

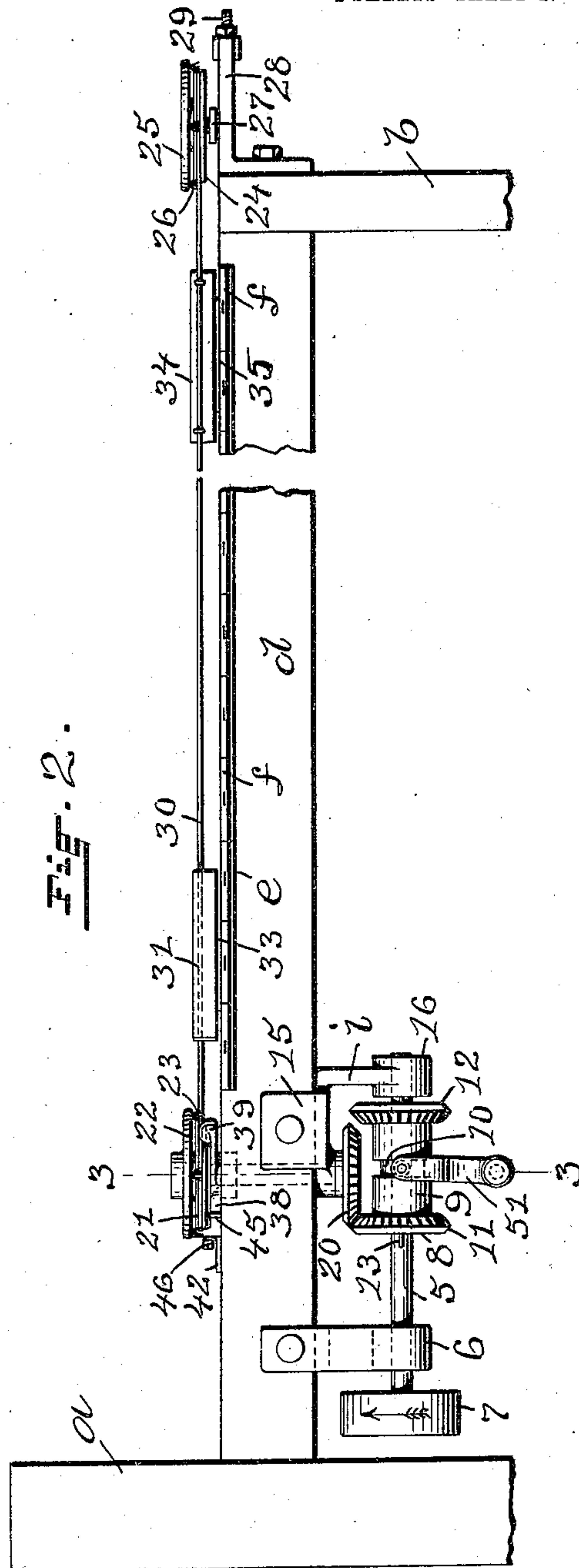
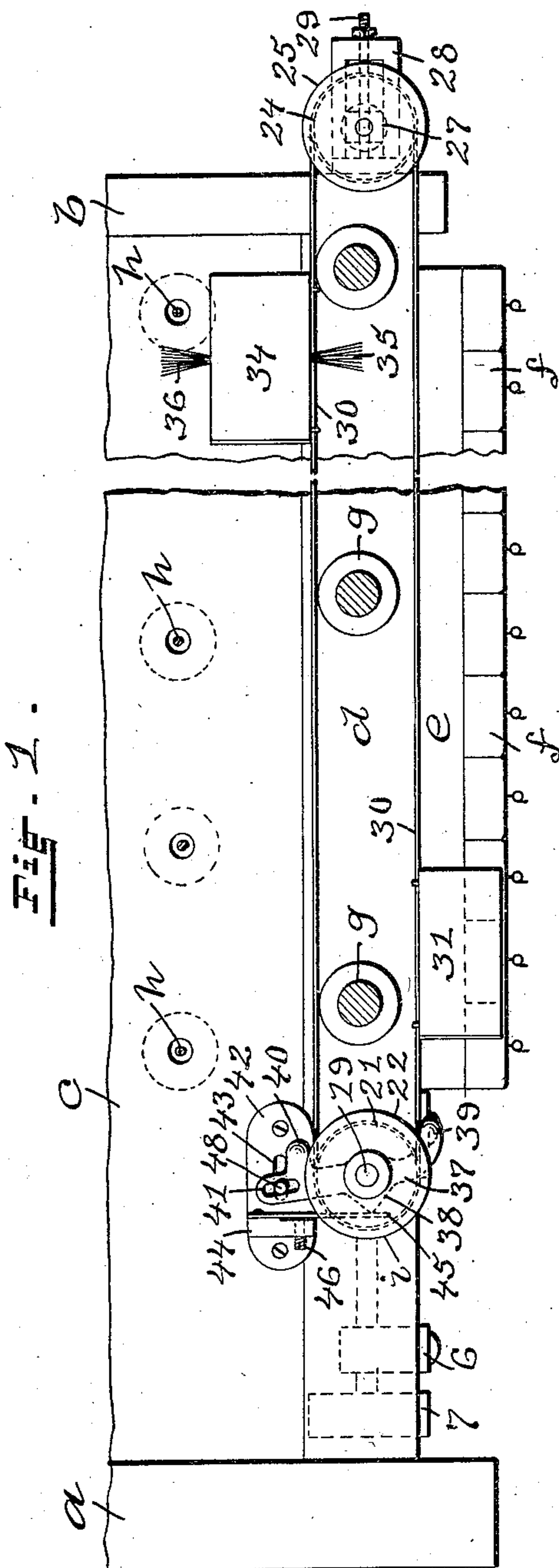
No. 876,960.

PATENTED JAN. 21, 1908.

T. A. HARRINGTON & A. BARRIE.
SPINNING MACHINE.

APPLICATION FILED JUNE 12, 1906.

2 SHEETS—SHEET 1.



WITNESSES:

Chas. H. Luther Jr.
Ada E. Hagerty

INVENTORS:

Timothy A. Harrington
Alexander Barrie
Joseph A. Miller

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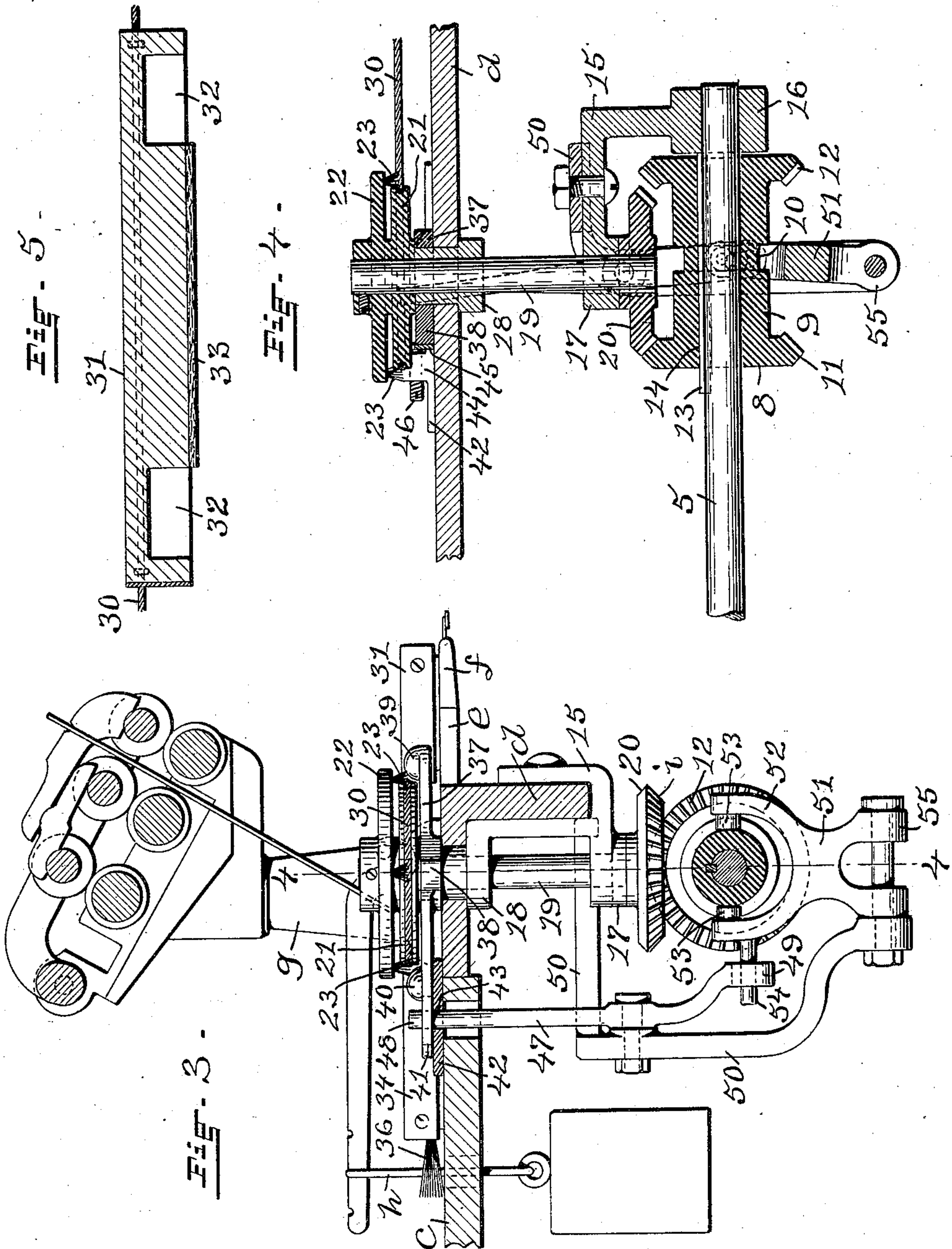
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UNITED STATES PATENT OFFICE.

TIMOTHY A. HARRINGTON AND ALEXANDER BARRIE, OF NATICK, RHODE ISLAND.

SPINNING-MACHINE.

No. 876,960.

Specification of Letters Patent.

Patented Jan. 21, 1908.

Application filed June 12, 1906. Serial No. 321,371.

To all whom it may concern:

Be it known that we, TIMOTHY A. HARRINGTON and ALEXANDER BARRIE, citizens of the United States, residing at Natick, in the county of Kent and State of Rhode Island, have invented a new and useful Improvement in Spinning-Machines, of which the following is a specification.

This invention has reference to an improvement in spinning machines and more particularly to an improvement in mechanism adapted to clean and remove the waste, fiber or lint from the parts of a spinning machine most difficult of access and most liable to have the same deposited thereon.

In the operation of spinning machines and particularly in spinning fine counts of yarn it has been found in practice that the best results are attained by keeping the machine as free as possible from waste or the fine fiber that is thrown off from the yarn in the twisting.

The object of our invention is to provide a spinning machine with mechanism adapted to automatically clean and remove the lint or fine fiber from the roller beam, thread board, finger boards and the adjacent portions of the top board, weight wires and roller stands of the machine.

A further object of our invention is to construct such a mechanism so that the waste or fiber is collected in an accessible place from which it can be easily and quickly removed.

Our invention consists in the peculiar and novel construction of mechanism adapted to clean and collect the waste or fiber from the roller beam, thread board, finger boards and the adjacent portions of the top board, weight wires and roller stands of a spinning machine, said mechanism having details of construction, as will be more fully set forth hereinafter and claimed.

Figure 1 is a top plan view of the front portion of a spinning machine, showing the central portion and the roller stands broken away and the machine provided with our automatic waste or fiber cleaner mechanism. Fig. 2 is an elevation looking at the front of the machine and showing the reverse motion of the cleaner mechanism. Fig. 3 is an enlarged vertical sectional view taken on line 3 3 of Fig. 2 through the top board, roller beam, drawing rolls and cleaner mechanism. Fig. 4 is a detail vertical sectional view taken on line 4 4 of Fig. 3, showing the construction of the reverse motion of the cleaner mechanism, and Fig. 5 is an enlarged detail sectional view taken lengthwise through one of the cleaner blocks and showing the pockets in the same for collecting the waste or fiber.

In the drawings, *a* and *b* indicate the end frames, *c* the top board, *d* the roller beam, *e* the thread board, *ff* the finger boards, *g g* the roller stands, and *h h* the weight wires of a spinning machine provided with our improved automatic cleaner mechanism *i*.

The cleaner mechanism *i* consists of a horizontal driving shaft 5 rotatably supported in a bearing 6 secured to the front of the roller beam *d* and having a pulley 7 on the end adjacent the head end frame *a*. A bevel gear clutch 8 comprising a hub 9 having the central annular groove 10 and the oppositely-disposed bevel gears 11 and 12 is secured to the opposite end of the shaft 5 by a spline 13 working in a longitudinal groove 14 in the hub, by which the hub and gears are revolved and a reciprocating movement may be given to the hub and gears on the shaft 5. A bracket 15 constructed to have a bearing 16 for the shaft 5 and the bearings 17 and 18 is secured to the roller beam *d* in a position to bring the bearings 17 and 18 back of the vertical portion of the roller beam on a central line with the shaft 5. A vertical shaft 19 is rotatably supported in the bearings 17 and 18 and has a bevel gear 20 on its lower end intermediate the bevel gears 11 and 12 and in a position to mesh with the same. The bearing 18 extends upward through a hole in the top of the roller beam, and the shaft 19 extends upward through the bearing and has the grooved pulley 21 and the disk 22 secured to the upper end of the shaft. A series of brushes 23 23 extend downward from the disk 22 adjacent its periphery to approximately a line with the groove in the pulley. A grooved pulley 24 and a disk 25 having downwardly-extending brushes 26 26 are rotatably supported in a bearing 27 which is adjustably secured to a bracket 28 firmly fastened to the end frame *b*, as shown in Fig. 2. By turning a screw 29 in the bracket which is in screw-thread engagement with the bearing 27 the pulley 24 may be adjusted toward or away from the pulley 21. These pulleys 21 and 24 which are at opposite ends of the machine on approximately a line with the roller stands *g g* are connected together by an endless cord 30 to which is secured a cleaner block 31 supported on the thread and finger boards *e* and *f* and having the inverted pockets

ets 32 32 at each end and its underside between the pockets covered with felt 33 or a similar material, as shown in Fig. 5. A cleaner block 34 similar to the cleaner block 31 is secured to the cord 30 on the opposite side and rests on the top board *c* and roller beam *d*. This cleaner block 34 has in addition the brushes 35 and 36 placed at each side of the block in a position to brush the waste or fine fiber from the roller stand supports, the weight wires, and the upper adjacent surface of the top board and roller beam. These cleaner blocks are secured to the cord in a position for the blocks to pass each other at a point centrally between the pulleys 21 and 24. An arm 37 having the centrally projecting V-shaped cam lug 38, the curved ends 39 and 40 and the slot 41 adjacent the end 40 is pivotally supported on the bearing 18 intermediate the top of the roller stand *d* and the pulley 21 in a position for the ends 39 and 40 to extend toward the cleaner blocks and for the V-shaped lug 38 to extend toward the end frame *a*, as shown in Figs. 1 and 3.

A wearing plate 42, having a slot 43, a seat 44, a flat whip spring 45 secured to the seat and a set screw 46 extending through the seat into engagement with the spring, is secured to the upper surface of the top board *c* in a position for the free end of the spring 45 to bear against the pointed end of the cam lug 38 on the arm 37, as shown in Fig. 1. By adjusting the set screw 46 the tension of the spring on the lug is increased or decreased. A vertical lever 47 having a round upper end 48 and a slot 49 in its lower end is pivotally secured adjacent its center to an arm 50 which is rigidly secured to the bracket 15 in a position for the upper end 48 of the lever to extend through a slot in the top board *c*, the slot 43 in the plate 42, and the slot 41 in the end of the arm 37. A lever 51 having the yoke 52 to the ends of which are rotatably secured the rolls 53 53 and the rearwardly-extending pin 54 is pivotally secured at its lower end 55 to the lower end of the rigid arm 50 in a position for the rolls 53 53 to enter the annular groove 10 in the hub of the bevel gear clutch 8 and for the pin 54 to enter the slot 49 in the lower end of the lever 47, as shown in Fig. 3.

In the operation of the mechanism the pulley 7 is connected by a belt to a pulley on the driving mechanism of the machine (not shown) and is revolved in the direction of the arrow as shown in Fig. 2. The cleaner blocks 31 and 34 are shown in the drawings in the position they would assume just before the reverse motion of the mechanism. Power from the shaft 5 is now transmitted through the gear 11, the gear 20, the vertical shaft 19, the pulley 21, and the cord 30 to draw the cleaner block 34 toward the end frame *b* and the cleaner block 31 toward the end frame *a* when the block 31 engaging with the end 39

of the arm 37 moves that end of the arm toward the end frame *a* and through the lever 47, and the lever 51 throws the gear 11 out of mesh with the gear 20 and the gear 12 into mesh with the gear 20, thus reversing the motion of the pulley 21 and the cleaner blocks 31 and 34, which now move in the reverse direction down the length of the machine until the cleaner block 34 comes into engagement with the end 40 of the lever 37, when the machine is again reversed. The tension of the spring 45 on the point of the lug 38 as it passes by center assists in throwing the gears into and out of mesh and holds the gears in mesh under spring tension. The cleaner blocks in their traverse the length of the machine remove the waste or fiber from the roller beam, thread board, finger boards, and the adjacent portions of the top board, weight wires and roller stands of the machine and collect the same in the pockets 32 32 of the cleaner blocks from which it is easily removed from time to time by the operator. The circular motion of the brushes 23 23 and 26 26 over the cord 30 tends to keep the cord free from waste or fiber.

It is evident that any number of brushes required may be used on the cleaner blocks and that these brushes may be arranged differently to suit various makes of machines and for different conditions, without materially affecting the spirit of our invention.

Having thus described our invention, we claim as new and desire to secure by Letters Patent;—

1. In a spinning machine, shafts, pulleys thereon, an endless cord passing around each of said pulleys, cleaner blocks carried by the cord, reversible operating mechanism connected to one of said pulleys, means for reversing said mechanism, and horizontally disposed means for operating said reversing mechanism pivoted to one of said pulley shafts and having projecting portions which extend beyond the periphery of the pulley carried by said shaft so as to be successively engaged by said cleaner blocks.

2. In a spinning machine, a single pair of pulleys, a cord passed around each of said pulleys, cleaner blocks on said cord, reversible operating mechanism connected to one of said pulleys, and a horizontally pivoted element having connection beyond its pivotal point with said operating mechanism and having one end extending beyond one side of said cord and its opposite end extending beyond the opposite side of said cord.

3. In a spinning machine, a pair of pulleys, a cord passed therearound, cleaner blocks carried by said cord, reversible operating mechanism for actuating one of said pulleys, a vertically pivoted lever for actuating said reversing mechanism, a horizontal lever pivoted to said pulley to which said operating mechanism is connected, and hav-

ing a slot in one of its ends, outwardly extending curved arms carried by said horizontal lever to engage said cleaner blocks, a central V-shaped cam lug on the opposite side of
5 said horizontal arm, a flat spring to engage said cam lug, and a vertically pivoted arm having its lower end connected to the upper end of said vertical lever, and having its upper end extending through said slot of the
10 horizontal lever.

4. In combination with a spinning machine, a pair of pulleys, an endless cord passing therearound, cleaner blocks on the cord, means for driving one of said pulleys including a reversible clutch, a lever for actuating
15 the clutch, a pivoted arm movably related at its lower end to said lever, a horizontal arm having a slot therein, the upper end of said pivoted arm extending through said slot,
20 said horizontal arm having portions disposed to extend adjacent the sides of said cord, and a spring for retaining said horizontal arm in predetermined position.

5. In combination with a spinning machine, a pair of shafts, pulleys mounted on the shafts, an endless cord passing around the pulleys, cleaner blocks on the cords, means for driving one of said pulleys including a reversible clutch, and means for operating
25 said clutch including a horizontal arm mounted on one of said pulley shafts and having portions disposed beyond the sides of the endless cord to be engaged by the cleaner blocks.
30

35 6. In an automatic waste or fiber cleaner

mechanism for spinning machines, a cleaner block having the inverted pockets 32 32 at each end, the underside covered with felt 33 or its equivalent, and the brushes 35 and 36, as described.

7. In combination with a spinning machine, a pair of pulleys, an endless cord passing around said pulleys, disks overlying said pulleys and revolving therewith, downwardly
40 extending brushes carried by said disks to overlie and engage said cord, and means for operating said pulleys.

8. In a spinning machine, a pair of pulleys having an endless cord passed therearound, cleaner blocks on said cord reversible operating
45 mechanism for actuating one of said pulleys, a horizontally pivoted lever, a vertically pivoted lever connected to said reversing mechanism, a vertical arm pivotally supported intermediate its ends, said arm having
50 its lower end pivotally connected to said vertical lever and having its upper end connected to said horizontal lever so as to be operated by the latter, and tension means for holding said horizontal lever in either of its
55 two positions.
60

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

TIMOTHY A. HARRINGTON.
ALEXANDER BARRIE.

Witnesses:

ADA E. HAGERTY,
J. A. MILLER.