

No. 723,037.

PATENTED MAR. 17, 1903.

B. SALZER & G. WALTHER.
KNITTING MACHINE.

APPLICATION FILED APR. 8, 1901.

NO MODEL.

3 SHEETS—SHEET 1.

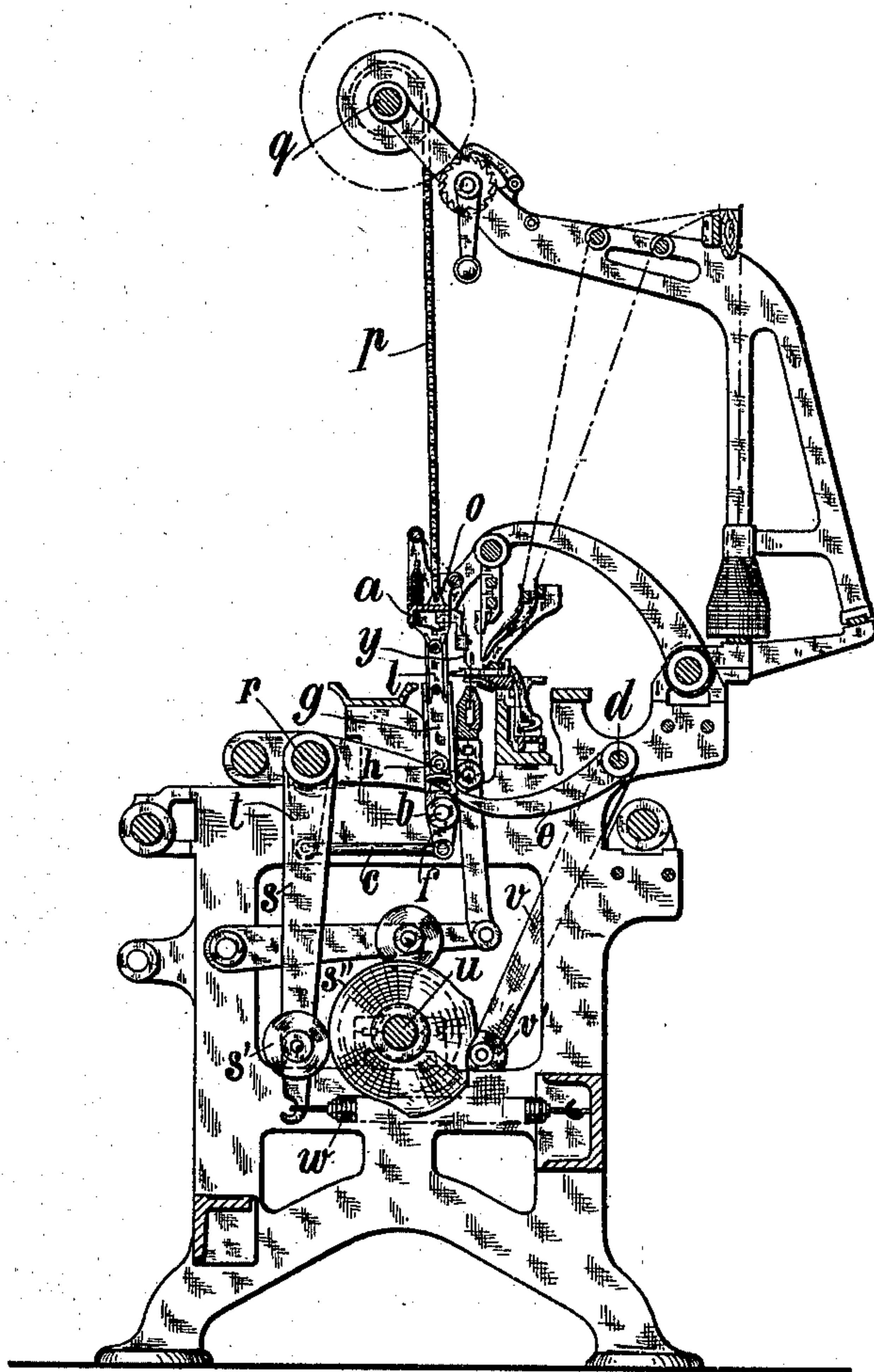


Fig. 1.

Witnesses:
W. E. Manning
Jno. Adams

Inventors:
Berns Salzer
Gustav Walther
By Knight Bros atty

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3 SHEETS—SHEET 2.

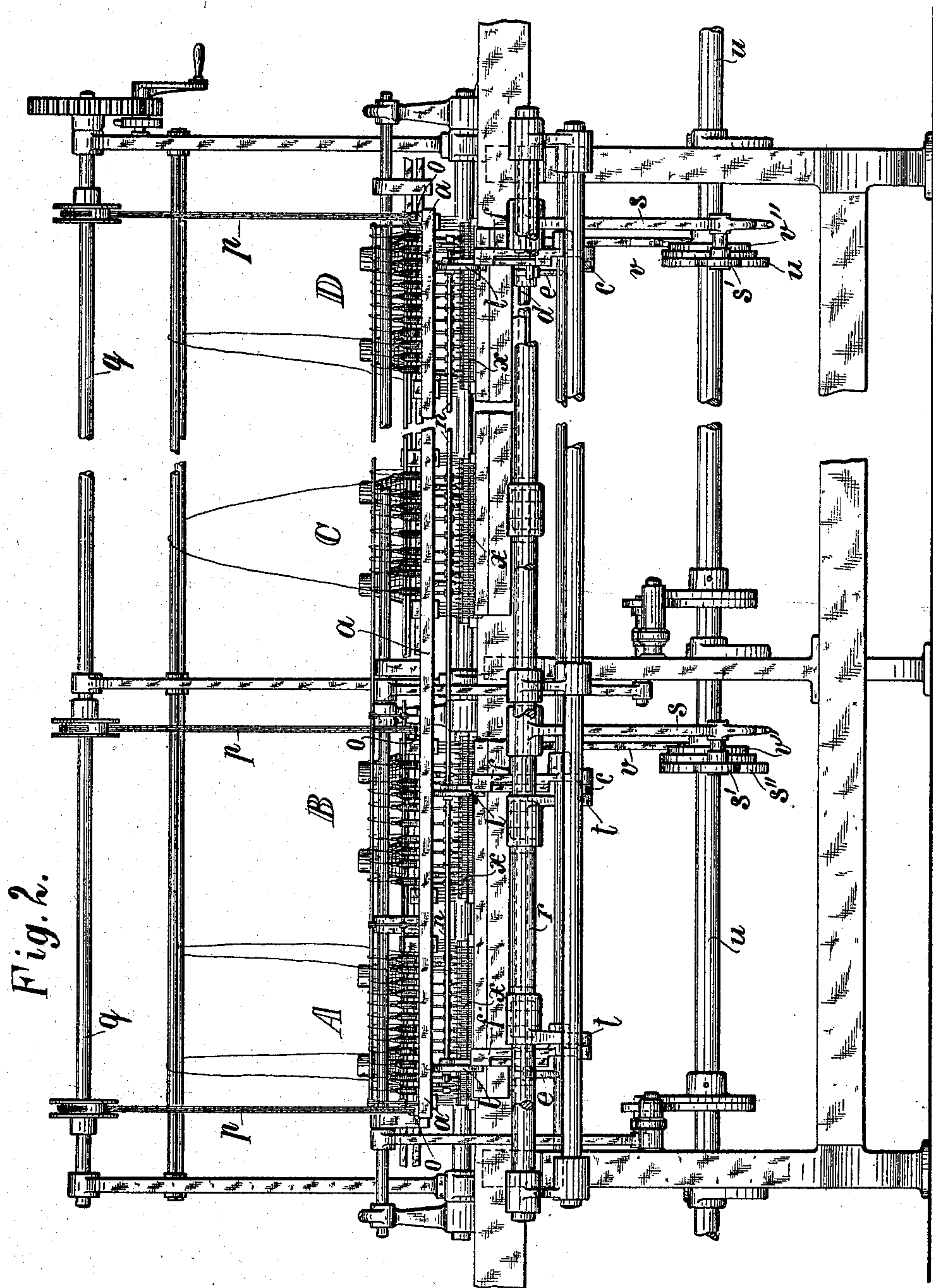


Fig. 2.

Witnesses:
H. E. Manning
J. R. Adams

Inventors
Bism. Salzer
Gustav Walther,
by Knight Bros atty

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3 SHEETS—SHEET 3.

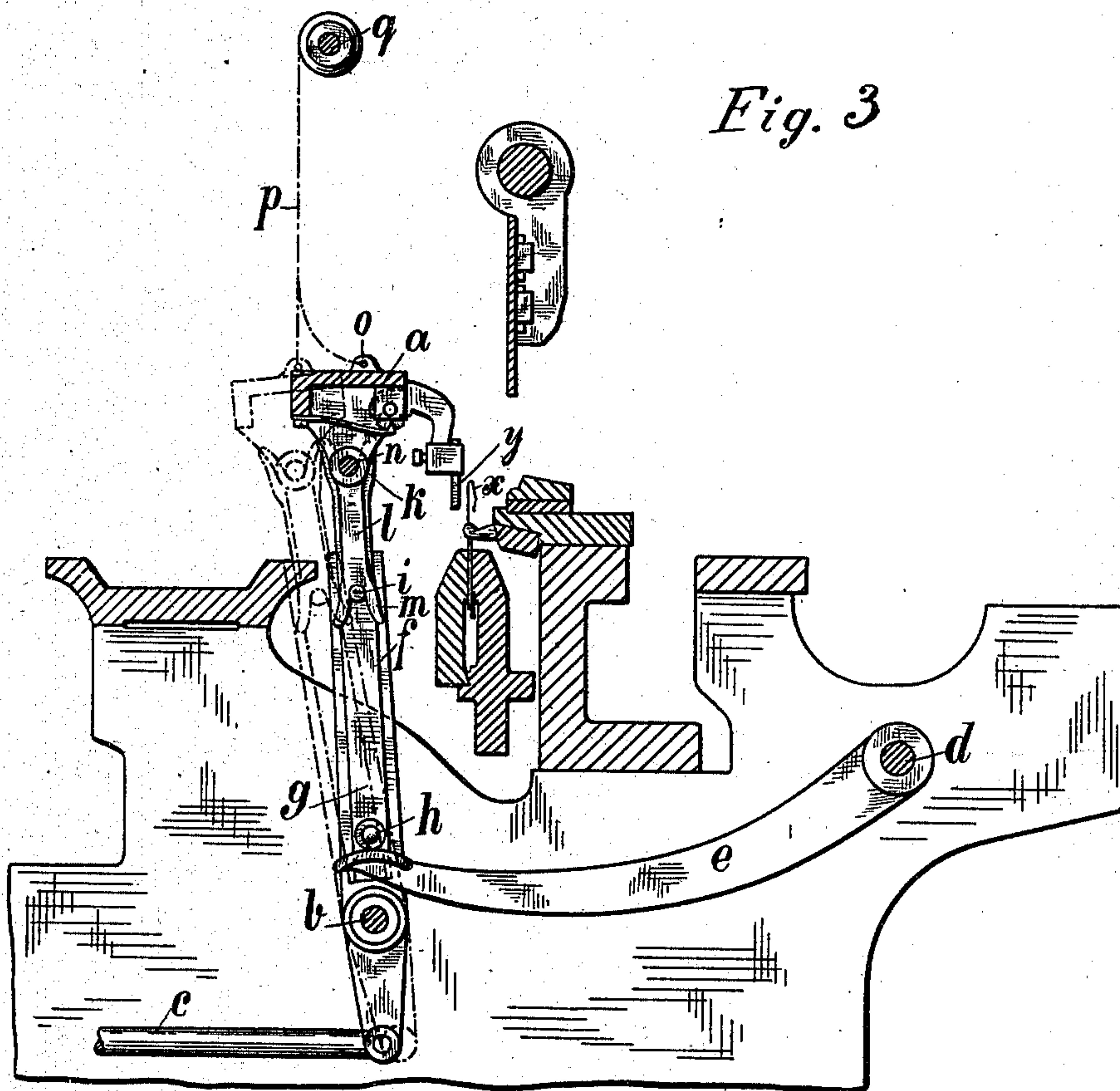


Fig. 3

Witnesses:
Hatherine E. Manning.
Jas. R. Adams

Inventors:
Bruno Salzer,
Gustav Walther,

By Knight Bros.
attys.

UNITED STATES PATENT OFFICE.

BRUNO SALZER AND GUSTAV WALTHER, OF CHEMNITZ, GERMANY.

KNITTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 723,037, dated March 17, 1903.

Application filed April 8, 1901. Serial No. 54,895. (No model.)

To all whom it may concern:

Be it known that we, BRUNO SALZER and GUSTAV WALTHER, subjects of the German Emperor, residing and having our post-office addresses at Adoferstrasse 13 and Neefestrasse 26, respectively, Chemnitz, Saxony, Germany, have invented certain new and useful Improvements in Straight-Bar-Knitting Machines, of which the following is a specification.

This invention relates to straight-bar-knitting machines in which means are provided for removing the thread-guiding bar and guides from their working position when not in use.

The use of straight-bar-knitting machines for producing plain and pattern goods is connected with one disturbing circumstance—viz., the fact that the presence of the thread-guiding bar and guides in the machine when they are not in use are in the way. The observation of the plain-goods knitting and manual assistance which may become necessary are greatly interfered with.

In the accompanying drawings, Figure 1 is a vertical section of the machine; Fig. 2, a front view of the machine with four sets A B C D. Fig. 3, on a larger scale, shows a part of Fig. 1.

The present invention consists in providing means to allow the complete removal of the thread-guiding bar and guides from mechanical connection with the machine and placing them in such an elevated position that they will be entirely beyond reach of the adjacent mechanism, so that the working process and the observation thereof can in no way be disturbed or interfered with.

The system and the construction of the guides are immaterial to the following description, as they do not form part of the invention.

As an example of the application of the invention the annexed drawings represent an apparatus which produces upon knitted ware of any description straight longitudinal lines or stripes of a different material or color. Assuming, for instance, that the spring-needles x produce plain work from black woolen thread and the thread-guide y lays a yellow silk thread, there will be upon the black background a continuous longitudinal row of loops

in yellow silk, since each time the row of needles x operates the thread-guide y traverses the position occupied by the needles and places the yellow thread around the spring-needles in front of it. The thread-guides y are mounted upon a guiding-bar a , which rests upon several levers f and can oscillate horizontally on the stationary shaft b and also be raised and lowered vertically by means of the lever e , fixed to the shaft d . The two movements referred to are taken off the main shaft u . The levers s , oscillating on the shaft r , are, by means of springs w , permanently held in such a position as to cause the guide-pulleys s' , rotatably supported in s , to press against the cam-disk s^2 , arranged on the main shaft u . The connecting-rods c are fixed to the levers t , attached to the shaft r , and move the lever f , oscillating on b , to and fro as soon as the levers s commence to oscillate. The levers e are, together with the levers v , fixed to the shaft d . The rollers v' , arranged on v , are moved by means of the cam-disk v'' , fixed to the main shaft u .

The thread-guiding bar a is not rigidly connected with the levers f , oscillating on shaft b , but rests upon slide-bars g , which slide in prismatic guides in the levers f .

The slide-bars g are provided with lifting-rollers h , with which they rest upon the convex ends of the levers e . While, therefore, the eccentric s'' imparts an oscillating movement to the lever $f g$ by means of the levers $s t$ and the connecting-rod c , the eccentric v'' imparts to the lever e , by means of the lever v , an oscillating movement, and thus raises the system $g a$.

To facilitate the removal of the thread-guiding bar and guides from the machine, the thread-guiding bar a is not rigidly connected with the bars g , but can be lifted from the same. For this purpose each bar g is provided with a laterally-projecting pin i and terminates in a widely-open fork k . From the thread-guiding bar a supporting-arms l , rigidly connected with it, extend downwardly and are connected with a bar n , extending across the whole breadth of the machine. The arms l end in forks m . During the working of the thread-guiding bar, therefore, the weight of the latter bears, by means of the pin i in the fork m and by means of the fork

k, on the bar *n*. When, therefore, the thread-guiding bar is lifted out of its bifurcated supports in an upward direction only, the upper ends of the levers *f* remain between the operator and the knitting-needle, and these are in no way disturbing or even inconvenient to the observation of the row of machine-needles.

The lifting of the thread-guiding bar is effected by means of the chain *p*, fastened thereto at *o*. The said chain *p* passes over pulleys fixed to the common shaft *g* and is wound up by the same by the rotation of a gear connected to a crank at the end of said shaft. The chains are then fastened by suitable means.

The point of suspension *o* and the position of the shaft *g* are so chosen that the vertical direction of traction of the stretched chain *p* passes approximately through the center of gravity of the thread-guiding bar and guides and the parts connected therewith when the levers *f* have been moved back, so that the thread-guiding bar is in the position indicated in the drawings by dotted lines. The thread-guiding bar can therefore be lifted from its bearings without any rocking movement, and when it is lowered again the bar *n* and the pins *i* easily engage the forks *k* and *m* without it being necessary to assist by hand or the like. The removal and replacement of the thread-guiding bar thus becomes an intermediate operation, requiring very little time and being quickly and easily effected.

Having now fully described our invention, we declare that what we claim is—

1. In a knitting-machine, the combination with a bar provided with a forked end, of a thread-guiding bar carrying thread-guides detachably supported on the forked end of the bar.

2. In a knitting-machine, the combination with a bar provided with a forked end, of a thread-guiding bar carrying thread-guides detachably supported on the forked end of

the bar, and a forked supporting-arm carried by the pattern apparatus and engaging with the forked bar.

3. In a knitting-machine, the combination with a plurality of swinging levers, of slide-bars movable on the levers, means for operating the levers and the slide-bars, and a thread-guiding bar carrying thread-guides and having a detachable connection with the slide-bars.

4. In a knitting-machine, the combination with a plurality of swinging levers, of slide-bars provided with forked ends and movable on the levers, means for operating the levers and the slide-bars and a thread-guiding bar carrying thread-guides detachably supported on the forked ends of the slide-bars.

5. In a knitting-machine, the combination with a plurality of swinging levers, of slide-bars provided with forked ends, and movable on the levers, pins carried by the slide-bars, means for operating the levers and the slide-bars, a thread-guiding bar carrying guides supported on the forked ends of the slide-bars, and forked supporting-arms carried by the thread-guiding bar and engaging with the pins on the slide-bars.

6. In a knitting-machine, the combination with a plurality of swinging levers, of slide-bars provided with forked ends, and movable on the levers, pins carried by the slide-bars, means for operating the levers and the slide-bars, a thread-guiding bar carrying guides supported on the forked ends of the slide-bars, forked supporting-arms carried by the thread-guiding bar and engaging with the pins on the slide-bars, and means for moving the thread-guiding bar to and from its operative position.

The foregoing specification signed at Chemnitz, Saxony, this 23d day of March, 1901.

BRUNO SALZER.

GUSTAV WALTHER.

In presence of—

BERNHARD BLANK,

H. THIELE.