(No Model.)

E. STEERS.

MEASURING, RIGGING, TENTERING, AND FINISHING MACHINE.

No. 260,059. Patented June 27, 1882.

FIG. 1.

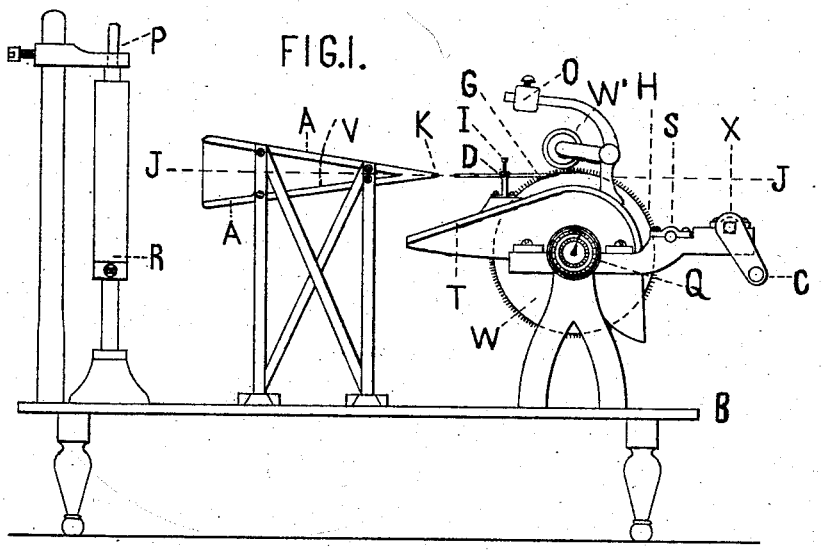


FIG. 3.

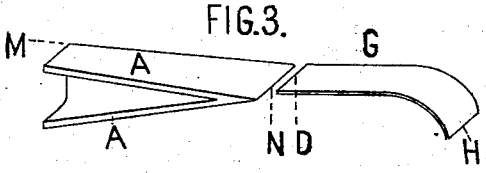


FIG. 4.

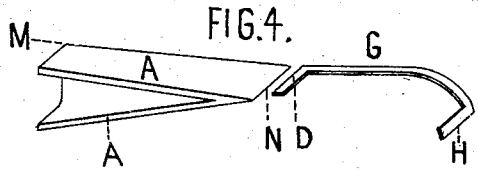


FIG. 5.

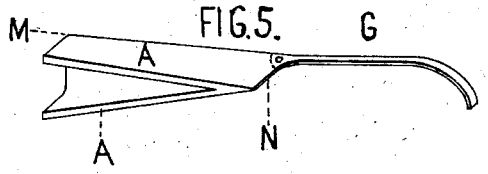


FIG. 6.

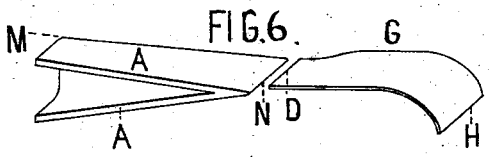
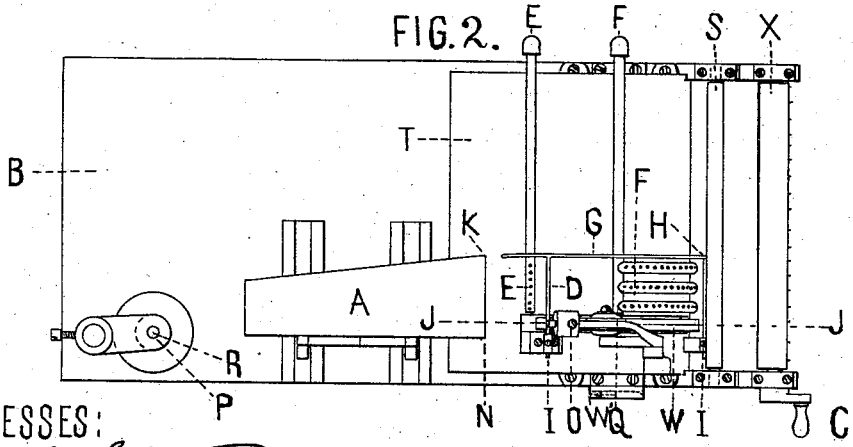


FIG. 2.



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UNITED STATES PATENT OFFICE.

EDWARD STEERS, OF WEST NEW BRIGHTON, NEW YORK.

MEASURING, RIGGING, TENTERING, AND FINISHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 260,059, dated June 27, 1882.

Application filed September 30, 1881. (No model.)

To all whom it may concern:

Be it known that I, EDWARD STEERS, of West New Brighton, county of Richmond, and State of New York, have invented a new and useful Improvement in Measuring, Rigging, Tentering, and Finishing Machines, which improvement is fully set forth in the following specification and illustrated in the accompanying drawings, in which—

Figure 1 represents an elevation, and Fig. 2 a plan, of my measuring, rigging, tentering, and finishing machine. Figs. 3, 4, 5, and 6 illustrate perspective views, respectively, of various forms of the folder or bridge employed by me in my improved machine.

The object of my invention is to provide a machine which shall fully accomplish the measuring and rigging of dry-goods, as also perform the tentering, finishing, and placing of the goods on rolls or boards.

Referring to the drawings, B is a suitable rectangular base, provided at or near one extremity with a spindle, P, upon which the original roll of goods is loosely mounted, and from which the goods may be easily drawn or unwound. At a convenient distance from said spindle P a bridge, A A, is placed, said bridge consisting of a solid block or appropriate skeleton frame, having two converging surfaces inclosing the angle V, opposite the spindle P.

In close proximity to the lateral edge N of the bridge A A a guide, D G H, is arranged, being adjusted above the table T, and bent or curved at or near its latter extremity, H, to approximately conform with the curvature of the inclosed wheel W, the latter being provided with pins, milling, corrugations, or other suitable device on its outer peripheral face. The wheel W is fitted in requisite journals or bearings beneath the curved or warped table T in such a position as to permit a requisite portion of the periphery of said wheel to project above said table through a suitable slot formed in the top of the latter. Beyond the latter extremity, H, of the guide, and resting in suitable bearings upon the frame, a roller, S, is mounted. A similar roller or board, X, is mounted adjacent to roller S, and accomplishes the final winding up of the goods.

The guide represented in Figs. 1 and 2 as consisting of the parts G D H may virtually be a thin plane surface brought in contact with or near the edge N and curved or warped at its latter extremity, H, Fig. 3; but as the edges D G H of such plane are merely used in the accomplishment of its purpose, I preferably employ a construction of skeleton form possessing such edges, which construction may consist of stout round wire or bars, or of strips presenting suitably-rounded edges, as in Fig. 4.

Preparatory to operating the machine the goods are taken from the drying-machine, and, being arranged upon a roll, R, in lengths of from one thousand to fifteen hundred yards, such roll, is placed by means of its core, upon the spindle P. The plane of the goods is now drawn over the bridge A A and warped to conform to its tapering top and bottom surfaces. At the point of intersection K of the converging surfaces A A and the edge G the goods become doubled or folded, with both lists or selvages on the line J J, and are retained in such position by the guide G in the crease or rig, in connection with the pins of the wheel W, suitable lateral tension being given the goods by adjustment of the guide D G H through agency of the adjusting-screws I I. The goods are then drawn from the guide and wheel under the roll S and engaged by the roll or board X.

The above arrangement being effected, the machine may be operated by means of a hand-crank, C, or by the application of power through agency of a belt and pulley attached to the spindle carrying the roll or board X, the revolutions of such crank or pulley having as a result the winding up of the goods upon said roll or board, as also makes obvious the revolution of the wheel W by virtue of the pins thereof being engaged in the traveling lists or selvages of the goods.

To fully insure the lists being engaged by the pins, as also by way of a guide, a tension-roller, W′, is suitably arranged above and in contact with the wheel W, the requisite pressure or tension of their contact being insured by means of a spring or lever and adjustable weight O.

It is apparent that a measurement of the goods will be obtained by counting the number of revolutions of the wheel W, the circumference of which being preferably chosen one

yard, and with each revolution of the wheel W the transmission of one yard of goods is insured, as false motion or slipping is fully obviated by the pins becoming embedded in the lists of the goods until relieved by the guide D G H at H and the auxiliary roll S.

To obviate the necessity of counting the revolutions of the wheel W by sight and memory of the operator, it is suggested that any device effecting the registry of the number of revolutions made by said wheel may be employed. As here illustrated, however, close observation by the operator is required, as Q represents a dial traversed by a hand or index, the latter being affixed to the projecting shaft or spindle of the wheel W, thereby merely indicating the transmission of one yard for a complete revolution of the wheel, and by an uncompleted revolution the corresponding fractional part of a yard.

It is further apparent that the wheel W does not merely act as a measuring-wheel, but also as a tentering-wheel, from the fact of the goods being widened or tentered while held distended between the pins of the wheel W and the edge G. The pins of the wheel W of my machine being arranged to penetrate the lists or selvages, and not the body of the goods, avoids the marring of the goods. The rigging, being the longitudinal crease or fold in the center of the goods between the lists or selvages, is fully accomplished by the tension given the goods upon the guide at G, in connection with the steam-jets which are caused to impinge upon the goods by means of the dampener or perforated pipe E, which is connected to a suitable steam-generator, (not shown,) and the drier or radiator F, arranged laterally upon the table T and under the goods, the former dampening the goods with steam, the latter heating or drying the same while in transit from the guide and wheel to the roll S, thus developing the twill, rounding the thread, and giving a fullness to the goods.

The tension given the goods by adjustment of the guide D G H insures their widening, and is known as the process of "tentering," the so-called "finish" being given by the development of the twill, as above.

It is apparent that in the production of the rig or crease the edge G of the guide D G H is the chief and sole acting portion, wherefore the parts D and H may, if desired, also be discarded, in which event the edge G may form part of the bridge A A, as in Fig. 5, by being attached or rendered adjustable thereto. It is, however, requisite that the line or edge N of the surfaces A A shall be in a plane with the edge G and with the upper peripheral face of the wheel W, and, further, that the transilience from the edge M to the edge G shall be gradual in the event of the latter being curved, as indicated in Fig. 6.

To insure the proper relative positions of said edges M and G to each other, both the bridge A A and the guide D G H may be rendered adjustable laterally to the base of the machine by any means adequate to the purpose.

From the foregoing it will be observed that my device will accomplish the measuring, rigging, tentering, finishing, and placing of the goods upon rolls or boards in a single operation.

In cases where goods have been already rigged—that is to say, folded with both lists or selvages in contact and a crease or rig down the center, and mounted on a roll or board—and where such goods require tentering, the same may be accomplished by removing the bridge A A of my machine, and arranging said goods in a suitable position to be fed to the edge G and the wheel W, such operation being effected with or without reference to the measurement of the goods, as occasion may require. In such event the edge G and wheel W constitute the only requisite working parts of the machine.

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

1. The combination, with the spindle P, bridge A A, and guide D G H, of the wheel W, dampener E, drier F, roll S, and roll or board X, all constructed and operating substantially as shown and described.

2. The combination, with the spindle P, bridge A A, and guide provided with an edge, G, of the wheel W, roll S, and roll or board X, all constructed and operating substantially as shown and described.

3. The spindle P and means for supporting it perpendicularly to the plane of the goods when folded, and bridge A A, combined with a guide which is provided with an edge, G, and means for drawing the material from said spindle and over the bridge and guide, substantially as shown and described.

EDWARD STEERS.

Witnesses:
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