June 19, 1923.

1,459,694

W. REINERS

BOBBIN HOLDER

Filed Sept. 2, 1921

Fig. 1.

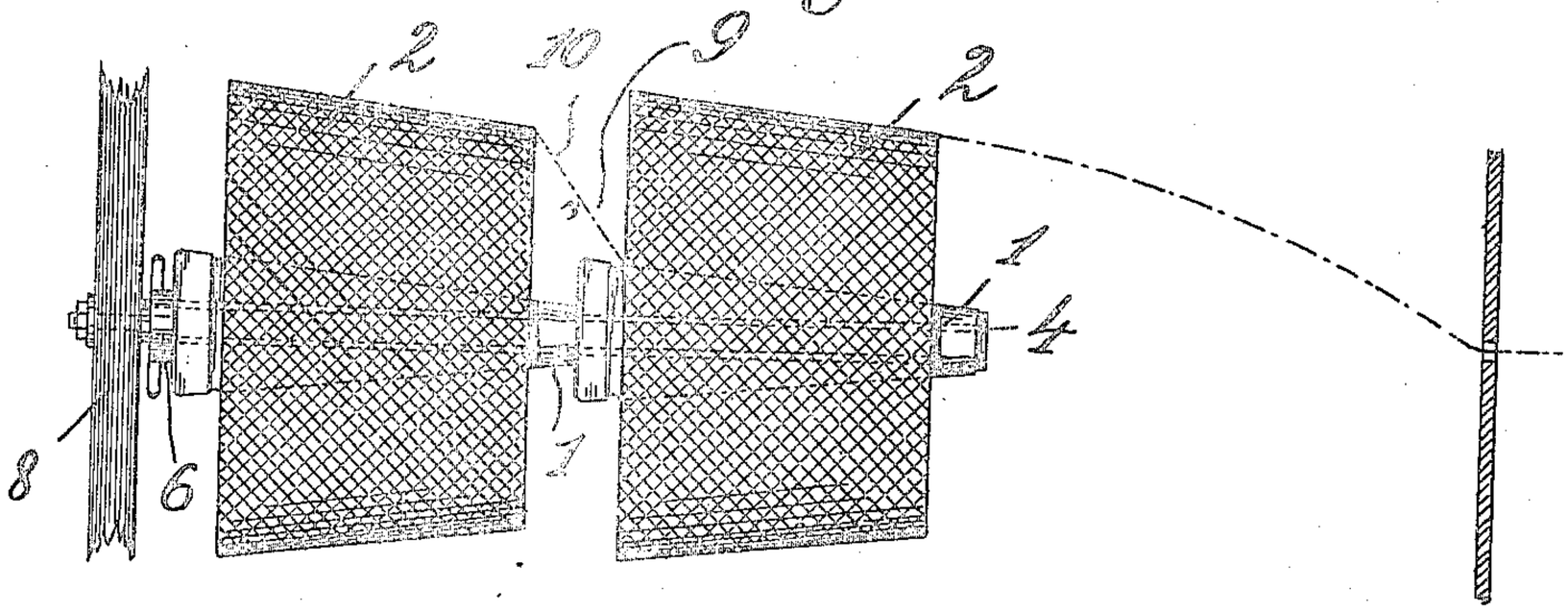



Fig. 2.

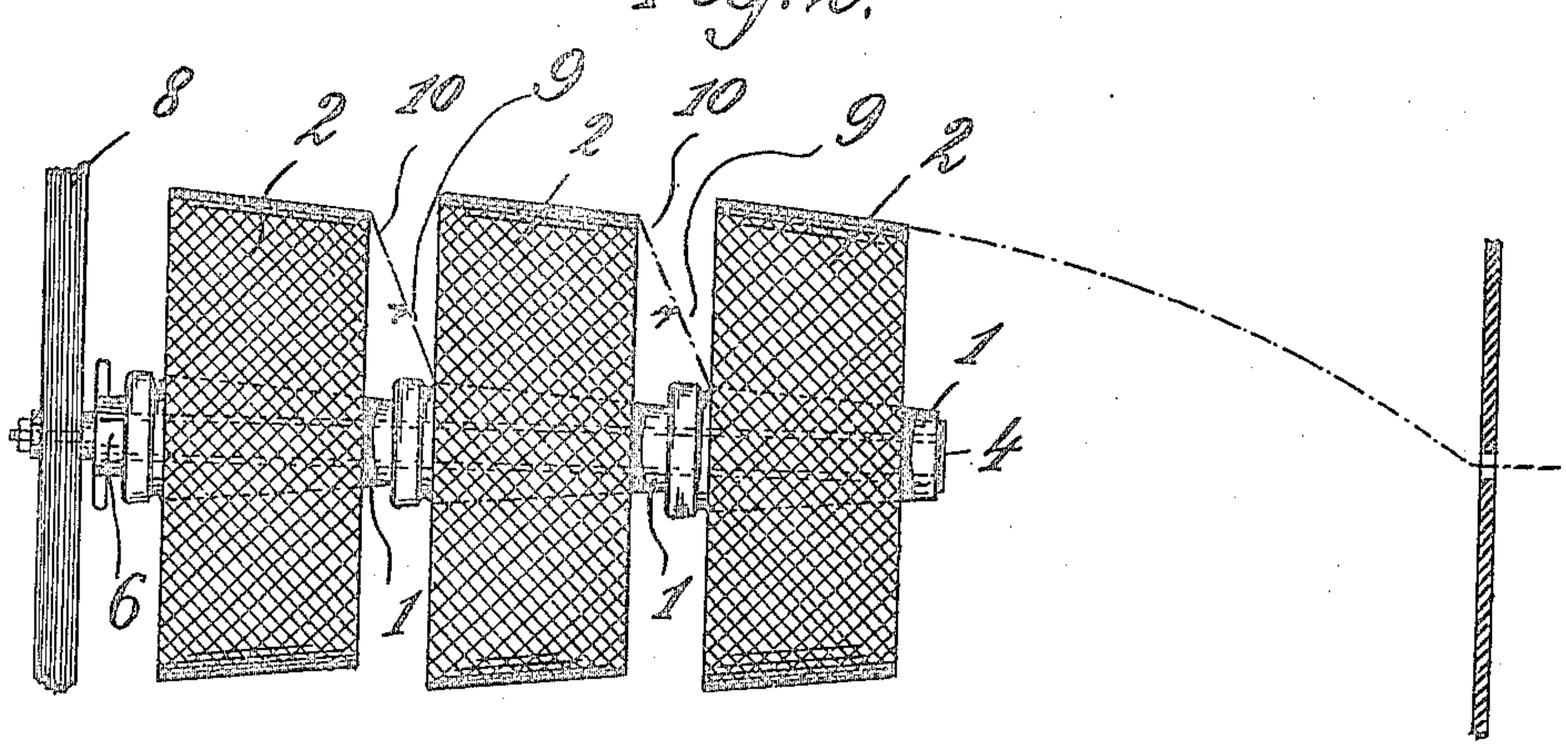
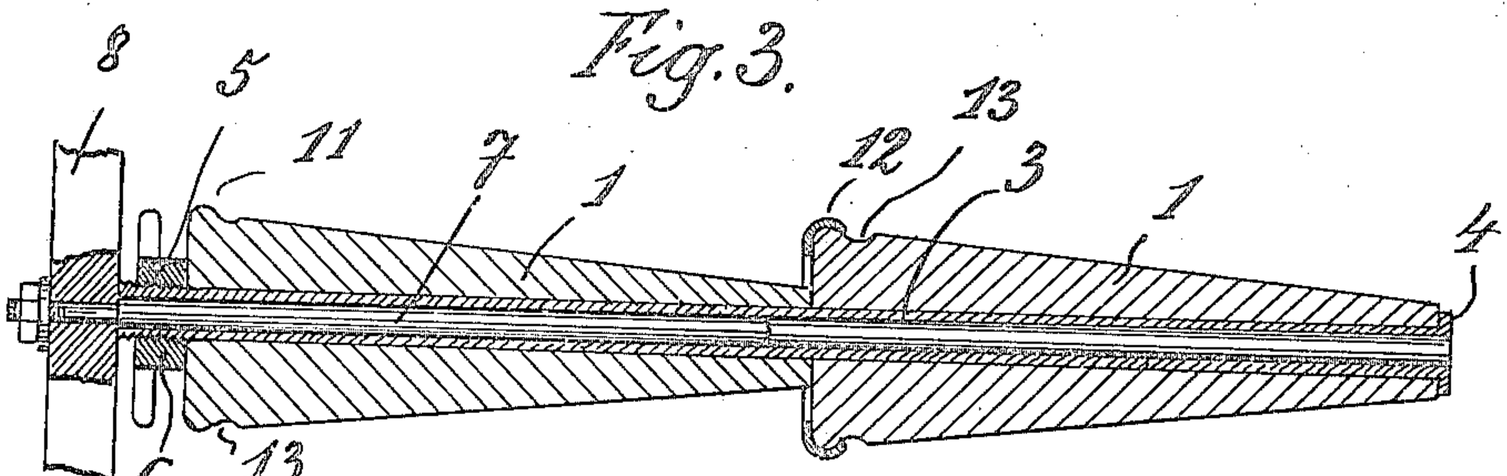



Fig. 3.




Inventor
Wilhelm Reiners,
By Knight Bros
Attys.

Patented June 19, 1923. 1,459,694

# UNITED STATES PATENT OFFICE.

WILHELM REINERS, OF MUNICH-GLADBACH, GERMANY.

## BOBBIN HOLDER.

Application filed September 2, 1921. Serial No. 498,179.

(GRANTED UNDER THE PROVISIONS OF THE ACT OF MARCH 3, 1921, 41 STAT. L., 1313.)

*To all whom it may concern:*

Be it known that I, WILHELM REINERS, engineer, a subject of the German Republic, residing at Munich-Gladbach, Germany, Am Bahnhof Speick, have invented certain new and useful Improvements in Bobbin Holders, of which the following is a specification.

My invention relates to device for unwinding cross bobbins which are connected with one another and are unwound successively. It is known in warp and spooling machines to connect spinning or twinning cops or the like and to unwind them successively. But the cops are each attached on independent spindles. If this known unwinding device were used for successively unwinding cross bobbins connected with each other, the bobbin stands in warp machines would, owing to the relatively great diameter of cross bobbins, become so large as to be impracticable for considerations of space. Therefore it was heretofore necessary to use only one cross bobbin for each single thread so that, after the several bobbins have been unwound up to a certain remainder, fresh bobbins must be attached which obviously causes great loss of time. Further disadvantages of this system are that the remainders must either be rewound or wound over to avoid loss of yarn for which operatives are required which is not economical.

One object of my invention is to remove these drawbacks which is effected by using a special bobbin holder. In this holder, a plurality of cross bobbins connected with their thread ends having independent sleeves are co-axially arranged on a separate collecting sleeve or spindle. A special spooling machine has been constructed some time ago which serves for directly spooling several sets of cross bobbins co-axially behind one another on a single sleeve which were then unwound successively. Here, however, the bobbins are not single bobbins connected by threads which can be made on any normal cross bobbin machine but bobbins consisting of a single thread not tied together which, however, cannot be used in practice because the bobbin machines which would be required would be far too large and complicated. Besides, weavers would be unable to buy cross bobbins, crude or dyed ones, from any spinning or dyeing factory.

In the drawings, I have illustrated several constructional embodiments of my invention.

Fig. 1 illustrates a bobbin arrangement comprising two cross bobbins behind one another,

Fig. 2 a bobbin arrangement comprising three cross bobbins behind one another,

Fig. 3 is a longitudinal section of two single bobbin sleeves with their common bobbin holder, arranged behind one another.

The cross bobbins 2 formed on the sleeves 1 are arranged co-axially behind one another in sets of two, three or more on a common bobbin sleeve 3, see Fig. 3. This sleeve at its front end has a ring 4 against which is abutting the first cross bobbin. The rear end of the sleeve is threaded at 5 and provided with a nut 6 so that the bobbins can be held tightly against one another and against ring 4 so that a rigid unit of bobbins is provided. The sleeve 3 is fixed on an arbour 7 with such play that it can be readily put on and removed and a breakage can readily be detected by turning the bobbins about their axis. The arbor 7 is fixed in a frame 8 but may also be adjustable in such frame. Instead of sleeve 3, a solid spindle may be provided which is rotatably carried or held at one end in a corresponding holder of the frame, which is within the scope of my invention. The end 9 of each thread on one bobbin is tied together with the beginning 10 of the thread of the succeeding bobbin so that all the bobbins will be unwound successively so that at least the bobbins at the front will be unwound completely and only the last bobbin will have a remainder of thread. This remainder may now, as usually, be rewound or wound over or the last bobbin of each set may be used as the beginning bobbins when forming new sets of bobbins behind which the full bobbins are placed so as to unwind the bobbin completely without rewinding or winding over. Consequently a larger quantity of thread may be mounted upon the warping creel with the obvious advantageous results.

The edges 11 at the greatest diameter of the bobbin sleeve are rounded or provided with protectors 12 in order to protect the thread from being damaged or stressed by the edges of the sleeves in front when unwinding the rear bobbins. Obviously, the edges 11 or the tongs 12, respectively, should be perfectly

polished in order to reduce to minimum the friction which the thread must overcome in moving past them.

The bobbin sleeve 1 has a grave 13 near to its greatest diameter where the thread mass is inserted which groove receives the ring of thread supply for tying each bobbin to the succeeding one.

As the cross bobbins to be tied together are attached to a common holder with their several sleeves which is adapted to be detached from the bobbin frame, the bobbins may be tied together and the sets of bobbins combined away from the frame. Notwithstanding the great lengths of the bobbin sets, the present delay owing to attaching the sets will not become longer and the attaching after the unwinding of every single bobbin can be dispensed with.

Notwithstanding the increased efficiency which is imparted, for instance, to a warp machine by my novel arrangement of bobbins, the dimensions of the machine are not increased in any way as it is neither longer nor higher than a machine of the old construction. In the direction of the axis of the bobbins, there had to be sufficient space for exchanging the bobbins which space is sufficient for the sets of bobbins according to my invention, the more so, as the bobbins are tied away from the frame. Besides, any single cross bobbin of the normal known and generally used spooling machines may be used.

Claim:

A bobbin holder for warping creels comprising a sleeve, a flange formed on one end of said sleeve, the other end of said sleeve being threaded, a thumb nut engaging said threads, a plurality of cross-wound bobbins with cross wound cheeses arranged on said sleeve, said bobbins being retained on said sleeve between said flange and nut whereby said sleeve and bobbins may be placed loosely on a warping creel spindle.

The foregoing specification signed at Cologne, Germany, this 2nd day of March, 1923.

WILHELM REINERS.

In presence of two witnesses:
EDW. ESSER,
W. ROETTGEN.