D. C. McCAN.

BLOCK DELIVERY MECHANISM.

APPLICATION FILED SEPT. 18, 1912.

1,064,236.

Patented June 10, 1913.

2 SHEETS—SHEET 1.

Fig. 1

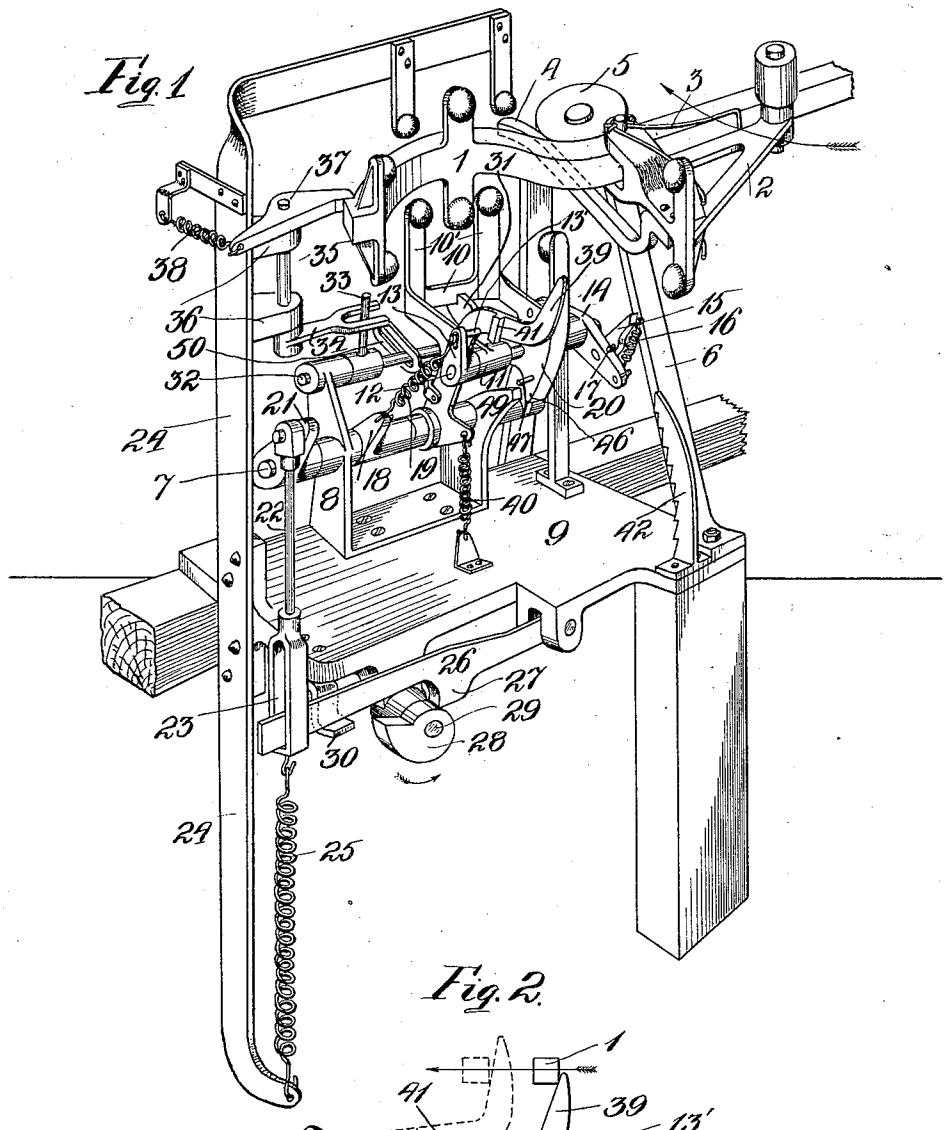
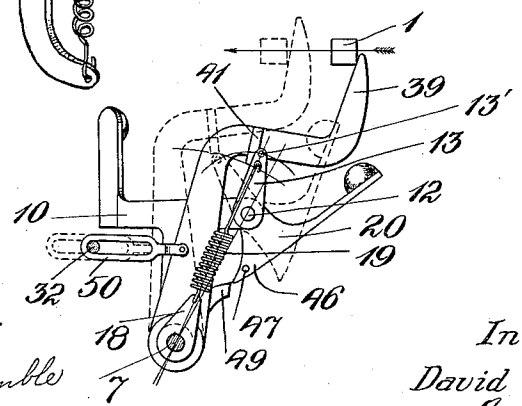


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

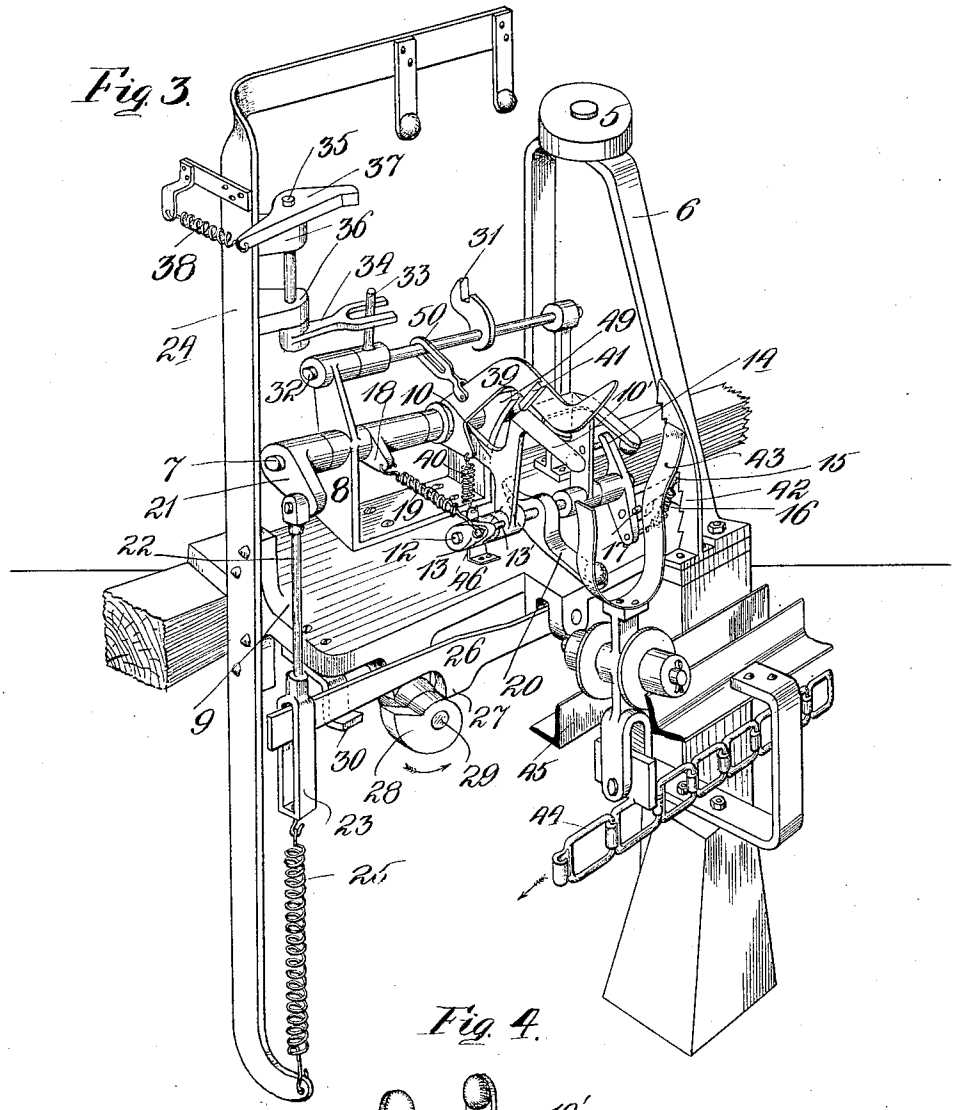
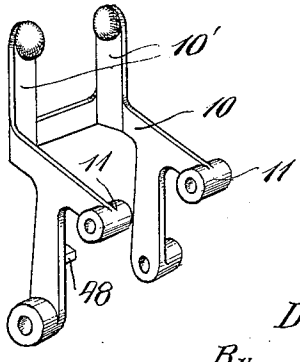


Fig. 4.



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UNITED STATES PATENT OFFICE.

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BLOCK-DELIVERY MECHANISM.

1,064,236. Specification of Letters Patent. Patented June 10, 1913.

Application filed September 18, 1912. Serial No. 721,068.

To all whom it may concern:

Be it known that I, DAVID C. McCAN, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a certain new and useful Improvement in Block-Delivery Mechanism, of which the following is a specification.

This invention relates to a mechanism for receiving blocks in a vertical position from a suitable carrier and delivering them horizontally to a traveling conveyer.

In order that the nature of this invention may be fully understood, reference is made to my co-pending applications for patents filed August 19, 1912, Serial Number 715,949 and August 5, 1912, Serial Number 713,466, which respectively show and describe carrier arms for blocks, and a conveyer for receiving the blocks and drawing them over a trackway whereby by exposure to the air the dipped ends thereof are dried; both of these devices are employed in the present mechanism.

An object of this invention is to provide a mechanism in which the blocks are received in a vertical position from the revolving carrier arms, and positively delivered to a conveyer in a horizontal position.

Another object of this invention is to provide a suitable gripping means for the blocks which will take and firmly hold the same without in any way injuring them, and with these and other objects in view, this invention consists of the features, details of construction and combination of parts described in connection with the accompanying drawings, and then more particularly pointed out in the claims.

In the drawings, Figure 1, is a perspective view showing the position of the clamp of a carrier arm at the time of release of a block; the block holding frame; the operative position of the clamping jaw, and the position of the operating mechanism for the frame and jaw. Fig. 2, is a detail showing the means for retarding the clamping movement of the jaw on a block. Fig. 3, is a perspective view showing the position of the block holding means and clamping means at the time of the delivery of a block to the clip of the conveyer, and Fig. 4, is a segregated perspective view of the frame.

Referring to the drawings, 1 designates a revolving carrier arm, whose end is shaped to conform to the shape of a block, which is arranged to be held therein by a clamp 2, normally under the tension of a spring 3. Said clamp 2, is provided with a bar 4, by means of which it is caused to be opened against the tension of said spring 3, and release a block, when said bar engages, in its revolutionary travel with said carrier arm, and glides over a roller 5, disposed horizontally upon a support 6. The block being in vertical position, is now received and held by the following mechanism: On a shaft 7, journaled in a suitable support 8, on a base plate 9, is keyed a frame 10, provided with uprights 10′, and with hubs 11, which loosely carry a spindle 12, on one end of which is keyed a crank 13, provided with a pin 13′, for purposes to appear hereinafter, and on the other end of which is fixedly mounted a rocker-arm 14, pivotally carrying a pawl 15, normally under the tension of a spring 16, a lug 17, on said pawl, serving to hold same in a fixed position relatively to said rocker arm 14. Said crank 13, is connected with a crank 18, on said shaft 7, by a spring 19, which functions to impart quick movement to said spindle 12, at stated periods, as will be understood from the operation of the mechanism. On said spindle 12, and located between said hubs 11, on said frame 10, is a jaw 20, which is arranged to coöperate with said uprights 10′, to clamp a block at the time of its release from said carrier arm 1. Keyed on said aforementioned shaft 7, is a crank 21, to which is attached a rod 22, having a stirrup 23, which is connected with the end of a bar 24, by a spring 25, that tends to draw said stirrup 23, and the parts under its control, normally to the position shown in Fig. 3. Extending through said stirrup 23, is the end of a lever 26, pivotally supported from said base plate 9, and provided with an offset 27, arranged for engagement by a cam 28, keyed on a shaft 29, and driven by any suitable means, not shown. This cam serves to lift said rod 22, against the tension of said spring 25, and oscillate said shaft 7, and frame 10. When said cam 28, escapes from said offset 27, the lever 26, drops to the position shown in Fig. 1, a shelf or lip 30, on said base plate supporting same. The lifting of said rod 22, causes the frame 10, which is keyed on said shaft 7, to be lifted to the position shown in Fig. 1. In this position, the frame 10, is locked and held by a latch 31, keyed on an arbor 32, journaled in support 8. On said

arbor 32, is a pin 33, extending between the tines of a forked arm 34, pinned on a vertical shaft 35, which is mounted in suitable bearings 36 on said bar 24. A dog 37, normally under the tension of a spring 38, is also keyed on said vertical shaft 35, and this dog extends in the path of travel of said revolving carrier arm 1, which, engaging said dog, causes the forked arm 34, to rock said arbor 32, and release said latch 31, whereupon the frame 10, is drawn, under the tension of the spring 25, to the position shown in Fig. 3. Loosely mounted on said shaft 7, and outside of said frame 10, is a toe 39, under the tension of a spring 40, and provided with an abutment 41, against which said aforementioned pin 13′, on said crank 13, is arranged to be forced to retard the movement of said jaw 20, on the block, as will appear from the description of the operation of the mechanism.

On the base plate 9, is a vertical rack 42, disposed in the path of travel of said pawl 15, which in its downward movement, rides over the teeth of said rack, and in its upward movement is held stationary, causing thereby a rotation of said spindle 12, and the jaw 20, such movement of the jaw, releasing a block from the frame and depositing it in the clip of the conveyer. The clip 43, is drawn by a chain 44, on a trackway 45. The jaw 20, is provided with an extension 46, having a stud 47, which is arranged to engage a lug 48, on said frame to limit its movement and the rotary movement of said spindle 12. This jaw 20, is returned to normal position to clamp a block by a knee 49, on the support 8, which is extended in the path of travel of said extension 46.

The operation of the mechanism occurs in substantially the following manner: Assuming the parts to be in substantially the position illustrated in Fig. 1, the clamp of the carrier arm 1, has been actuated, and released a dipped block, which is now clamped in the frame 10, by the jaw 20, whose actuation has occurred simultaneously with the opening of the clamp 2. As the carrier arm continues to revolve, it engages the dog 37, which through its connections, rocks the arbor 32, and removes the latch 31, from engagement with said frame 10. Thereupon the frame 10, with the block now clamped therein, in a vertical position, is drawn by the spring 25, to the position shown in Fig. 3, placing the block in the clip 43 of the conveyer. The toe 39, having no support, and being loose on said shaft 7, falls, under the tension of said spring 40, to the position shown in Fig. 3, and is there held by a clevis 50, loosely mounted on said arbor 32, and pivotally connected with said toe 39. The parts are now in the position shown in Fig. 3, preparatory to releasing the block and being elevated to normal position to receive and clamp another block. The stirrup 23, on the rod 22, is now resting on said lever 26, which is about to be raised by the cam 28. As the shaft 7, is rotated by such movement of the lever, the pawl 15, on the rocker arm 14, now in engagement with said rack 42, causes the spindle 12, to be rotated in the opposite direction from that of the shaft 7, the engagement of the pawl 15, continuing until the spring 19, connecting the crank 13, on the said spindle 12, with the crank 18, on the said shaft 7, has passed the central axis of the spindle, when, under the tension of the spring 19, the spindle is quickly turned, causing the jaw 20, thereon, to release its hold on a block. As explained the movement of said jaw 20, is limited by the engagement of the pin 47, with the lug 48, on said frame 10. The frame 10, continuing in its rotary movement with the shaft 7, causes the extension 46, of said jaw 20, to engage the knee 49, of the support 8, whereby said jaw and spindle 12, are oscillated. When the spring 19, passes the central axis of the spindle 12, the crank 13, spindle 12, and jaw 20, are suddenly drawn under the tension of the spring 19, but the complete movement of the jaw against a block is prevented by the abutment 41, on the toe 39, against which the pin 13′, on said crank 13, strikes, forcing it against the revolving carrier arm, which at that time is in the path of said toe. The toe 39, crank 13, spindle 12, and jaw 20, now follow the carrier arm. When the pin 13′, on the crank 13, escapes from the abutment 41, the jaw 20, is free to be drawn under the tension of said spring 19, against a block just released from said carrier arm. In this manner the jaw 20, is gradually let upon the block.

What I claim, is:—

1. In a mechanism of the character described, a carrier arm, means to hold a block in said carrier arm, means to release said block from said carrier arm, a frame for receiving the block from said carrier arm, means to clamp the block in said frame, means to hold said frame in a vertical position, means to release said frame, a conveyer, means to bring said frame to a horizontal position to cause said block to be delivered to said conveyer, means to release the block from said frame, and means to control all of said means in the order named.

2. In a mechanism of the character described, a carrier arm for a block provided with means to hold a block, means to release the block from said carrier arm, a frame for receiving the block from said carrier arm in a vertical position, and provided with means to clamp the block therein, means to hold said frame in a vertical position, a conveyer, means actuable by said carrier arm to release said frame, means to bring said frame

to a horizontal position to deposit the block upon said conveyer in a horizontal position, means to release the block from said frame, and means to control said means in the order named.

3. In a mechanism of the character described, a carrier arm provided with clamping means for a block, means to release the block from said carrier arm, a frame to receive the block from said carrier arm, means to clamp the block in said frame, means to retard the movement of said clamping means on said block, a conveyer, means to actuate said frame to deposit said block on said conveyer, and means to release said block from said frame.

4. In a block delivery mechanism, a receiving frame for a block, means to clamp the block in said frame, means to retard the movement of said clamping means on said block to prevent injury thereto, means to hold said frame in a vertical position, means to actuate said holding means to release said frame, a conveyer, means to bring said frame to a horizontal position to cause said block to be delivered to said conveyer, means to release said block from said frame, and means to control said means in the order named.

5. In a block delivery mechanism, a frame to receive a block in a vertical position, locking means for said frame, means to clamp said block in said frame, means to retard the movement of said clamping means on said block to prevent injury thereto, a conveyer, means to bring said frame to a horizontal position and deliver the block to said conveyer, means to raise said frame to normal vertical position, and means controllable by the raising of said frame to actuate said clamping means and release the block from said frame.

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

DAVID C. McCAN.

Witnesses:

EDWARD D. SILENT,

FRITZ ROSENSTEIN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."