

J. B. LINCOLN & C. F. CLOUGH.
Sewing-Machines.

No. 140,584.

Patented July 8, 1873.

FIG 1.

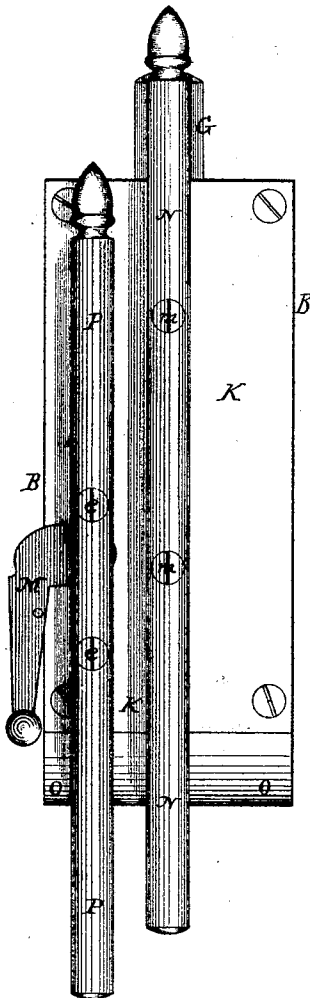
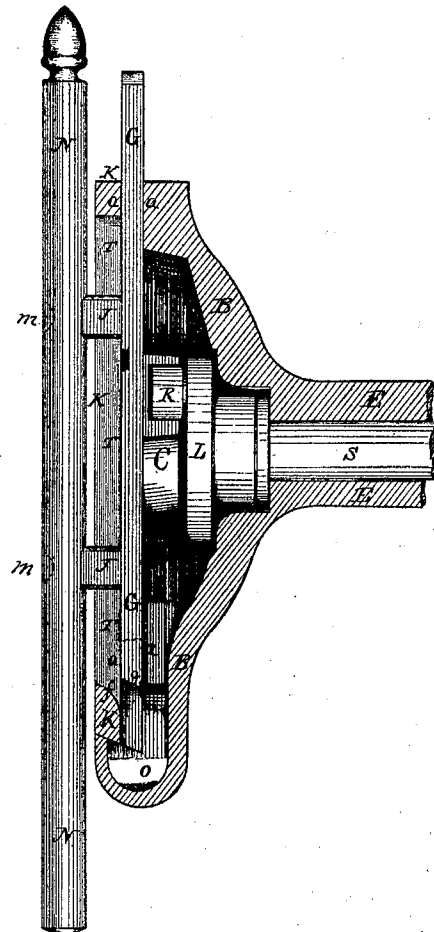


FIG 2.



Witnesses.

Inventors.

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UNITED STATES PATENT OFFICE.

JESSE B. LINCOLN AND CHARLES F. CLOUGH, OF PROVIDENCE, R. I.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **140,584**, dated July 8, 1873; application filed September 24, 1872.

To all whom it may concern:

Be it known that we, JESSE B. LINCOLN and CHARLES F. CLOUGH, both of the city and county of Providence and State of Rhode Island, have invented a new and useful Improvement in Sewing-Machines, of which the following is a specification, referring to the accompanying drawing making part of the same.

Our said improvement is applicable more particularly to the class of sewing-machines in which the straight needle with its perpendicular movement is used, and is calculated to overcome an important objection to the same, which we will proceed to explain: The straight needle, in machines as heretofore constructed, is confined in the lower end of an upright needle-bar, which, by means of suitable mechanism, slides in perpendicular ways or guides directly over the table or plate of the machine on which the fabric is placed to be sewed. The extent of rubbing-surface, together with the rapid movements of these parts, requires thorough lubrication by frequent applications of oil to the same. On the other hand, by the application of no more oil than is absolutely required to lubricate the parts, by their operation the oil gradually works downward to the lower part of the needle-bar and onto the needle, and saturates the thread, or is thrown or accumulates on the lowermost part of the slide-way, and drips upon the work on the sewing-plate beneath, and in either case soils and damages the work beyond reparation in many cases where the fabric or workmanship is expensive, or when the fabric or garment, from its nature, cannot be washed, or is not intended to be until after it is sold in the market in form to be immediately worn by the purchaser. This objection of its liability to soil the work with the oil with which the parts which operate the needle are lubricated is so serious in its nature, and important as affecting its probable usefulness, even with care, as to hinder the sale of the straight-needle machines, which require oiling over the work, in favor of the curved-needle machines, which do not, although the straight-needle machines would otherwise, in most cases, be preferred for manufacturing purposes, on account of the more positive, direct, and powerful action of the needle. The invention, in the present in-

stance, therefore, relates to the employment of means for preventing the oil with which the needle-holder or needle-bar, and the parts which operate the same above the work, are lubricated from soiling the work; and consists, first, in combining and arranging, with the straight needle and needle-bar for holding and carrying the same, a separate guide-bar, mounted in the usual manner of the straight needle-bar, to slide perpendicularly, but with the needle-bar and needle placed outside and away from the course of the lubricating-oil, so that the fully-lubricated guide-bar will not communicate its discolored oil to either the needle-bar or the needle, to soil the garment or the thread with which it is sewed. The second part of the invention consists in providing, beneath the said guide-bar and the working parts which communicate motion thereto, a receptacle beneath all that will collect and retain any excess or accumulation of oil from whatever immediate source, and thereby prevent it from dripping, or in any way soiling the work. The third part of the invention consists in combining and arranging a separate guide-bar with the presser-bar of the presser which holds the work in position on the table, to be sewed with the straight needle, so that, like the needle-bar, the oil with which its slide is lubricated is conveyed into the receptacle provided for the purpose, and cannot drip or run down upon the presser and soil the work.

In the drawing, Figure 1 is a front elevation of the needle-bar and presser-bar, and the parts of the machine in which they operate. Fig. 2 is a side elevation and section of the needle-bar and its guide-bar, and the working parts that operate the same.

Similar letters mark like parts in both figures.

The needle-bar N and the presser-bar P are arranged outside, in front of the head B on the arm E overhanging the table of the sewing-machine. Within the head B the upright guide-bar G is fitted to slide perpendicularly in suitable ways or guides *a a a*, by motion communicated from the driving mechanism, consisting of the cam C, the roller R, and crank L on the driving-shaft S. The needle-bar N is permanently connected to the guide-

bar G by means of two studs, J J, which extend through the opening T in the front plate K of the head, and are secured by screws *m m* passing through the needle-bar and studs J from the front, and screwing into the guide-bar in the rear, or by any other effective means of connecting the two bars. In like manner, also, by means of the screws *e e*, Fig. 1, the presser-bar P is connected to its guide-bar, of similar construction, and operated by a spring within the head H, to press it downward with the requisite force upon the work, in the usual way, and is lifted to adjust the work beneath the presser by the cam-lever M.

In the lower part of the head B I provide a closed oil-receptacle or dripping-pan, O, to receive the drippings and deposits of lubricating-oil from the two guide-bars and the driving mechanism overhead. The lower end of the guide-bar G is beveled, with its lowermost edge *g*, from which the surplus or accumulation of oil would naturally drip, directly over the center of the receptacle, and the lower part *f* of the slot or front opening T in the head is also inclined inward, for the purpose of conducting the oil from the outside of the guide-bar into the receptacle O below, so that by no possibility shall any of the lubricating-liquid escape from the head B, but all shall be retained and deposited in the receptacle O at the bottom provided for the purpose.

By this arrangement of the needle and presser bars outside and prominently in front of the head B, these parts may, without difficulty, be wiped and kept free from oil, when, by more close connection or arrangement with the lubricated sliding and working parts, the thread, in its passage to the needle, might become soiled with the lubricating-oil.

The needle-bar and the presser-bar may be an extended arm permanently secured near the bottom of their respective guide-bars, or forming an extension in front of the same

piece with the guide-bar itself, and perhaps other and a better construction of the lower end of the guide-bar and the different parts of the slide or guides may be devised to more effectually and completely isolate the needle-bar and presser-bar from the oil with which the sliding parts of the same are lubricated, so that there will be no liability of soiling the work or the thread with which it is sewed. We wish it understood, therefore, that we do not limit ourselves to the precise construction and arrangement of the parts as described, but claim all merely formal variations thereof calculated to accomplish the same purpose by equivalent means.

What we claim is—

1. The isolated needle-bar, as described, connected with a slide-bar, G, by studs or connections J, by means of which the needle and its thread are removed from liability to soil the work by the oil or fluid used to lubricate the same.

2. The isolated presser-bar, connected with its slide-bar by studs or their equivalents, for holding the fabric to be sewed without liability of soiling the same with the oil or fluid by which its working parts are lubricated.

3. The combination of the isolated needle-bar with a guide-bar and guides constructed substantially as described, to keep the lubricating-oil from the needle-bar, and to conduct any excess of the same into a receptacle provided for the purpose.

4. The oil-receptacle O, as described, and in combination with the head H, or its equivalent, substantially as and for the purpose specified.

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Witnesses:

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