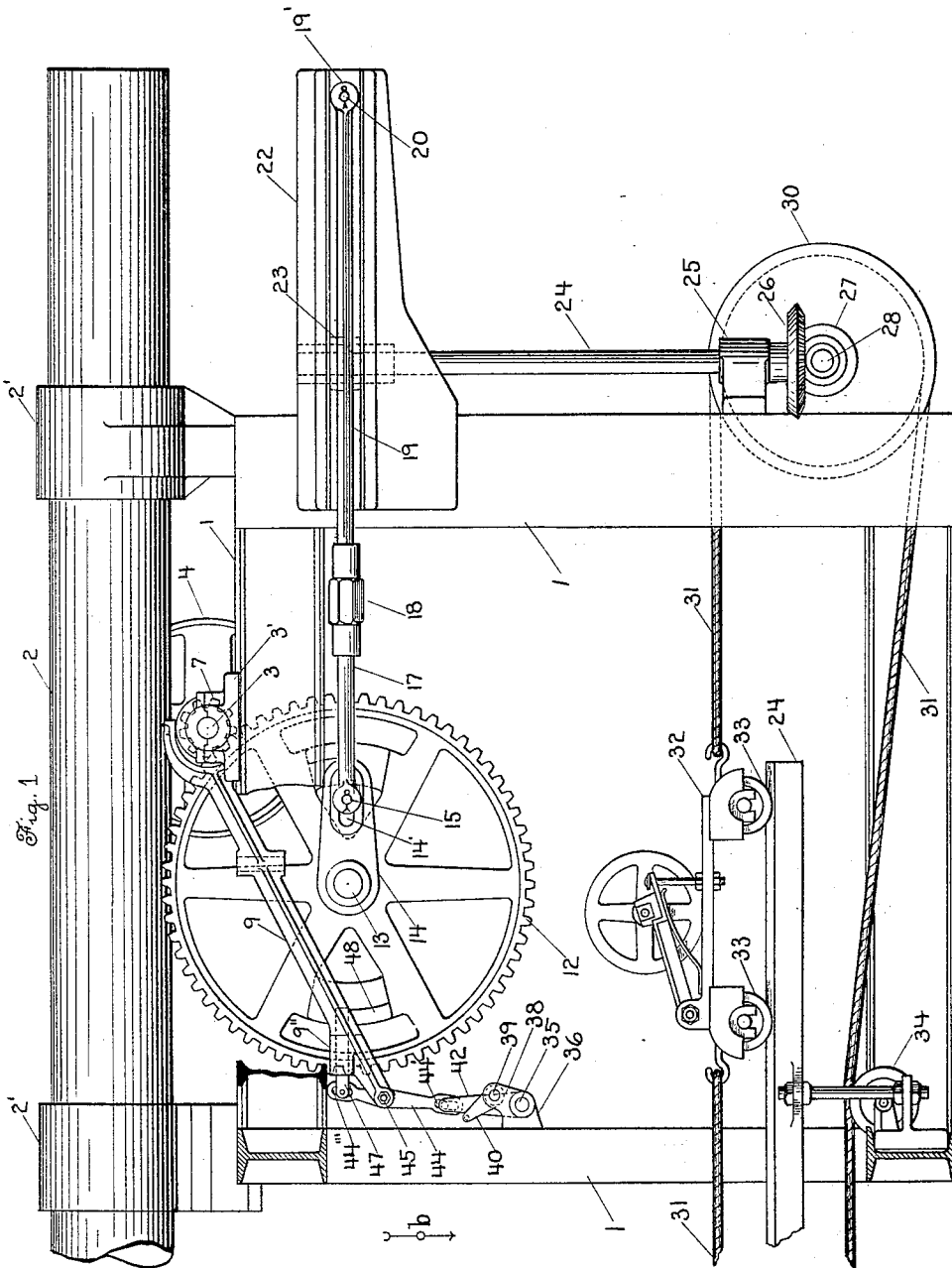


F. A. WHITMORE.
 COLOR CARRIAGE OPERATING MECHANISM FOR TAPESTRY PRINTING DRUMS.
 APPLICATION FILED FEB. 6, 1912.

1,050,075.

Patented Jan. 7, 1913.

3 SHEETS—SHEET 1.



Witnesses
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 W. H. Hase.

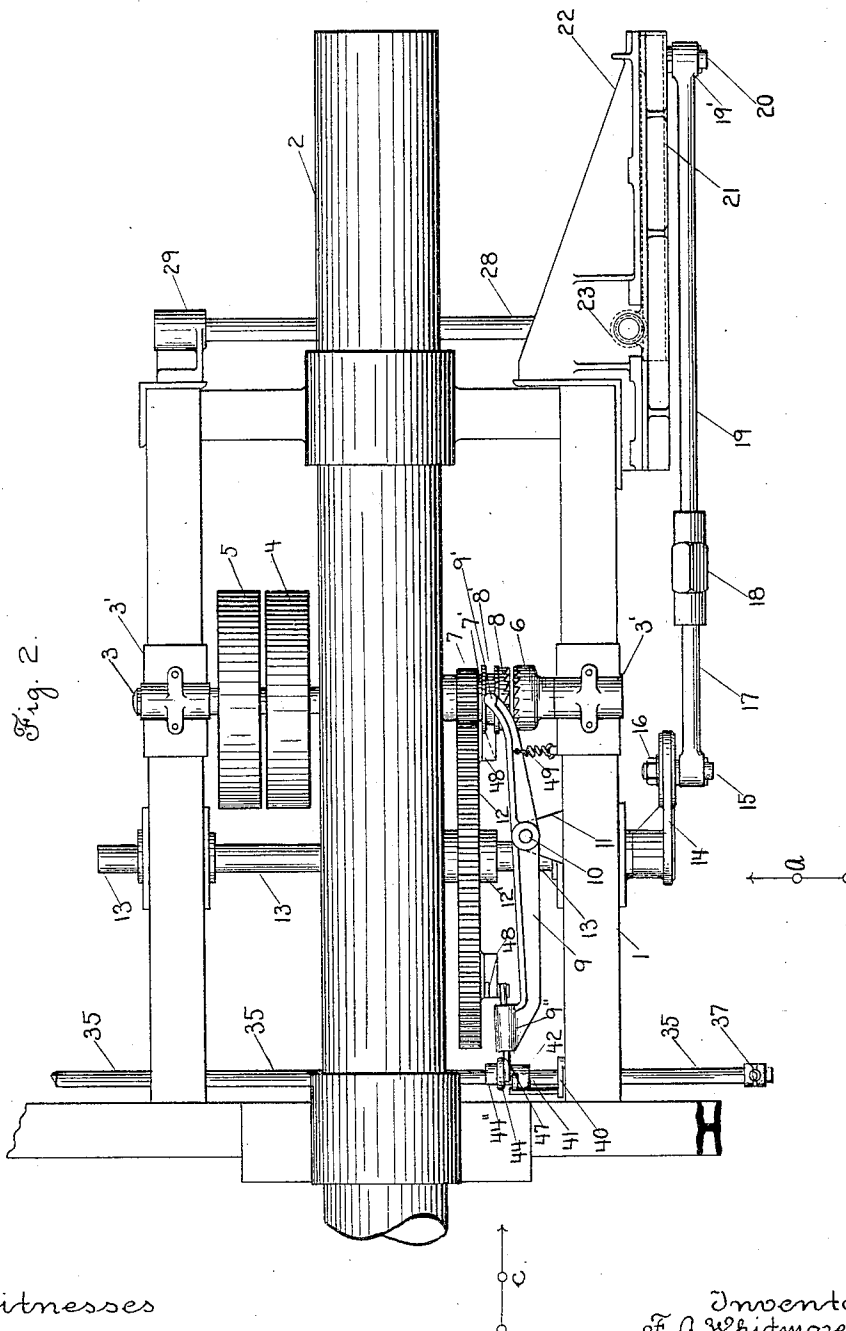
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Witnesses

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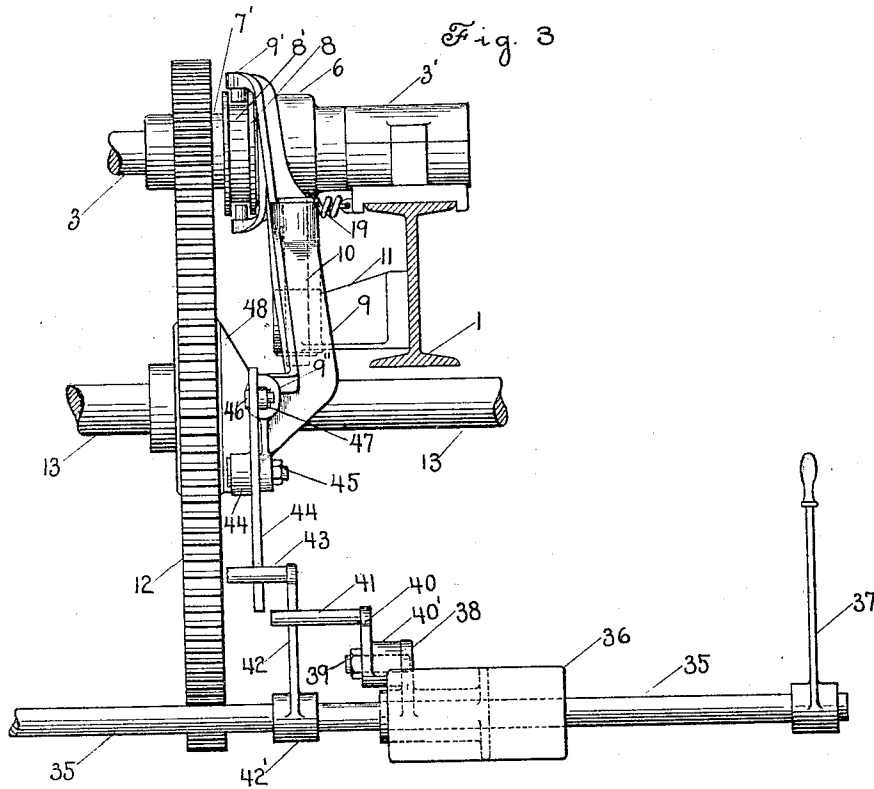
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3 SHEETS-SHEET 3.



Witnesses
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UNITED STATES PATENT OFFICE.

FRED A. WHITMORE, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO CROMPTON & KNOWLES LOOM WORKS, A CORPORATION OF MASSACHUSETTS.

COLOR-CARRIAGE-OPERATING MECHANISM FOR TAPESTRY-PRINTING DRUMS.

1,050,075.

Specification of Letters Patent.

Patented Jan. 7, 1913.

Application filed February 6, 1912. Serial No. 675,889.

To all whom it may concern:

Be it known that I, FRED A. WHITMORE, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Color-Carriage-Operating Mechanism for Tapestry-Printing Drums, of which the following is a specification.

My invention relates to color carriage operating mechanism for tapestry printing drums, and the object of my invention is to improve upon the construction of the color carriage operating mechanism as ordinarily made.

My invention consists in certain novel features of construction of my color carriage operating mechanism, as will be hereinafter described.

In my improvements in color carriage operating mechanism for tapestry printing drums, I provide manually operated mechanism for putting into operation, and out of operation, the operating mechanism for the color carriage, and mechanism for automatically continuing the operation of the color carriage.

I have shown in the drawings my improvements in color carriage operating mechanism, combined with a color carriage, and other parts, to enable those skilled in the art to understand the construction and operation thereof.

Referring to the drawings:—Figure 1 is a side view of my improvements in color carriage operating mechanism, looking in the direction of arrow *a*, Fig. 2, with a part of the frame broken away, and some of the parts shown in Fig. 2, left off, and other parts, not shown in Fig. 2, shown in this figure. Fig. 2 is a plan view of the parts shown in Fig. 1, looking in the direction of arrow *b*, same figure. Some of the parts shown in Fig. 1 are not shown in this figure, and, Fig. 3 is, on an enlarged scale, an end view of the operating mechanism, detached, looking in the direction of arrow *c*, Fig. 2.

In the accompanying drawings, 1 is a part of the main frame, at one side of a printing drum, not shown.

2 is one end of the stationary shaft or axis for the printing drum, not shown. The shaft 2 is supported in bearings 2' on the main part of the machine.

3 is a pulley shaft, mounted in bearings

3', 3' on the upper side of the frame 1, see Fig. 2. On the shaft 3 is fast a pulley 4, around which passes a driving belt, not shown. On the shaft 3 is also a loose pulley 5, to receive the driving belt, when the machine is not in operation. On the opposite end of the shaft 3, from the pulleys 4 and 5, is fast a clutch member 6, provided in this instance with teeth on its inner side. On the shaft 3 is loosely mounted a gear 7, and on the hub 7' of the gear 7 is keyed the sliding clutch member 8, which has teeth to engage with the teeth of the clutch member 6, to connect the clutch member 8 and gear 7 with the clutch member 6, and cause the same to revolve with the shaft 3. The clutch member 8 has an annular groove 8' therein to receive the forked shaped end 9' on a shipper lever 9, which is pivotally mounted on a stud 10 on a stand 11, attached to the frame 1, see Fig. 2.

A gear 12, in mesh with and driven by the gear 7, has its hub 12' fast on a shaft 13, mounted in suitable bearings on the frame 1. On one end of the shaft 13 is fast a crank lever 14. The lever 14 has an elongated slot 14' therein to receive a stud 15, which is adjustably secured therein by a nut 16, see Fig. 2. Pivottally mounted on the stud 15, is one end of a connector rod 17; the other end of the rod 17 is connected to a turn-buckle 18. To the turn-buckle 18 is also connected one end of a rod 19; the other end of the rod 19 has a boss 19' thereon, which is pivotally mounted on a stud 20 secured to the rack 21, which slides in a way or track in a stand 22, secured to the frame 1, see Fig. 2. The rack 21 meshes with and drives a pinion 23, fast on the upper end of an upright shaft 24, journaled in a suitable bearing at its upper end, and in a bearing 25 at its lower end. On the lower end of the shaft 24 is fast a bevel gear 26, which meshes with and drives a bevel gear 27, fast on a shaft 28, which is journaled at one end in a suitable bearing on the frame 1, and at its opposite end in a bearing 29, see Fig. 2. The shaft 28 also has fast thereon a drum 30, around which passes a rope or cord 31, which is attached at one end to the color carriage 32, mounted on rolls 33, and adapted to travel on the track 24, in the usual way. From the drum 30 the rope or cord 31 passes over the guide pulley 34, around a drum or pulley at the

other end of the machine, not shown, and has its end attached to the other end of the carriage 32, as shown in Fig. 1, all in the usual way.

5 I will now describe the shipping mechanism for operating the clutch mechanism.

A rock shaft 35 is mounted in a bearing on a stand 36 secured to the frame 1. A shipper handle 37 is fast on one end of the shaft 35. On the stand 36 is a slotted extension 38, in which is adjustably secured a stud 39, on which is mounted the hub 40' of an arm 40 carrying a pin 41. On the rotary rod 35 is fast the hub 42' of an arm 42, which carries a pin 43, which is adapted to extend into an elongated slot 44' in the lower end of a lever 44, which has its hub 44'' loosely mounted on a stud 45, secured on the lever 9, see Fig. 1. The upper end 20 of the pivotally mounted lever 44 has an elongated slot 44''' therein, into which extends a pin 46 on a shipper pin or device 47, which in this instance is loosely mounted in a boss 9'' on the lever 9, see Fig. 2. The 25 pin 47, as the gear 12 rotates, is adapted to be engaged by a cam 48, in this instance there are two cams 48, on opposite sides of the gear 12, see Fig. 2. To the lever 9 is attached one end of a helically coiled contraction spring 49, the other end of said spring 49 is attached to the frame of the machine.

The operation of my improvements in color carriage operating mechanism, from 35 the above description in connection with the drawings, will be readily understood by those skilled in the art. To put the mechanism into operation, the shaft 35, through the hand lever 37, is rotated far enough to 40 withdraw, through intermediate connections, the pin 47, from the path of the cam 48 on the gear 12, to allow the spring 49 to act, to move the clutch member 8 into engagement with the clutch member 6, and cause 45 the rotation of the gear 7, and the rotation of the gear 12, and the rotation of the crank lever 14, and the operation of the connecting mechanism to the color carriage, to move the color carriage. The stop pin 41 limits the 50 rotary movement of the shaft 35. To stop the operating mechanism, the shaft 35 is rotated back into its original position, which places the pin 47 in the path of the cam 48, and in the revolution of the gear 12, the 55 cam 48 will engage the pin 47, and move the lever 9, against the action of the spring 49, to disconnect the clutch mechanism and leave the color carriage at rest.

The advantages of my improvements will

be readily appreciated by those skilled in 60 the art; they are of simple construction, and are not liable to get out of order, and may be readily applied to ordinary styles of printing drums, and color carriages, and act to stop the carriage very easily at each end 65 of its travel.

It will be understood that the details of construction of my improvements may be varied if desired.

Having thus described my invention, what 70 I claim as new and desire to secure by Letters Patent is—

1. In a color carriage operating mechanism for tapestry printing drums, a reciprocating color carriage, a driven shaft having 75 a clutch member fast thereon, a second clutch member loose on said shaft, a pinion connected with said second clutch member, a gear meshing with and driven by said pinion, a shipper lever, pivotally mounted 80 between its ends, for said movable clutch member, said lever having a clutch connection on one end, and a movable device on its other end, said device including a lever, 85 pivoted intermediate its ends, and a connection from one end of said lever to a movable pin, to coöperate with a cam, and a connection from the other end of said lever to a manually operated shipper lever, and said cam on said gear, and connections from said 90 gear to said color carriage, to move said color carriage.

2. In a color carriage operating mechanism for tapestry printing drums, a reciprocating color carriage, a driven shaft having 95 a clutch member fast thereon, a second clutch member loose on said shaft, a pinion connected with said second clutch member, a gear meshing with and driven by said pinion, a shipper lever, pivotally mounted be- 100 tween its ends, for said movable clutch member, said lever having a clutch connection on one end, and a movable device on its other end, said device including a lever pivoted intermediate its ends, and a connection from 105 one end of said lever to a movable pin to coöperate with a cam, and a connection from the other end of said lever to a manually operated shipper lever, and a stop to limit the movement of said shipper lever, and said 110 cam on said gear, and connections from said gear to said color carriage, to move said color carriage.

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Witnesses:

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