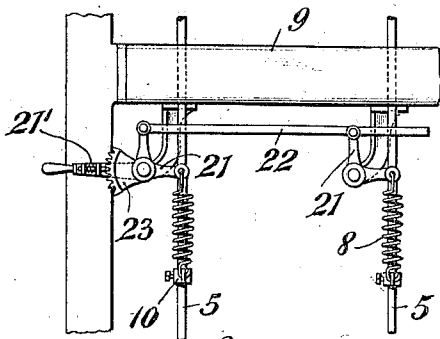
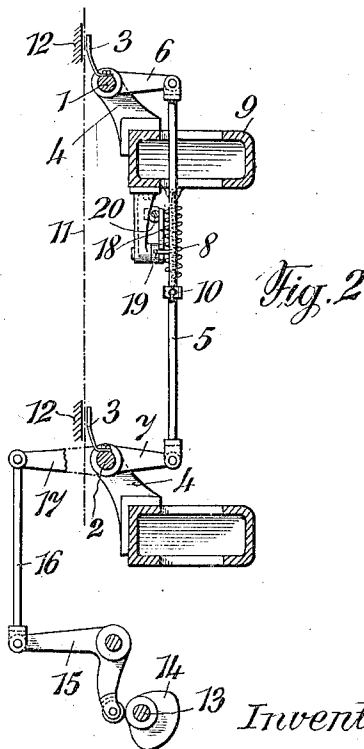
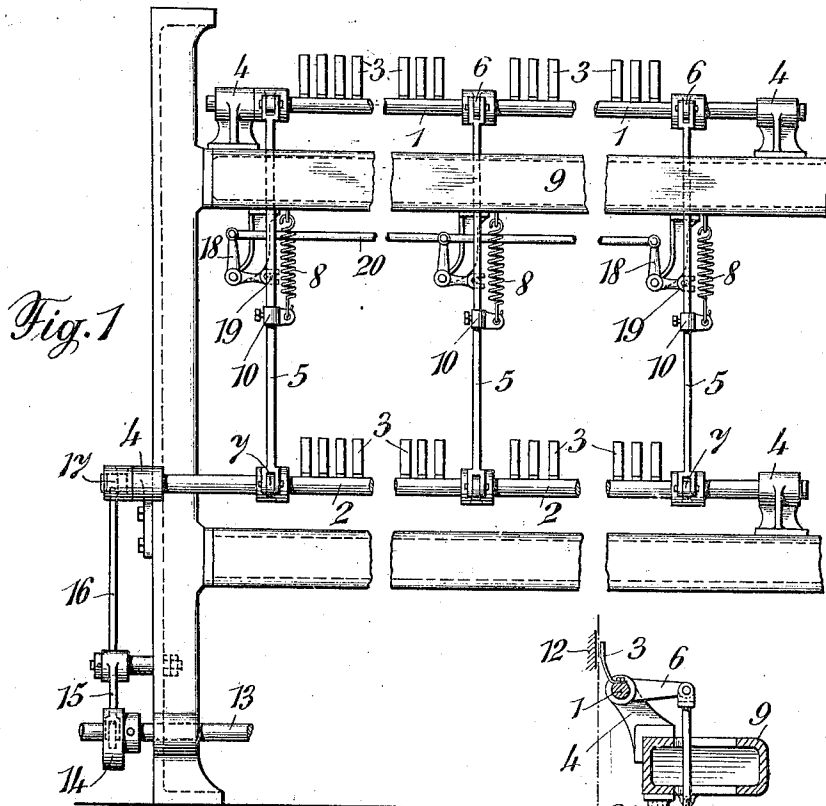


K. KELLER.
EMBROIDERING MACHINE.
APPLICATION FILED MAR. 2, 1912.

1,059,878.

Patented Apr. 22, 1913.



Witnesses:

M. Kommers
C. Leckert.

Inventor:

Karl Keller.
By *Henry M. J.* atty.

UNITED STATES PATENT OFFICE.

KARL KELLER, OF ARBON, SWITZERLAND, ASSIGNOR TO THE FIRM OF ADOLPH SAURER, OF ARBON, SWITZERLAND.

EMBROIDERING-MACHINE.

1,059,878.

Specification of Letters Patent.

Patented Apr. 22, 1913.

Application filed March 2, 1912. Serial No. 681,211.

To all whom it may concern:

Be it known that I, KARL KELLER, a citizen of the Republic of Switzerland, residing at Arbon, Switzerland, have invented new and useful Improvements in Embroidering-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form part of this specification.

My invention relates to embroidering machines and particularly to devices for holding the fabric in position during embroidering and more particularly to that type of such devices in which a rock shaft which carries the means for pressing on the fabric and holding the same in position, is arranged in each range of the embroidering machine.

The object of the invention is to connect positively to each other at several places, the shafts of all ranges so that at each place of connection the pressure exerted by the holding means of all shafts is adjusted independently at the places of connection by a slight torsion of the shafts and the pressure is released simultaneously at all places of connection by means of a common member.

In the accompanying drawing: Figure 1 is a side elevation of a device embodying my invention, Fig. 2 is a vertical section through the same, and Fig. 3 is a detail view of a modified form of the device.

The shafts 1 and 2 are provided with members 3 for holding the fabric in position, said shafts being arranged in the upper and the lower range of the embroidering machine, which in this case is supposed to be provided with two ranges of needles. The shafts are mounted to rock in bearings 4, and are positively connected to each other by means of links 5 arranged at equal distances apart over the whole length of the shafts. In the example shown in Fig. 1 of the drawing, three links are provided which are pivotally connected to arms 6 and 7 mounted on the shafts. A spring 8 is provided for each link, the springs being secured at one end to a cross bar 9 of the machine frame and at the other end to a collar 10 adjustably mounted on the link 5.

The springs 8 act to move the arms 6 and 7 upwardly, turning therewith the shafts 1 and 2 so that the holding members 3 press the fabric 11 against a plate 12, (Fig. 2) thus holding the fabric in position. By adjusting the collars 10 the tension of the springs 8 and therewith the pressure of the holding members 3 may be regulated as desired.

The holding members 3 are removed from the fabric by positive means. For this purpose a cam 14 is mounted on the main shaft 13, and acts on a roller provided on one arm of a bell-crank 15, the other arm of which is connected by means of a rod 16 to an arm 17 fixed on the shaft 2. A bell-crank 18 mounted on the cross bar 9, is provided for each of the rods 5, one arm of each bell-crank 18 being forked to engage a pin 19 secured to the rod 5, while the other arms of these bell-cranks are connected together by a rod 20. When the roller of the bell-crank 15 lies close to the shaft 13 the members 3 hold the fabric in position by the action of the springs 8.

Owing to the great length of the shafts and the rod 20 in comparison with their diameters they possess a large degree of elasticity and by means of the springs 8 and by the torsion of the shafts the pressure of the holding members of both shafts may be regulated at the places where the shafts are connected to the rods 5. If for example the pressure of the holding members is increased at any place of connection by the corresponding spring 8, this increased pressure is substantially confined to this place and only an immaterial part of the pressure is transmitted to the other places of connection, so that in any case at the place of connection the pressure of the holding means is larger than at the other places.

When the projecting portion of the cam acts on the lever 15, the shafts 1 and 2 are turned by means of the parts 16, 17, 7, 5, 6 and 19, 18, 20, and the holding members 3 on both shafts are simultaneously removed from the fabric, that is to say the pressure exerted by the same members is released simultaneously at all places independently from the turning of the shaft.

Fig. 3 illustrates a construction in which all the springs 8 acting to move the members 3 against the fabric are simultaneously manually adjusted in addition to

the singular adjustment shown in Figs. 1 and 2. In the construction of Fig. 3 a bell-crank 21 is provided for each spring 8. These springs are secured at one end to one arm of the lever and at the other end are adjustably fixed to the corresponding rod 5. A link 22 is pivotally connected to the second arms of the levers 21 and the bell-crank which is located near the place of the embroiderer has a third arm 21' by means of which all crank levers can be turned and all springs adjusted. The arm 21' can be fixed in position by means of a toothed segment 23.

15 I claim:

1. In an embroidering machine having a plurality of ranges, a device for holding the fabric in position comprising a rock shaft provided in each range of the machine, means on each shaft adapted to press against the fabric to be embroidered, means for positively connecting the shafts to each other at a plurality of places, a spring mounted at each place of connection, so that by turning the shafts the pressure exerted by said pressing means of all shafts on the fabric is independently adjustable at the places of connection by a slight torsion of the shafts, and means interconnecting the said connecting means for simultaneously releasing the pressure at all places.

2. In an embroidering machine having a plurality of ranges, a device for holding the fabric in position during embroidering comprising a rock shaft provided in each range of the machine, means on each shaft adapted to press against the fabric to be embroidered, arms secured to said shafts at several corresponding longitudinal places, links pivotally connecting corresponding arms on said shafts, a rod interconnecting the said links, and springs secured at one end to the corresponding links.

3. In an embroidering machine having a plurality of ranges, a device for holding the fabric in position during embroidering, comprising a rock shaft provided in each range of the machine, means on each shaft adapted to press against the fabric to be embroidered, arms secured at several corresponding lon-

gitudinal places to each of said shafts, links pivoted to the corresponding arms on each of said shafts, crank levers mounted to engage by one arm the corresponding link, a rod pivotally connected to the second arms of said crank levers, a collar adjustably mounted on each of said links and springs secured at one end to the corresponding collar.

4. In an embroidering machine having a plurality of ranges, a device for holding the fabric in position during embroidering comprising a rock shaft provided in each range of the machine, means on said shafts adapted to press against the fabric, arms secured at several corresponding places to each of said shafts, links pivoted to the corresponding arms on each of said shafts, crank levers mounted to engage by one arm the corresponding link, a rod pivotally connected to the second arms of said crank levers, a collar adjustably mounted on each of said links, springs secured at one end to the corresponding collar, and means for simultaneously adjusting the tension of each of said springs.

5. In an embroidering machine having a plurality of ranges, a device for holding the fabric in position during embroidering comprising a rock shaft provided in each range of the machine, means on each shaft adapted to press against the fabric, arms secured at several corresponding places to each of said shafts, links pivoted to the corresponding arms on each of said shafts, a collar adjustably mounted on each of said links, springs secured at one end to the corresponding collar, a crank lever provided for each spring and connected by one arm to the second end of the corresponding spring, a rod pivoted to the second arms of said second crank levers, a third arm secured to one of said second crank levers, and means for securing the latter arm in any desired position.

In testimony that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

KARL KELLER.

Witnesses:

CARL GUBLER,
ARNOLD LEHNER.