(No Model.)

J. GREENWOOD.

MACHINE FOR WINDLASSING BARRELS.

No. 251,575. Patented Dec. 27, 1881.

Fig. 1.

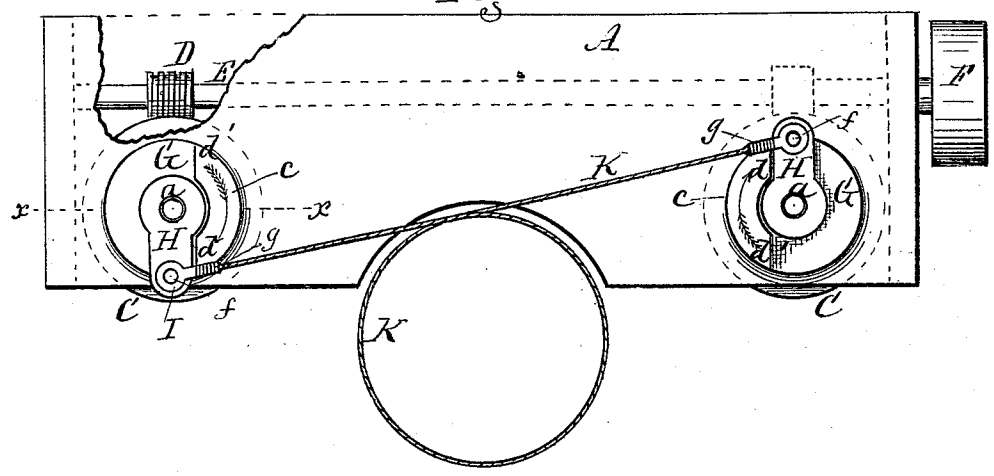


Fig. 2.

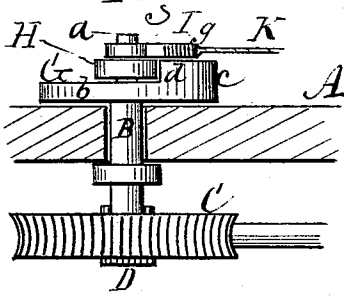


Fig. 3.

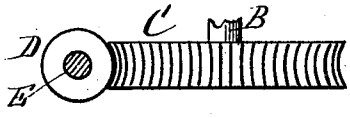


Fig. 4.

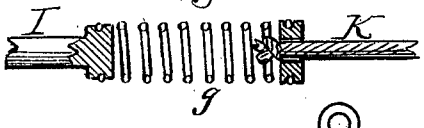
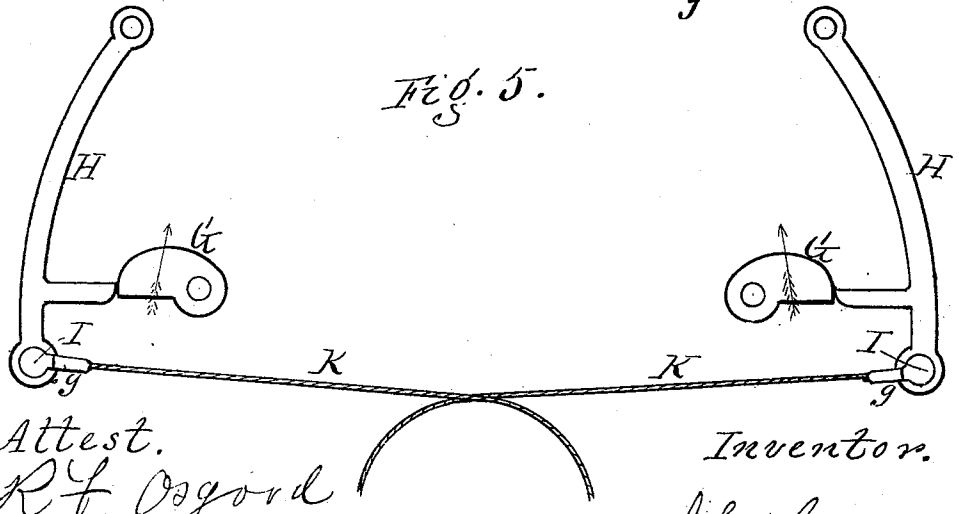


Fig. 5.



Attest.
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JOHN GREENWOOD, OF ROCHESTER, NEW YORK.

MACHINE FOR WINDLASSING BARRELS.

SPECIFICATION forming part of Letters Patent No. 251,575, dated December 27, 1881.

Application filed December 20, 1880. (No model.)

To all whom it may concern:

Be it known that I, JOHN GREENWOOD, of Rochester, Monroe county, New York, have invented a certain new and useful Improvement in Machines for Windlassing Barrels; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a plan of the machine. Fig. 2 is a vertical section in line *x x*, Fig. 1. Fig. 3 is an elevation of the worm-wheel and gear. Fig. 4 is a sectional view of the spring in the windlassing-cord. Fig. 5 is a modification.

My invention relates to windlassing-machines in which the power is more economically and effectively applied than in ordinary machines of the class, and in which the action is more regular and uniform. One great object is to produce a machine of greater strength and of greater capacity than common machines.

In machines heretofore in use more or less hand or foot power is required, and after the barrel is windlassed it is necessary to produce a certain amount of reaction to slacken the cord for fitting a new barrel, which takes much time and gives much trouble.

It is my object to obviate these difficulties by the use of an apparatus constructed, arranged, and operating as follows:

A represents a frame, of suitable form, which is made of great strength, to withstand the strain to which it is subject. In this frame are mounted two short vertical shafts, B B. On the shafts are fixed worm-gears C C, with which engage worms D D, located on a horizontal shaft, E, which receives motion from a pulley, F, or other suitable means. By this arrangement the vertical shafts are both revolved in the same direction.

To the tops of the shafts B B are secured disks G G, and on top of the disks or cams are pins *a a*, which form the pivots of arms H H, that turn freely thereon. The disks consist each of a thin flat portion, *b*, which forms the seat upon which turns the arm H, and a raised segmental portion, *c*, which forms a shoulder which strikes against and forces forward the arm as the disk is turned. In fact, two shoulders, *d d'*, are formed at the opposite ends of this raised portion, one of which, *d*, by striking against the arm, forces it around as the disk is turned and the other one, *d'*, serves as a stop to the arm as it strikes around, by reason of the reaction of the windlassing-cord after the arm has passed the dead-center.

On the outer ends of the arms H H are wrists I I, which turn freely on pins *f f* of the arms. Attached to these wrists are the ends of the windlassing cord or cable K, which is crossed at the center and formed into a loop, which fits around the ends of the set-up staves to be windlassed. In this cord or cable are interposed springs of coiled wire, rubber, or other material. The springs are preferably applied at the wrists, as shown at *g g* in the drawings. The wrists and connections of the cord or cable run free over the top of the arms and disks, as shown in Fig. 2.

The operation is as follows: A "set up" of staves is placed in position against the table, and the crossed cord or cable is passed around it in the form of the cord shown in Fig. 1. As the disks G G revolve the shoulders *d d* strike the arms H H and force them around, thereby drawing upon the cord or cable and compressing the tops of the staves. When they are fully compressed the truss-hoop is slipped over them. Time is given for this while the arms are passing the dead-center, and during this time the springs in the cord or cable prevent the cord from drawing too tightly upon the staves, and thereby crippling it. As soon as the dead-center is passed the arms spring around and strike the opposite shoulders *d' d'* of the disks, thereby slackening the cord or cable, releasing the barrel, and giving time, while the other shoulders, *d d*, are coming around, to place the cord or cable over the next set-up of staves. The springs in the cord or cable are essential to produce this automatic action. By the above means also the power is properly adapted to the work, for when the cord first commences to act its motion is the fastest and the resistance is then the least. As the resistance increases the power also increases by the turning of the arms more and more in the line of the ends of the cord.

By the means above described the action of compressing the staves is produced by the direct action of disks or cams upon arms, forcing

the arms away from the barrel, while the releasing of the barrel is produced by the relaxation of the arms, the whole operation being automatic, and avoiding the expensive machinery ordinarily employed and the necessity of retracting the cord or cable by springs or weights, as is ordinarily the case.

Various modifications may be used, one of which is shown in Fig. 4, in which the disks G G are in the form of cams, which act upon the arms H H to throw them out in drawing upon the cord or cable, and in which the said arms spring back past the shoulders of the cams to slacken the cord or cable. In such case the arms are pivoted at the long end to the table.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination, in a windlassing-machine, of two pivoted arms operated upon by disks, and a windlassing cord or cable attached at its opposite ends to said arms, the arms having a free action on their pivots, the disks which propel the arms having shoulders on their faces and receiving a rotary motion, and in only one direction, the arms first drawing up the cord to compress the staves and then releasing the same to allow removal of the barrel after the trussing-hoop has been applied, as herein shown and described.

2. The combination, in a windlassing-machine, of the arms H H, the disks G G, having shoulders *d d*, for operating the arms, the cord or cable K attached at its opposite ends to the arms, and a spring or springs, *g*, in the cord or cable, as and for the purpose specified.

3. In a windlassing-machine, the combination of the arms H H, the disks G G, having shoulders *d d*, the wrists I I, the cord or cable K, and the spring or springs *g* in the cord or cable, the whole arranged to operate in the manner and for the purpose specified.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

JOHN GREENWOOD.

Witnesses:
R. F. OSGOOD,
JAMES NAYLOR, Jr.