No. 800,270. PATENTED SEPT. 26, 1905.

J. COUCHE.

MACHINE FOR SIZING THREAD.

APPLICATION FILED MAR. 1, 1905.

2 SHEETS—SHEET 1.

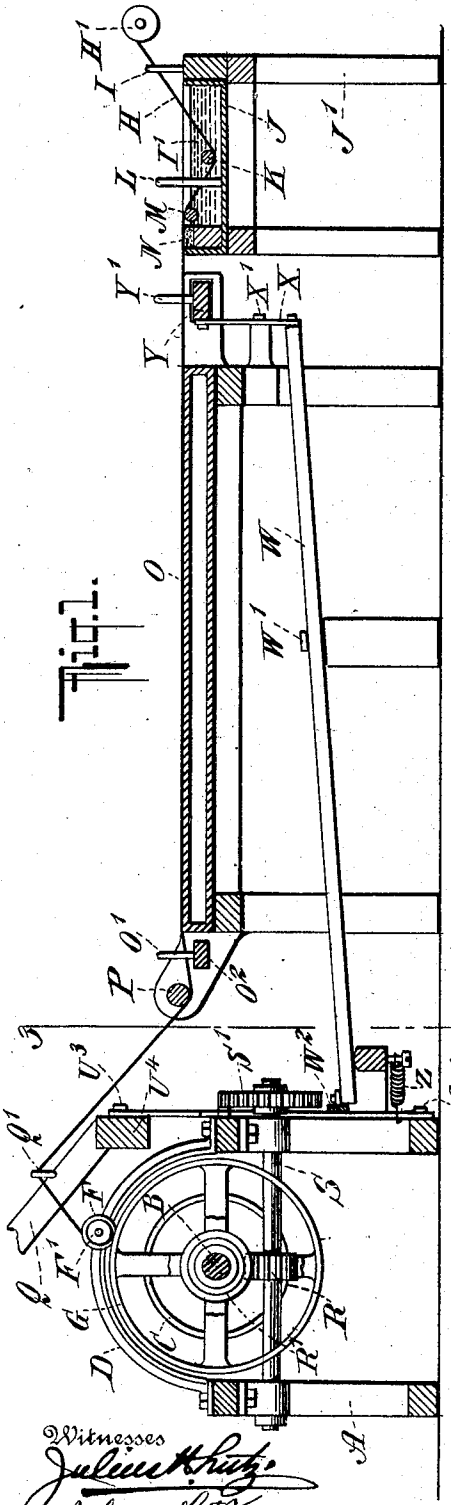


Fig. 1.

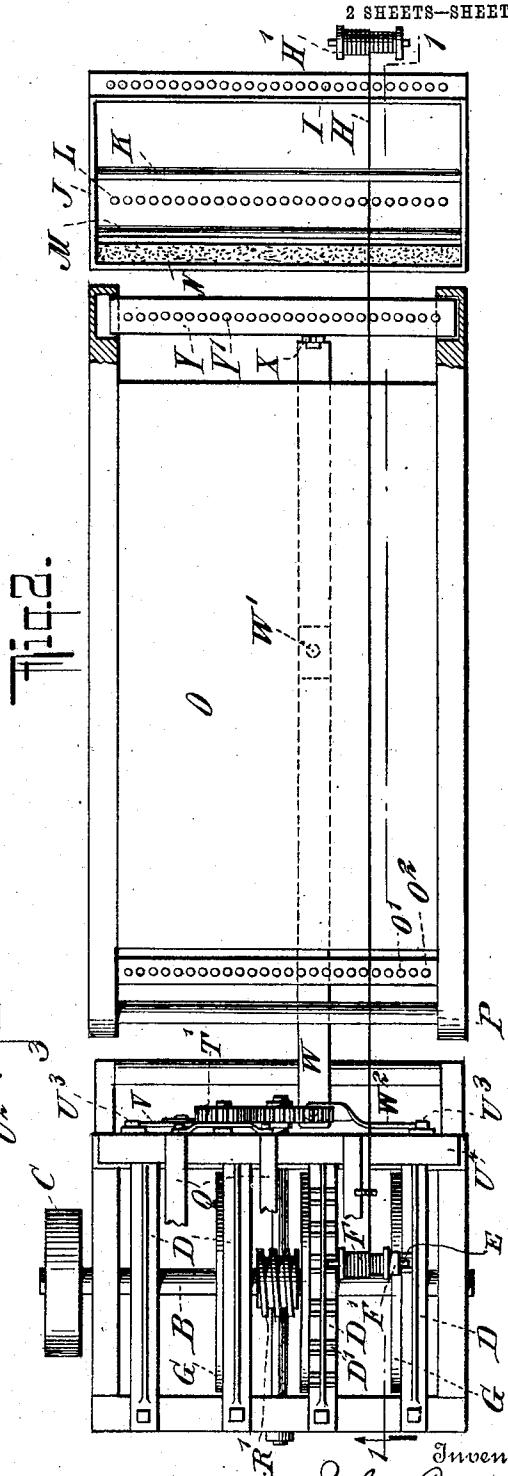


Fig. 2.

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John Lotka

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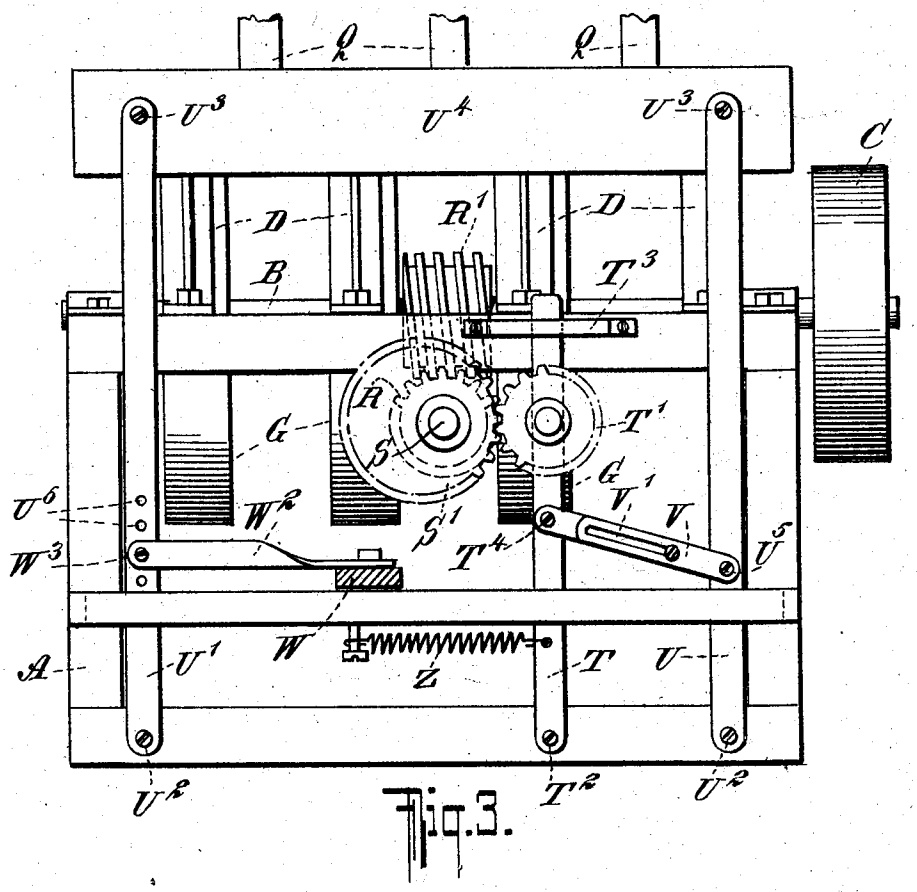
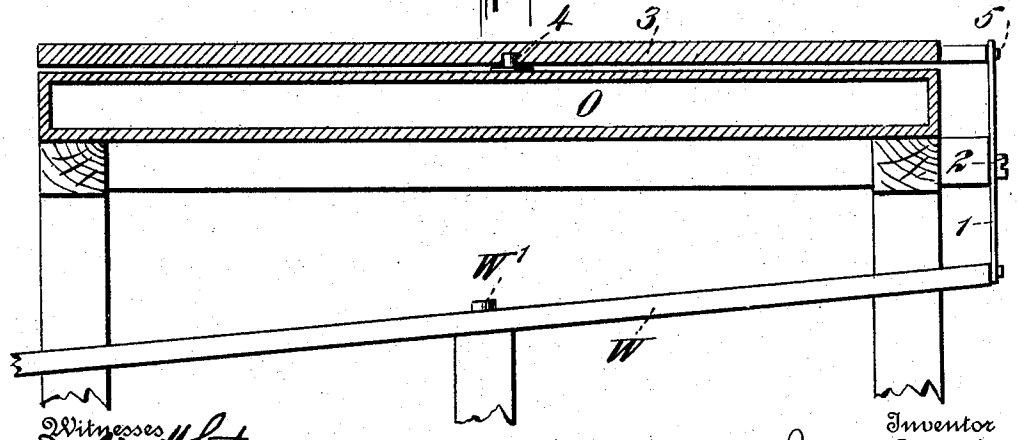


Fig. 3.

Fig. 4.



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UNITED STATES PATENT OFFICE.

JULES COUCHE, OF UNION HILL, NEW JERSEY.

MACHINE FOR SIZING THREAD.

No. 800,270. Specification of Letters Patent. Patented Sept. 26, 1905.

Application filed March 1, 1905. Serial No. 247,908.

To all whom it may concern:

Be it known that I, JULES COUCHE, a citizen of the United States, residing in Union Hill, county of Hudson, and State of New Jersey, have invented certain new and useful Improvements in Machines for Sizing Thread, of which the following is a specification.

My invention relates to machines for sizing threads, and has for its object to provide a simple and efficient device of this description and also to provide said device with means for preventing the sized thread from sticking to the drying-table and from becoming broken.

My invention will be fully described hereinafter, and the features of novelty will be pointed out in the appended claim.

Reference is to be had to the accompanying drawings, in which—

Figure 1 is a sectional elevation of my improved sizing-machine substantially on the line 1 1 of Fig. 2. Fig. 2 is a plan view thereof. Fig. 3 is a sectional view, on an enlarged scale, taken on line 3 3 of Fig. 1; and Fig. 4 is a partial sectional view showing a slightly different form of drying-table.

A represents the frame, upon which is journaled in suitable bearings a shaft B, carrying a pulley-wheel C, to which power may be applied in any convenient manner. Cross-pieces D are secured to the frame A and are provided with notches D′, adapted to receive the ends of short shafts E of spools F. I have shown only one of the spools F, it being understood that in practice as many as desired may be used, all being made in the manner now to be described.

A small friction-wheel F′ forms part of or is secured to the spool F and is adapted to frictionally engage a friction-wheel G, mounted on the shaft B. It is to be understood that the cross-pieces D are located adjacent to the periphery of the friction-wheels G, of which there may be as many as desired, said cross-pieces being curved to correspond to the shape of the wheels G, so that all of the friction-wheels F′ on the spools F which are being used may be in frictional engagement with the wheels G. These spools F are thus rotated as power is applied to the shaft B through the medium of the pulley-wheel C and receive the thread after it has been sized and has left the drying-table. The thread H passes from spools H′, mounted on suitable standards, (not shown,) then between guide-pins I into the sizing mixture I′, contained in the tank J, which is mounted on suitable supports J′. In this tank J is mounted a roller K, under which the thread H passes after passing between the guide-pins I. This roller serves to keep the thread immersed in the sizing mixture I′, which may consist of any of the well-known ingredients adapted for the purpose. After leaving the roller K the thread passes between further guide-pins L, also located in the tank J, and over a second roller M, which is also mounted in said tank J. To prevent the thread from carrying too much of the sizing mixture with it as it leaves the tank J, I provide a wiping-cushion N, made of any suitable material and located adjacent to the roller M, so that the thread H passes over this cushion N as it leaves the roller M, and any superfluous mixture is thus wiped from the thread. After leaving the tank J the thread passes over a drying-table O, which is hollow and into which steam or any other heating medium may be introduced in any convenient manner from any suitable source. After the thread H leaves the drying-table O it passes between guide-pins O′, mounted on the cross-piece O^2 of the drying-table O. From the guide-pins O′ the thread passes under a roller P, journaled on the framework of the drying-table O, to and through guides Q′, mounted on supports Q, which will be more fully described hereinafter. From the guides Q′ the thread passes to the receiving-spools F, upon which the said thread is wound, as hereinbefore mentioned. With existing devices of the kind to which my invention relates each thread always passed over the same path, resulting in an accumulation of sizing mixture on the drying-table, which formed projections which as the sizing mixture hardened caught the threads and broke the said threads. To overcome this objection and to attain other valuable advantages, I have provided the mechanism which I will now describe.

Mounted on the shaft B is a worm-wheel R′, which meshes with a worm-gear R, mounted on a counter-shaft S, journaled in suitable bearings on the frame A. An eccentrically-mounted gear-wheel S′, which forms a cam, is secured to the shaft S to turn therewith. The said gear-wheel S′ meshes with a second gear-wheel T′, which is mounted on an oscillating arm T, pivoted at T^2 on the frame A. A spring Z has its one end connected to the arm T and its other end connected to the frame A and serves to retain

the gear-wheel T′ in engagement with the cam gear-wheel S′. The upper end of the arm T moves in a guideway T^3, secured to the frame A. Oscillating arms U and U′, pivoted at U^2 upon the frame A, are pivotally connected at the upper ends at U^3 with a cross-bar U^4, upon which cross-bar U^4 are mounted the supports Q, carrying the guides Q′, hereinbefore mentioned. An adjustable bar V, formed of two portions having a pin-and-slot connection with each other, as at V′, connects the two arms T and U together at T^4 and U^5. Thus as the counter-shaft S is rotated, through the medium of the worm-gear R and the worm-wheel R′, mounted on the shaft B, the cam gear-wheel S′ will, through its engagement with the gear-wheel T′, oscillate the arm T, which in turn through the medium of the bar V will rock the arms U and U′ and the cross-bar U^4, thus also rocking the supports Q and guides Q′, and thus guide the thread H back and forth in a path parallel with the spools F, which thus receive the thread in even layers. An arm W, pivoted at W′ upon a suitable support, has its one end pivotally connected, by means of a bar W^2, to the oscillating arm U′. The arm U′ is provided with a number of openings U^6, which are adapted to receive the screw W^3, which secures the bar W^2 to the arm U′ to permit of the adjustability of the bar W^2. At its other end the arm W is pivotally connected to a bar X, pivoted at X′ on the support for the drying-table O. This bar X is pivotally connected to a cross-bar Y, slidably mounted on the frame of the drying-table O and provided with guide-pins Y′, between which the thread H is adapted to pass before it reaches the drying-table O. Thus as the arm U′ is oscillated, through the medium of the mechanism just described, it will swing the arm W on its pivot W′ and through the medium of the bar X slide the cross-bar Y back and forth in a path transverse to that traveled by the thread H in its passage across the drying-table O, thus preventing the thread which passes through the guide-pins Y′, carried by the bar Y, from depositing any of the sizing mixture in any one particular place. In other words, any sizing material which may leave the thread as it passes over the table O will be evenly distributed over said table, thus preventing the formation of any projections which might fray, tear, or break the thread.

In the construction shown in Fig. 4 the arm W is connected with an arm 1, pivoted at 2 upon the frame of the table O. This table in this form of device is provided with an extra top 3, mounted to swing upon a stud or pivot 4, secured to the table O, this extra top 3 being connected at 5 with the arm 1. Thus as the arm W is swung by the means hereinbefore described the arm 1 will be oscillated on its pivot 2 and through its connection with the top 3 will swing said top on its pivot 4, thus serving the same purpose and attaining the same benefits as described with relation to the sliding bar Y, it being understood that with this structure the bar Y may be omitted.

Various modifications may be made without departing from the nature of my invention.

I claim as my invention—

The combination with means for feeding the material lengthwise and a sizing device, of a transversely-movable size-distributer located between said sizing device and feeding means, a transversely-movable guide for the material, located between the feeding means and the size-distributer, an oscillating arm or lever, and connections extending from points of said lever located at opposite sides of its fulcrum, to the size-distributer and the guide respectively.

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

JULES COUCHE.

Witnesses:
THOMAS H. WAYLER,
JOHN A. KEHLENBECK.