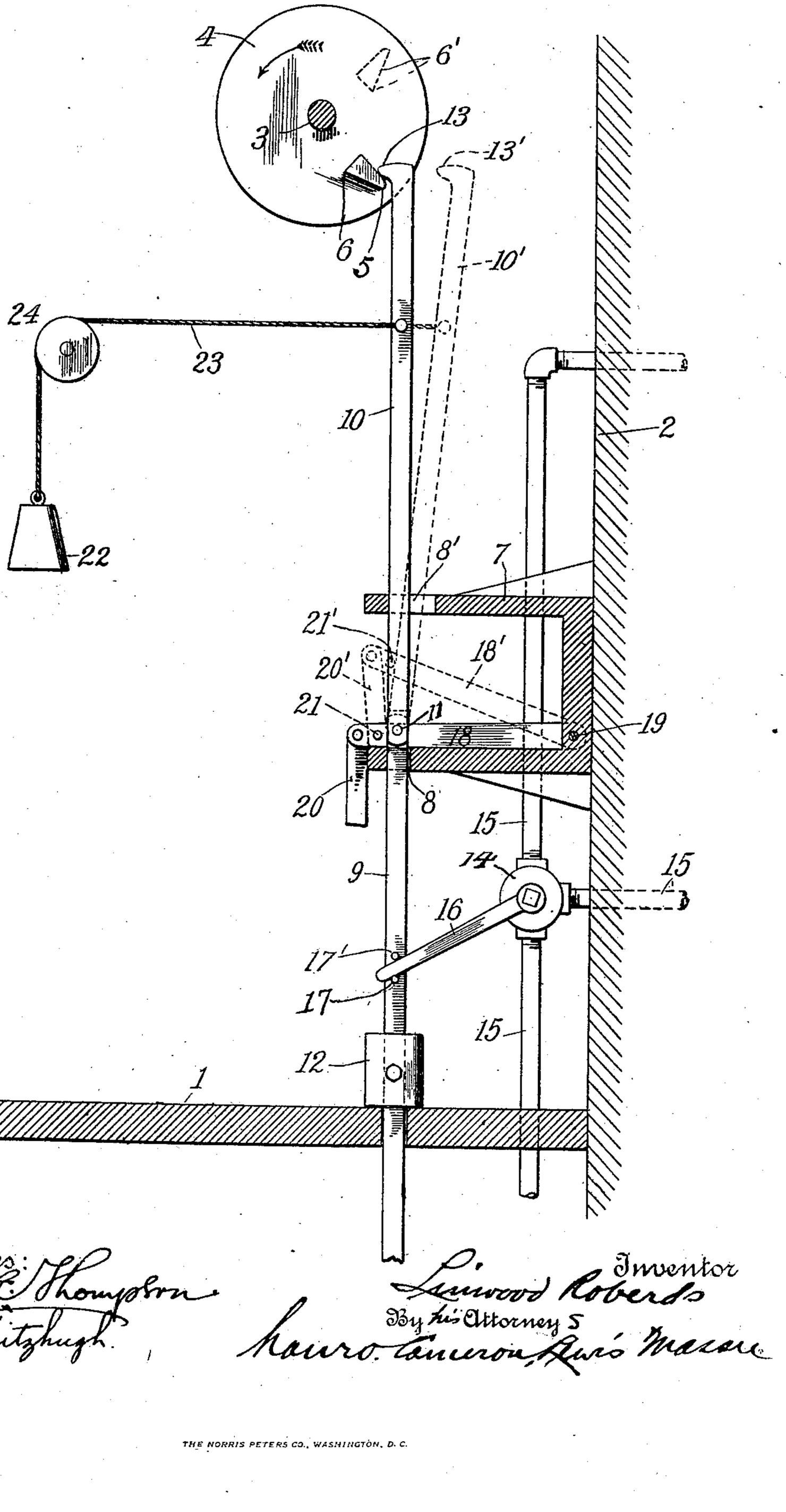
No. 879,413. PATENTED FEB. 18, 1908.

L. ROBERDS.

STEAM TRAMPING COTTON PRESS.

APPLICATION FILED SEPT. 21, 1906.



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STEAM-TRAMPING COTTON-PRESS.

No. 879,413. Specification of Letters Patent. Patented Feb. 18, 1908.

Application filed September 21, 1906. Serial No. 335,667.

To all whom it may concern:

Be it known that I, LINWOOD ROBERDS, a citizen of the United States, and resident of Scotia, in the State of South Carolina, have invented certain new and useful Improvements in Steam-Tramping Cotton-Presses, whereby the same are worked automatically.

As is well known, in presses of this type there is a reciprocating "follow-block" which is forced down to compress the cotton and is thereafter lifted up again. The downward stroke of the follow-block is comparatively slow, while its return may be practically instantaneous. Heretofore an attendant has been required who must be on hand constantly while the press is in operation, to admit steam slowly to one side of the steam-cylinder to produce the downward (or pressing) stroke, and then rapidly to the other side, to return the follow-block to its raised or initial position.

The purpose of the present invention is to control these movements automatically, so as to dispense with an attendant.

The invention consists broadly of means for thus controlling the admission of steam, and will be best understood by reference to the accompanying drawing which is a diagrammatic view to illustrate an improved embodiment of my invention.

1 represents the floor of the gin house or press room, and 2 is one wall thereof.

3 is a driven shaft (preferably driven from the same power that drives the press) upon which is made fast the pulley 4. The connection is such that the pulley revolves quite slowly, say once a minute. The arrow indicates its direction of rotation. Upon this pulley is a stud which is shown as triangular in shape and extending radially so as to present the nose 5 and the shoulder 6.

7—7 indicate two horizontal guides secured to the wall 2 and having the slots 8—8′.

9 and 10 indicate a (vertical) rod, consisting of two members pivoted together at 11 (for a purpose to be hereafter described), and adapted to slide up and down in the slots 8—8′ and through a third guide or bearing, which is shown as a hole in the floor 1.

12 represents a weighted stop on the lower rod 9, to limit its downward passage.

13 is a hook at the upper end of upper rod 10, adapted to be engaged and lifted by nose 5.

At 14 is indicated the three-way valve that controls the admission of steam through piping 15 to the opposite sides of the steam-cylinder, not shown.

16 is a handle or lever for operating the valve, and 17—17′ are pins carried by the rod 9 and engaging lever 16.

Considering the parts so far described, the operation is as follows: As pulley 4 revolves and when its stud has reached the position indicated in full lines the nose 5 engages the hook 13 and is raising the compound rod 9—10 slowly and continuously until the shoulder 6 (in the position indicated by dotted lines 6′) disengages the hook, whereupon its own gravity and weight 12 cause the rod to drop back to its initial position (ready to be reëngaged and raised by the stud upon its next revolution). This slow upward travel of the compound rod 9—10 raises valve-lever 16 (through pin 17), and thereby is admitting steam behind the follow-block of the press, which is slowly forced downward. As soon as the hook 13 is released, the rod 9—10 drops back, and (through the other pin 17′) admits steam to the other side of the steam-cylinder, and thereby raises the follow-block. By changing the position of the stud on pulley 4, the comparative duration of the pressing-stroke of the follow-block can be altered. And of course, by changing the speed of the pulley, the speed of the press can be varied.

To describe the remaining features of my invention, 18 is a bar, pivoted as at 19 to the guides 7, and extending slightly beyond rod 10; and 20 is another bar or trigger pivoted to bar 18, and having the pin 21 which projects to one side so as to lie in front of rod 10. These parts, 18—20—21, constitute a latch. When it is desired to stop the operation of the press without stopping the engine, the attendant raises the arm 18, whereupon projecting pin 21 forces the upper rod 10 to tilt backwards on its pivot 11, so that its hook 13 can no longer be engaged by the nose 5 of the stud; meanwhile trigger 20 is swinging down until its foot rests upon the lower guide 7, to latch the rod 10 out of engagement,—all as indicated by dotted lines at 18′—21′—20′ and 10′—13′. Thereafter pulley 4 revolves idly, and the follow-block will remain stationary, in its raised position. In order to start the press again, it is only necessary to disengage the trigger 24, whereupon a weight 22 (shown as attached to a cord 23, which passes over a pulley 24 and is secured to the pivoted rod 10) will restore the rod to its normal vertical

position, after which the operation proceeds as already described.

I have described my invention with some particularity in order that it may be clearly understood; but I do not limit myself to the precise construction and arrangement of the parts shown and described. The words "behind", and "in front of", "up" and "down", etc., are relative only, since the parts may be reversed. Other changes may be made without departing from the spirit of my invention which consists of automatic means for operating a device for admitting steam alternately to opposite ends of a steam cylinder, admitting it slowly on one side and rapidly on the other; and also of means for latching the first-named means out of operative position, so as to stop the operation of the press. It will also be understood that while I have described my invention for use in connection with a three-way valve for controlling a steam-tramping cotton press, it may be employed for other more or less similar purposes, where the object is to operate a handle or similar device in opposite directions, or to leave the handle stationary when desired.

Having thus described my invention, I claim:

1. The combination of a three-way valve having a handle for controlling the same, a reciprocating shaft having stops for engaging and actuating said handle, and a power-driven catch that intermittently engages and releases said shaft for reciprocating the same.

2. The combination with a throttle-valve and a lever controlling the same, of a gravity-actuated reciprocating shaft independent of said lever but carrying stops arranged to engage and actuate said lever, and a revolubly-mounted catch arranged in such position as to engage and raise said shaft and thereafter release the same.

3. The combination with a throttle-valve and a lever controlling the same, of a gravity-actuated reciprocating shaft independent of said lever but carrying stops arranged to engage and actuate said lever, a revolubly-mounted catch arranged in such position as to engage and raise said shaft and thereafter release the same, and means for shifting said shaft out of engagement by said catch.

4. The combination with a three-way valve of a steam-tramping-cotton-press or the like and a handle actuating said valve, of a vertically reciprocating shaft carried in guides and engaging said handle, a second vertical shaft pivoted at its lower end to the former and having a hook at its upper end, a driven pulley having a stud for engaging and releasing said hook, means for shifting and locking said pivoted shaft out of engagement with said stud, and means for restoring the same to normal position when released.

5. The combination of a revoluble pulley having a stud thereon, a vertically reciprocating shaft consisting of two members pivoted together, a shoulder on the upper member adapted to be engaged and released by said stud whereby the two members are raised and allowed to drop, a three-way valve having a handle engaged by the lower shaft aforesaid, a bar-and-trigger device having a pin adapted to engage the upper shaft-member and force the same backwards, said trigger adapted to lock the same out of engagement with the stud on said pulley.

6. The combination with a three-way valve for a steam-tramping-cotton-press or the like and a handle actuating said valve, of a vertically reciprocating shaft engaging and operating said handle, a revoluble pulley, and a stud carried thereby for lifting and releasing said shaft, said stud presenting an engaging-nose lying substantially radially of said pulley, and a disengaging shoulder lying substantially at right angles to said radius.

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