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K. HOWIE

YARN FURNISHING MEANS FOR KNITTING MACHINES

Original Filed Jan. 3, 1922

Fig. 1.

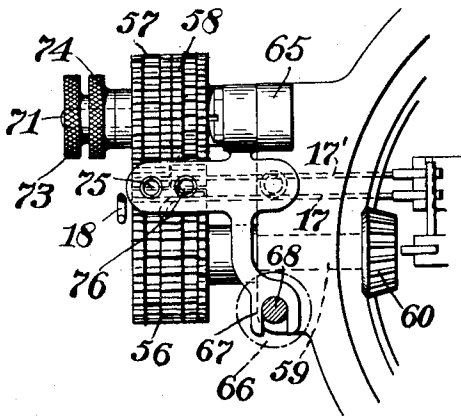


Fig. 3.

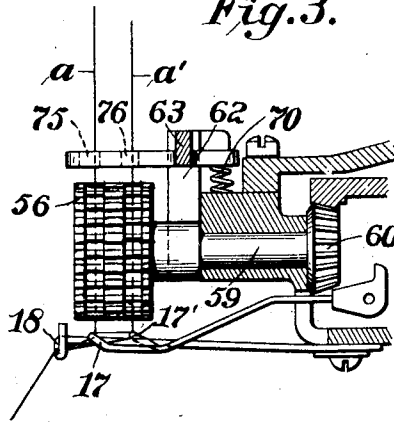


Fig. 2.

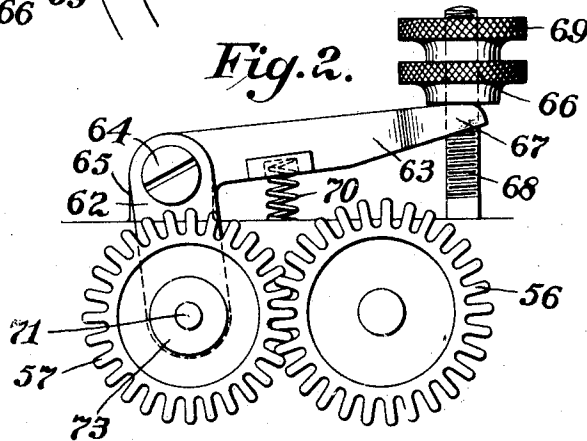


Fig. 4.

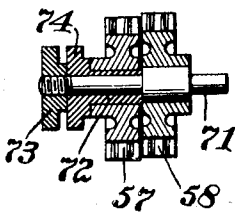
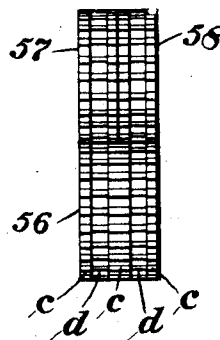


Fig. 5.



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YARN-FURNISHING MEANS FOR KNITTING MACHINES.

Original application filed January 3, 1922, Serial No. 526,669. Divided and this application filed October 17, 1922. Serial No. 595,149.

The invention consists in the features and combination and arrangement of parts hereinafter described and particularly pointed out in the claims, this case being a division of that filed January 3rd, 1922, Serial No. 526,669.

In the accompanying drawings:—

Fig. 1 is a plan view of yarn furnishing wheels and a portion of the head supporting the same.

Fig. 2 is a front view of the yarn furnishing wheels and the associated devices.

Fig. 3 is a side view partly in section.

Fig. 4 is a sectional view of the supplemental yarn furnishing wheels.

Fig. 5 is a view of the furnishing wheels detached.

The yarn from the bobbins, not shown, passes between furnishing wheels 56, 57, 58, one set for each feed, and thence to the yarn guide at this feed, and provision is made for delivering two yarns to each feed, one of which is a plating yarn.

On their way from the furnishing wheels to the yarn guide the yarns pass through guide ends of dropper fingers 17 and 17' and fixed guides 18 adjacent thereto. These dropper fingers control stop motion means.

The broad wheel 56 and the two narrow wheels 57 and 58 have long teeth intermeshing so as to measure off the yarn passing between them in suitable and accurate lengths or sections to properly supply the needles to which the yarn is led without being subjected to any variable tension, there being no tension devices employed between the furnishing wheels and the needles.

The toothed wheel 56 is mounted on a shaft 59 bearing in the casing of the stop motion head and this shaft has a bevel gear 60 on its inner end meshing with a suitable bevel gear which is driven in unison with the needle cylinder in any suitable manner.

One of the yarns of each pair *a*, *a'* at each feed passes between the furnishing wheels 56 and 57 and the other yarn passes between said wheel 56 and the wheel 58. These wheels 57 and 58 are carried by a swinging bracket consisting of the depending arm 62 and the substantially horizontal arm 63, the bracket being pivotally mounted at 64 to an ear or post 65 on the frame of the stop motion head. The bracket is adjustable by means of a nut 66 bearing on its

forked end 67, said nut being on the screw threaded post or pin 68 mounted in the frame of the stop motion head. A jam nut 69 holds the parts in adjusted position. A spring 70 maintains the bracket up against the nut 66, but the bracket may yield to allow for variations in the yarn, or for the passage of lumps which, however, will be taken care of by any suitable detector means at the needles. The adjustment of the bracket will vary the depth of mesh of the teeth and thus vary the lengths of yarn furnished the needles in exact accord with the demands of the needles, which, of course, may be made to draw longer or shorter loops. Besides the adjustment of both wheels 57 and 58 relative to the wheel 56, it is to be noted that the wheel 57 is adjustable relative to wheel 56 independently of wheel 58, so that the furnishing of one yarn may be regulated in degree in respect to the amount of yarn furnished by the other wheel in order to get the proper relation during plating.

For this purpose the wheel 58 is mounted on a pin 71 carried by the swinging bracket and the other wheel is mounted on an eccentric sleeve 72 turnable on a reduced part of the pin 71 and held by a nut 73 screw threaded upon the pin. The eccentric sleeve can be turned by the finger piece 74 and when so turned it will cause the wheel 57 to mesh more or less deeply with the wheel 56.

There is one set of these yarn furnishing devices for each feed. The swinging brackets have guide eyes 75, 76 for the pairs of yarns.

The yarn furnishing wheels are formed with tooth portions which perform only the function of driving these portions being shown at *c* and with reduced tooth portions *d* which perform the function of measuring off or furnishing the yarn but do not act as driving means.

This structure will prevent the yarn from being unduly pinched because the driving force will not be exerted from tooth to tooth through the interposed yarn.

When the yarn furnishing wheels are combined with stop motion means arranged to be controlled by the yarn extending between the wheels and the needles, the action of this stop motion mechanism is improved, because the yarn furnishing wheels will absorb cer-

tain irregularities in the action of the yarn and prevent these from affecting the stop motion mechanism, which therefore will not have to be set to take care of these.

I claim:

- 1. In combination, a pair of yarn furnishing wheels having intermeshing teeth with portions for driving one from the other, and having other toothed portions of less thickness than the driving portions, which other portions perform the function of yarn furnishing without performing the function of driving one wheel from the other, substantially as described.
- 2. In combination, yarn furnishing wheels having intermeshing teeth, a portion of each tooth serving as a driver for imparting mo-

tion from one wheel to the other and another portion of each tooth of less thickness than the driver portion and serving as yarn furnishing means but not as driving means, substantially as described.

- 3. In combination in apparatus of the class described, a toothed main yarn furnishing wheel, and a plurality of supplemental yarn furnishing wheels having teeth intermeshing with the teeth of the main wheel to measure off the yarns on the way to the needles, said wheels having intermeshing teeth acting as power transmission means independent of the yarn measuring teeth, substantially as described.

In testimony whereof, I affix my signature.
KENNETH HOWIE.