J. M. PAYNE & G. G. WALLACE.

COTTON WARPER.

APPLICATION FILED MAR. 24, 1908.

904,719. Patented Nov. 24, 1908.

Fig. 1.

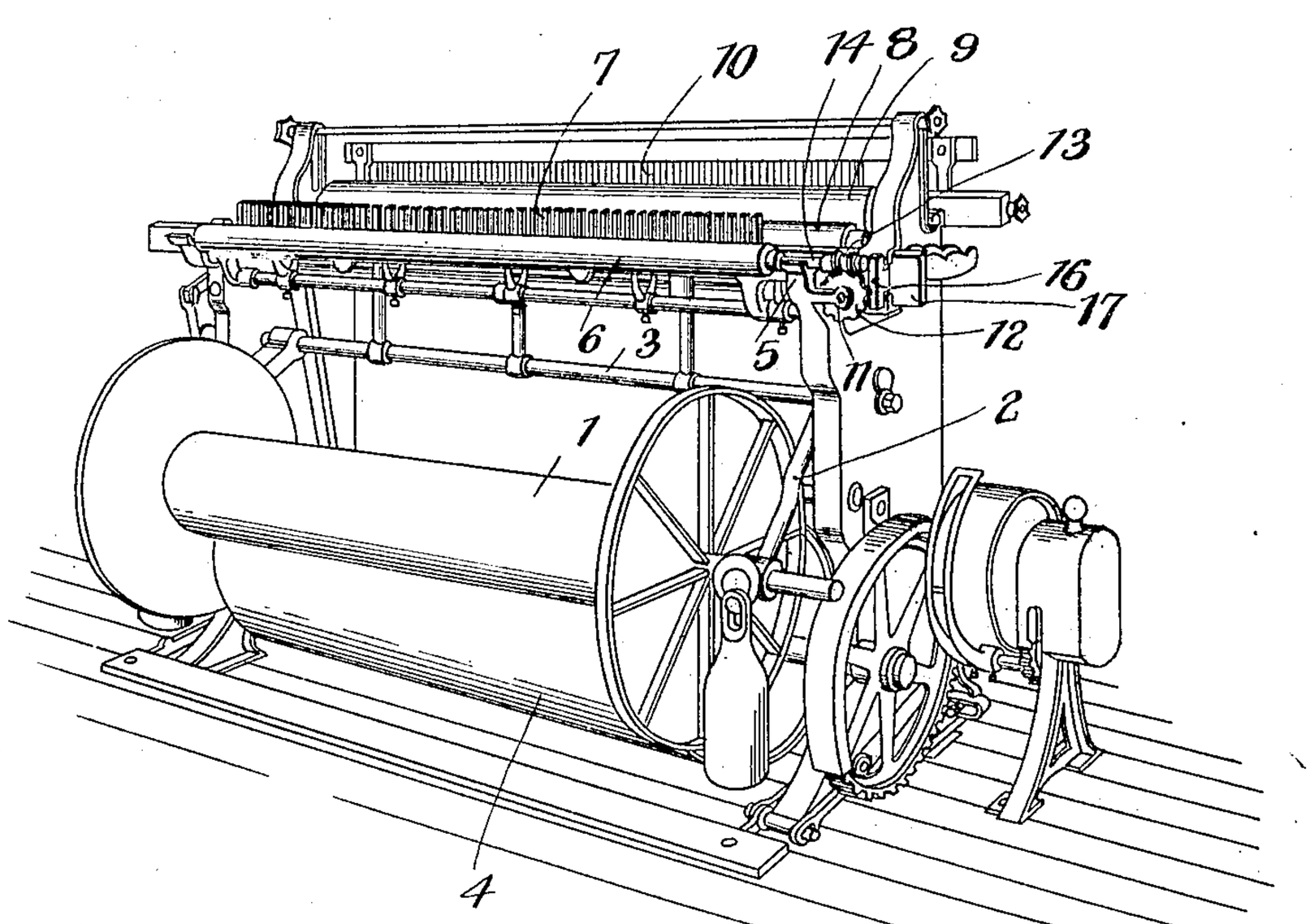


Fig. 2.

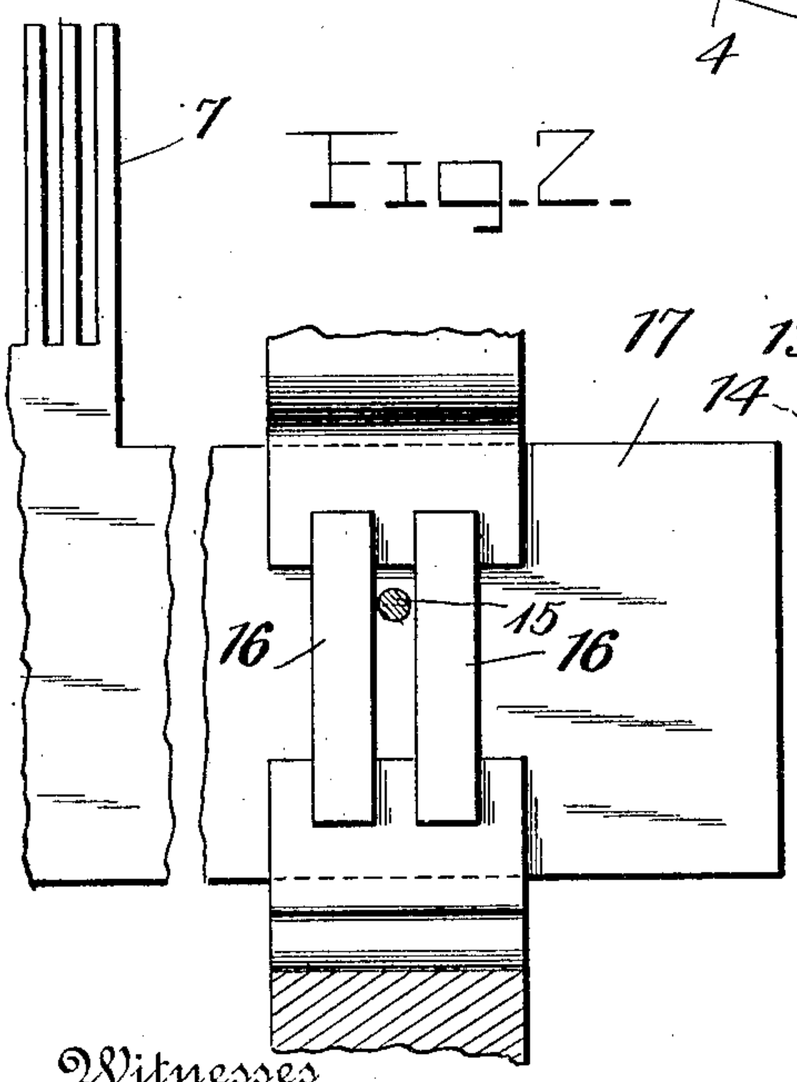
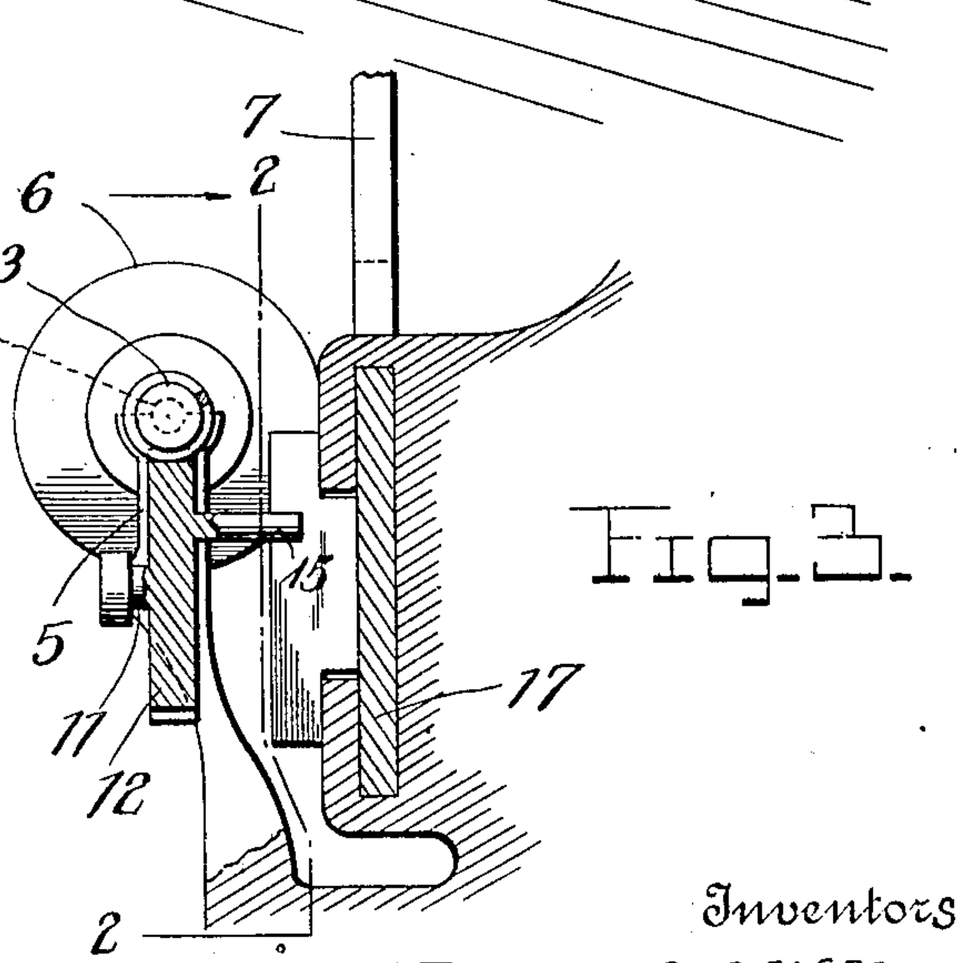


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

JESSE M. PAYNE, OF PHOENIX, AND GEORGE GREGORY WALLACE, OF GIRARD, ALABAMA.

COTTON-WARPER.

No. 904,719. Specification of Letters Patent. Patented Nov. 24, 1908.

Application filed March 24, 1908. Serial No. 422,905.

To all whom it may concern:

Be it known that we, JESSE M. PAYNE, a citizen of the United States, residing at Phœnix, Lee county, Alabama, and GEORGE G. WALLACE, a citizen of the United States, residing at Girard, in the county of Russell and State of Alabama, have invented certain new and useful Improvements in Cotton-Warpers; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to cotton warpers and especially to beam warpers.

The object of the invention, broadly speaking is to traverse the warper reed of the warper so that the threads which are wound upon the beam will be crossed to prevent them from splitting while being dyed. Heretofore the warper reeds of beam warpers were made stationary and consequently the threads from the creel through the warper reed to the beam were piled or wound around the beam directly on top, the cross sectional view of a beam showing each thread wound upon itself in a vertical position. Our invention is designed to obviate this difficulty, and broadly stated consists of means for traversing or moving the warper reed so that the threads as they pass through the eyes thereof are piled or wound around the beam and at the same time crossed upon each other so as to effectually tie themselves together whereby separating or splitting under pressure from within, while the beam is in the dye vat, is prevented. While we have illustrated herein a specific form for accomplishing this function it does not follow that we are limited to its exact mechanism because many other forms are contemplated, which will accomplish the same function without departing in any way from the spirit or scope of the invention. All such modifications and changes are considered by us to be within the purview of the appended claims.

Further objects of the invention will appear as the specific description is read in connection with the accompanying drawings which form a part of this application and in which,

In the drawings, Figure 1 is a perspective view of a beam warper with our invention applied thereto, and Fig. 2 is a detail perspective view of the warper reed and its associated operating mechanism. Fig. 3 is a fragmentary end elevation, partly in section.

The beam warper illustrated in Fig. 1 is a common form used in cotton mills and therefore need not be specifically described herein, it being sufficient to point out the parts relating particularly to our invention. The beam 1 as is usual is journaled in swinging arms 2, so that as the size of the yarn wound thereon increases, it may swing about upon the pivot rod 3 and yet maintain its constant contact with the friction roller 4. Secured to the upper part of the frame in any suitable manner are brackets 5, in which the guide roller 6, is journaled so as to receive and bear the weight and tension of the threads as they pass over the warper reed 7. Instead of being rigidly secured, the warper reed 7 is reciprocally mounted in bearings carried by the frame. A pair of pressure rollers 8 are journaled in the frame and in between them is located the feed roller 9, all of which are arranged between the warper reed 7, and the rear warper reed 10.

Rigidly secured to the bracket 5 is a stub shaft 11, upon which is carried the gear 12, adapted to mesh with the worm wheel 13, carried upon the shaft 14, of the roller 6. Projecting inwardly from the side of the gear 12 is a short stud 15, which works in between a pair of brackets 16 integrally formed upon an arm 17, which is carried by the warper reed 7.

In operation, the friction roller 4 is driven thereby turning with it the beam 1 and pulling the threads through the rear warper reed 10 over the rollers 8 and 9 through the warper reed 7 and over the guide roller 6 to the beam 1. This action revolves the several rollers and thereby the gear 12 with its associated stud. As this stud works in between the brackets 16 the arm and its attached warper reed is reciprocated so that the strain upon the guide roller and beam are crossed in alternate relation and lock themselves and their associated threads so that there will be no splitting under pressure.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention as defined in the appended claims.

Having thus described our invention what we claim and desire to secure by Letters Patent is:—

1. In a warping machine, a beam, a warper reed, and a guide roller together with means operated by the guide roller for traversing the warper reed to cross the threads upon the beam.

2. In a warping machine, a beam, a warper reed, a guide roller adapted to receive the threads from the warper reed, and a reciprocating device for the warper reed controlled by the guide roller which comprises a pair of brackets upon the warper reed, and a rotary device operated by the guide roller for engaging said brackets.

3. In a device of the class described, the combination with a beam, of means for driving the same, a warper reed, a guide roller adapted to receive the threads from the warper reed, a pair of brackets carried by the warper reed, a gear wheel on the guide roller, another gear carried by the frame, an eccentric stud on the latter gear for engagement with the brackets.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

JESSE M. PAYNE.
GEORGE GREGORY WALLACE.

Witnesses:
EARL MORGAN,
R. P. WALSH.