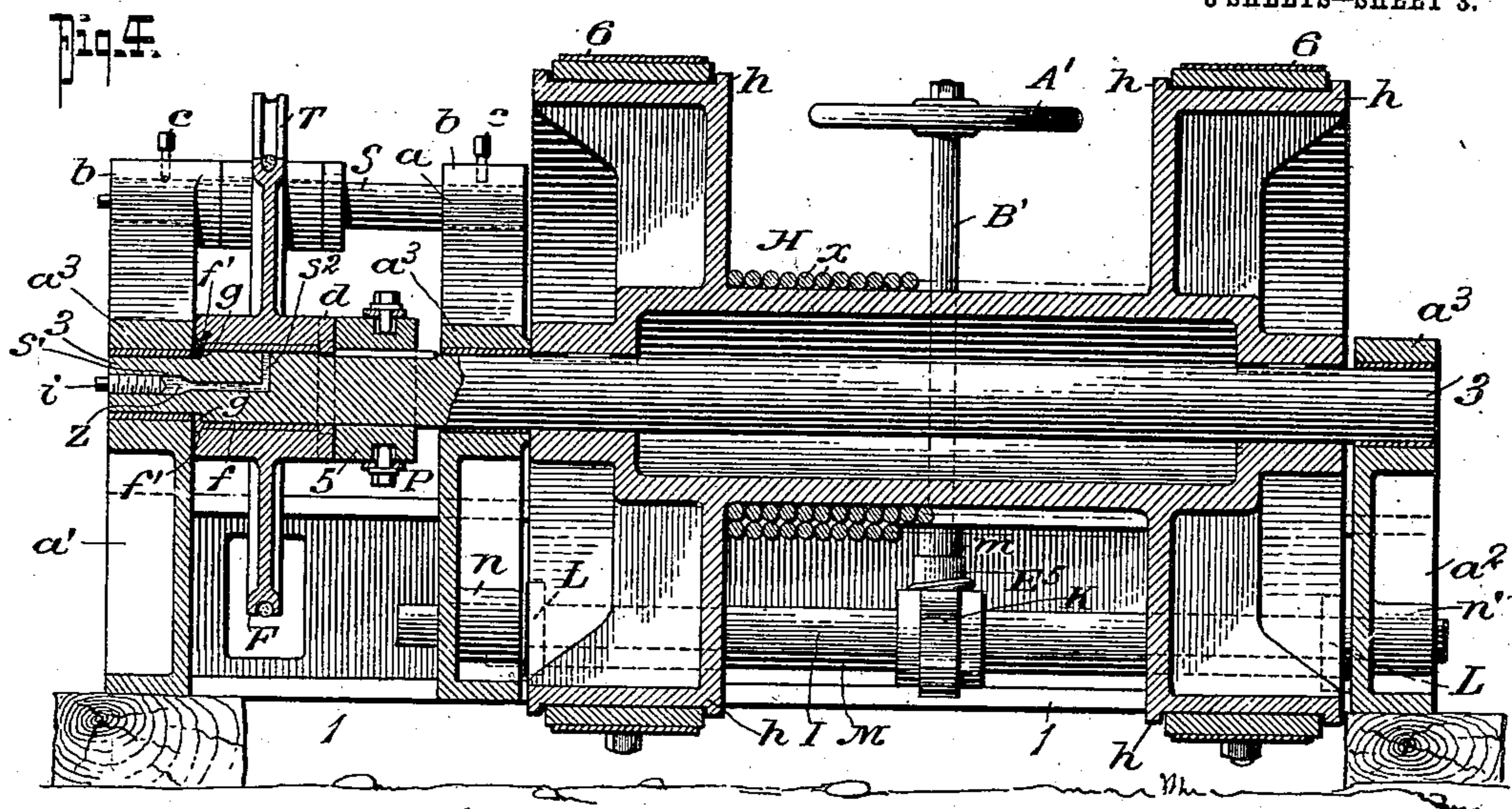
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

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LOGGING MEANS.

No. 886,287.

Specification of Letters Patent.

Patented April 28, 1908.

Application filed March 27, 1907. Serial No. 364,925.

To all whom it may concern:

Be it known that I, SPURGEON J. DAVIS, residing at Ostrander, in the county of Cowlitz and State of Washington, have invented
5 a new and Improved Logging Means, of which the following is a specification.

This invention, which relates generally to means for controlling the transporting of logs down steep inclines, more particularly
10 refers to a means combined with the pull or drag cable or cables, in the nature of a supplemental cable, arranged for positively controlling at the will of the operator, the speed and the desired positionings of the logs rela-
15 tively to each other, when passing down the steep inclines.

In transporting logs down the mountain side to the nearest water course or railroad, it has been a common practice to link to-
20 gether two or more logs, held in longitudinal direction, and to the foremost of the said logs to attach a main or pull cable that runs down to the engine house at the foot of the mountain, to which engine a second or return line
25 or cable is also connected that extends parallel with the main cable over the guide, made fast at the top of the mountain or discharging point for the logs and then passed down and made fast to the main line, such
30 provision being, as it were, in the nature of an endless cable, the direction of movement of which, up or down, is controlled by the logging engine in the engine house, winding up one drum of the engine as the other drum
35 of the engine pays out. From practical experience, I have found the system generally employed for hauling the logs not reliable, since in sending the logs down they at times gain such momentum that they dash into
40 each other, strike the bottom of the water course or deflect their course and strike obstructions with such force that they are entirely broken up and the logging mechanism thereby frequently disabled.

Means have been provided for holding back the logs as they pass over steep inclines, in the nature of connecting a pull back cable to the rearmost log or logs, but so far as I know, such means have been controlled from the
50 engine at the delivery point for the logs and by the operator, who controls the direction of movement of the main or pull cable and the return cable. This method of handling the log, while in a measure controlling the "run
55 away," of the logs, has not met all the require-

ments desired in this art for the reason that it is expensive as large cables must be used all the way around, and since before the hold back means can be applied, after notice that the logs are running fast has been
60 communicated to the operator, they gather such speed, that when slack on the long hold back cable that extends from the bottom to the top of the mountain is taken up, the jerk transmitted by the now swiftly sliding logs
65 either breaks the cable and the block at the top, over which the hold back runs, injures the engine or permits the logs to become disorganized or separated.

My invention seeks to provide for permit-
70 ting the logs sliding down the steep inclines under perfect control of the operator and in such quick controlling adjustments whereby to maintain the logs in their regular or or-
75 ganized position as they slide down.

With the above objects in view and other objects to be hereinafter referred to, my invention comprehends a supplemental brake controlled cable mechanism, especially adapted to be located at the top of the hill or
80 mountain and that coöperatively joins with the main cable controlling engine at the foot of the hill and which is controlled by the operator at the top of the mountain at a point where the logs are discharged for reg-
85 ulating the down movement of the logs.

In its more complete nature, my invention consists of a supplemental or hold back cable and brake controlling means therefor, which also forms a guide or head block for the main
90 pull and return cable member, and in its more subordinate features my said invention consists in certain details of construction and peculiar combination of parts, all of which will be hereinafter fully explained, specif-
95 ically pointed out in the appended claims and illustrated in the accompanying drawings, in which:—

Figure 1, is a diagrammatic side view which illustrates the general arrangement of
100 my invention. Fig. 2, is a perspective view of the combined main or pull cable guide and the supplemental or hold back cable controlling means. Fig. 3, is a plan view thereof, the sliding clutch member being shown shift-
105 ed out of engagement with the hold back cable drum. Fig. 4, is a longitudinal section on the line 4—4 of Fig. 3, the sliding clutch member being shown in engagement with the clutch head on the hold back drum. Fig. 5, 110

is a transverse section thereof taken on the line 5—5 on Fig. 3 and illustrates the controlling means for the drum brake devices hereinafter referred to. Fig. 6, is a diagram that illustrates how the hold back cable devices can be used in any position along the road when the incline is not at the end of the road. Fig. 7, is a similar view illustrating how it may be used when placed at the end of the road. Fig. 8, is a detail view of a portion of a logging engine, and showing how the pull and hold back cables are connected thereto.

Referring now to Fig. 1, it will be noticed that the logs A are joined to follow each other lengthwise, by the coupling devices B, which may be of any approved construction, and the foremost log is connected to the main line C of the pull cable that leads down to the engine house D over the drum E of the reversing logging engine, which includes another drum E' from which passes the return cable C' that extends up the incline, passes over the guide pulley presently referred to which forms a part of the hold back or supplemental cable controlling means located at the top or log discharging point, from whence the said cable member C' passes down and connects with the main or pull cable section C, as shown.

The supplemental or hold back cable controlling means, which constitutes an essential feature of my invention, and which is best illustrated in Figs. 2 to 5, inclusive, comprises generally, a strong frame 1, which is firmly anchored at the desired point on the hill or along the road, from where the logs are discharged.

The frame 1, in plan view, is of rectangular shape and includes a middle cross member a and end cross members a' and a'' . The end member a' and the cross member a have their outer ends extended vertically and provided at the upper end with bearings $b—b'$, the purpose of which will be presently explained, and midway thereof the end members a' and a'' have capped journal bearings $a^3—a^3$ to receive the drum shaft 3, which extends lengthwise of the frame 1 and upon which is fixedly mounted the drum H, having at the opposite ends brake rims $h—h'$.

S—S designate two short shafts that are journaled in the bearings $b—b'$ of the cross members $a'—a$ and which are fixedly held in the said bearings by the set screws $c—c$ as clearly shown in Figs. 2 and 3.

Upon each shaft S is loosely mounted a large guide sheave T, and in transverse alignment with the said sheaves T is a larger guide sheave F, which is loosely mounted on the drum shaft 3, and which has at one end a clutch hub d , with which engages a clutch member 5, rotatable with the shaft 3 but slidable thereon, said clutch being so disposed that when moved into engagement with the clutch hub d the sheave F is caused

to revolve in a proper direction, that is, with the drum H whereby to wind up the hold back cable x thereon. The sheave F is held from lateral movement on its shaft by means of a bushing f which has a shoulder f' that engages a shoulder g on the shaft 3, as best shown in Fig. 4 and the sheaves T—T, in the practical arrangement of my improvements are also provided with heavy bronze bushings, whereby to stand a great amount of wear. Each of the sheaves T—T and F are arranged to be lubricated by forming the several shafts for the said sheaves at the ends on which the sheaves are mounted with a bore S' that has a lateral s^2 that discharges against the bushing, see Fig. 4. The lubricating is effected by forcing a hard oil or lubricant compound designated Z through the bore s' and channel s^2 by means of screw plugs i that enter and thread into the outer end of the bores s' , as shown.

The brake rims or heads of the drum H are adapted for receiving a brake band 6, which carries on its inner face friction blocks of wood or fiber secured transversely on the band and the said band is operated by actuating mechanism, the construction of which is best shown in Figs. 2 & 5, by reference to which it will be noticed a hand wheel A is mounted on a vertical shaft B, held in the bearing apertures $l—l'$, formed on the bosses $m—m'$ of the frame. That part of the shaft B between the bosses is made square and receives and carries a worm gear E, which rests between the two bosses $m—m'$.

I designates a brake shaft that extends lengthwise of the frame 1 and has its ends mounted in the apertures $n—n'$ in the cross members a and a' and in this shaft is tightly mounted a semi-circular spur gear K and two short crank levers L which are also fixedly mounted on the shaft I and have their outer ends apertured as at l^3 for the purposes presently explained.

The crank levers L are keyed enough apart to be just outside of the brake rims or heads, and the holes l^3 in said levers L are in line with holes p' in the segmental gear wheel K, whereby to receive a rod M, such means providing for connecting one end of the brake band engaging with the actuating device, the other end of the brake band engaging an eye bolt that passes through the side of the frame as at 10 see Fig. 4, and which bolt has a long threaded shank with a nut to permit of readily adjusting the brake mechanism whereby to apply the same tension to both brake bands and to take up the wear. As the ends of the brake bands pass almost around the shaft I in a central position at end of stroke, the brakes have great force on the drum rims, when it is considered they are actuated by the worm gear power.

P designates a lever that shifts the clutch 5 endwise on the shaft, and the said lever is

arranged to be hinged on either of the lugs $t-t'$ of the frame 1. The lever P and the brake mechanism actuating devices are so arranged and adapted for connection with the main frame whereby they can be changed to either side of the frame and thus allow the entire cable controlling means to be placed at either side of the road.

By reason of the peculiar arrangement of the several sheaves T—T and F, the cable controlling means can be readily arranged for use at the end of the road or top of the hill since, when thus positioned, the hold back cable is passed over sheave F and under one of the adjacent guide sheaves T, as clearly illustrated in Fig. 6, or the said controlling means used in any position along the road, when the incline is not at the end of the road, in which case, the cable is passed under the sheave F and over both sheaves T—T as shown in Fig. 7.

From the foregoing, taken in connection with the drawings it will be readily apparent that since the drum shaft and drum normally run loose, that as the main line or cable C pulls, or as the logs slide regularly down the incline, the hold back cable x which is secured to and wound on the drum H will freely play out from the said drum, it being understood that should the logs gather too much speed or the unwinding speed of the drum H be controlled, that this can be readily accomplished by applying the drum brakes or adjusting the brake controlling mechanism. After the logs are discharged, by simply throwing in the shiftable clutch 5 on the drum shaft 3 to clutch with the sheave F, and applying reverse motion to the logging engine, the return line or cable will now turn the drum H with sheave F in the reverse direction, whereby to rewind the hold back cable x on the drum H to the starting point.

Having thus described my invention, what I claim and desire to secure by Letters Patent, is:—

1. A logging means, which comprises a pull and a return cable for engaging with the logs, a hold back cable, means for sustaining the hold back cable at the discharging point for the logs, a winding drum for the hold back cable and means controlled by the pulling in of the return cable for winding up the hold back cable drum.

2. A logging means, which comprises a pull and a return cable for engaging with the logs, a hold back cable arranged for connection with the logs for the hold back cable at the discharging point of the logs.

3. A logging means, which comprises in combination with a pull and a return cable, arranged for connection with a log; of means located at the log delivering point for controlling

the said cables, a hold back cable arranged for connection with the log, and means located at the log starting point for controlling the hold back cable.

4. In a logging means of the character described, the combination with devices for pulling the logs and the return cable; of a hold back cable arranged for connection with the logs, means for controlling the out run of the said cable, and a wind up for such cable actuated from the pulling of the return cable, as set forth.

5. A logging means of the character stated, which comprises a pull cable for connection with the front end of the log, a return cable connected to the pull cable, drums for simultaneously winding up one of said cables and unwinding the other, and a hold back cable arranged for connection with the rear end of a log, a drum for said hold back cable controlled in one of its movements by the pulling in of the return cable, and a brake mechanism for the hold back cable.

6. The combination with a pull and a return cable connected to the log, and means at the log delivering point for winding and unwinding the said cables; of a hold back cable connected to the log, a drum located at the log starting point for the said cable, brake mechanism for controlling the out run of the said hold back cable and means actuated from the return cable for actuating the drum to wind up the said hold back cable.

7. In a logging means of the character described, the combination with a pull cable, a return cable and means located at the delivery point of the logs for winding and unwinding said cables; of a means for controlling the descent of the logs which comprises a drum adapted to be mounted at the log starting point, a shaft horizontally mounted on said frame, a wheel loose on said shaft, over which the return cable takes, a drum fixedly mounted on the shaft, brake mechanism for the drum and the shifting clutch mechanism for locking the wheel to the shaft, for the purposes described.

8. In a means for moving and controlling the movement of logs over an incline or logging road, a pull cable for drawing the log forward, a return cable connected to the pull cable, a hold back cable connected to the rear end of the log, a drum for said hold back cable, a brake mechanism for the drum, a wheel for the return cable, and means for coupling said sheave with the drum for turning the drum with the said sheave, as set forth.

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Witnesses:

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