July 28, 1936. G. C. SMITH 2,048,974

MEANS FOR PREPARING THREAD LEASE

Filed April 5, 1933 2 Sheets-Sheet 1

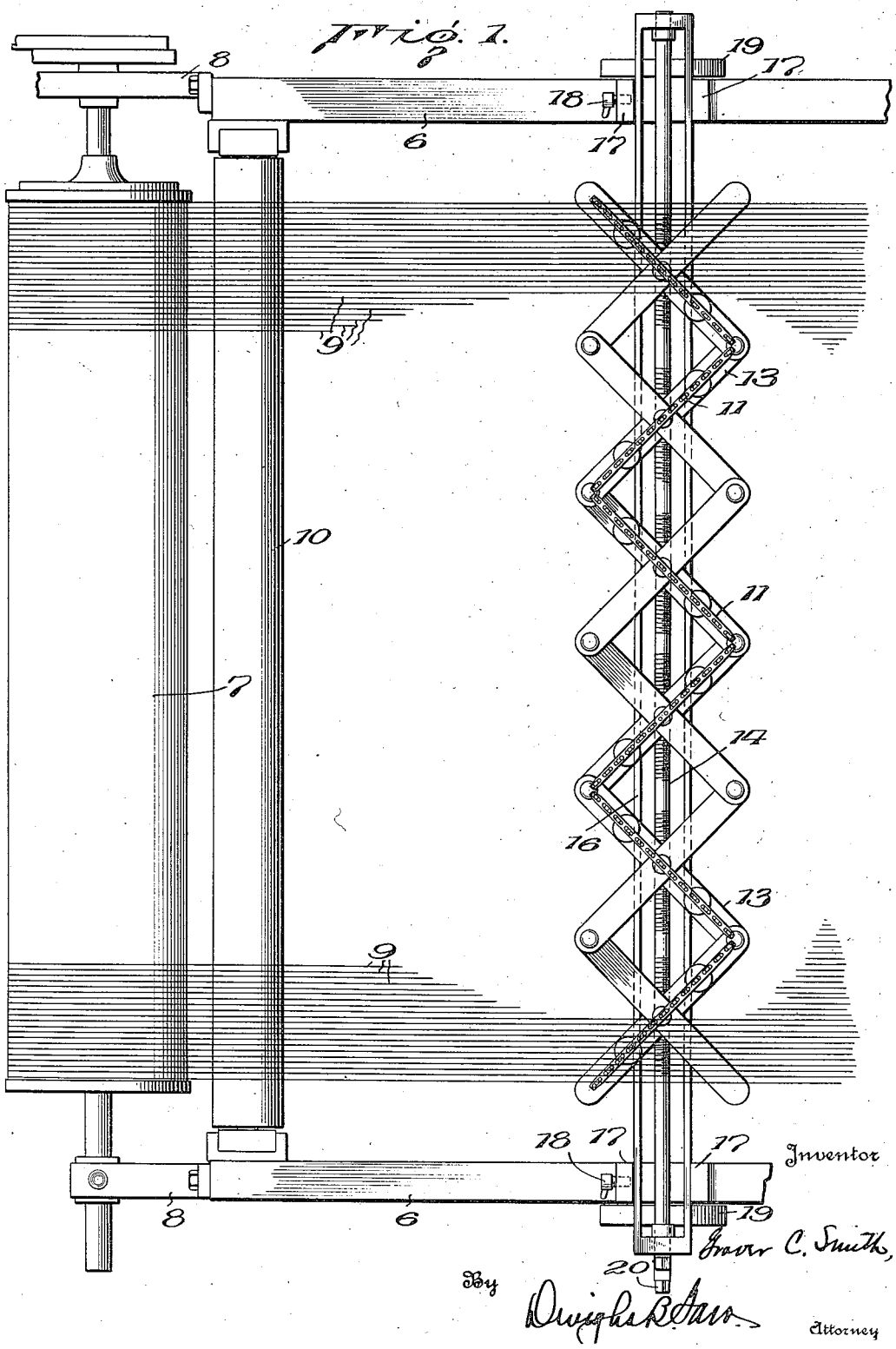

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Fig. 2.

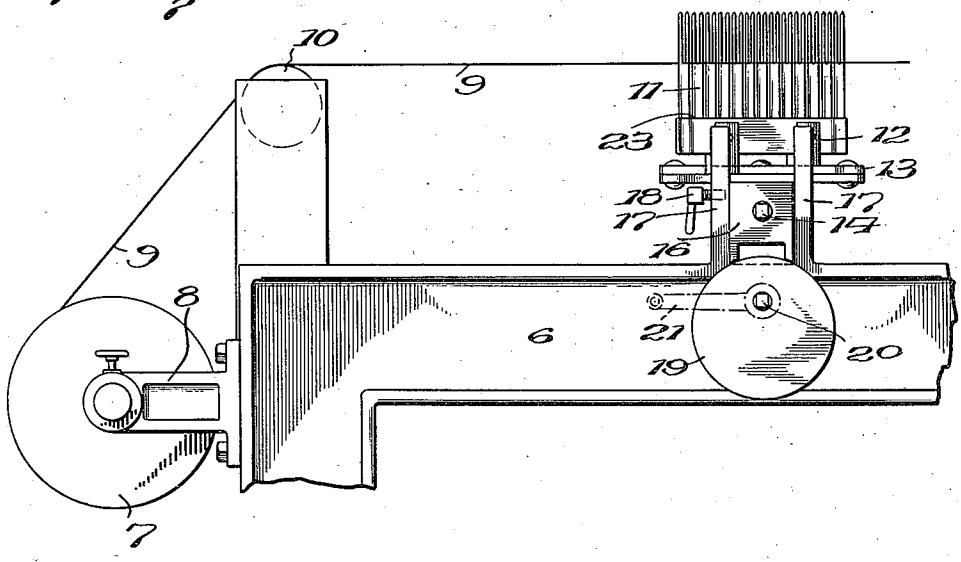


Fig. 3.

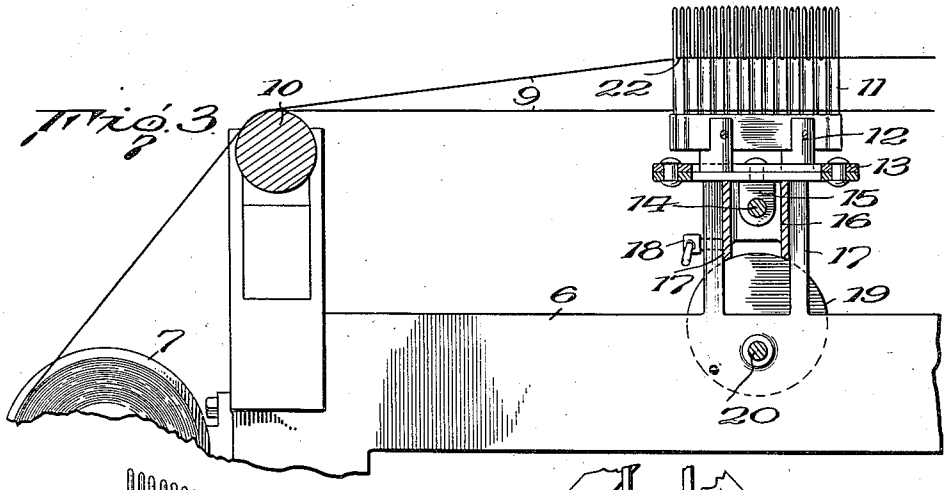


Fig. 4.

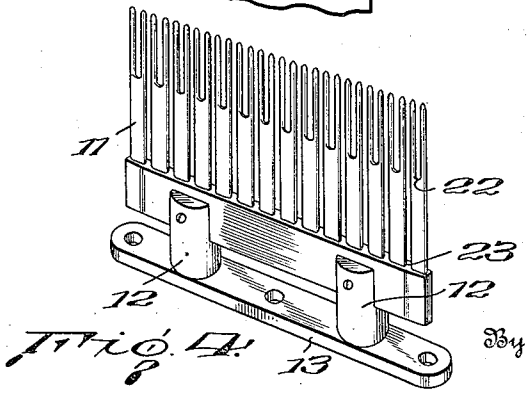
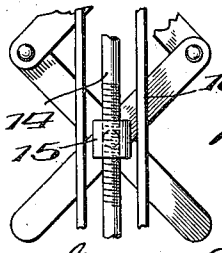


Fig. 5.



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MEANS FOR PREPARING THREAD LEASE

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Application April 5, 1933, Serial No. 664,606

2 Claims. (Cl. 28—40)

This invention relates to processes incident to cloth weaving, having for its primary object to provide means of an improved and simplified manner whereby a thread lease in the yarn may be easily and quickly made on a slasher machine at any desired point in the yarn, the advantages and uses of which are very well known to those familiar with weaving and slashing.

As is well known to those skilled in the art, the yarn is led through the slasher in preparation for the weaver's beam, and it has been the practice heretofore to pass this yarn through comb like structures at the front of the slasher with two or more threads to each dent. In some instances the number of threads in one dent will greatly exceed those in another. There are certain disadvantages attendant upon the feeding of the yarn in this manner, chief among which is that the yarn becomes more or less entangled and is likely to bunch if the threads of the yarn are not properly fed to the several dents. Due to this faulty method of feeding, it is extremely difficult and tedious to prepare a thread lease where desired, because of the fact that with the varying numbers of threads in the several dents, it is extremely difficult to separate these threads in equal numbers so as to form a thread lease therewith.

The present invention contemplates means whereby the yarn is fed from the slasher to the loom or weaver's beam in such manner as to eliminate the possibility of bunching and in such manner also that a thread lease may be quickly and conveniently made at any desired place in the loom warp.

In the drawings forming a part of this specification:—

Fig. 1 is a top plan view of the delivery end of a conventional form of slashing machine and illustrating as applied thereto a device involving the invention,

Fig. 2 is a side elevation of a device as shown in Figure 1,

Fig. 3 is a longitudinal sectional view showing the parts in the position they will assume when preparing a thread lease,

Fig. 4 is a detail perspective view of one of the comb sections, the comb constructed in accordance with the invention, and

Fig. 5 is a fragmentary detail plan disclosing the lazy tong structure for carrying the combs.

In carrying out the invention, a series of combs are arranged upon the hack and through which the several threads of the warp are passed. The hack which carries these combs is preferably capable of being extended or contracted by suitable means, such for instance, as the well known lazy tong structure. The combs carried by the lazy tong structure have one strand arranged in each dent thereof to insure proper feeding of the several strands of the warp. This hack can be installed on the front of the slasher immediately in advance of the loom or weaver's beam. The combs are provided with dents of varying depths and arranged alternately. For instance, the dent of the first pair of comb teeth may stop substantially mid-way between the top and bottom of the teeth whereas the next adjacent dent will extend clear to the bottom of the comb. This arrangement continues in this alternate fashion throughout the length of the comb. It is obvious, therefore, that as the threads pass through these dents they will be maintained properly spaced apart and will pass in this fashion to the weaver's beam, each thread separate or independent of the others.

More particularly, the slashing machine frame is represented at 6, and as well known to those familiar with such devices, the loom or weaver's beam 7 is rotatably mounted in brackets 8 on the forward end of the slasher, the yarn 9 being led thereto over a roll 10.

The slasher frame is provided with combs 11 mounted at the delivery end of the slasher machine and preferably immediately behind the roll 10. These combs have their dents disposed in vertical or upright position, and are carried by posts 12 affixed to members 13 of the lazy tong structure. As this structure is old and well known in the weaving art it is deemed unnecessary to resort to a detailed description of the construction and operation, but it is sufficient to say that lazy tongs may be extended or contracted transversely of the machine by rotation in a proper direction of the adjusting shaft 14 which carries threaded nuts 15 secured to elements of the lazy tongs.

The adjusting shaft and lazy tong structure is carried by a bar or hack 16 which normally rests at its ends upon the side frames 6 of the slasher. In the present instance it is desired that this hack and the structure supported thereby be capable of vertical movement, and to this end the extremities of the hack are confined between upstanding posts or guides 17 carried by the frame, while set screws or other securing elements 18 upon one or more of these posts may be operated to maintain the hack in proper adjustment.

Any number of means may be resorted to in

creating vertical movement of the hack, but in the present instance this operation is carried out by means of cams 19 arranged one at each side of the frame 6. These cams are carried by a shaft 20 suitably mounted in the sides of the frame of the slasher, and may be rotated by a crank 21 It is obvious, therefore, that upon rotation of the cam shaft 20, the cams, which are disposed directly beneath the hack, will cause the said hack and the structure supported thereby to be moved bodily in an upward direction. When it is desired to move the hack back to normal or operative position, the cams are moved accordingly in order that the hack may drop to its normal supporting position upon the frame.

Each dent of the combs in the present invention is to accommodate and feed a single strand of yarn, as distinguished from a multiplicity of strands as has been the practice heretofore, and in carrying out the present invention the alternate dents of the combs vary in depth. For instance, the dent of the first pair of comb teeth stops substantially mid-way of the top and bottom of the teeth as indicated at 22, while the base or bottom of the next adjacent dent will be at the extreme lower end of the comb as at 23. In normal operation of the machine, however the combs will be adjusted to such vertical position that the yarn 9 passing therethrough will be disposed in a true horizontal plane, as shown in Fig. 2. This plane will pass substantially through the stop portions 22 of the dents.

In operation, the yarn to be led onto the loom or weaver's beam is threaded in the combs one strand to each dent. When this has been done and the ends passed onto the loom beam, the hack is adjusted so as to bring the stop portions 22 of the combs into proper horizontal alignment with the strands being fed through the full depth dents. The machine is set in motion, whereupon the threads pass individually through their respective dents and onto the loom beam. By feeding a single strand through a dent it is at once apparent that a proper feeding is assured and no opportunity is provided for clogging or snarling the yarn. When it is desired to make a thread lease, the machine is halted and the crank shaft 20 is rotated so as to move the hack bodily upward. As the combs move up, the shallower dents will have their stops 22 engage the threads passing therethrough, raising the same, while the threads passing through the deeper dents will remain stationary. This causes the spacing of alternate threads to provide a gap sufficient to enable a lease bar, having a lease thread attached thereto, to be passed therethrough in front of the hack. The position the alternating threads will assume is shown clearly in Fig. 3. When the lease string has been threaded through the space thus provided, the lease bar is detached and the ends of the lease string properly tied or secured, whereupon the cams are operated to drop the hack to normal position and the slashing machine is again set in motion. The lease thus made passes onto the loom beam as will be understood.

From the foregoing it is apparent that I have provided means of extremely simple construction capable of ready operation and with little effort to bring about a proper operation of the yarn strands to quickly prepare a lease. Moreover, a machine constructed and operated in the manner described will insure proper feeding of the yarn to the loom beam and a simplicity of operation and the quick establishment of leases for loom beam operation enables a great saving of time as well as to facilitate the work of weaving.

While the foregoing is a description of the invention in its preferred embodiments, it is nevertheless to be understood that minor variations in the details of construction and assemblage of parts may be resorted to without departing from the spirit of the invention as defined by the appended claims.

Having thus described my invention, I claim:—

1. In combination, a slashing machine having side frames, a beam on the forward end of said machine, vertically disposed guides carried by said frames and opposite to each other and disposed rearwardly of said beam, a bar disposed laterally of said machine and having its ends arranged in said guides, an extensible member carried by said bar, combs secured to said member, a screw rod rotatable in said bar and below the upper edges thereof, said rod disposed longitudinally within said bar, nuts on said member receiving said rod and means on said frame for raising or lowering said bar.

2. In combination, a slashing machine frame, a beam on the forward end of said frame, guides carried by said frame at the rear of said beam, a bar disposed laterally of said frame and having its ends arranged in said guides, a rod on said bar, a toggle carried by said bar, means on the toggle cooperating with said rod whereby rotation of the latter will extend or contract the toggle, combs carried by said toggle, and means for adjusting said bar vertically within its guides.

GROVER C. SMITH.