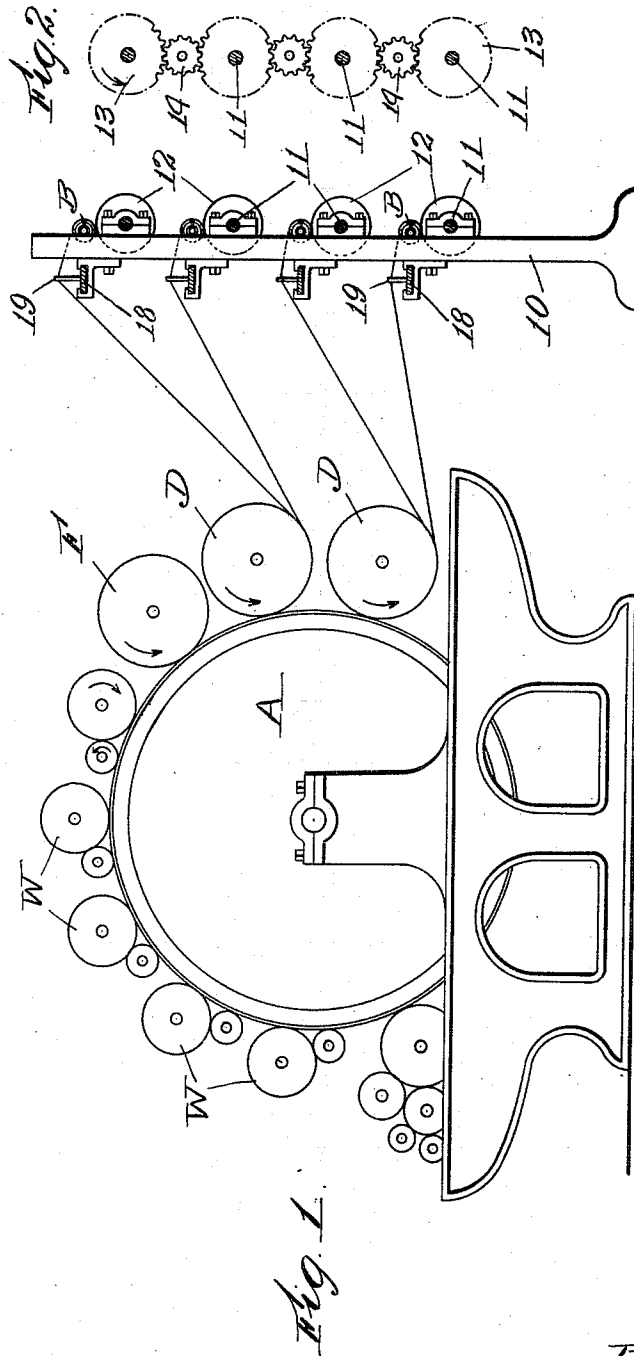


J. McCREA.
WINDING FRAME.
APPLICATION FILED JULY 2, 1904.

1,005,990.

Patented Oct. 17, 1911.

2 SHEETS—SHEET 1.



Witnesses:
C. F. Mason.
M. E. Regan.

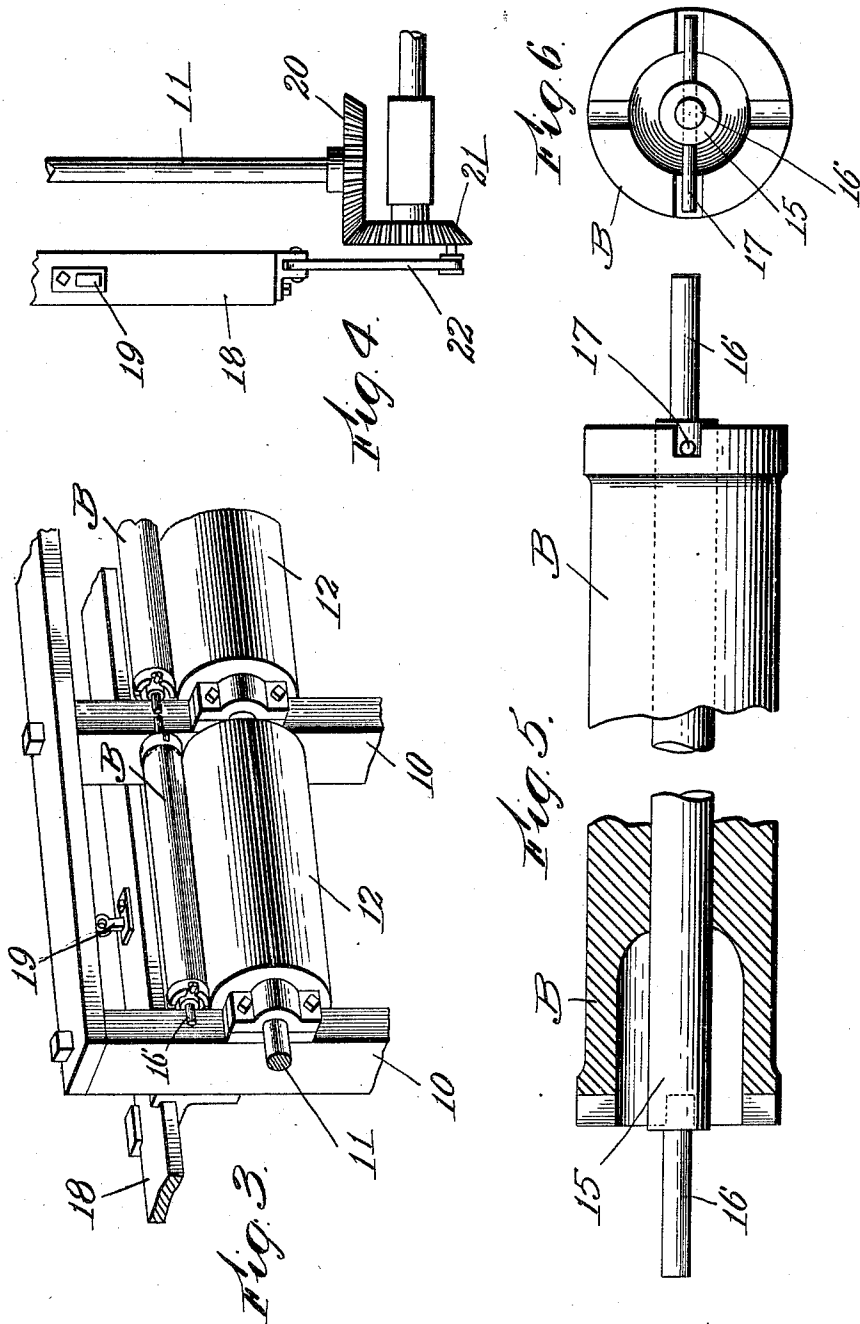
Inventor:
John McCreA.
By his Attorneys
Southgate and Southgate

J. McCREA.
WINDING FRAME.
APPLICATION FILED JULY 2, 1904.

1,005,990.

Patented Oct. 17, 1911.

2 SHEETS—SHEET 2.



Witnesses:
C. F. Nelson.
M. E. Regan.

Inventor:
John McCrea.
By his Attorneys
Southgate and Southgate

UNITED STATES PATENT OFFICE.

JOHN McCREA, OF MILLBURY, MASSACHUSETTS.

WINDING-FRAME.

1,005,990.

Specification of Letters Patent.

Patented Oct. 17, 1911.

Application filed July 2, 1904. Serial No. 215,135.

To all whom it may concern:

Be it known that I, JOHN McCREA, a citizen of the United States, residing at Millbury, in the county of Worcester and State of Massachusetts, have invented a new and useful Winding-Frame, of which the following is a specification.

This invention relates to an apparatus which has been especially designed for use in manufacturing the coarser grades of linen or similar materials.

The especial object of this invention is to provide an apparatus for winding separate rovings from a carding machine upon separate spools or bobbins which are employed in connection with the spinning or twisting frames so that all the intermediate machinery and processes now employed for operating upon the material from the time it leaves the carding machines to the time it is brought to the spinning or twisting frames may be dispensed with.

In the accompanying two sheets of drawings, Figure 1 is a diagrammatic view of sufficient parts of a carding machine to illustrate the use of a winding frame in connection therewith in accordance with this invention. Fig. 2 is a detail view of gearing connecting the shafts of the winding drums. Fig. 3 is a perspective view of part of a winding frame constructed according to this invention. Fig. 4 is a plan view of connections for reciprocating one of the guide rails. Fig. 5 is a side view partly broken away of a bobbin and a holding spindle therefor, and Fig. 6 is an end view of the same.

In the ordinary practice of manufacturing linen products the material is ordinarily carded or straightened upon flat cards or carding machines of the type ordinarily employed for cotton. The separate rovings are ordinarily either run into separate cans or else all the ends are wound upon one long common jack-spool, and in either case it is necessary to rewind the rovings; and in practice, also, a number of intermediate processes and machines are employed before the rovings are carried to the spinning or twisting frames.

In practice I have found that in making the coarser linen products the materials can be carded and straightened to better advantage upon ordinary wool-carding machines, and that by winding the separate rovings directly upon the spools or bobbins used in spinning or twisting frames, all the

intermediate processes of doubling, rewinding, etc., and machinery now employed after the material is carded and before the same is brought to the spinning or twisting frames, may be dispensed with.

Referring to the accompanying drawings for a detail description of one form of construction which I have designed for accomplishing this purpose, the carding machine comprises a main cylinder A cooperating with which are a number of sets of workers W, a fancy F for raising the stock on the main cylinder, and the doffers D for stripping the separate rovings or strands of carded material. This carding machine may be of the ordinary or well-known type and need not be herein described at length.

In connection with carding machines it has already been proposed to provide drawing, spinning and twisting devices so that a combined carding and spinning machine can be mounted in one frame-work. In practice, however, these combined carding and spinning machines are exceedingly complicated, and have not as yet been capable of economic use because the breaking of a number of the ends is liable to require the stopping of the entire machine.

As distinguished from a construction which is intended to card and spin at a single operation, I propose to provide a simple and easily doffed construction for directly winding the rovings upon separate spools or bobbins without attempting any spinning or twisting of the rovings.

One form of winding frame constructed according to this invention as herein illustrated, comprises a frame-work including posts or uprights 10. Mounted in bearings at the rear of the posts or uprights 10 are winding shafts 11 carrying winding drums or rolls 12. The centers of the winding drums or rolls 12 are set far enough to the rear of the posts or uprights 10 so that the bobbins or spools resting upon the winding drums 12 will have the ends of their spindles guided to move up and down upon the posts 10. That is to say, the bobbins or spools are merely dropped into place on top of the winding drums 12, and whenever a bobbin or spool is filled it can be taken away without lifting the bobbin-spindle from slots or bearings. Each of the winding shafts 11 is provided at one end with a gear 13, and the adjacent gears 13 are connected by intermediates 14 as shown in Fig. 2.

The bobbins which are employed are the same bobbins which are used in the spinning or twisting machines, and as illustrated in Fig. 5, each of these bobbins B is bored at its ends and provided with notches. The bobbins B are ordinarily of comparatively light wood, and in order to weight the bobbins for proper winding, I provide iron spindles 15 having a guide pin or stud 16 at each end of smaller diameter than the body portion of the spindle. Each spindle is also preferably provided with a cross-pin or projection 17 for engaging the notches of the bobbins. When the bobbins are in place as shown in Fig. 3, the pins 16 will run up and down on the rear faces of the posts, and the bobbins will be held from endwise displacement by the shoulders of the spindles, and at the same time, the weight of the spindles will give the necessary weight for winding the bobbins. Mounted in bearings at the front of the frame are guide rails 18 having ordinary roving guides 19. In order to reciprocate the rails 18 each of the winding shafts 11 may be provided with a bevel-gear 20 which meshes with and drives a bevel-gear 21, which bevel-gear 21 has a crank-pin connected by a link 22 to reciprocate a guide-rail 18.

In the operation of the complete construction it will be seen that each separate roving is wound upon a separate spool or bobbin. As soon as each bobbin is filled, it is taken out of position, its spindle is withdrawn, and an empty bobbin is mounted on the spindle and put back into the frame. The removal of the filled bobbins can thus be accomplished very easily, and the winding or filling of the bobbins will require little if any more labor than that required in connection with the carding machines.

I am aware that changes may be made in practicing my invention by those who are

skilled in the art, and that although my invention is particularly applicable for manufacturing the coarser grades of linen products, my invention can be used in connection with other materials if desired. I do not wish, therefore, to be limited to the special constructions which I have herein shown and described, but

What I do claim and desire to secure by Letters Patent of the United States is:—

1. In a machine for preparing linen for spinning, the combination with a machine adapted for carding wool, of posts or uprights located adjacent thereto, winding drums supported by the said posts or uprights, the centers of said winding drums being at the rear of said posts or uprights, and bobbins supported by the drums each of substantially the same length as the drum that supports it, and having a notch, each of which bobbins is provided with a removable metal weighting spindle having means for engaging the notch in the end of the bobbin.

2. In a machine for preparing linen, the combination, of posts or uprights, winding drums on the uprights, and bobbins supported solely by said drums, each having a notch in the end thereof, and each provided with a removable metal weighting spindle having guide-pins or studs at its ends for engaging the uprights, and having a pin or projection for engaging said notch, whereby the bobbins are held down on the drums, so as to rotate therewith and are guided by the uprights.

In testimony whereof I have hereunto set my hand, in the presence of two subscribing witnesses.

JOHN McCREA.

Witnesses:

PHILIP W. SOUTHGATE,
LOUIS W. SOUTHGATE.