

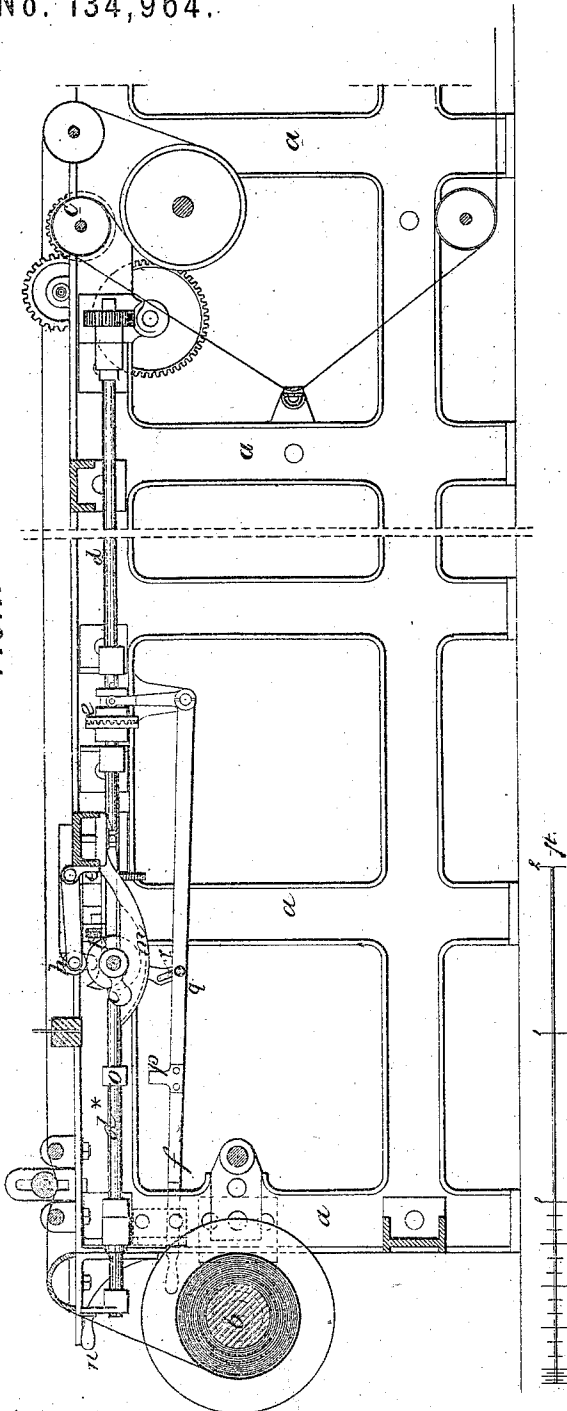
T. ABBOTT.

Machines for Sizing Yarn.

No. 134,964.

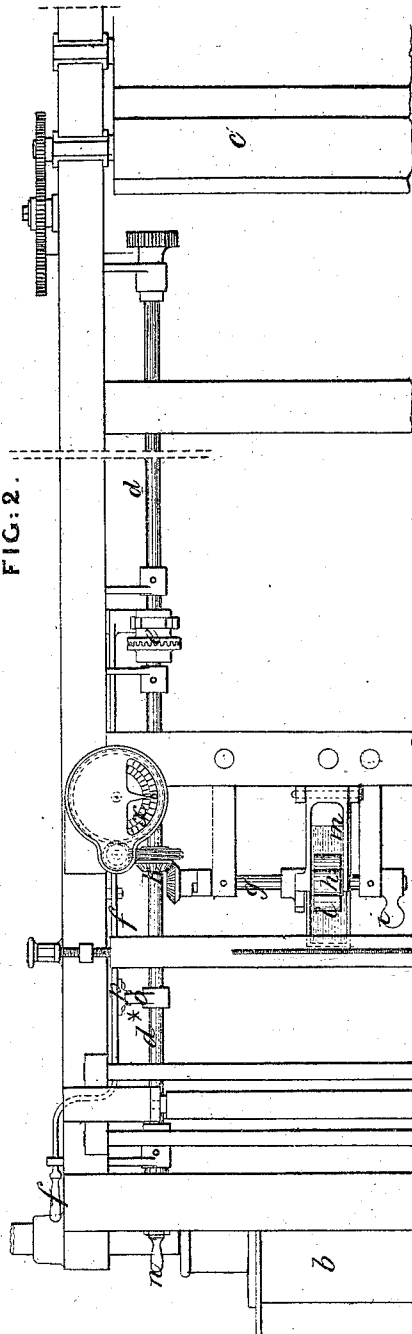
Patented Jan. 21, 1873.

FIG. 1.



Witnesses
George Daines
John Ferguson

FIG. 2.



Thos. Abbott

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FIG. 5.

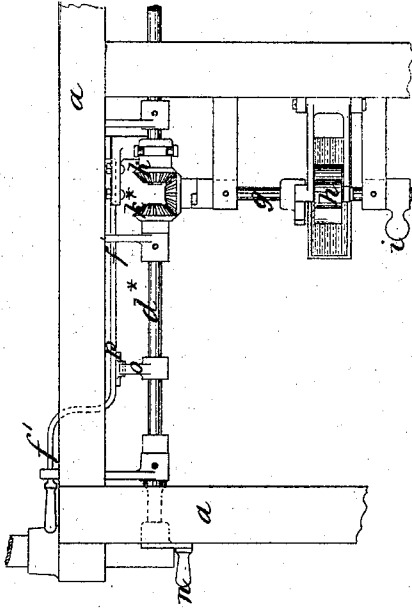


FIG. 4.

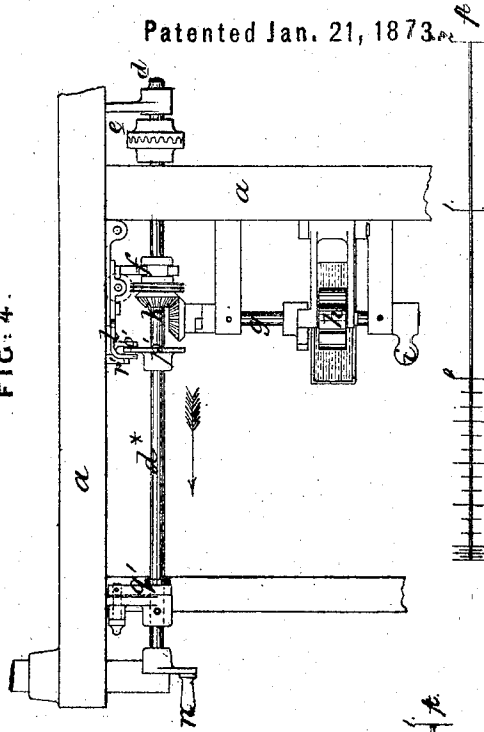


FIG. 3.

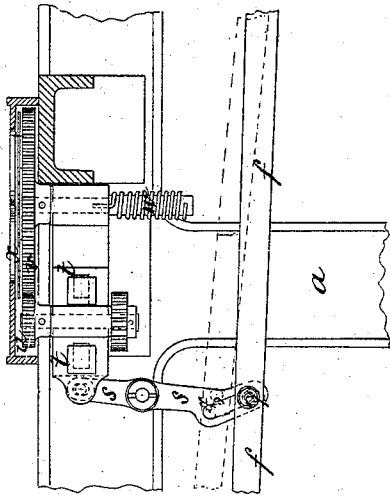


FIG. 7.

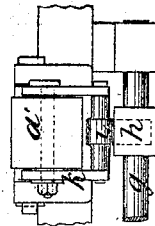
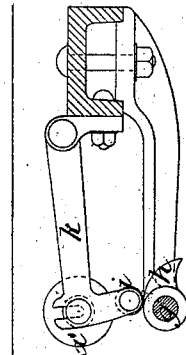


FIG. 6.



Witnesses
George Davis
John Hughes

Thos. Abbott

UNITED STATES PATENT OFFICE.

THOMAS ABBOTT, OF BLACKBURN, GREAT BRITAIN.

IMPROVEMENT IN MACHINES FOR SIZING YARN.

Specification forming part of Letters Patent No. 134,964, dated January 21, 1873.

To all whom it may concern:

Be it known that I, THOMAS ABBOTT, of Blackburn, in the county of Lancaster, Kingdom of Great Britain and Ireland, have invented certain Improvements in Machinery Employed in Sizing Yarn, of which the following is a specification:

This invention relates to that part of sizing-machines which effects the marking of the yarns or warps; and consists, principally, of an arrangement of mechanism for resetting the marking apparatus after the completion and marking of a beam and before the commencement of another.

With the arrangement usually employed for that purpose it is necessary for the workman to leave the end of the machine, (where the beam is,) and after going to the side of the machine to make several turns of a handle to bring the marking-bowl back to its original position; and the object of my invention is to enable the workman, without moving from his place at the end of the machine, to throw out of gear the wheel which actuates the marking apparatus, and by one turn of a handle placed within his reach to bring back the marking-bowl and the index-plate to their original position.

In order to enable others skilled in the art to make and use my invention, I will now proceed to describe its construction and operation.

On reference to the accompanying two sheets of drawing, which form part of this specification, Figure 1 is a longitudinal section of so much of the delivering-end of a sizing-machine as is necessary to illustrate my improvements, the latter being represented in side elevation. Fig. 2 is a plan or horizontal view of the same as seen from above. Fig. 3 is a section on an enlarged scale of the mechanism of the index-plate. Fig. 4 is a plan view of an arrangement for dispensing with the long lever for moving the clutch-box. Fig. 5 is a similar view of a modification, working with three bevel-wheels and dispensing with the clutch-box; and Figs. 6 and 7 are side and front views of the mechanism for marking the yarn with solid ink.

In Figs. 1 and 2, *a a* is part of the framework of the machine; *b b* is the yarn-beam, and *c c* the measuring-roller; the latter drives the longitudinal shaft *d d** by spur and worm gearing in the usual manner. I make the said

shaft *d d**, however, in two parts, coupled together by the clutch-box *e e*, on sliding which out of gear by raising the lever-handle *f f* the part *d* can be disconnected from the part *d**. The transverse shaft *g g*, which carries the marking-bowl *h h* and tumbler *i i*, is driven, as usual, by a pair of miter-wheels, *k k*. The marking-bowl runs upon an inking-roller, *l l*, which revolves in the ink in the trough *m m*, and thus distributes ink to the marking-bowl. Upon the outer end of the part *d** of the longitudinal shaft is keyed a winch-handle, *n n*, which, (as well as the handle of the lever *f f*;) is within easy reach of the workman's hand as he stands at the end of the machine, so that when a beam is finished he can, without moving from his place at the end of the machine, first disconnect the part *d** of the longitudinal shaft from the part *d* by raising the handle of the lever *f*; and having done so he then, by giving one turn only to the handle *n* (at the end of the part *d** of shaft) can bring the marking-bowl back to its original position.

I would here observe that fixed upon the part *d** is a finger, *o o*, which, as the shaft revolves, comes against a projection, *p p*, on the lever *f*, which acts as a stop, so as to define the exact position of the marking-bowl. This only acts whenever the lever is raised, and, consequently, the clutch-box *e e* is out of gear. At other times when the lever is down the finger does not reach it. The raising of the lever *f* also at the same time throws the index-plate or dial (or the finger itself) out of gear with its driving mechanism, and allows a coiled spring to return the same to the "zero" point ready to commence measuring a fresh length.

On referring to Fig. 3, *f f* is part of the lever which is provided with a pin, *q q*, working in an inclined slot, *r*, in a short lever, *s*, attached to a slide, *t t*, which (when the lever *f f* is raised) draws the spur-pinion *u* out of gear with the wheel *v*, and allows the coiled spring *w* to turn the index-plate *x* back to "zero." When the apparatus is thrown into gear again the revolution of the index-plate or dial winds up the spring ready for fresh action.

It will be evident that in cases where a fixed dial and a revolving index are used it is the

latter that will have to be thrown out of gear and returned to "zero" in a similar manner.

In the arrangement shown at Fig. 4 the long lever ff is dispensed with. The boss of the miter-wheel k on the part d^* of the shaft slides on a key or feather, and has a neck embraced by a fixed clip, which keeps it always in gear with the miter-wheel on the transverse shaft g . The part d^* of the shaft is made to slide longitudinally, so as to throw the clutch-box ee into or out of gear, and when in gear is held in position by means of a clip, q' . When this clip q' is raised the workman can draw the shaft d^* in the direction of the arrow, so as to bring the clutch-box out of gear, and then turn the handle n back, as before described. The disk p' draws back the slide tt and disengages the index-pinion, and a tooth, o' , on the disk acts against a fixed stop, r' , to define the position of the marking bowl on starting a fresh beam, as before.

In the arrangement shown at Fig. 5 the clutch-box is dispensed with, and three miter-wheels are employed. The wheel k^* on the part d^* of the longitudinal shaft is always in gear with the miter-wheel on the end of the transverse shaft g , but the boss of the wheel k on the part d of the shaft slides on a key or feather, and has a neck or groove, embraced by a clip or fork, on the end of the lever $f'f'$, so that when the beam is finished the wheel k can be thrown out of gear, while the marking-bowl is turned back by the handle n , as in the previously-described arrangements.

In the marking instrument itself, which is illustrated by Figs. 6 and 7, I dispense with liquid or semi-fluid ink entirely, and form the bowl of a solid piece or block, $a' a'$, of com-

pressed ink, which will mark the yarn or warp quite as effectually, and will obviate the inconveniences arising from the use of a wet mark.

It will be obvious that the marker need not, in this case, be in the form of a bowl, but may be a bar or block of any other form. I prefer to mount and drive it, as shown, by fixing on the transverse shaft g a cam or wiper, h , which acts against a bowl, i , attached to the lever k , which carries the marker a' ; and in some cases I propose to carry the marker in a vertical slide instead of mounting it in the lever k .

Claims.

1. The shaft, consisting of two sections, $d d^*$, which may be connected or disconnected, substantially as described, in combination with marking apparatus operated by the section d^* , which extends to the front of the machine, and is provided with a winch, n , or its equivalent.
2. The combination, with the lever ff , of the pin q , slot r , lever s , and slide t , Fig. 3, or other equivalent device, for returning the dial-plate or the index-finger to the "zero"-point on adjusting the lever.
3. The combination, with the shaft d^* and lever f , of the finger o and stop p , or other equivalent device, for defining the position of the marking bowl or instrument at the commencement of a fresh beam.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

THOS. ABBOTT.

Witnesses:

GEORGE DAVIS,
JOHN HUGHES.