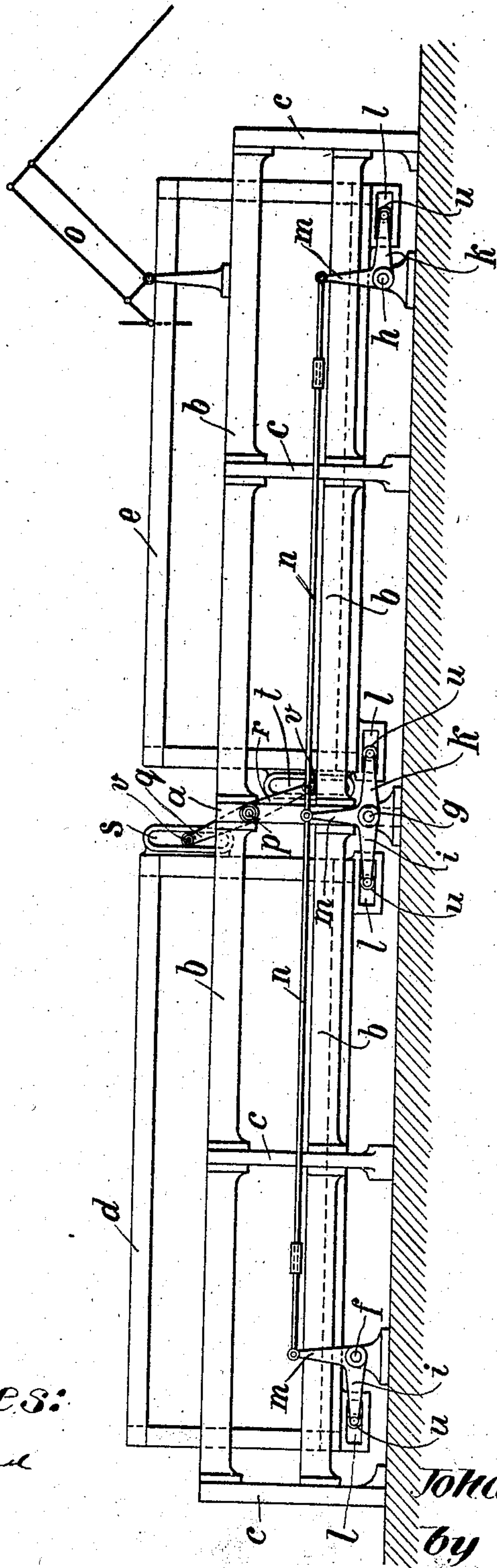


No. 815,177.

PATENTED MAR. 13, 1906.

J. J. KNECHT.  
EMBROIDERING MACHINE.  
APPLICATION FILED SEPT. 7, 1905.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

JOHANN JAKOB KNECHT, OF CHEMNITZ, GERMANY.

## EMBROIDERING-MACHINE.

No. 815,177.

Specification of Letters Patent.

Patented March 13, 1906.

Application filed September 7, 1905. Serial No. 277,330.

*To all whom it may concern:*

Be it known that I, JOHANN JAKOB KNECHT, a citizen of Switzerland, residing at Chemnitz, in the Kingdom of Saxony and Empire of Germany, have invented certain new and useful Improvements in Embroidering-Machines, of which the following is a specification.

This invention relates to embroidering-machines, and especially to a device for suitably connecting to one another the frames of two embroidering-machines arranged beside each other in a line.

With this end in view and for the purpose of avoiding counterweights in said machines the frame of one machine in the present invention is so constructed as to form the counterweight of the other machine. This is attained by arranging both frames upon the ends of levers rigidly connected to one another and placing the supporting-levers of one frame at an angle of one hundred and eighty degrees in regard to the other, so that when the one frame is lifted the other performs a downward movement. By this arrangement counterweights are avoided, so that the attendant has not to operate any dead-load.

In the annexed drawing two embroidering-machines are illustrated in back view provided with the improvement referred to. Supported upon the main intermediate frame-partition *a* of two embroidering-machines arranged beside each other are both the main girders *b*. *c* represents the other frame-partitions, and *d e* the two embroidering-frames.

Pivoted to the axes *f g h* are angle-levers *i m*, *i m k*, and *k m*. The horizontal arms *i* of said levers which extend in one direction support the frame *d*, while their other oppositely-directed horizontal arms *k* support the frame *e*. Fixed to the end of said lever-arms *i* and *k* are rollers *u*, adapted to slide in the slot of the well-known streets *l*, connected to said frames *d* and *e*. Integral with the horizontal arms *i k* are vertical arms *m*, being rigidly connected to one another by means of horizontal connecting-rods *n*. In consequence thereof all the three axes *f g h* and the levers fixed thereto must perform like movements. The two frames *d* and *e* are of quite equal weight, so that, as stated above, the frame *d* forms the counterweight of the frame *e*, and

vice versa, and the one frame must move upward when the other one is moved downward by means of the pantograph *o*.

Pivoted to an axis *p* in the frame-partition *a* is a two-armed lever *q r*, provided at its free end with rollers *v*, adapted to slide in the streets *s t*, fixed to the frames *d* and *e*. Consequently when the frame *e* is moved by means of the pantograph *o* to the right the lever *r* partakes in this movement, and the lever *q* moves or oscillates quite the same distance as the lever *r* in the opposite direction, the frame *d* partaking in this movement to the right.

Having now fully described my invention, I declare that what I claim is—

1. In embroidering-machines the combination of two embroidering-machines, each provided with an embroidery-frame, pivotal supporting members for said frames and means of moving the one frame an equal distance as the other frame in opposite direction.

2. The combination of two embroidering-frames, connected supporting means therefor causing one frame to act as a counterbalance to the other and effecting synchronous movement of said frames in opposite directions vertically, and means causing synchronous movement of said frames horizontally.

3. The combination of two embroidering-frames, connected supporting means loosely secured to said frames causing one to act as a counterbalance to the other and effecting synchronous movement of said frames in opposite directions vertically, and means loosely secured to said frames and causing synchronous movement thereof horizontally.

4. The combination of two embroidering-frames, movably-mounted supporting members therefor connected with each other and causing one frame to act as a counterbalance to the other and effecting synchronous movement of said frames in opposite directions vertically, and a lever connecting said frames and causing synchronous movement thereof horizontally.

5. The combination of two embroidering-frames, pivotally-mounted bell-crank levers connected with each other and secured to said frames to effect synchronous movement thereof in opposite directions vertically, and a pivotally-mounted lever connecting adjacent ends of said frames and causing synchronous movement thereof horizontally.



6. The combination of two embroidering-frames arranged end to end and provided with supporting - streets, bell - crank levers connected with streets at remote ends of  
5 said frames, a rocking lever connected with streets at adjacent ends of said frames, rods connecting said rocking and bell-crank levers causing synchronous movement of said frames in opposite directions vertically, and  
10 a pivotally-mounted lever connected with streets at the adjacent ends of said frames causing synchronous movement of the same horizontally.

7. The combination of two embroidering-

frames, and means causing one of said frames 15 to act as a counterbalance for the other.

8. The combination of two embroidering-frames, means causing one of said frames to act as a counterbalance for the other, and means effecting synchronous movement of 20 said frames.

In testimony whereof I affix my signature in presence of two witnesses.

JOHANN JAKOB KNECHT.

Witnesses:

MORRIS LIPMAN,

FREDERICK J. DIETZMAN.