

(No Model.)

G. F. HUTCHINS.  
REVERSING MECHANISM FOR LOOMS.

No. 491,776.

Fig. I. Patented Feb. 14, 1893.

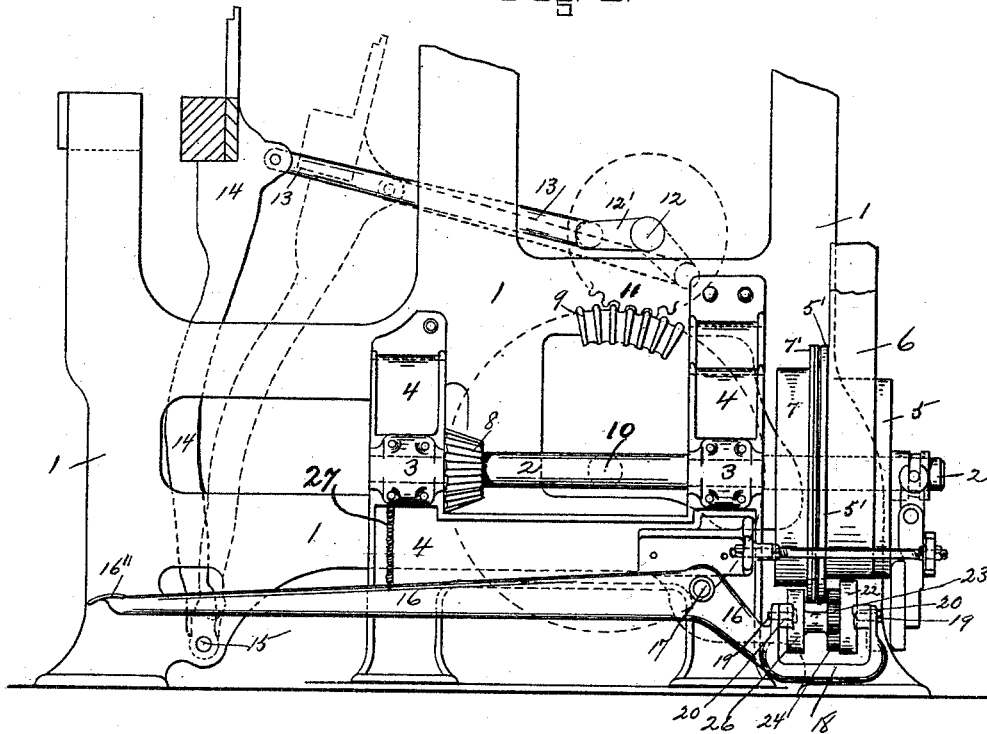
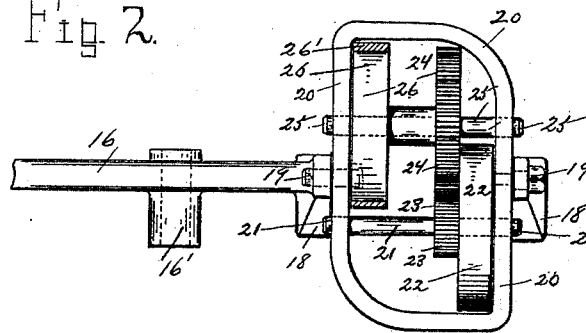


Fig. 2.



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# UNITED STATES PATENT OFFICE.

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KNOWLES LOOM WORKS, OF SAME PLACE.

## REVERSING MECHANISM FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 491,776, dated February 14, 1893.

Application filed October 20, 1892. Serial No. 449,478. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE F. HUTCHINS, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Reversing Mechanism for Looms; and I do hereby declare that the following is a full, clear, and exact description thereof, which, in connection with the drawings making a part of this specification, will enable others skilled in the art to which my invention belongs to make and use the same.

My invention relates to looms, and more particularly to a supplemental attachment, to be combined with the driving pulley and friction pulley of a loom, to reverse the loom by power and move the lay to its rear position, for the purpose of removing the shuttles from the shed, or for any other purpose.

My supplemental attachment is designed particularly to be used on heavy looms, in which considerable power is required to reverse the loom, and move back the lay after the loom is stopped.

The object of my invention is to provide a supplemental mechanism, adapted to be combined with heavy looms, for the purpose above stated, so that the attendant, generally a young girl or woman, by simply operating a lever will cause the loom to be reversed by power, and the lay to move back and remain in its rear position.

My invention consists in certain novel features of construction and operation of the supplemental mechanism, combined with the driving mechanism of a loom, for the purpose above stated, as will be hereinafter fully described, and the nature thereof indicated by the claims.

Referring to the drawings:—Figure 1 is an end view of a loom, of ordinary construction showing sufficient parts of the driving mechanism to illustrate the nature of my supplemental mechanism applied thereto. Fig. 2 is a plan view, on an enlarged scale, of my supplemental mechanism detached.

In the accompanying drawings, 1 is the right hand loom side, 2 the end shaft, supported in boxes 3 attached to the stand 4.

5 is a friction driving pulley loose on the

shaft 2, and provided with a friction face 5', and driven by a belt 6, in this instance belted from above.

7 is a friction face pulley, fast on the shaft 2, and provided with a friction face 7' with which the driving pulley 5 is moved into or out of contact, to start and stop the loom by the ordinary shipping-mechanism, as shown in the United States Patent No. 437,894.

A beveled gear 8 fast on the shaft 2, meshes with, and drives a large beveled gear 9, fast on the bottom shaft 10; and the beveled gear 9 meshes with and drives a gear 11, fast on the crank shaft 12, all in the ordinary way. A connector 13 connects the crank 12' of the crank shaft 12, with the lay 14, pivoted at its lower end on a pin 15, in the lower part of the frame 1, in the usual manner.

All of the above parts are of the usual construction and operation in looms of the class represented in the drawings.

I will now proceed to describe my supplemental mechanism. A lever 16, provided with a hub 16', is pivoted at the rear of the loom on a pin 17, and extends upon the outside of the loom, as shown in Fig. 1. One end 16'' of said lever extends to the front of the loom, and is adapted in this instance to be engaged by the foot of the attendant. The other end of the lever 16 is provided with a U shaped head or casting 18, in the upper ends of which is pivotally supported, on bolts or pins 19, a yoke 20. In said yoke 20 is supported the shaft or spindle 21, on which is fast a pulley 22, and a pinion 23. The pinion 23 meshes with and drives a gear 24 fast on a shaft 25, arranged parallel with the shaft 21, and also supported in the yoke 20. A pulley 26 is fast on the shaft 25, and provided with a covering 26' of leather, or other suitable material, see Fig. 2. The lever 16 is hung in such a position on the end of the loom that the pulley 22 will come under the driving pulley 5, and the pulley 26 will come under the friction pulley 7. The pivotal support of the yoke 20 will allow the pulleys 22 and 26 to adjust themselves to the driving and friction pulleys, as required. A spring 27 is secured at one end to the lever 16, and at the other end to the box 3 of the stand 4, or to any other fixed part of the loom frame,

and serves to keep the end 18 of the lever 16 in its lowest position, as shown in Fig. 1.

The operation of my supplemental mechanism will be readily understood by those skilled in the art. When the loom is stopped the lay will usually be in the position shown by full lines Fig. 1, and when it is desired to move back the lay for any purpose, into the position shown by dotted lines Fig. 1, the front end 16" of the lever 16 is depressed, causing the rear end of said lever to be raised, and bring the pulley 22 into contact with the driving belt 6, or with the flange of the driving pulley 5, or with the pulley itself, in case it is belted from below, and also bring the pulley 26 in contact with the friction pulley 7 fast on the shaft 2. The revolution of the pulley 5, which runs loose on the shaft 2, will cause the pulley 22 to revolve, and through the gears 23 and 24, the pulley 26 will transfer the power to friction pulley 7, and will cause said pulley to revolve, and also the shaft 2 on which said pulley is fast, thus reversing the loom and moving back the lay, into the position shown by dotted lines, Fig. 1. The releasing of the lever 16 allows the spring 27 to act to disengage the pulleys 22 and 26 from the pulleys 5 and 7, and leave the lay in its backward position, so that the attendant may remove the shuttles from the shed, or repair the warp, preparatory to re-starting the loom in the ordinary way. By using a small pinion 23 and a larger gear 24, I reduce the motion of the pulley 26, and prevent the too sudden reversing of the loom, and the too quick return of the lay.

The advantages of my improvement will be readily appreciated by those skilled in the art.

My supplemental attachment is of very simple construction and operation, and is adapted to be combined with looms of ordinary construction without any change, and requires but slight power to operate.

The details of construction of my supplemental mechanism may be changed if desired; the lever 16 may be adapted to be operated by hand if desired, and the pulley 22 may extend under and engage the edge of the flange on the loose pulley 5, instead of the belt, and thus prevent any damage or injury to the belt by the friction of the pulley.

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

1. In a loom, the combination with the belt pulley loose on the driving shaft, and the friction pulley fast on said shaft, and the gearing for operating the loom, of a supplemental mechanism for reversing the loom by power to move back the lay, consisting of a pivoted lever supporting a pivoted yoke carrying a pulley adapted to engage the belt pulley, and a second pulley adapted to engage the friction pulley, and intermediate gearing between the pulleys supported in said yoke, substantially as set forth.

2. In a loom, the combination with the belt pulley loose on the driving shaft, and the friction pulley fast on said shaft, of means for conveying power from the belt pulley to the friction pulley, to reverse the loom by power and move back the lay, consisting of a lever pivoted at one end of the loom, with its front end adapted to be engaged and operated from the front of the loom, and its rear end adapted to extend under the belt pulley and friction pulley, and provided with a pivoted yoke carrying two shafts, and a pulley mounted on each of said shafts, and intervening gearing between the shafts, for the purpose stated, substantially as set forth.

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Witnesses:

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