

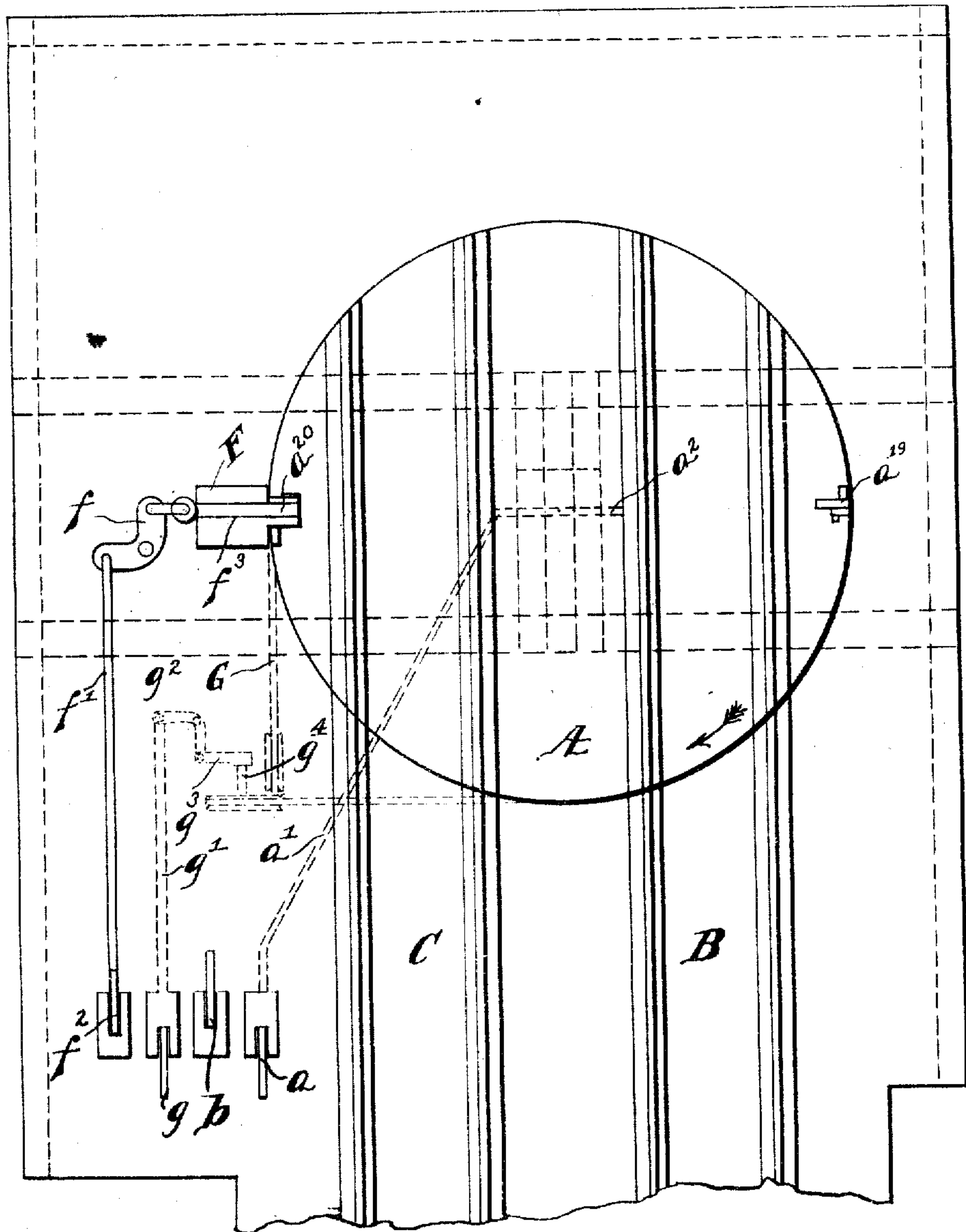
TURN TABLE.

910,754.

Patented Jan. 26, 1909.

4 SHEETS—SHEET 1.

Fig 1



Witnesses

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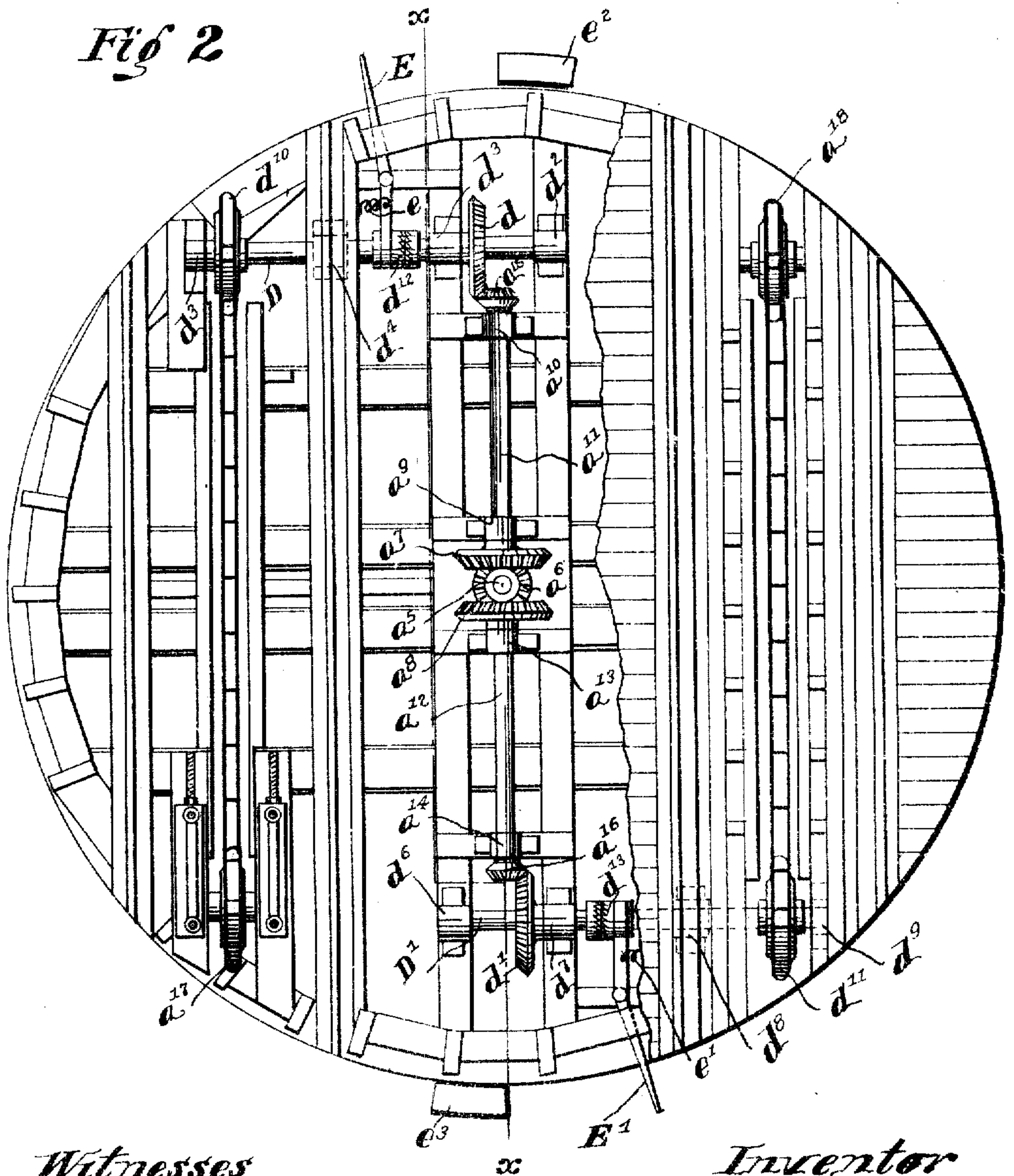
J. J. WEAVER.
 TURN TABLE.
 APPLICATION FILED FEB. 17, 1908.

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4 SHEETS--SHEET 2.

Fig 2



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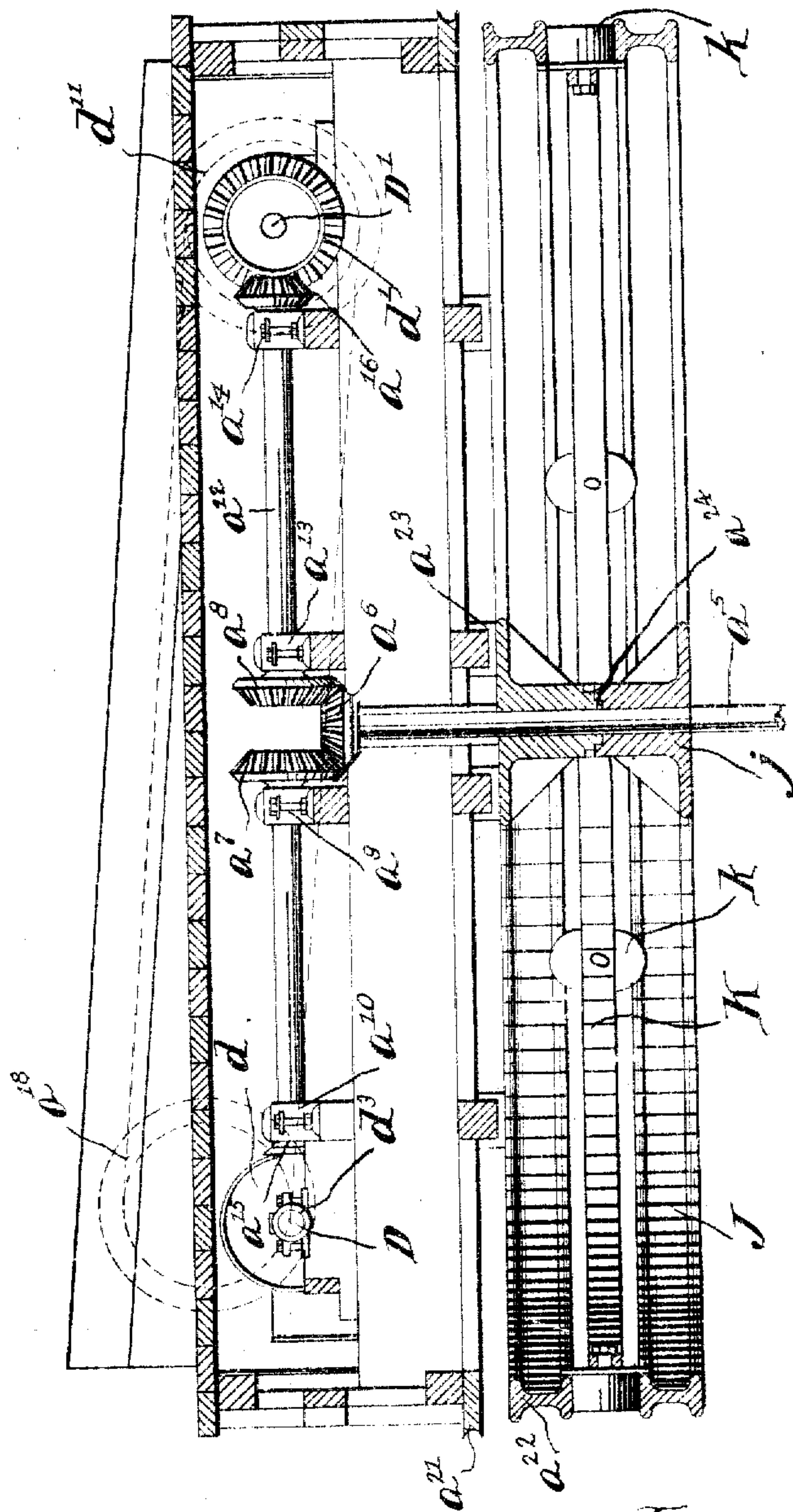
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4 SHEETS—SHEET 3.

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Fig. 3



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4 SHEETS—SHEET 4.

Fig 4

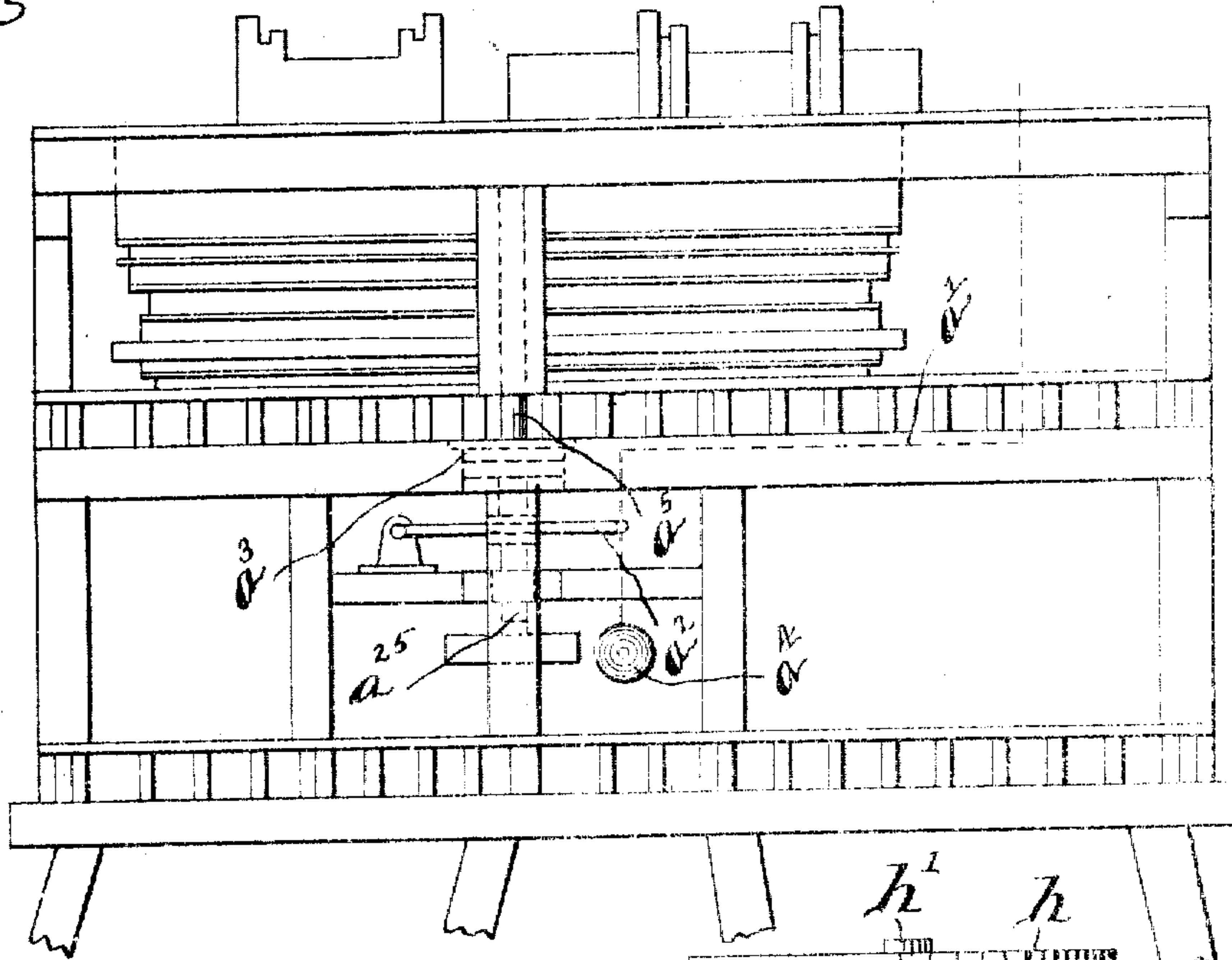
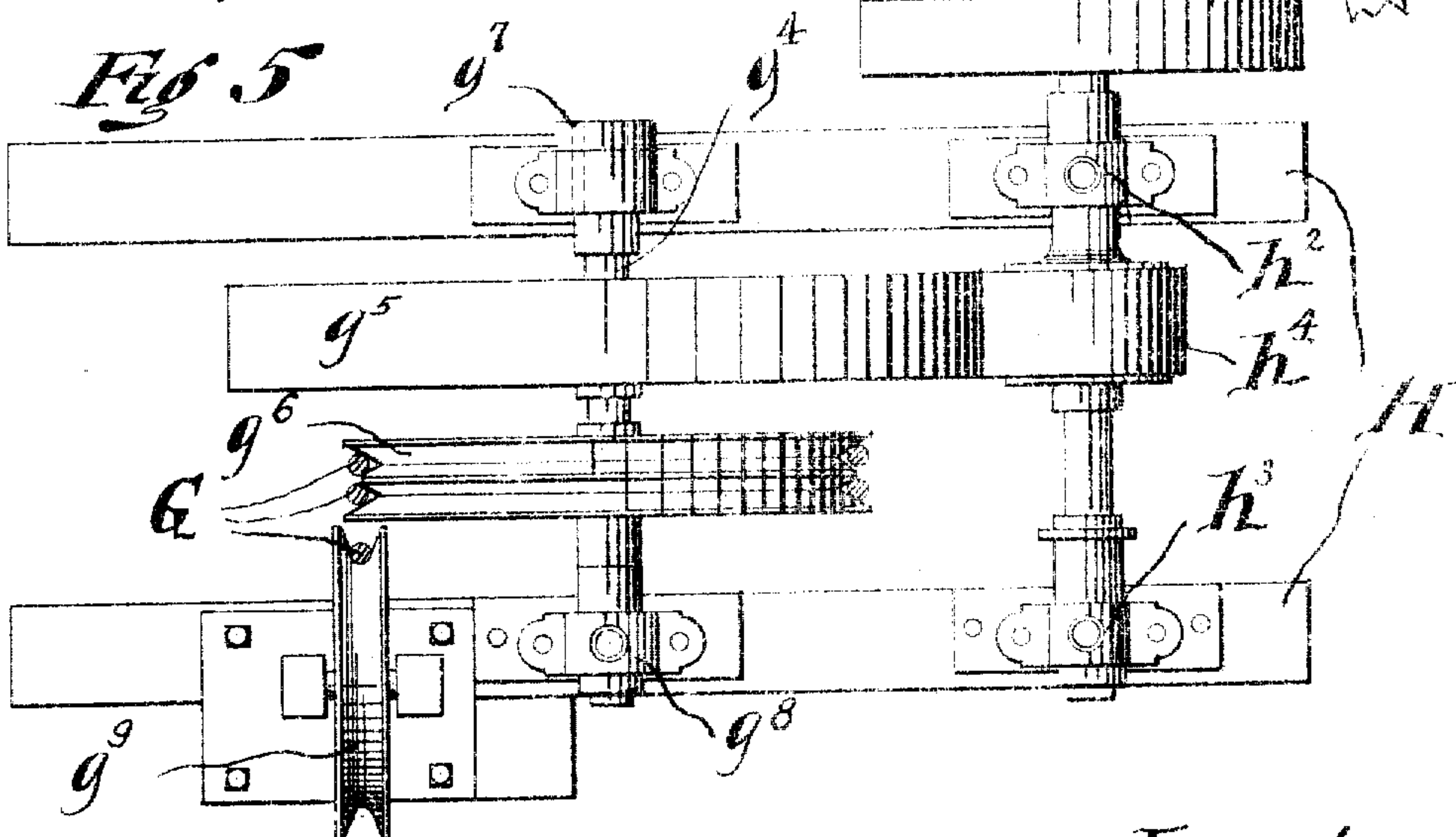


Fig 5



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UNITED STATES PATENT OFFICE.

JEROME J. WEAVER, OF LUDLOW, KENTUCKY.

TURN-TABLE

No. 910,784.

Specification of Letters Patent.

Patented Jan. 26, 1909.

Application filed February 17, 1908. Serial No. 419,356.

To all whom it may concern:

Be it known that I, JEROME J. WEAVER, a citizen of the United States, residing at Ludlow, in the county of Kenton and State of Kentucky, have invented new and useful Improvements in Turn-Tables, of which the following is a specification.

This invention relates to new and useful improvements in turn tables, and especially to turn tables used in the manipulation of water chutes.

Heretofore in water chutes using boats only, the boats have been loaded on the turn table due to the momentum they have acquired in their travel up the return track; and have been started down the chute by pushing them off by hand or by tilting a so-called cradle mounted near or upon the turn table. None of the means formerly used have been positive in their action, and the necessary labor has been excessive.

The object of this invention is to provide such a turn table that the loading and starting of the boats will be positive. Furthermore to have the same controlled by such a system of levers and attached mechanism that one man can easily control the loading of the cars on the table and the discharging of them from it.

To attain these features, a tower of a water chute has been provided, comprising a turn table absolutely lever controlled, and embracing mechanism and connections to control the return of the boat to the down track.

In the particular embodiment of my invention, selected for illustration: Figure 1 is a plan view of the tower and the controlling levers. Fig. 2 is a plan view of the turn table with part of its floor broken away disclosing some of its operating mechanism. Fig. 3 is a section of the turn table along the broken line x, x in Fig. 2. Fig. 4 is an end elevation of the tower (in reduced size) with parts broken away. Fig. 5 is a plan view of the auxiliary mechanism for driving the turn table.

Referring to the drawings, A is the turn table, C the up track and B the down track or flume. Lever a controls the operation of the mechanism of the turn table. Said lever is connected to a friction clutch a^1 by suitable connections a^2 and lever a^3 suitably pivoted. Weight a^4 or its equivalent prevents the frictional contact of the clutch a^1 when the lever a is not in position to cause said contact. Clutch a^1 is connected to shaft a^5 and the

driving shaft a^5 . Rotatively attached to the top of shaft a^5 is gear a^6 which meshes with gears a^7 and a^8 , rotatively attached to shafts a^{11} and a^{12} respectively. Shaft a^{11} is provided with journals a^9 and a^{10} , and shaft a^{12} is provided with journals a^{13} and a^{14} . Also rotatively attached to shafts a^{11} and a^{12} are gears a^{15} and a^{16} respectively, which mesh with gears d and d^1 respectively, which are rotatively attached to shafts D and D¹ respectively. Shafts D and D¹ are journaled in bearings d^2, d^3, d^4 , and d^5 , and d^6, d^7, d^8 , and d^9 respectively. Sprocket wheel d^{10} is rotatively attached to shaft D and rotates in the opposite direction to sprocket wheel d^{11} which is rotatively attached to shaft D¹. Said sprocket wheels d^{10} and d^{11} drive link belting, which operates over idler sprocket wheels a^{17} and a^{18} respectively. This link belting is so constructed as to facilitate the fastening of the car by means of one or more dogs or the like attached to the boat. A convenient form of dog for this purpose is that shown in my U. S. Letters Patent No. 793,333 of June 21st, 1905. Said idlers are adjusted by any means which will afford the lineal movement of their journals for the purpose of tightening or loosening the chain as shown exposed for idler a^{17} . Clutches d^{12} and d^{13} operated by levers E and E¹, suitably pivoted, connect or disconnect the parts of shafts D and D¹ in starting and stopping the transmission of power to the sprocket wheels d^{10} and d^{11} . Said clutches d^{12} and d^{13} are normally held out of contact by springs e and e^1 and they are automatically thrown and held in contact by cam blocks e^2 and e^3 or their equivalents and suitably situated relative to the turn table so as to contact with the levers E and E¹ of the clutches when the table has been revolved to the desired position.

Link belting operating over suitable sprocket wheels or other suitable mechanism (not shown) is used in connection with the return track to draw the boats up to the tower in the usual way. The operation of such belting is controlled by lever b . Lever f^2 connects to catch F by means of links f^1 and bell crank f , suitably pivoted. Said catch F consists of a bar which operates in slot f^3 , and which is adapted to enter into notched blocks a^{19} and a^{20} , said blocks being rigidly fastened to the turn table at suitable points, 180° apart. Lever g is connected to shaft g^4 by means of links g^1 , bell crank g^2

and crank g^6 . Shaft g^4 is journaled at its crank end in a ball and socket eccentric box g^7 , and the other end in a ball and socket journal box g^8 . (See Fig. 5). Said journal boxes are rigidly fastened to frame H, which is supported by parts of the construction of the tower. Rotatively attached to shaft g^4 is friction wheel g^5 and driving sheave g^6 . Shaft h^1 is journaled in ball and socket journal boxes h^2 and h^3 rigidly fastened to the frame H. Shaft h^1 carries a pulley h which is connected by a belt to the driving mechanism, (not shown), and a friction wheel h^4 which can be caused to contact with friction wheel g^5 and transmit power to shaft g^4 . Idler sheave g^9 is journaled in bearings integral with or fastened to a plate which is rigidly fastened to the frame H. Flexible connection G encircles the turn table in a groove a^{21} and passes from said groove over driving sheave g^6 and down over a tension sheave (not shown in the drawings). Said flexible connection then passes from the said tension sheave up over idler g^9 and back to the groove a^{21} of the turn table.

The turn table has fastened at its base a track a^{22} which rests upon rollers k connected to one another by a hoop K. Said rollers rest upon a track J supported by parts of the structure of the tower. The turn table also has a bearing at its center consisting of a block a^{23} having a projection a^{24} , which fits in an annular recess in a similar block j , said block being supported by parts of the structure of the tower.

The parts of the turn table which register with the return track and the chute may be placed on an incline. (See Fig. 3). The high sides of these inclines, when said inclines register with the up track and chute, are always adjacent to the up track and the low sides are adjacent to the down track. This arrangement, due to the action of gravity, aids in landing the cars on the turn table and prevents the same from sliding back down the up track. The positive operation of the link belt mechanism on the turn table tracks, makes an incline unnecessary.

The operation of the device is as follows:— Assume the driving mechanism started, lever b thrown so as to cause the link belting of the up track C to be operating, and that a boat is traveling up the said track. As soon as the said boat reaches the top of track B, lever a may be thrown and the mechanism of the turn table started. Power is then transmitted through gears a^7 , a^{15} , and d , and a^8 , a^{16} , and d^1 and shafts a^{11} , a^{12} , D and D^1 to the sprocket wheels d^{10} and d^{11} respectively. These wheels d^{10} and d^{11} transmit the power to the belting which operates over said wheels and idlers a^{17} and a^{18} respectively. One of the dogs of the boat, (each boat being generally provided with two dogs about eight feet apart along its lineal dimension) engages

with the link belting of the turn table and the other dog disengages from the link belting of the up track. The boat is now hauled to a suitable position on the table and lever a is thrown to disengage the contact of friction clutch a^3 , so as to stop the operation of the link belting of the turn table. The boat is prevented from sliding back onto the up track, is aided in the disengagement of its dog from the link belting of the up track and is aided in its engagement with the link belting of the turn table by the action of gravity facilitated by means of the inclined portion of the turn table afore described. Lever f^2 is now thrown so as to disengage catch F from catch block a^{20} , and the turn table is free to revolve. Lever g is now thrown so as to cause a frictional contact between friction wheels g^5 and h^4 causing flexible connection G, operated by means of driving sheave g^6 , to which power has been transmitted from friction wheel g^5 through shaft g^4 , to rotate the turn table in the direction indicated by the arrow. (See Fig. 1).

The clutches d^{12} and d^{13} are thrown out of contact during the rotation of the table by springs e and e^1 , since said springs can operate shortly after the table starts to rotate, as the levers E and E^1 are no longer contacted by the cam blocks e^2 and e^3 . If the above stated clutches were allowed to be in contact, the link belting of the turn table would continue to operate and would haul the boat on the turn table to a position beyond the one desired and might interfere with the operation of the device. The rotating of the table would cause the operation of the mechanism designed to start and load the cars on the turn table. Since the clutches d^{12} and d^{13} are thrown out by the springs as soon as the cam blocks cease to contact with the levers E and E^1 when the table has rotated very slightly from its normal position, it is obvious that clutch a^3 could be in contact when the table is rotating; or in other words the lever a need not be thrown if the operator so desires, and that the expulsion of the boat from the turn table would become automatic. After the table has rotated 180 degrees, catch F engages with catch block a^{19} of the turn table, and said table is stopped and held by the throwing of lever f^2 , which throws catch F into the slot of the turn table. The clutches d^{12} and d^{13} have now been thrown in contact by the contacting of their levers E and E^1 with the cam blocks, e^2 and e^3 . If the members of clutch a^3 were now in contact, the boat, through its dog, would be started down the chute by the motion of the link belting, of the turn table which starts as soon as clutches d^{12} and d^{13} are thrown in contact. Also said boat would tend to start, due to the action of gravity facilitated by the inclined surface of that part of the table which now registers with track B and whose lower side is contiguous

with said track. If, however, the lever *a* was thrown so as to disengage the members of the clutch *a*³, said lever must be thrown before the boat could start down the chute, and when said lever is thrown the starting of the boat is brought about in the same manner as described in the first case.

A further description of the operation would be a repetition of the foregoing. However, it must be remembered that a boat may be started from and one loaded on the turn table at the same time, and that to turn the table through 180° is always a sufficient rotation.

It will be understood that I do not limit myself to any specific form of mechanism for the actuation of vehicles upon turn tables; but my invention covers any mechanism connected with the turn table adapted to produce the positive movement of vehicles upon turn tables, with or without the assistance of gravity.

What I claim as new and desire to secure by Letters Patent of the United States, is:—

1. A turn-table, provided with tracks, adapted to register with tracks connecting with the table, means carried by the table and positively driven and operating substantially parallel with the travel of the vehicle, for positively moving the vehicle upon and discharging it from said table.

2. A turn table, having in combination a driving shaft, a pinion fixed thereon, and mechanism connected therewith and operated thereby for each turn table track, consisting of a gear meshing with the driving pinion and fixed to a parted shaft, said shaft, a clutch connection upon said shaft, means for holding the parts of said clutch normally disconnected, means connected with said clutch adapted to be operated upon from without to connect the parts of said clutch, a sprocket wheel upon said parted shaft, an idler sprocket wheel in line with the first, and a linked chain adapted to operate over said sprockets.

3. A turn-table, provided with a plurality of tracks adapted to register with main tracks connecting with the table, each track of the table adapted to operate as a discharge or loading track, and power-driven mechanism upon the table engageable with a vehicle for positively loading said vehicle on the table and discharging it therefrom.

4. A turn table, having a mechanism comprising gears which mesh with a pinion of the driving shaft and which are rotatively fastened to shafts carrying gears, which mesh with gears rotatively attached to shafts carrying link belting pulleys, clutches attached to said shafts of the pulleys and means

to hold said clutches normally out of contact, said clutches adapted to be automatically thrown into contact by the contacting of their levers with suitable cam blocks, and idler link belting wheels over which link belting operates.

5. A turn-table having a track-way which forms a continuation of a main track, and carrier-means mounted on the table between the tracks thereof and adapted to engage a vehicle to positively move it onto the table and discharge it therefrom.

6. In combination with a water-chute, a turn-table having tracks adapted to register with the several chute tracks through the rotation of the table, and power-driven mechanism on said table having means for positively engaging movable vehicles to deliver them onto the table and discharge them therefrom.

7. In combination with a turn table, a lever controlled mechanism for positively loading vehicles on the table and discharging the same from the table, said mechanism comprising gears which mesh with a pinion of the driving shaft, said gears rotatively attached to shafts at right angles to said driving shaft, and which carry gears which mesh with similar gears rotatively attached to shafts at right angles to said shafts and carry link belting pulleys rotatively attached to said link belt pulley shafts having clutches to connect their parts, means for holding said clutches normally out of contact, and levers adapted to contact with cam blocks and throw the said clutches in contact, also link belt idler, link belting and inclined tracks.

8. In combination with a water chute, a turn table comprising a plurality of tracks adapted to register with the tracks of the chute and mechanism to positively load the vehicles from the chute onto the table and discharge the same from the table onto the chute; a tower embracing a lever and mechanism for controlling and rotating said table, a lever and connections to operate a catch to stop, hold and release the turn table, a lever and connections to connect and disconnect the loading and discharging mechanism of the turn table with the driving mechanism and a lever and connections to control the return track mechanism, which consists of driving and idler link belting pulleys and link belting.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JEROME J. WEAVER.

Witnesses:

WALTER A. KNIGHT,
JOSEPH R. GARDNER