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2,835,517

HOLDING DEVICE

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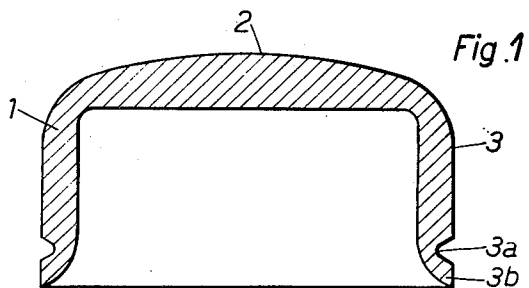


Fig. 1

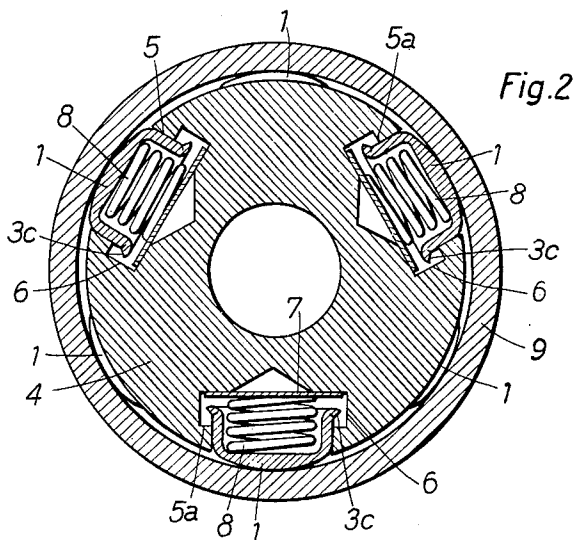


Fig. 2

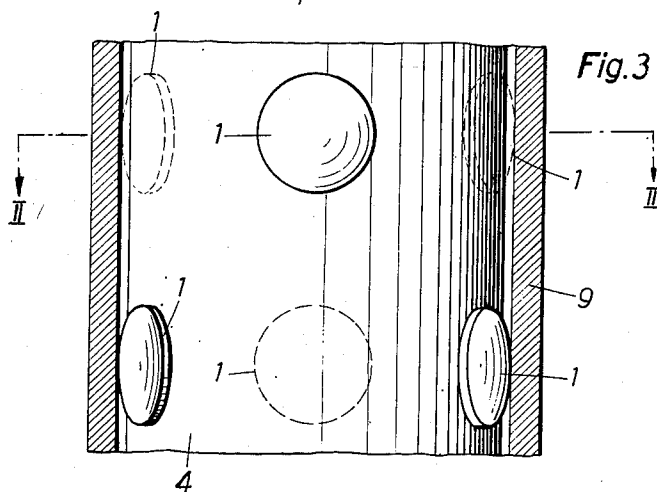


Fig. 3

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1 Claim. (Cl. 287—52)

The present invention relates to a device for holding sleeves on spindles, and more particularly for holding sleeves on spinning and on twisting spindles, in which coupling caps are slidably arranged each in a transverse boring provided in the spindle with an outwardly directed force exerted on them and which are provided at their inner open end with a circumferential flange adapted to cooperate with a shoulder provided in the corresponding bore in order to limit the outward movement of the coupling cap.

It is a prime object of the invention to provide each coupling cap in a very simple way with a resistant circumferential and abutting flange, which effectively and permanently prevents escaping or loosening of the coupling cap from the spindle. Other objects and advantages of the invention will become apparent from the description now to follow of a preferred embodiment thereof, given by way of example only, and in which reference will be had to the accompanying drawings, in which:

Fig. 1 is an axial section through a coupling cap in its original form;

Fig. 2 represents on smaller scale a cross-section taken along the line II—II in Fig. 3, through a spindle with a sleeve slipped on it and onto which three coupling caps act in one and the same horizontal plane;

Fig. 3 is an elevational view to Fig. 2 showing two groups of three coupling caps provided on the spindle.

In the figures reference numeral 1 designates the coupling caps, which are all similar to each other and comprise a top 2 having a spherical outer surface and which over a rounding turns into a cylinder jacket 3. According to Fig. 1 each coupling cap, before it is inserted into a seat provided for this purpose in the spindle 4, has at its open end a neck 3b formed by means of a circumferential groove 3a. This neck 3b is widened from the inside of the cap 1 so that its inner surface is outwardly directed from its base without, however, closing the circumferential groove 3a and without exceeding the diameter of the jacket 3. The neck thus produced is ready to be flanged. In the described form represented in Fig. 1 the coupling cap may easily be inserted into one of the radial bores 5 provided in the outer surface of the spindle. These bores 5 have at their bottom a concentric recess 6 receiving a supporting disk 7 bearing against the bottom of the opening 5, 6. This supporting disk 7, the

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diameter of which is somewhat superior to the mouth of the bore 5, is star-shaped so that it may be bent in order to be inserted into its seat. Each disk 7 serves to support a helical spring 8 arranged within the coupling cap 1 and acting against the said disk 7 as soon as the coupling cap 1 is inserted into the bore 5, 6. As the coupling cap 1 is inserted into the bore it is moved against the action of the spring 8 to such a depth into the bore 5, 6 that its neck 3b is flanged outwardly by the disk 7 bearing against the bottom of the bore. The flange 3c thus formed on the cap 1 projects beyond the outer surface of the remainder of the jacket 3 and is adapted to cooperate with the shoulder 5a formed between the recess 6 and the wall of the bore 5, in order to limit the outward movement of the cap. The cap 1 is maintained in its outer position, i. e. with its flange 3c bearing against said shoulder 5a, by the spring 8. If now a sleeve 9 is slipped onto the spindle 4 the coupling caps 1 are displaced against the action of the springs 8 and tend to center the spindle 4 within the sleeve 9. In the embodiment illustrated in the drawings two groups, of three such coupling caps 1 each, are arranged in two parallel transverse planes as is clearly visible from Fig. 3. By means of these coupling caps 1 the sleeve 9 is carried along on the rotation of the spindle 4 due to friction. Subsequent to the winding the produced cop is removed from the spindle 4 against the friction of the coupling caps 1.

Clearly coupling caps as described may also be used in textile spindles other than the two described types.

What I claim is:

In a holding device for detachably holding a sleeve on a spindle which has a plurality of radial bores therein each with an inwardly overhanging shoulder, that improvement comprising a plurality of helical springs each in one of said bores, and a plurality of coupling caps each slidably arranged in one of said bores, said springs urging said caps out of said bores for engagement with said sleeve, each of said bores having an at least partly flat bottom and each of said caps having an outwardly flared lower inner edge and a peripheral groove bounded by opposite flanks in the peripheral surface of said cap, said groove and lower inner edge defining a neck, said cap being of permanently deformable material and said neck being permanently flanged outwardly at the inner end of the cap with said opposite flanks of the groove abutting each other whereby said neck provides an annular outer flange of the cap cooperating with said inwardly overhanging shoulder of the bore for limiting the outward movement of the cap under the action of said spring.

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