

A. Bascom.
Mach. for Sizing & Dressing Yarn.
Nº 8,520. *Patented Nov. 18, 1851.*

Fig. 1

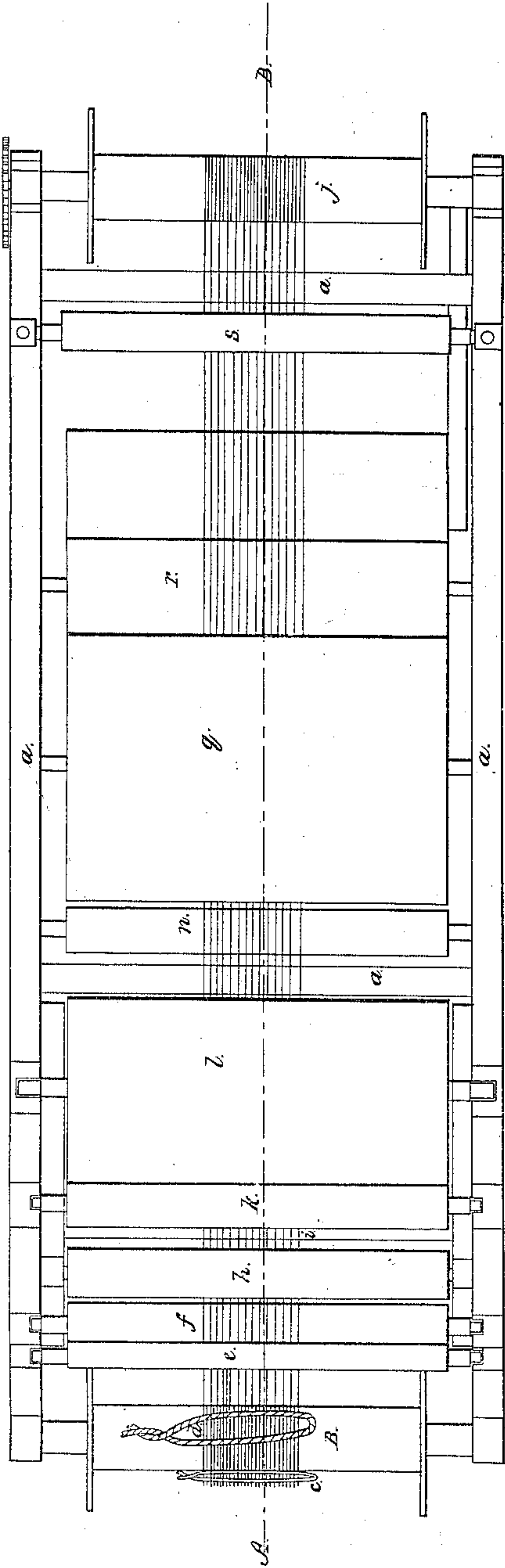
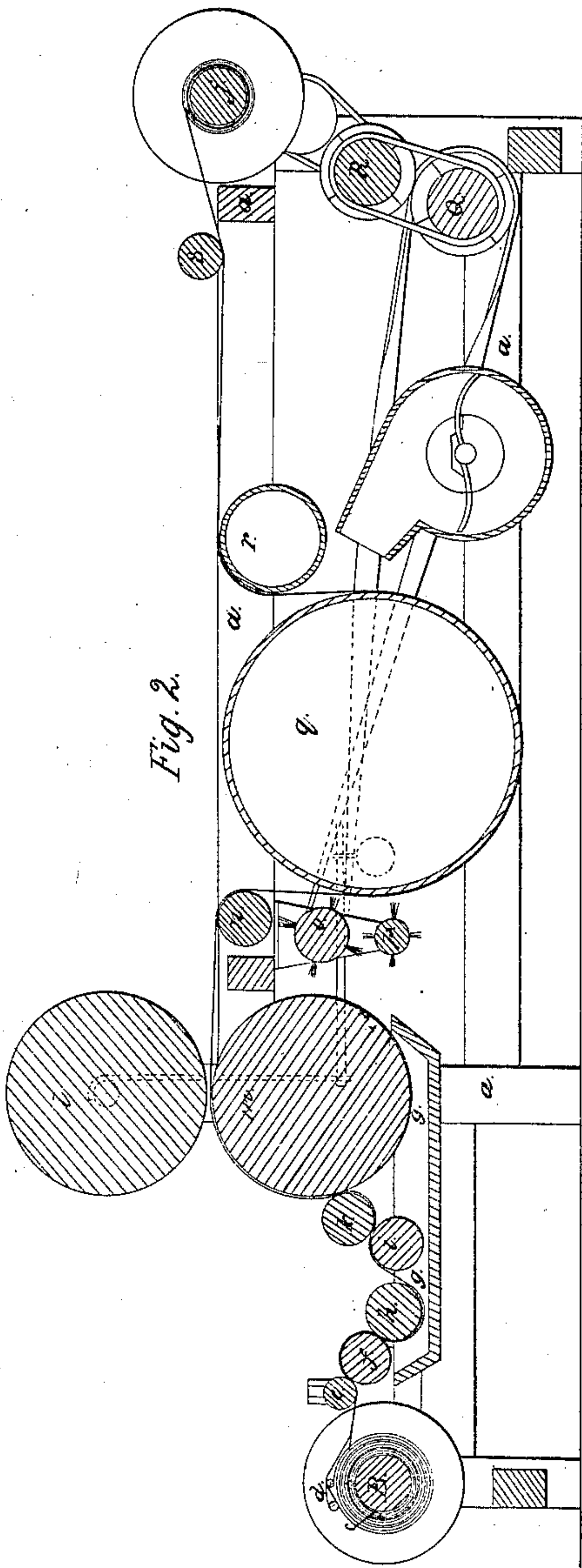


Fig. 2.



UNITED STATES PATENT OFFICE.

ALONZO BASCOM, OF EAST JAFFREY, NEW HAMPSHIRE.

APPARATUS FOR SIZING AND DYEING YARNS.

Specification of Letters Patent No. 8,520, dated November 18, 1851.

To all whom it may concern:

Be it known that I, ALONZO BASCOM, of East Jaffrey, in the county of Cheshire and State of New Hampshire, have invented certain new and useful Improvements in Mechanical Processes of Sizing or Dressing Yarns, and that the following description, taken in connection with the accompanying plate of drawings, constitutes a full and exact specification of the same, wherein I have set forth the nature and principles of my said improvements by which my invention may be distinguished from others of a similar class, together with such parts as I claim and desire to have secured to me by Letters Patent.

The figures of the accompanying plate of drawings represent the apparatus and mechanical devices used in my improved process. Figure 1 is a plan of a dresser or sizer with certain appendages hereinafter referred to and Fig. 2 is a longitudinal vertical section of the same.

In sizing or dressing yarns as it is now and has been heretofore practised it is well known to be of great importance to keep the said yarns separate from each other, so as to prevent clinging or matting, so that they may be properly wound on the weaving beam and ready for forming the requisite shades in the loom, and this result has heretofore been partially secured by passing the yarns through reeds, raddles or other kinds of separators both before and after they leave the sizing rollers the yarns pass directly between sizing rollers striking the sizing unprotected which leaves it liable to be matted together while undergoing the process of sizing and drying. Yarns have in one machine heretofore constructed been dipped in a size vat by a kind of float wheel before it came to the pressing rollers, but in this case they were left unprotected in the sizing and allowed to mat together, and in this case a raddle and hack separator was used in front of the vat roller and therefore when a beam runs off in this machine, it is necessary in connecting another beam to the yarns which have passed off the warper beam or beams to tie or twist on every thread separately, also in operating this machine when a thread breaks or comes up loose the machine has to be stopped and the threads passed through the heddles and connected to the bar with great inconvenience and damage to the yarn by stoppage

which mats and sticks it together. All these difficulties severally above enumerated are entirely obviated by my improved process, and the use of all reeds raddles or separators of any kind in sizing or dressing yarns is entirely superseded thereby.

One important discovery and improvement which I have made consists in arranging or taking and preserving what is called a "weavers lease" at the commencement of the process of warping or beaming and as much oftener as the length or quantity of yarn wound on the warper or section beams exceeds the quantity or length required for each weaving beam. By this improvement it will be seen that after the yarn has passed through the sizing process and wound on the weaving beam the base will be on the exterior of said beam and leave the ends of the yarns all ready to be introduced separately into the heddles to form the sheds of the warp for weaving. In the process of dressing as heretofore practised this lease had to be taken after the yarn had passed through all the operations of sizing and drying and generally by means of a hack usually placed just in front of the weaving beam.

My other improvements are in the more mechanical part of the process and consist in not only conducting the yarns from the warper or section beam or beams into the sizing vat, on a roller but also in keeping them tense or strained on roller or rollers more or less, said rollers being placed as near each other as practicable without obstructing the passage of the yarn while it is passing through the said vat or sizing, the lease or leases wherever taken as before suggested passing right through the machine with the yarns. My mechanical arrangement for this purpose is represented in Figs. 1 and 2 of the accompanying plate of drawings, of which, as before stated, the former is a plan and the latter a central longitudinal vertical section taken in the plane of the line A, B, Fig. 1.

a a a is the frame work of the machine suitably constructed to support the operative parts thereof.

B is the warper or section beam, one only being represented, though it is usual to have two, three or more, one lease being taken at the commencement of winding the yarn on said beam as shown by dotted lines at *c* and another at any proper distance there-

from to form a suitable length of warp as above suggested, and as shown at *d d* in Figs. 1 and 2.

The yarns pass from the warper or section beam or beams in the direction shown by red lines in the drawings under a roll *e* of small diameter laying loosely on the yarn, thence over the guide roll *f* into the sizing trough *z z* which contains hot or it may be cold sizing liquid. When hot liquid is used steam should be introduced to keep the same at a proper temperature. The yarns are conveyed nearly to the bottom of this trough by the sizing roll *h* whose journals and diameter are properly arranged and made for the purpose and under which the yarn passes as shown in Fig. 2, thence over the other wooden sizing roller *i* also arranged low in said trough, a heavy roller *k* pressing on the top of the yarn and said roller *i* as shown in Fig. 2. The yarns by being thus passed through the vat and kept tense upon the rollers are kept from matting and entirely separate without the use of reeds or separators and are sure to become thoroughly impregnated with the sizing fluid and though the roller may be made of different diameters and of different materials from those represented and more or less rollers arranged in the sizing vat keeping the yarn tense upon a roller or rollers placed as above stated in close order is the great secret of running yarn through sizing or coloring liquids without matting or clinging. The yarns now pass as still shown by the red lines through pressing rollers and brushed and conducted over and under drying cylinders to the weaving beam *j*, which cylinders, &c., are as follows:

l, m are two rollers of large diameter covered with cloth, the upper one *l* being properly weighted to express all superfluous liquid from the yarns.

n is a guide roller; *o*, a circular smoothing brush, and *p* a circular cleansing brush for the same.

q q is the larger and *r r* the smaller drying cylinder made of copper or other suitable metal into which steam should be introduced and which with the aid of the fan or blower gives the yarns the proper or requisite drying.

s is a guide measuring roller placed in front of the weaving beam *j*, the revolutions or turn of which will draw the yarns through the machine, as hereinabove stated, motion being derived from the driving shaft

R which has a cone or speed regulating shaft *Q* connected with it and the several turning parts, being banded or geared directly or indirectly to said driving shaft or deriving their motion from the same in the manner shown in the drawings or in any other desirable way, which will be readily understood by mechanics versed in the art of building similar machines.

In the foregoing specification I have made allusion to coloring warps by transferring them from the beam or beams by means of rollers similar to those described in the dresser (but of a larger size) through coloring liquid or dye vat on to a beam dried for dressing; the principle of running yarns tense upon continuous and closely connected rollers through coloring as well as sizing liquids, embodies one and the same thing so nearly that I do not deem it necessary to make a detailed specification of the same.

Having thus described my improvements I shall state my claims as follows:

What I claim as my invention and desire to have secured to me by Letters Patent is—

1. The conducting of yarn or thread from section or warper beams directly into and through the size or coloring liquids to the presser rollers, by a series of rollers more or less in number, placed as nearly in contact with each other as the nature of the case will admit, the closer the better, sufficient space being allowed between the fixed rollers for the passage of the yarns or threads, thus enabling the said rollers to operate as guides to each and all the threads to prevent them from matting or clinging together and superceding the otherwise necessary use of reeds, raddles or other separators.

2. I claim the taking or making of a weavers' lease or series of leases at the commencement of the process of warping or beaming of yarn or thread on section or warper beams, and at proper intervals on the same to correspond with required lengths of yarns, or threads on weaving beams and preserving the same throughout the sizing and drying, thus dispensing with the use of hacks or lease takers in the dresser and the otherwise necessary stoppage of the dresser or sizer for the purpose of tying or twisting together each separate thread.

ALONZO BASCOM.

Witnesses:

EZRA LINCOLN,
ROBERT L. HARRIS.