

Dec. 29, 1925.

F. HEITZLER

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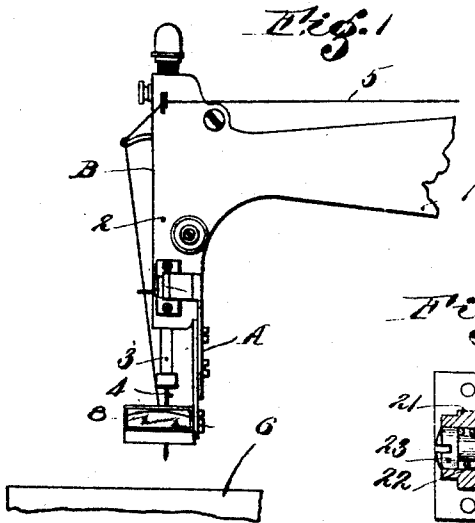
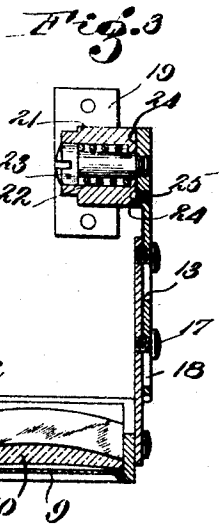
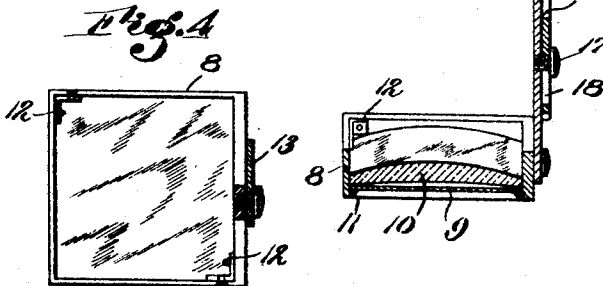
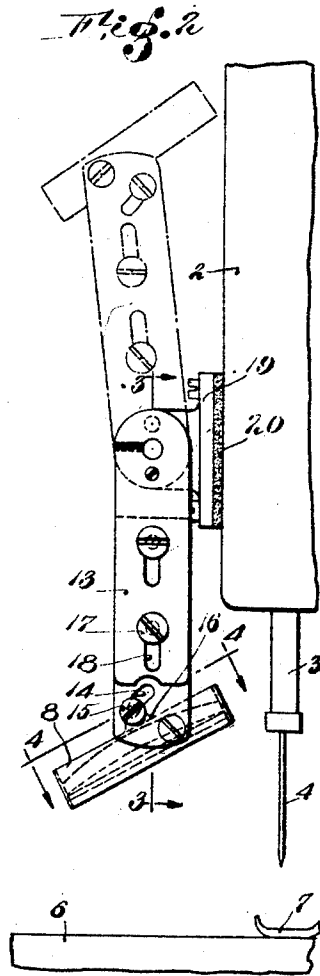
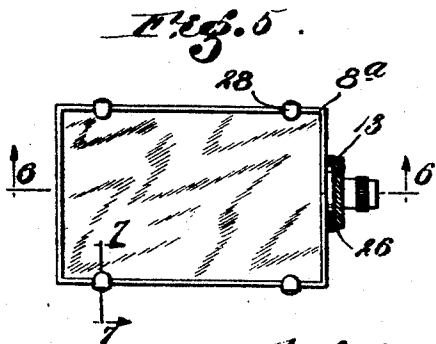
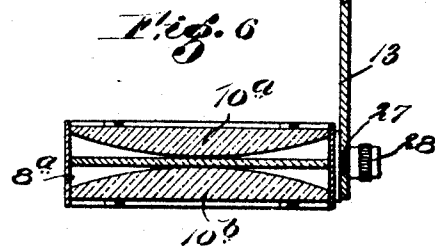
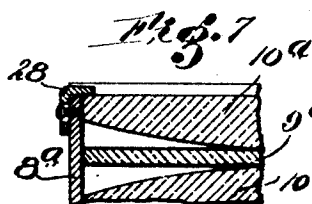
ATTACHMENT FOR SEWING MACHINES

Filed Sept. 20, 1924

Claiming attachment
as shown

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8-9 OPTICS
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UNITED STATES PATENT OFFICE.

FRANK HEITZLER, OF BOSTON, MASSACHUSETTS.

ATTACHMENT FOR SEWING MACHINES.

Application filed September 20, 1924. Serial No. 738,835.

To all whom it may concern:

Be it known that I, FRANK HEITZLER, a citizen of the United States of America, and resident of Boston, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Attachments for Sewing Machines, of which the following is a specification.

This invention relates to attachments for sewing machines and particularly to devices for enabling the operator clearly to observe the sewing operation without moving in too close proximity to the work.

Sewing machine operators are ordinarily subjected to very great eye strain when working over extended periods of time because it is essential for efficient results that the material being sewed constantly be watched closely and intensely so that it may properly be guided and directed relatively to the reciprocating needle. In order more clearly to watch the sewing operation most operators bend over closely to the work and the muscles in their backs become extremely tired so that inefficient work soon results or they are compelled to cease working and rest for a while. Furthermore working upon black or brightly colored cloth for a time is hard on the eyes and is liable to injure the vision so that operators are unable to work on such cloth for long periods of time. The above difficulties tend materially to reduce the volume of work accomplished in tailoring establishments and other places where it is desirable that the machines be kept in continuous operation.

Objects of the invention are to overcome the above difficulties to provide a simple device readily attachable to sewing machines and having a lens which magnifies that portion of the material in which the stitches are being formed and which is conveniently adjustable to a position so that the operator may assume a comfortable position while at his work; to provide in connection with such device means for shutting off the injurious ultra-violet and infra-red light rays so that white or brightly colored materials can be sewed without danger of straining the eyes; and to mount the device in such position as to permit him to apply his hands or fingers in the usual manner for manipulating the work.

The invention is shown by way of illustration in the accompanying drawings in which:

Fig. 1 is a side elevation of a sewing machine equipped with a lens for magnifying that portion of the work at which the stitches are being formed;

Fig. 2 is an enlarged elevation of the device attached to the sewing machine head;

Fig. 3 is a section on the line 3—3 of Fig. 2;

Fig. 4 is a section on the line 4—4 of Fig. 2;

Fig. 5 is an elevation of a modified form; Fig. 6 is a section on the line 6—6 of Fig. 5; and

Fig. 7 is a fragmentary section on the line 7—7 of Fig. 5.

In the embodiment of the invention illustrated the magnifying device A is attached to a sewing machine B. The sewing machine is of usual and well-known construction having the supporting arm 1 with which the depending head 2 is integral; the needle bar 3 carrying the needle 4 reciprocating in the head 2, and thread 5 being fed from a suitable source to the needle in the usual manner. The cloth or other material to be sewed is supported on the work rest 6 and guided under the needle 4 and pressure foot 7 in the sewing operation.

The magnifying device A is preferably attached to the head 2 of the machine in spaced relation to the work rest 6 and serves to enable the operator more readily and easily to watch the material being sewed. This device comprises a rectangular metal frame 8 for the lenses 9 and 10 which are held in place by an inwardly offset shoulder 11 on the inside of the frame on one side and angular metal corner pieces 12 on the opposite side which are removably connected to the frame by screws so that the lenses may be removed to enable them to be replaced by others of greater or less magnifying power. The lens 10 is preferably of long focus plano-convex type and the lens 9 may be of glass colored amber, blue or in fact any suitable shade, such as the colors known to the optical trade as "amethyst" or "novial", being especially well adapted to relieve the eyes of the operator and enable him to sew brightly colored cloths for an ex-

tended period of time without danger of eye strain.

One side of the frame 8 is pivoted to an extensible arm 13 at a point offset from the center thereof in order that the frame may be tilted to the proper angle for the operator conveniently to look through the lenses. In order to hold the frame 8 tilted to the desired degree a curved slot 14 is formed in the arm 13 and a screw 15 extends through the slot into a lug 16 formed on the frame. The arm 13 is made up of two pieces held together by screws 17 which extend through elongate slots 18 in one of the pieces and in this manner the length of the arm can be varied to bring the frame 8 closer to or farther away from the work rest 6, as desired.

The arm 13 is supported from the head 2 of the machine by a bracket 19 which is connected thereto by screws, a pad 20 of felt, rubber or other suitable material being interposed between the bracket and head to take up the machine vibration. The arm 13 is pivoted to the bracket 19 so that it can occupy the depending position shown in full lines in Fig. 2, when in use, or to an inoperative position as shown in the dot and dash lines. In order to hold the arm 13 in either of said positions the bracket 19 is formed with a tubular bearing projection 21 having a recess to receive a coil spring 22 bearing against the under side of a screw 23, the screw being threaded into the arm 13 so that the arm 13 is yieldingly held against one end of the projection 21. Formed in the outer edge of the projection 21 in diametrically opposed relation are sockets 24 arranged to receive the projecting end of a threaded pin 25 which snaps into one or the other of the sockets thus holding the arm in one position or another.

If greater magnifying power is desired two plano-convex lenses 10^a and 10^b having an interposed colored lens 9^a may be mounted in a frame 8^a to which is secured as by screws a plate 26 having an integral screw-threaded stud 27 for pivoting the frame to the arm 13, a cap screw 28 being threaded into the stud for holding the frame in position. In order to hold the lenses to the frame 8^a clamps 28 in the form of metal strips bent at substantially right angles fit over the sides of the frame and are held thereto by screws, thus enabling the lenses to be removed in a simple manner. It will be observed that the frame 8^a is longer than the frame 8 so that a larger surface is covered although it is to be understood that the size and shape thereof may be varied as desired.

I claim:

1. An attachment for sewing machines comprising an arm supporting a magnifying lens at one end, a pintle member projecting from the opposite end of the arm,

and a bracket adapted to be secured to the machine frame having a bearing for the pintle, a spring tending to move the pintle axially of the bearing, the latter having spaced sockets in its end wall, and a pin projecting from the arm adjacent to the pintle and alternatively engageable with either of said sockets to hold the arm either in operative or inoperative position.

2. An attachment for sewing machines comprising a bracket adapted to be secured to the head of a sewing machine, an arm pivoted at one end to the bracket, means for normally retaining the arm in a predetermined substantially vertical position including a spring urging the arm into contact with the bracket and a pin carried by one of said parts normally engaging a socket in the other of said parts, a lens pivotally supported adjacent to the lower end of the arm to turn about a substantially horizontal axis, and means for retaining said lens in a selected position of angular adjustment about said axis.

3. An attachment for sewing machines comprising a bracket provided with means for attaching it to the frame of a sewing machine, said bracket being provided with a resilient pad for engagement with the surface of the machine frame, an arm pivoted to the bracket, said arm comprising relatively adjustable sections, and a magnifying lens carried by said arm.

4. An attachment for sewing machines comprising a bracket adapted to be secured to the head of the machine, an arm comprising a pair of elongate members, one of said members having elongate slots therein and the other having set screws engaging said slots to permit adjustment of the length of the arm, a pivot connecting one of said members to the bracket, a lens frame pivotally connected to the other of said members, and a long focus lens in said frame.

5. An attachment for sewing machines comprising a bracket adapted to be attached to a part of the machine, an arm pivoted to said bracket, a rectangular frame pivoted to said arm, a pair of plano-convex lenses in said frame, a colored transparent screen interposed between the lenses, detachable retainers for holding the lenses and screen in the frame, means normally retaining the arm in a position such that the lenses are adjacent to the presser foot but spaced from the work support, the frame being pivoted to the arm to tilt so that the operator is enabled to observe the sewing operation through both lenses without moving closely to the sewing mechanism.

6. An attachment for sewing machines comprising a bracket adapted to be attached to a part of the machine, an extensible arm pivoted to said bracket, a rectangular frame

pivoted to said arm, a convex lens in said frame, a colored transparent screen in said frame, detachable angle members engaging the frame, removably holding said lens and
 5 screen in said frame, said arm when in normal position holding the lenses in the vicinity of the sewing mechanism, the frame being pivoted to the arm to tilt so as to vary the angle made by the focal axis of
 10 the lens with the plane of the work support of the machine.

7. An attachment for sewing machines comprising an arm, means for pivotally attaching the arm to the frame of a sewing
 15 machine, spring actuated means for positively retaining the arm in desired position of angular adjustment, a lens frame secured

to the arm, a long focus magnifying lens within the frame, a colored transparent screen also mounted in the same frame and
 20 means for removably securing the lens and colored screen in the frame.

8. An attachment for sewing machines comprising an arm pivotally secured at one end to the machine head, a rectangular lens
 25 frame detachably and adjustably secured to the opposite end of the arm, a pair of long focus plano-convex lenses arranged with their convex faces adjacent to each other in the frame, and a plate of plane
 30 colored glass disposed between the lenses.

Signed by me at Boston, Mass., this 16th day of September, 1924.

FRANK HEITZLER.