Oct. 27, 1925. 1,559,267

I. LIPSCHITZ

FUR SEAMING MACHINE

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Fig.1.

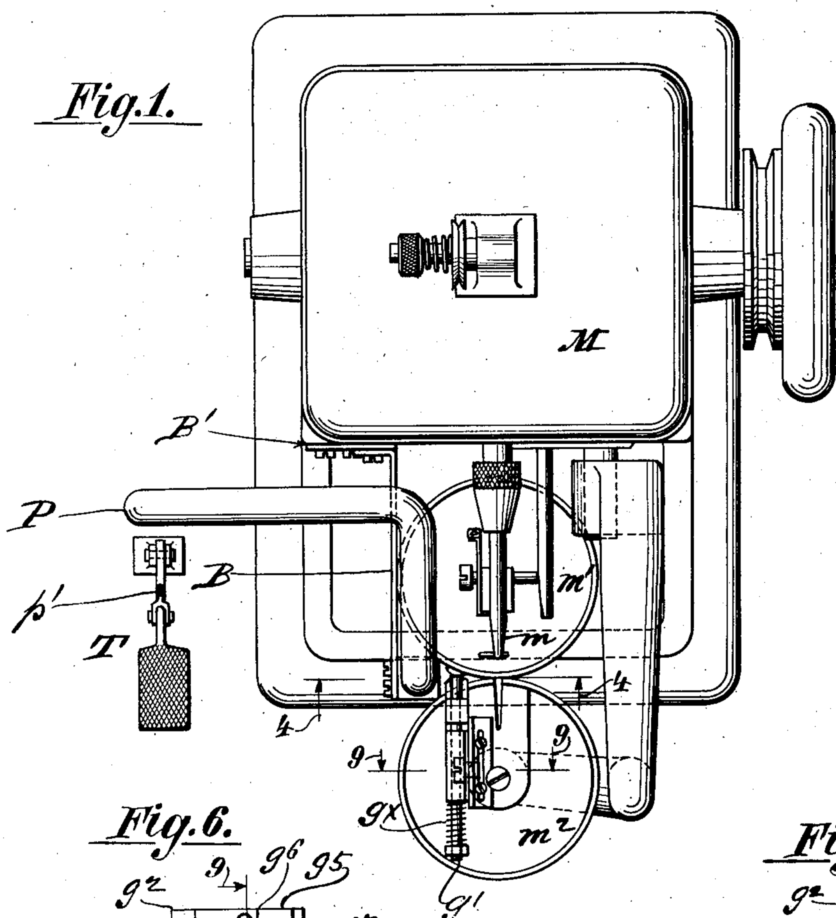


Fig.6.

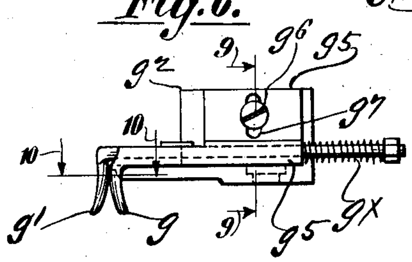


Fig.7.

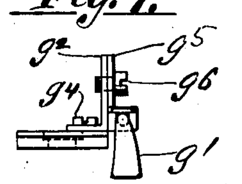


Fig.9.

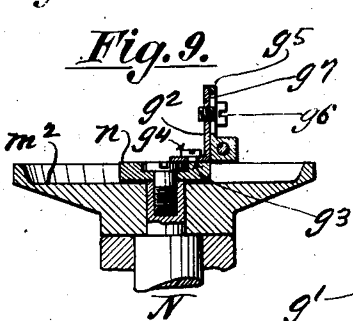


Fig.8.

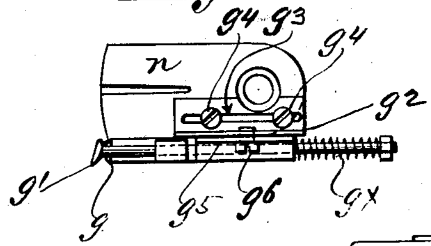


Fig.10.

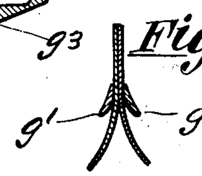
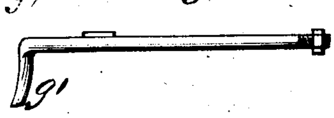


Fig.11.



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Fig. 2.

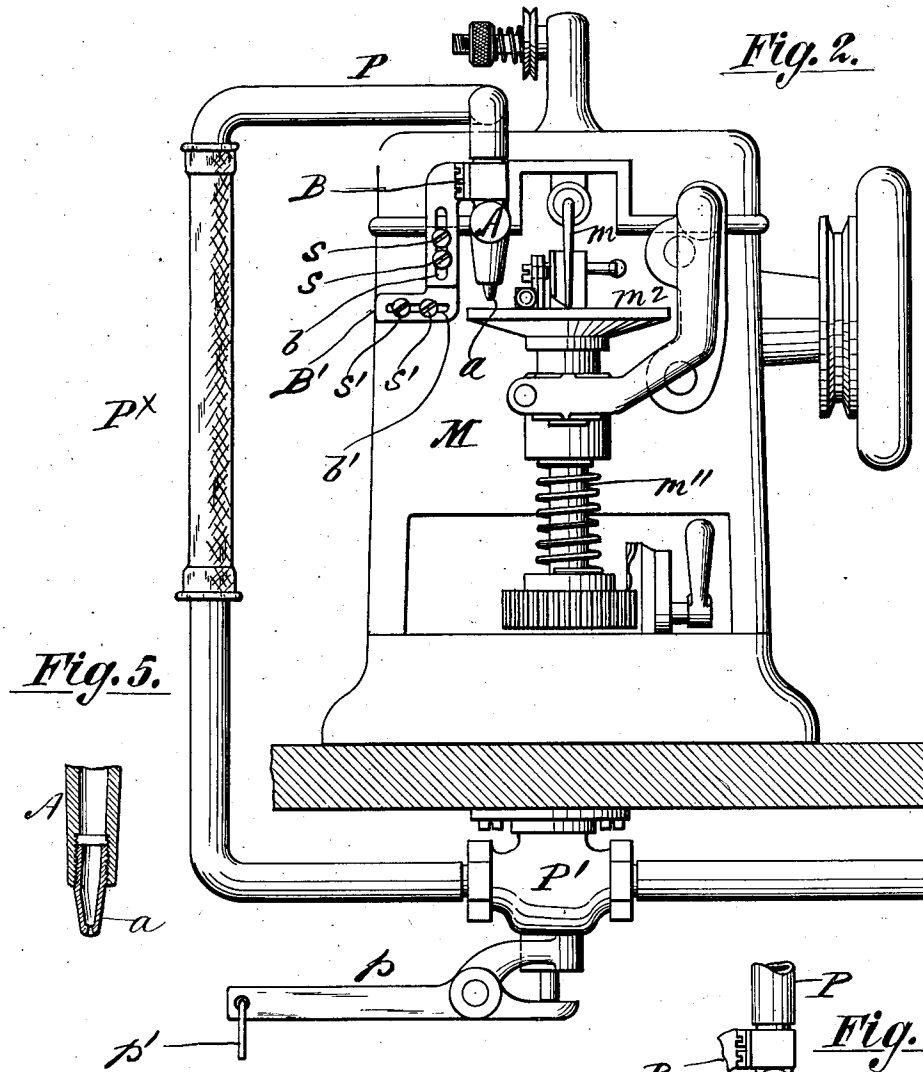


Fig. 5.

Fig. 3.

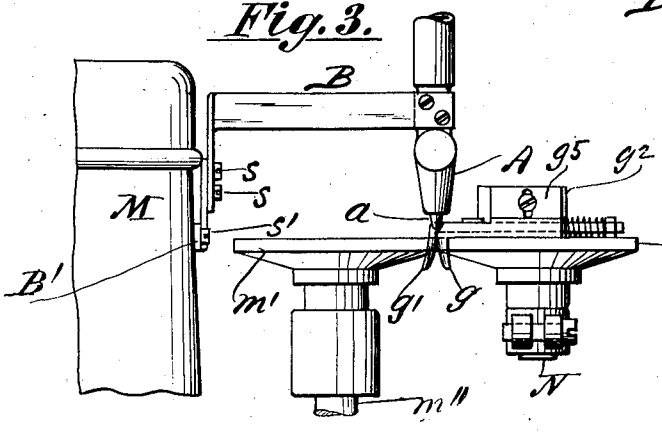
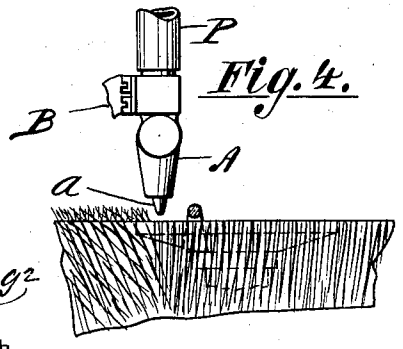


Fig. 4.



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UNITED STATES PATENT OFFICE.

ISIDORE LIPSCHITZ, OF BROOKLYN, NEW YORK.

FUR-SEAMING MACHINE.

Application filed June 6, 1925. Serial No. 35,359.

To all whom it may concern:

Be it known that I, ISIDORE LIPSCHITZ, a citizen of Russia, having declared my intention of becoming a citizen of the United States, and a resident of the borough of Brooklyn, county of Kings, city and State of New York, have invented certain new and useful Improvements in Fur-Seaming Machines, of which the following is a specification, sufficient to enable those skilled in the art to which the invention appertains to utilize the same.

My improvements relate to the type of sewing machine adapted to the uniting of the edges of strips or pieces of fur in a manner well known, in a general way, in the prior state of the art, and as exemplified in my concurrent applications Serial No. 7,245, filed February 6th, 1925, and Serial No. 24,098, filed April 18th, 1925, the object being in both cases to render the feed of fur to the sewing mechanism not only practically automatic but also more rapid and effective than heretofore,—the present invention relating more particularly to the apparatus disclosed in said latter application Serial No. 24,098, the distinctive feature in which is the employment of a jet of air for the purpose of inturning the hairs of the fur adjacent to the seam, and said present invention consisting in means for controlling said air jet by foot pressure; in means for affecting a universal adjustment of the air jet nozzle; and in a new method and means of seam control, all as hereinafter fully set forth and described and claimed specifically.

In the accompanying drawings I illustrate a practical embodiment of the essential features of my invention in a sewing machine of the character designated, although I do not limit myself to the identical construction of parts shown by way of exemplification, since changes may be made in minor details, and equivalent mechanical expedients resorted to, with like results, and without departing from the spirit and intent of my invention in this respect.

With this understanding:—

Fig. 1, represents a top view of a fur seaming machine of well known manufacture, with my feed attachments applied thereto;

Fig. 2, is a front elevation of the apparatus shown in Fig. 1;

Fig. 3, is a side elevation, in part, of the apparatus shown in the preceding figures, illustrating more particularly the co-relation of the feed discs, air jet, and seam adjuster;

Fig. 4, is a sectional elevation taken upon plane of line 4—4, Fig. 1, looking in the direction of the arrows, and still further illustrating the co-relation of feed disc, air jet and seam adjuster;

Fig. 5, is a sectional detail of an air jet nozzle adapted for use in my improved fur sewing machine;

Fig. 6, is an elevation of the left hand side of my new fur seam adjuster;

Fig. 7, an elevation of the inner end thereof;

Fig. 8, is a top view thereof;

Fig. 9, is a transverse sectional elevation taken upon plane of line 9—9, Figs. 1 and 6.

Fig. 10, is a sectional detail taken upon plane of line 10—10, Fig. 6;

Fig. 11, is an elevation of the automatic clamp member of the seam adjuster.

As heretofore stated in my previous applications named the operator of this class of machine had to be trained for the purpose, involving long terms of apprenticeship before sufficient skill was acquired to do effective work; and the latter has been necessarily limited in scope as compared with the possibilities and capacity of the machine, because the feed of the edges of the fur pieces to be sewed together had to be accomplished by the fingers of the operator and involved not only the advancing of the opposed edges to the needle in proper alignment as related to each other, but also the turning down and in of the hairs adjacent to said edges, so as to be incorporated within the resultant seam,—the requisite expert manipulation incidental thereto being difficult and expensive for obvious reasons as compared with the limited output of product.

Hence, the main object of my invention, which is the result of several years of experimental investigation of the subject, is to simplify and render substantially automatic the feed of the edges of fur to the sewing mechanism, relieving the fingers of the operator from the need or function of inturning the hair adjacent to said edges, and accomplishing this result uniformly and accurately by the means herein set forth, a distinctive feature being the use of a jet of air under pressure which insures the imposing of the adjacent hairs on the opposed sur-

faces into and between the seam,—the action of said hair-inturning air jet being aided and supplemented by accessory parts as hereinafter set forth.

M, represents any desired or known type of fur sewing machine, constructed and operating in a manner well known in the art, m, being the stitch looper, m', the rear feed disc, and m^2, the front feed disc. The rear feed disc m', is mounted on a vertical shaft m^{11}, actuated in the usual manner by the sewing mechanism.

B, is a bracket arm rigidly, but adjustably supported on the frame of the machine M, as indicated in Figs. 1, 2 and 3, of the drawings, said bracket arm B, having mounted upon its forward end an air jet nozzle A, which is connected with an air supply pipe P, communicating indirectly through a throttle or pressure regulating valve P′, with a compressed air tank, reservoir, or other source of air under a suitable degree of compression, said valve P′, controlling the amount and force of air ejected through the tip a, of said air jet nozzle A. This ejector tip a, is adjustable upon the nozzle A, by reason of its screw connection therewith, as will be understood by reference to Fig. 5, of the drawings, and the nozzle itself is made adjustable both vertically and horizontally by suitable means, as by that illustrated in the first three figures of the drawings, which show the bracket arm B, on which the air jet nozzle A, is mounted as vertically adjustable upon its base plate B′, by means of binding screws s, s, extending through a longitudinal slot b, in the vertical portion of said bracket arm B, while the basic plate or portion B′, of the bracket, considered in a unitary sense, is adjustable horizontally by means of binding screws s', s', extending through a horizontal longitudinal slot b', in said base plate B′,—reference being had in this connection particularly to Fig. 2, of the drawings, by which it will be seen that provision is thus made for a practically universal adjustment of the tip a, of the nozzle A, as related to the feed discs m', m^2, and the work to be done. In other words, the distance of the ejector tip a, above the upper plane of the feed discs m', m^2, and with relation to the edges of the fur to be united may be prescribed and regulated with accuracy in accordance with varying requirements of use.

To facilitate this universal adjustability of the air nozzle supporting bracket means B, B′, in the simplest manner possible, I interpose in the air supply pipe P, a section of rubber hose P^x, which readily adapts itself to requirements in this respect.

Another novel feature of my present invention consists in controlling the air pressure supply to the nozzle A, by foot pressure, thereby relieving the operator of the necessity of regulating such air supply by hand as in my concurrent application Serial No. 24,098 hereinbefore referred to, and enabling him to devote his whole manipulative attention to the seam in course of formation. To this end the throttle or pressure regulating valve P′, may be of a well known commercial type, opened against spring valve seating pressure, by a lever p, as indicated in Fig. 2, of the drawings, said lever p, being actuated through the medium of a pull-connection p', by means of a treadle T, as indicated in Fig. 1, or by equivalent foot-control means.

As will be seen by reference more particularly to Figs. 3 and 4, of the drawings, the air pressure nozzle A, is positioned above the line of advance feed of fur to the discs m', m^2, so that the air jet impinges upon the hairs of both skins adjacent to the edges thereof which are to be united, with the result that said hairs are inturned between the opposed edges of the skins and prior to the action of the stitching mechanism, and hence all danger of the protrusion of the hairs through the seam is eliminated.

A third feature of my present invention as distinguished from the prior state of the art and from my aforesaid concurrent application for patent, is the provision, between the air jet nozzle A, and the opposed edges of the feed discs m', m^2, of a seam gauge G, comprising co-related twin guide jaws g, g', which are convergent with relation to each other and to the feed discs m', m^2. These twin guide jaws g, g', are mounted on a flanged standard g^2 which in turn is adjustably mounted on the needle plate n, which latter is rigidly secured, as by means of the set screw n', to the top of the stationary spindle N, on which the front feed disc m^2, is rotatably mounted, as will be understood by reference more particularly to Fig. 9, of the drawings,—the base of said flanged standard g^2, being formed with a longitudinal slot g^3, (Fig. 8) for the accommodation of the binding screws g^4, g^4, by which the seam gauge G, is thus adjustably secured to said needle plate N, for the purpose of affording lateral regulation of the guide jaws g, g', with relation to the line of feed of seam between the air jet a, and the coincident peripheral edges of the feed discs, as will be seen by reference more particularly to Fig. 1, of the drawings.

Both of the guide jaws g, g', are mounted on a guide plate g^5, which is vertically adjustable on the standard g^2, as by set screw g^6, and slot g^7, shown more particularly in Figs. 6 and 9, of the drawings, so that, in conjunction with the slot g^3, and binding screws g^4, g^4, provision is thus made for both vertical and horizontal adjustment of the guide jaws g, g', with relation to the line of seam feed.

The guide jaw g, is rigidly affixed to the guide plate g^5, whereas the twin jaw g', is yieldably supported thereon and provided with a retractile spring g^x, which tends constantly to draw said guide jaw g', toward the fixed guide jaw g, said spring g^x, adapting the jaw g', to and compensating for, variations in the thicknes of the component parts of the seam and effectually supporting the said seam laterally in its transit from the air jet a, to the feed discs m, m^2, and stitching mechanism. In fact these twin guide jaws g, g', thus operatively constructed and arranged, are an important and material aid to the fingers of the operator in the proper alignment of the conjunctive edges of the fur to be united, thus facilitating and cheapening production.

It will be obvious from the foregoing description, taken in conjunction with the drawings, that by my additions and attachments to the seaming machine I eliminate the need of skilled labor and manipulation in affecting the feed of the edges of the skins to the seaming mechanism, thereby cheapening and expediting the operation, and attaining better and more uniform results.

What I claim as my invention and desire to secure by Letters Patent, is:—

1. In a fur sewing machine of the character designated, the combination with the feed discs and sewing mechanism, of an air jet nozzle positioned in the line of feed in advance of the stitching point to direct a jet of air between the layers of the fur passing between the feed discs to inturn the hairs on the opposed edges of the fur preceding their subjection to the stitching operation, and means for effecting the adjustment of said air jet both horizontally and vertically as related to the feed discs and seam, substantially in the manner and for the purpose set forth.

2. In a fur sewing machine of the character designated, the combination with the feed discs and sewing mechanism, of an air jet nozzle positioned in the line of feed in advance of the stitching point to direct a jet of air between the layers of the fur passing between the feed discs to inturn the hairs on the opposed edges of the fur preceding their subjection to the stitching operation, and a seam gauge positioned between said air jet nozzle and the feed discs and comprising co-related twin guide jaws convergent as related to each other and to the said feed discs, one of said guide jaws being slidably mounted and spring-controlled, for the purpose and substantially in the manner set forth.

ISIDORE LIPSCHITZ.