

A NEW COMBING TECHNIQUE

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Authority responsible for the project:	The Free State of Saxony - Protec	
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Initial situation

The maximum number of nips on combing machines is limited in case of techniques requiring large masses to be moved, especially within the area of fabric take-down. In this respect, it is only details that can be improved and no fundamental rise in productivity is achieved. Therefore, the work performed and summarized in the research report consisted in the testing of a technique that was different from the traditional combing technology. Its basic principles are documented in Europe patent EP 0406589.

According to the traditional combing technique, the fibrous material is thoroughly combed by means of the circular comb and top comb. The circular comb cleans the fibre portions more thoroughly than the top comb.

Research target

The research target was to develop a new combing technique for creating a sliver that is completely combed by the circular comb. This new combing technique is intended to yield improvements in quality. In addition, the possible feeding length was intended to be increased by the elimination of the top comb in favour of an increase in productivity and/or a reduction in the number of revolutions of the machine.

Research result

The transfer nipper jaw combing technique represents a new wool combing principle. The problems of the basic principle described in the patent specification EP 0406589 were solved. In contrast to the patented solution, the newly developed combing technique allows to set the length of overlap. In addition, combing-out can be varied by variation of the setting distance. For the carrying-out of the draft, a novel draft element was developed and tried. This draft element is a combination of draft and clamping elements. It clamps the fibre portion and passes it to the detaching rollers. Drafting is effected within the transfer phase. The solution found for the draft problem as well as the clamping and drafting element developed were proposed for patenting. The combing principle provides for a thorough combing of the rear fibre portion.

Application and economic advantages

As a result of the research project, theoretical investigations and results obtained with the employed drafting element as well as fundamental test results obtained by a completely new technique of wool combing are available to the user. These results shall help him to introduce a combing machine with transfer nipper jaw. The main advantages of the transfer nipper jaw as compared with the traditional combing principle are the possibilities of a more thorough combing of the rear fibre portion as well as a larger feeding length by elimination of the top comb. The longer feeding length results in an increase in productivity.

As this technological principle is a new development world-wide and very complex, however, some partial problems are still to be treated. After the solution of the existing problems the user will have an innovative product that will foster his competitiveness.

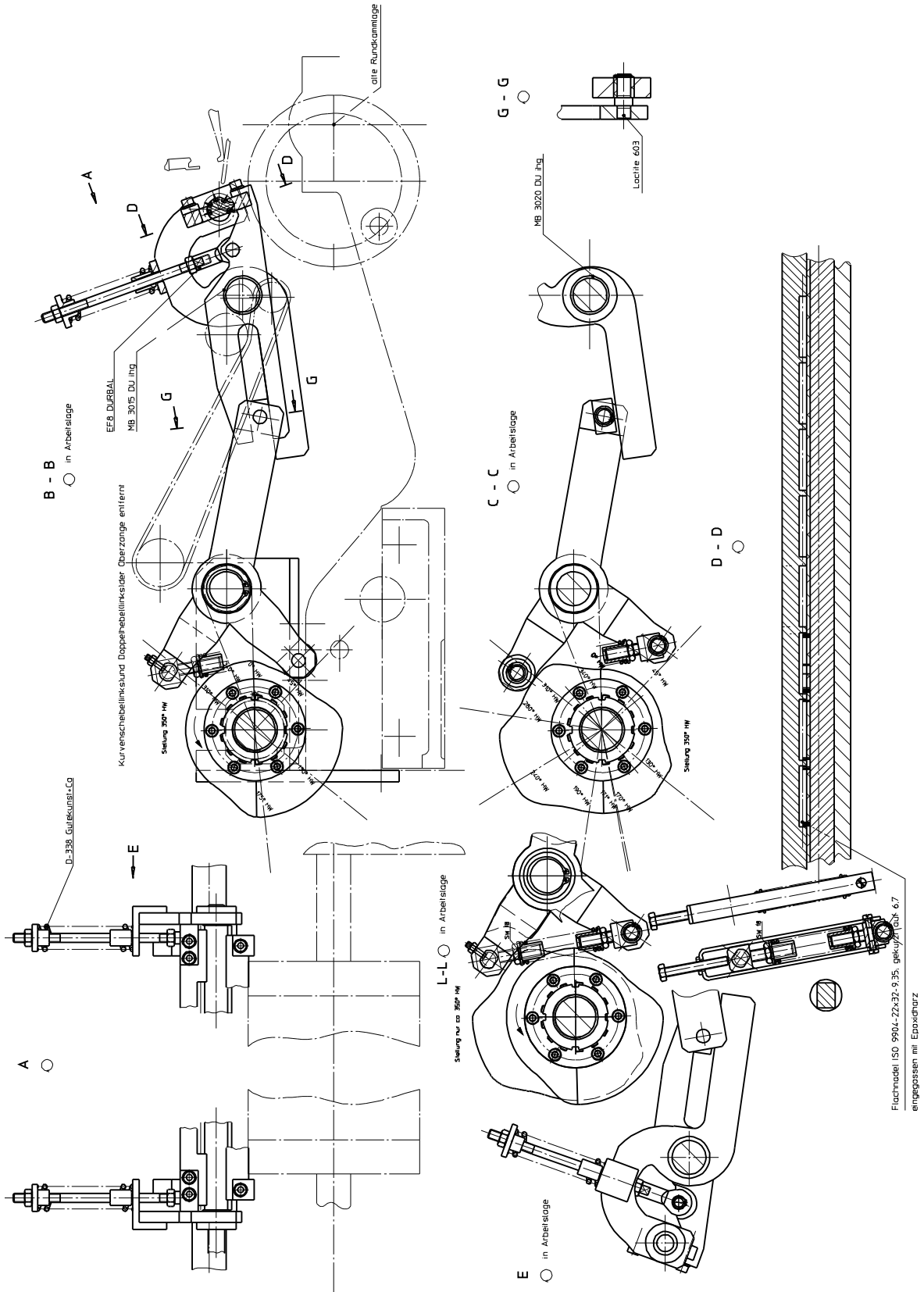


Fig.: Transfer nipper jaw (side view)