

A. E. FÜLLNER.

SIZING APPARATUS FOR PAPER MACHINES.

(Application filed Aug. 29, 1901.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 1.

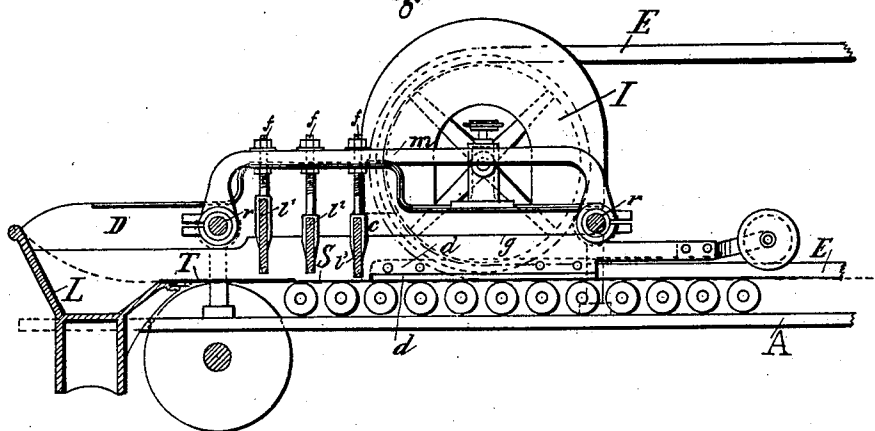
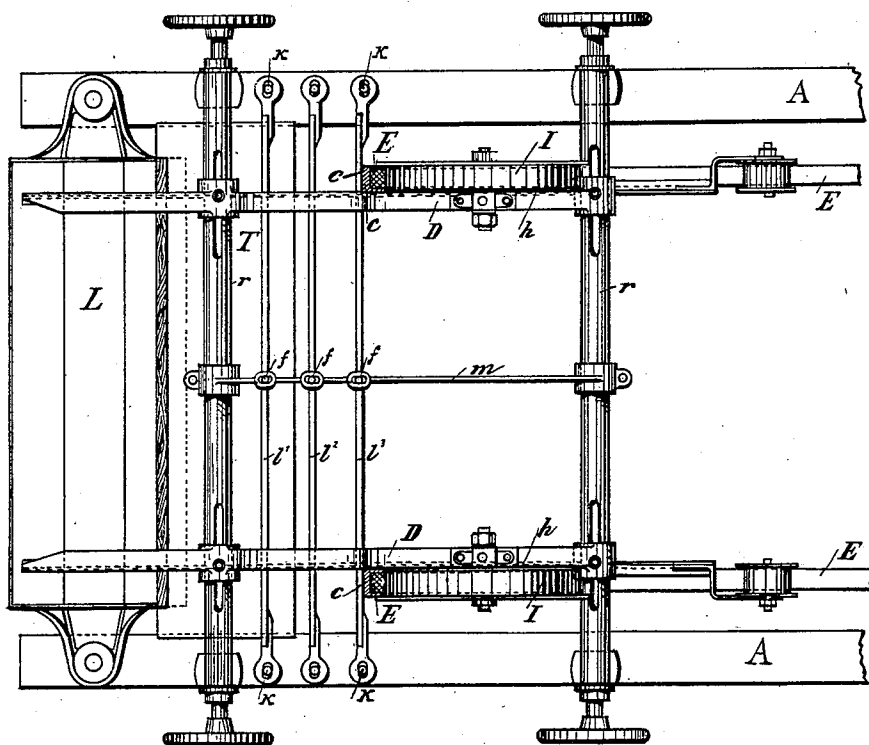


Fig. 2.



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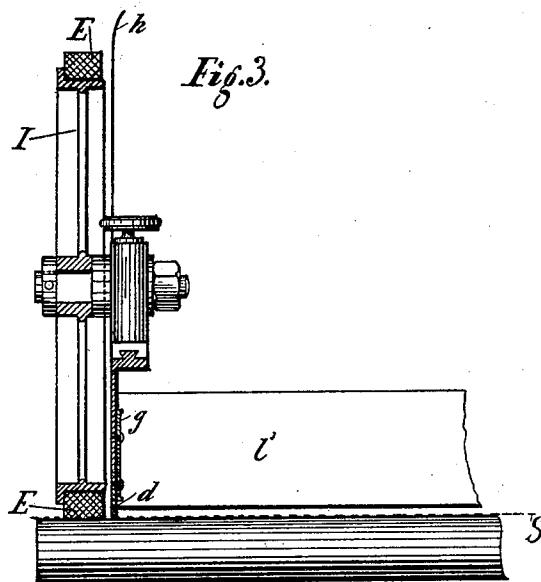
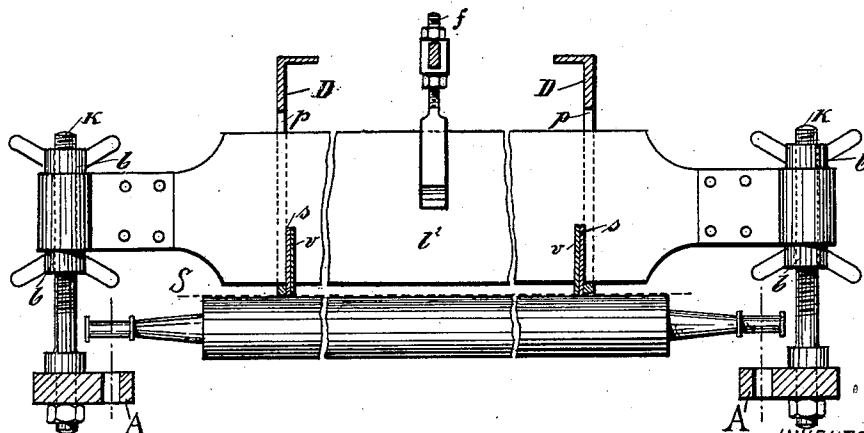


Fig. 4.



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Fig. 5.

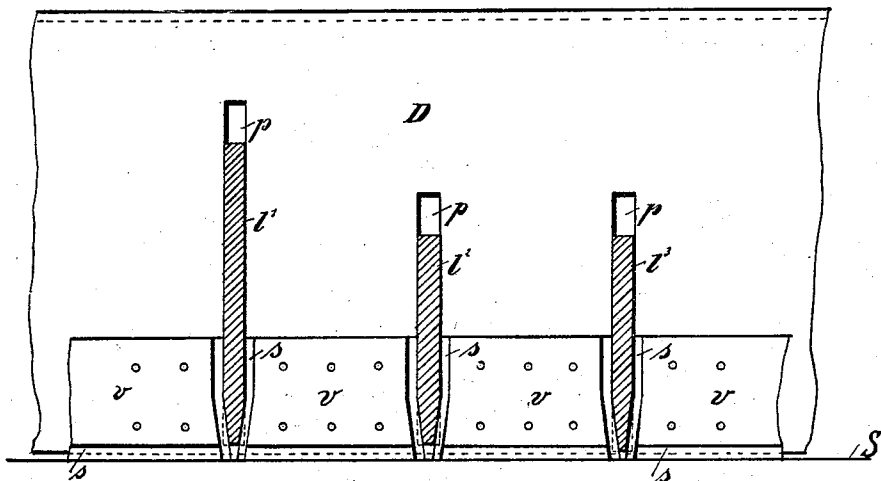
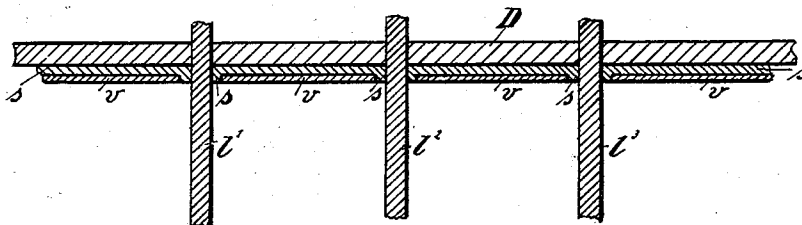


Fig. 6.



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ALWIN EUGEN FÜLLNER, OF WARMBRUNN, GERMANY.

SIZING APPARATUS FOR PAPER-MACHINES.

SPECIFICATION forming part of Letters Patent No. 694,146, dated February 25, 1902.

Application filed August 29, 1901. Serial No. 73,656. (No model.)

To all whom it may concern:

Be it known that I, ALWIN EUGEN FÜLLNER, a subject of the King of Prussia, Emperor of Germany, and a resident of the city of Warmbrunn, Silesia, Prussia, Germany, have invented certain new and useful Improvements in Sizing Apparatus for Paper-Machines, of which the following is an exact, full, and clear description.

As is known, in the sizing devices of paper-machines which are in use at the present time the skimmers or edge bars serving for regulating the passage of the material are attached to both side bars, which for the purpose of obtaining the particular width desired for the path of the material can be separated or approached to one another in the well-known manner by means of two screw-spindles having right and left hand threads. Under these conditions the attachment of the edge bars to the side bars necessitates the separation of each of the edge bars into two parts, which overlap for a certain distance in the center over the wire-cloth and on the movement of the side bars slide over one another. Both the overlapping ends are fastened together by means of screws, which engage therethrough in longitudinal narrow slots. This arrangement of the sizing apparatus has the disadvantage that the middle portion of the edge bars consisting of the overlapping parts is stronger than the remaining portions, which causes an uneven passage of the material. Further, when it becomes necessary to separate or approach toward one another the side bars opposed to one another the screws holding together both parts of the edge bars have each time to be unloosed, which in consequence of the position of these screws in the middle over the wire-cloth is very likely to endanger the wire-cloth. As the edge bars must also be capable of being adjusted in a vertical direction, the whole attachment of the same to the side bars is rendered correspondingly complicated. These technical as well as practical disadvantages are avoided in the present invention in that the edge bars are each formed of one undivided piece and are no longer attached to the side bars, but are fixed so as to be adjustable on the longitudinal frames of the wire-cloth table, the side

bars being themselves provided with narrow slits, through which the edge bars penetrate.

In the accompanying drawings, Figure 1 shows a longitudinal section of the sizing apparatus and of the registering parts belonging thereto. Fig. 2 is a plan of the apparatus; Fig. 3, a cross-section through the guiding-roller of the cover-belt; Fig. 4, a cross-section showing the rear of an edge bar. Figs. 5 and 6 show the packing of the edge bars at the narrow openings of the side bars.

Both side bars D can be simultaneously and evenly separated or approached to one another in the well-known way by means of two screw-spindles provided with right and left hand screws inclosed in tubes *r*. The edge bars *l* ¹ ² consist each of one single piece extending over the whole width of the wire-cloth table and are provided with slotted ends, through which they may be secured by means of screw-bolts *k*, which are attached to both the longitudinal frames A of the wire-cloth table, Fig. 4. The edge bars may be adjusted in a vertical position and held there by means of winged screws *b*. A threaded bolt *f* is attached to the middle of each edge bar, extending upward through slots formed in a cross-piece *m*, connected to both of the inclosing pipes *r*. Each bolt *f* is fixed to the cross-piece *m* by means of two nuts, one above and one below said cross-piece, so that the edge bars are also firmly held in the center, and in this way the bending of the said bars is prevented. The edge bars are held in both side bars by means of suitably-arranged narrow openings *p*. These openings, as shown in Figs. 4 and 5, are so arranged that the vertical position of the edge bars relative to the wire-cloth S can be regulated within suitable limits. The edge bars are somewhat beveled at their edges and rest under ordinary circumstances upon the outside edges of the narrow openings *p*. The latter may either correspond in shape with the beveled form of the edge bars or may be entirely rectangular, as in all cases the edge bars are packed in contact with the narrow openings of the side bars. This packing, as shown in Figs. 5 and 6, consists of strips *s*, of soft material, felt, or the like, arranged along the length of the side bars D, which material is cut through at

the openings *p*, and the edges formed in this way are bent in inward against the edge bars. The strips are attached with the help of brass plates *v* to each of the side bars, and these
 5 brass plates are so adjusted that they press the edges of the said material with suitable pressure against the edge bars, and in this way insure a secure packing of the same in the narrow openings *p*. Each strip *s* extends
 10 close down to the endless wire-cloth *S* or to the cloth *T*, attached to the receiving trough *L*, and in this way forms in itself a sort of packing to the side bar.

The guiding-rollers *I* for the cover-belts *E*
 15 are arranged as close as possible behind the last edge bar *B*, so that the space between the last edge bar and the cover-belt is as small as possible. In order to prevent the material from being discharged at this point, a leather
 20 strip *d* is fixed, by means of brass plate *g*, to each of the side bars, which extends down as far as the wire-cloth, and in addition a triangular piece *c* of india-rubber or cotton material is also inserted between the edge bar *B*
 25 and each guiding-roller *I*, which corresponds exactly to the cover-belt running on the roller, and in combination with the leather strips *d* entirely prevents any escape of the paper material. It is thus quite evident that the edge
 30 bars, consisting each of one single equally-

strong piece, consequently cause an absolutely even passage of the material, whereby a perfect evenness of the resultant material is insured throughout its whole breadth. Further, all unnecessary handling of the edge
 35 bars is avoided, as the adjustable screws on the longitudinal frame *A*, as well as those in the middle of the cross-piece *m*, are easy to reach and can be easily handled without endangering the wire-cloth. The arrangement
 40 above described also permits of the attachment and adjusting of the edge bars being effected in a relatively simple and durable manner.

Having thus fully described my invention, 45
 I claim as new and desire to secure by Letters Patent—

A sizing device for paper-machines provided with undivided edge bars which pass through suitable packed openings in the side
 50 bars and are fixed independently of the latter on the longitudinal frames of the wire-cloth table, as set forth.

In witness whereof I have hereunto set my hand in presence of two witnesses.

ALWIN EUGEN FÜLLNER.

Witnesses:

WOLDEMAR HAUPT,
 HENRY HASPER.