Sept. 2, 1958 E. JACOBI ET AL 2,849,852

DEVICE FOR SUCKING OFF LINT ON SPINNING MACHINES

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Fig. 2

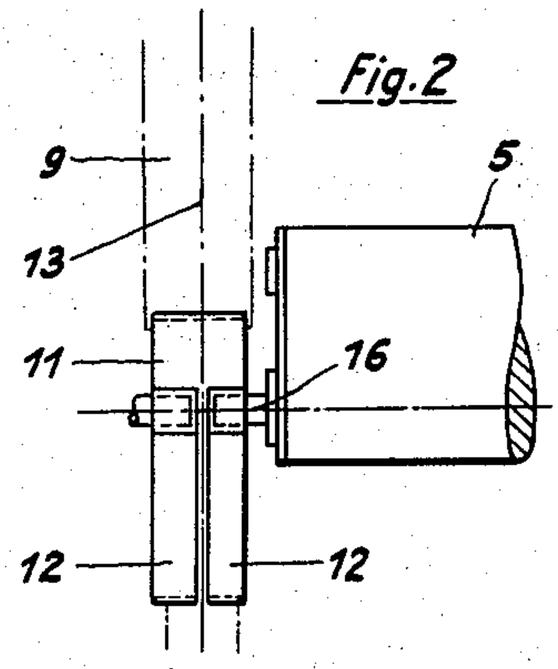

Fig. 1

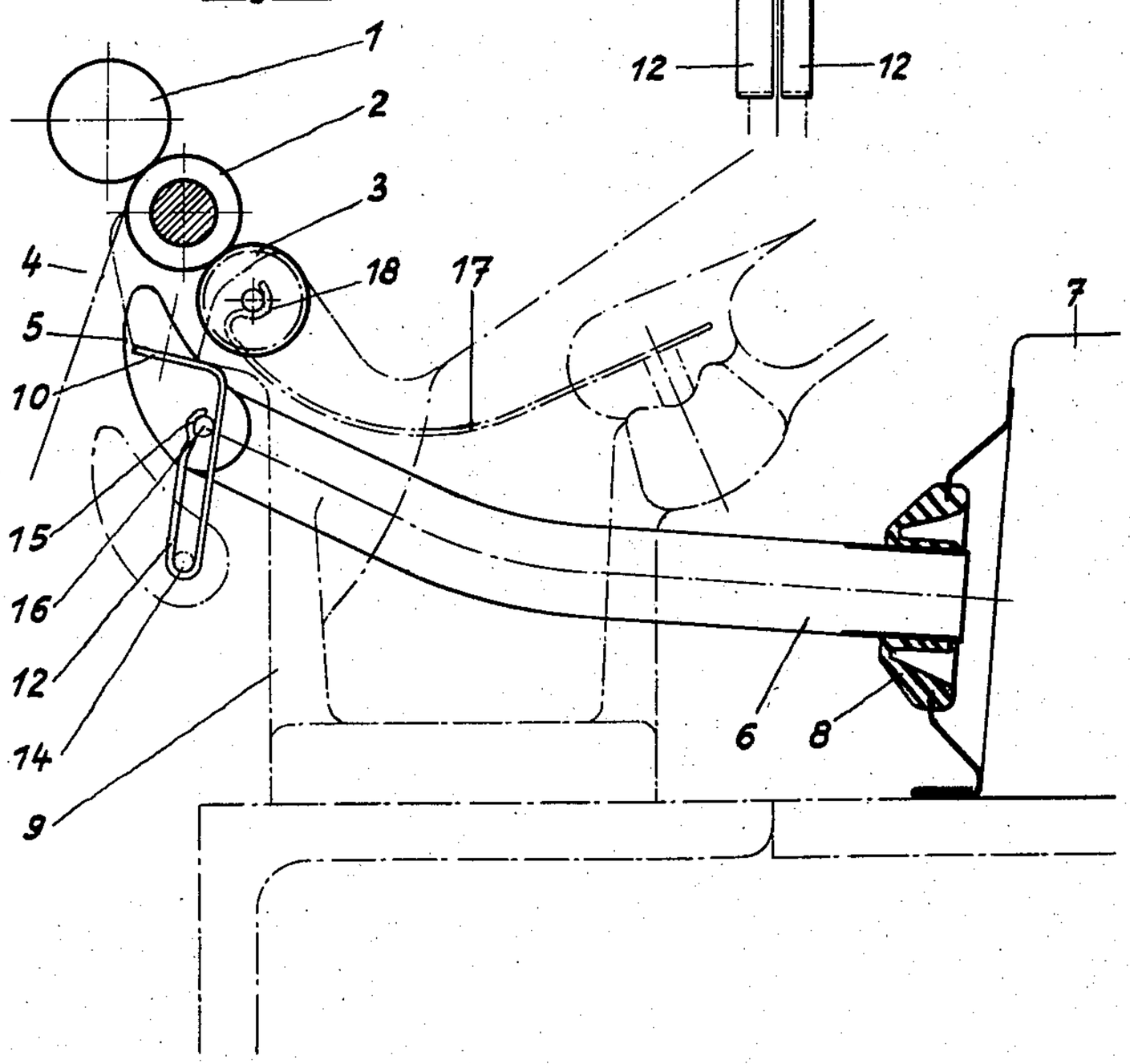

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Fig. 5

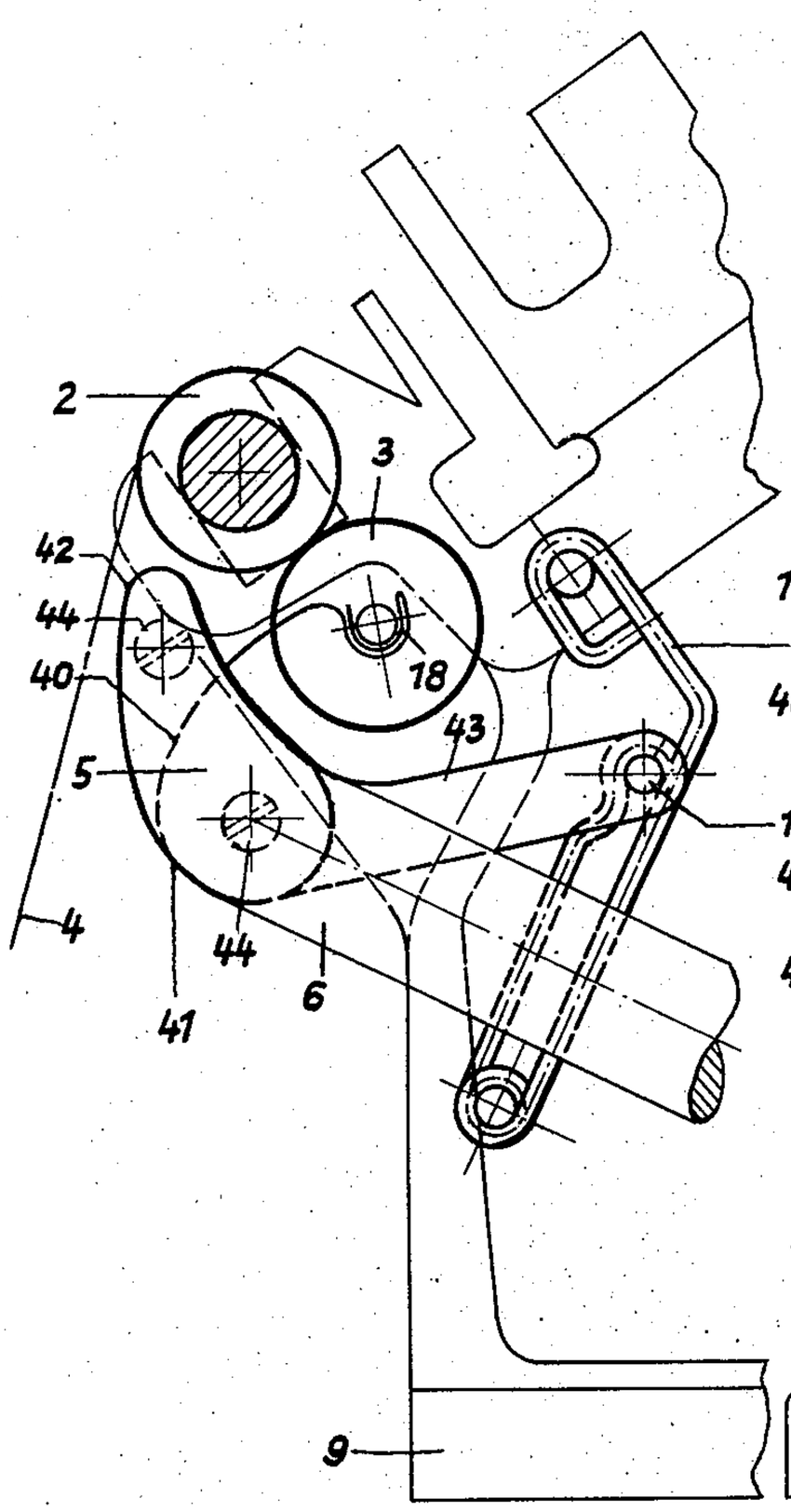
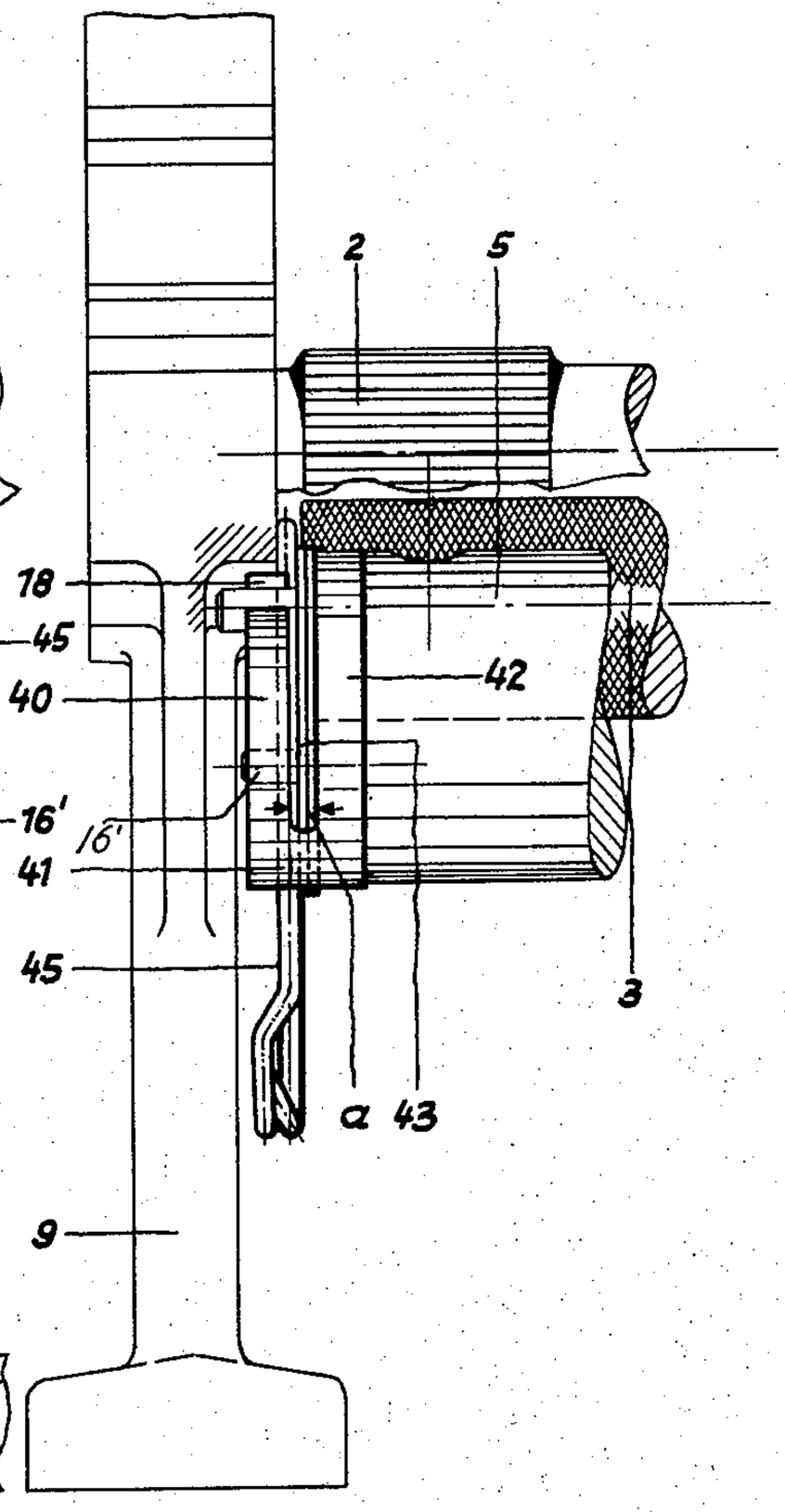


Fig. 6



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DEVICE FOR SUCKING OFF LINT ON SPINNING MACHINES

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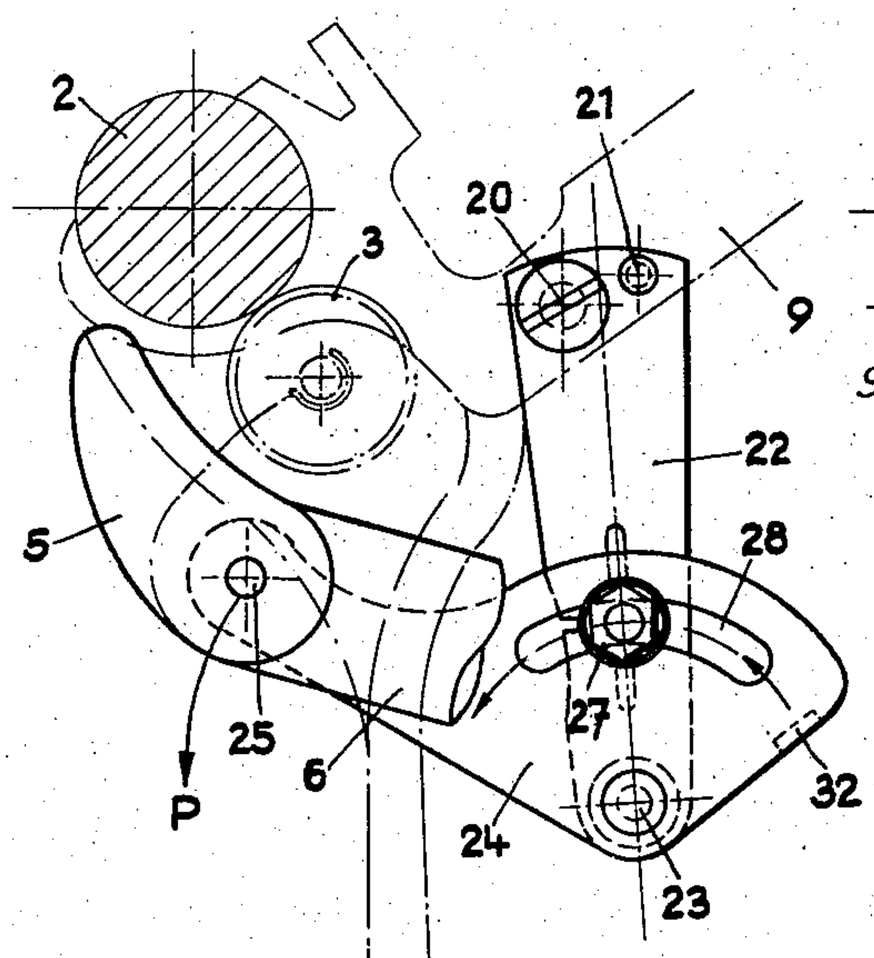


Fig. 7

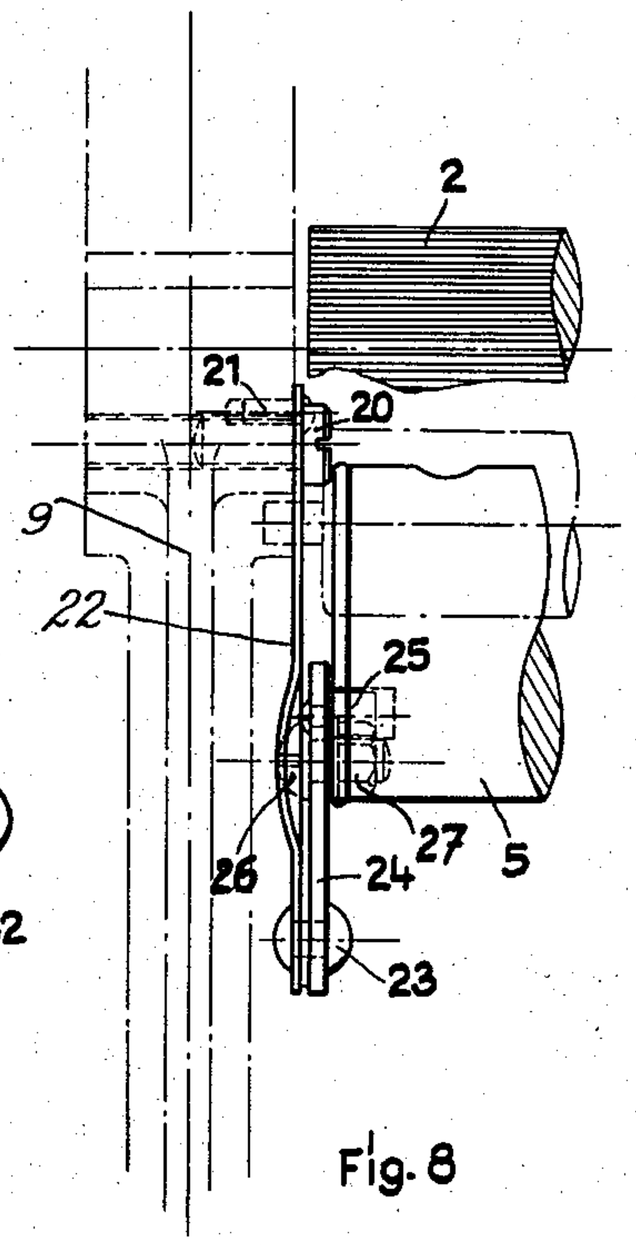


Fig. 8

Fig. 9

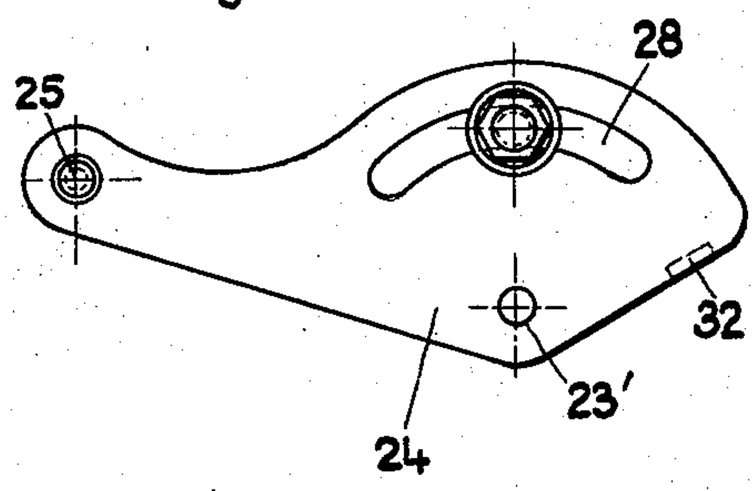


Fig. 10

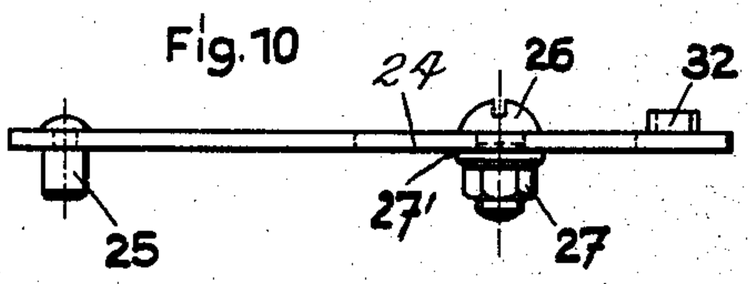


Fig. 11

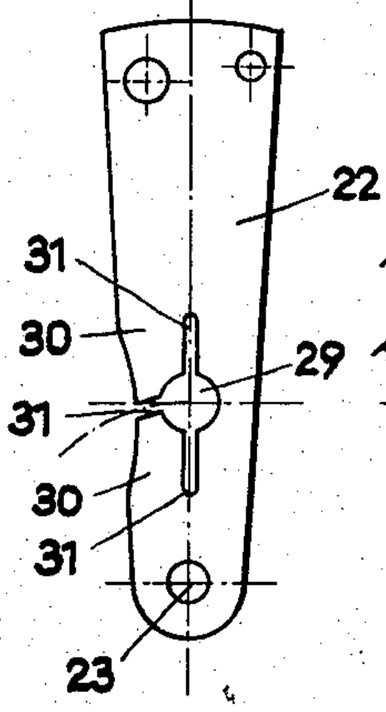
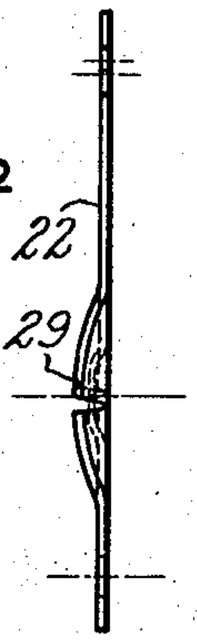


Fig. 12



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DEVICE FOR SUCKING OFF LINT ON SPINNING MACHINES

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Application January 27, 1956, Serial No. 561,871

Claims priority, application Germany February 3, 1955

5 Claims. (Cl. 57—34.5)

The invention relates to an apparatus designed for sucking off lint, broken yarn, dust and the like on spinning machines by means of suction pipes arranged parallel to the drawing roll. Members supporting the suction pipes are secured to the draft gear frame. The item which is basically new is constituted by a snap catch (positive snap-type locking device) which serves as a support for the suction pipes. Although from such a support the suction pipes can be released easily and conveniently by hand without the aid of tools, the suction pipes are positively located and firmly positioned in this support. This is the feature by which this invention differs favorably from another known arrangement which provides a spring-loaded support in which the spring tension can be kept neither uniform nor effective in the various sections extending over the length of the spinning machine. The positive support, which constitutes the object of this invention, maintains at all times an absolutely parallel position of the suction pipes relative to the drawing rolls as well as an unchanging position of all suction nozzles relative to the threads leaving the draft gear.

When the scutching roll which is positioned below the lower drawing roll is to be cleaned, the suction pipe is released from the snap catch by exertion of a certain amount of pressure. Then, the suction pipe comes to rest on a stop by action of gravity. A pin guide interposed between the snap catch and the stop makes it impossible for the suction pipes to be moved off a determined path accidentally upon being released from the snap catch as this would harm the threads. Therefore, the snap catch, the stop and the pin guide are joined in a single spring member. By this arrangement, not only a simple and compact unit is formed, but a soft-acting resilience is given to the snap catch affording protection in the event of hard use.

A special advantage of the apparatus forming this invention is the fact that the supports carrying the suction pipes are so rugged that a suction pipe can carry the two scutching roll bearings which are preferably formed by spring members. This arrangement makes it possible to swing the scutching rolls out of working position by releasing the suction pipes from the snap catches. The scutching rolls can then be readily removed for cleaning.

In order to make it possible that the scutching roll bearings are supported by the suction pipes when they extend over the full width of the drawing roll, also over those sections adjacent to the draft gear frames, one spring tongue of a forked spring member embraces a part of the outer contour of the suction pipe and branches the other spring tongue off laterally past the face of the suction pipe to form a scutching roll bearing. Also in this application, the snap catch which constitutes an object of the invention can be used as a support in that an arm rigidly secured to the face of the suction pipe reaches out toward the draft gear frame and carries a snap frame which engages a positive snap-type locking device secured to the frame.

In order to enable users to utilize the invention in connection with the various forms of draft gear employed and to manufacture the support members identical in shape and in large numbers, one part of the positive snap-type locking device, preferably the catch bolt member, is made adjustable. Adjustment is preferably effected by means of a slot which is part of a circle about a center formed by the pivot of a pivoted arm joined to a supporting arm secured to the draft gear frame. In this application, the adjustable part is preferably formed by a round head screw whose shaft extends through the slot and is clamped in position by a nut on the other side of the slotted member, preferably by interposing a washer. This arrangement is simple, inexpensive, and requires very little space.

Further details relating to this invention are given in drawings illustrating a number of examples and applications. In the drawings:

Figs. 1 and 2 show the side and the front view of an embodiment,

Figs. 3 and 4 show another embodiment,

Figs. 5 and 6 a third embodiment,

Figs. 7 and 8 a fourth embodiment,

Figs. 9 and 10 the elevational and the plan view of the pivoted arm shown in Figs. 7 and 8, and

Figs. 11 and 12 the front elevation and the side view of the supporting arm shown in Figs. 7 and 8.

Component parts are designated by numbers as follows: **1** is the last upper drawing roll, **2** the last lower drawing roll, **3** the scutching roll which rotates in contact with the latter, **4** the thread as it leaves the machine, **5** the suction pipe having a cross section which tapers off toward the angle enclosing the thread **4** and the roll **2** and which is indented toward the scutching roll **3**, **6** the pipe branching off to the collecting duct **7**, **8** the flexible rubber joint, **9** a member of the frame supporting the draft gear.

In the embodiment illustrated in Figs. 1 and 2, a spring member **11** is screwed to the frame member **9** at **10**. As shown in Fig. 2, this spring member is forked. Its two resilient tongues **12** are equally spaced relative to the vertical center line **13** of the frame member. The tongues **12** and the supporting section of the member **11** form a U. The lower end of the U is formed by the stop **14** and its upper end by the resilient snap catch **15** engaging the pins **16** protruding from the faces of the suction pipes **5**. Between the ends **14** and **15**, the U-bent member forms a pin guide which makes sure that the distance of the suction pipe from the thread **4** is sufficiently large when the suction pipe rests on the stop **14** and while it is swung down to this stop. When the suction pipe is in a position indicated by the dotted lines, the scutching roll **3** can be easily taken off. In Fig. 1 the scutching roll is supported by the pin bearings **18** which form a part of the flat springs **17** secured to the frame member **9**.

The embodiment illustrated in Figs. 3 and 4 differs from the above application mainly in that a pair of small flat springs **19** are shaped to form the pin bearings **18** for the scutching roll **3**. These flat springs **19** are attached to the suction pipes **5**. Hence, the scutching roll **2** is swung into and out of working position together with the suction pipes **5**. The spring members **12'** are screwed to the frame member at **21'**, i. e. at both sides of its center web **20'**.

In the embodiment according to Figs. 5 and 6, the scutching roll **3** extends along the full working width of the drawing roll **2**, it even covers the serrated section close to the frame member **9**. This has been made possible because the pin bearings supporting the scutching roll **3** at both ends are formed by the ends of the spring tongues **40** which are passed by the ends of the suction pipes **5** and join the other spring tongues **42** at a place

41 which is on the outside diameter of the suction pipes, the tongues 42 embracing the outer contour of these suction pipes. Since the spring tongues 40 and 42 are separated by the distance *a*, the flat arm 43 can be rigidly secured to the face of the plug constituting the end of the suction pipe 5 by means of the two screws 44. The arm 43 carries the snap pin 16' at its free end. The snap pin engages the slot formed by the member 45 which is bent of spring wire and which incorporates snap catch, stop and pin guide constituting the object of this invention.

In the embodiment shown in Figs. 7 to 12, a flat supporting arm 22 is secured to the frame member 9 of the various draft gear units by means of the screw 20 and the pin 21. At 23, to this arm 22, the flat arm 24 is pivoted, the pivot being formed by a double-head rivet which is passed through the hole 23'. At its other end, the pivoted arm 24 carries the pin 25 which fits into the bore of the plug forming the face end of the suction pipe 5. When the suction pipe 5 is tilted down in a direction as indicated by the arrow P about the flexible joint connecting the branch pipe 6 to the collecting duct, the pivoted arm 24 performs a corresponding rotative movement about the pivot 23' and the round head 26 of a screw, clamped in position in the slot 28 of the pivoted arm by means of the nut 27 and the washer 27', leaves the snap hole 29 which forms a part of the supporting arm 22. The indent which contains the snap hole is shown in Figs. 8 and 12. It is composed of the spring flaps 30 obtained by the cuts 31 made to facilitate snapping in and out of position. When the head is out of contact with the recess, the swing is limited by the shoulder 32 on the pivoted arm 24 contacting the supporting arm 22. Another stop which is independent of the supporting arm 22 can be provided as well. As may be seen by the drawing, the supporting arm 22 can be offset and shaped in any other appropriate manner to be joined to the frame member at some other suitable location when the catch bolt 26—27 is suitably adjusted in the slot 28.

We claim:

1. In a spinning machine, which includes a drawing roll and a draft gear frame, means for sucking off lint, dust and broken yarn, said means including a suction pipe arranged parallel to the drawing roll and snap catch means releasably securing said suction pipe to said draft gear frame adjacent said drawing roll, said snap catch means including a spring member so formed that portions thereof define an elongated slot, and bearing means for said suction pipe slidable in the said slot without becoming disengaged from the snap catch means.

2. The device as set forth in claim 1 wherein said spring member includes a pair of resilient tongues the extremities of which contact the bearing means for the said suction pipe.

3. The device as set forth in claim 1 wherein said spinning machine includes a scutching roll and spring means secured to said suction pipe and forming the pin bearings for said scutching roll.

4. In a spinning machine, which includes a drawing roll and a draft gear frame, means for sucking off lint, dust and broken yarn, said means including a suction pipe arranged parallel to the drawing roll and snap catch means releasably securing said suction pipe to the said draft gear frame, said snap catch means including a spring member, portions of which define an elongated slot, means pivotally mounting said suction pipe with respect to said spring member, and means secured to said suction pipe and slidable in the said slot defined by certain portions of said spring member.

5. The device as set forth in claim 4, wherein said spinning machine includes a scutching roll and spring means secured to said suction pipe and forming the pin bearings for said scutching roll.

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