J. S. JOHNSTON & C. A. POWELL.

SEWING MACHINE.

APPLICATION FILED MAY 20, 1908.

924,236.

Patented June 8, 1909.

2 SHEETS—SHEET 1.

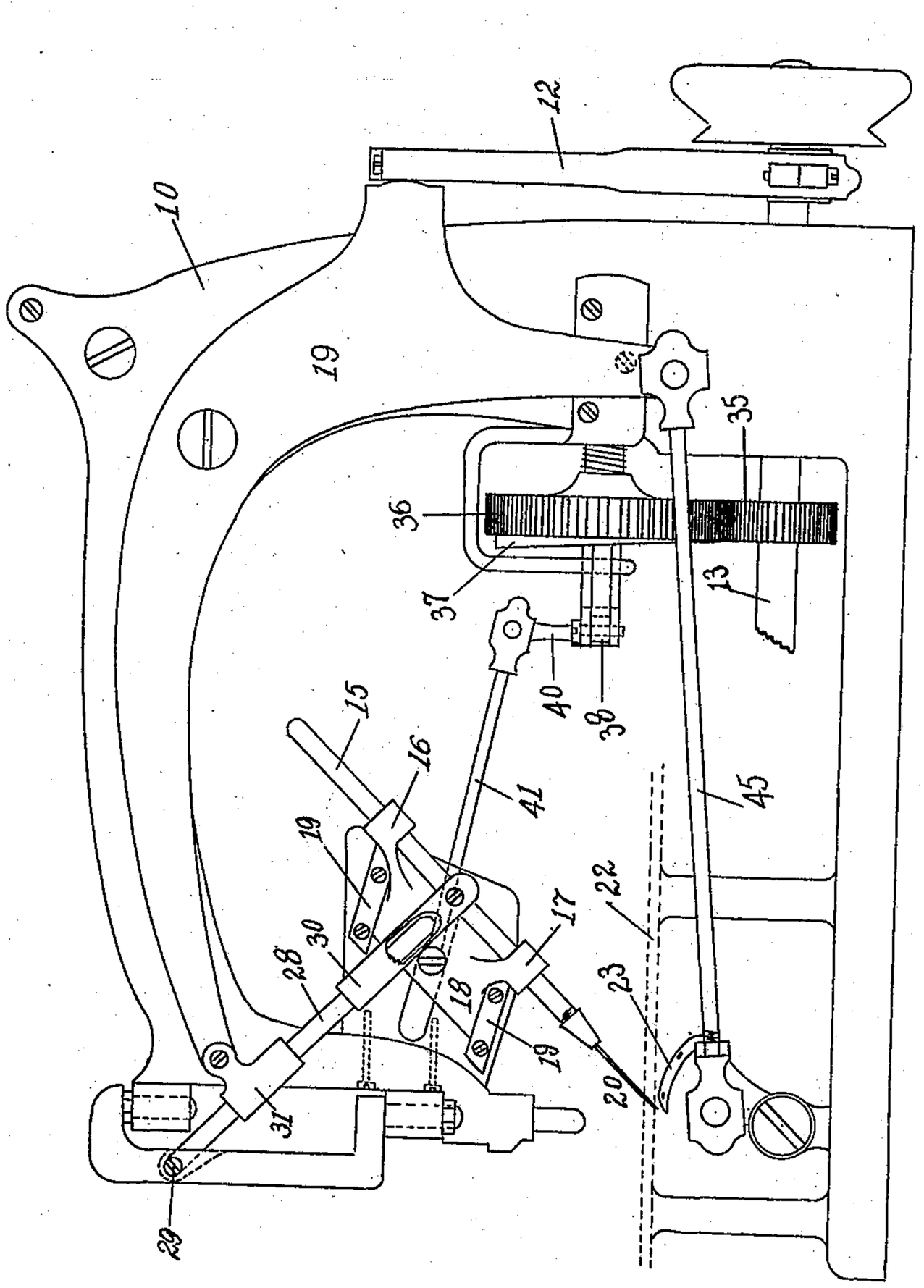

Fig. 1.

Witnesses

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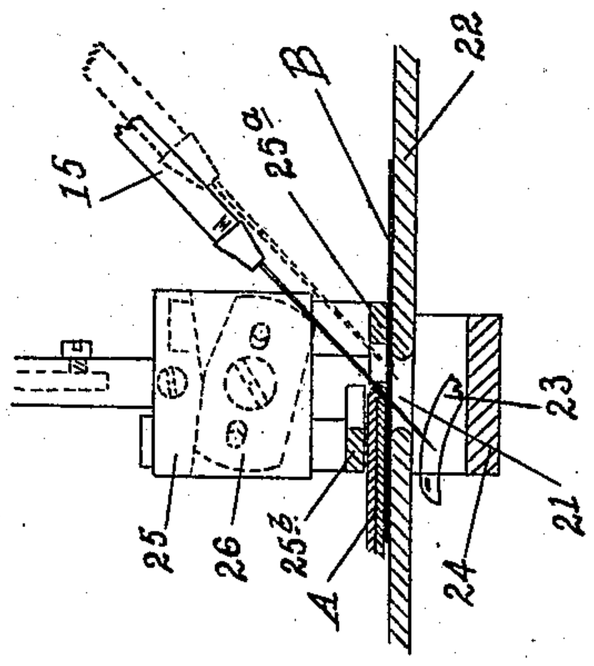

Fig. 3.

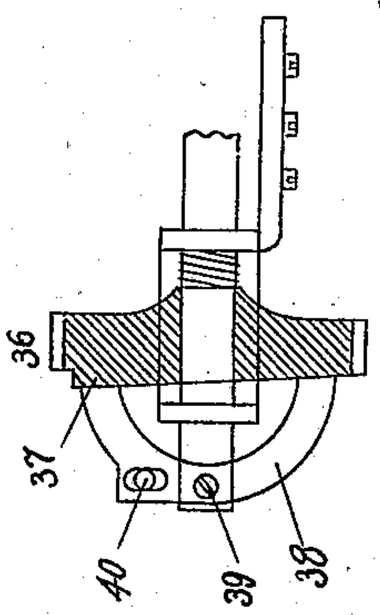

Fig. 4.

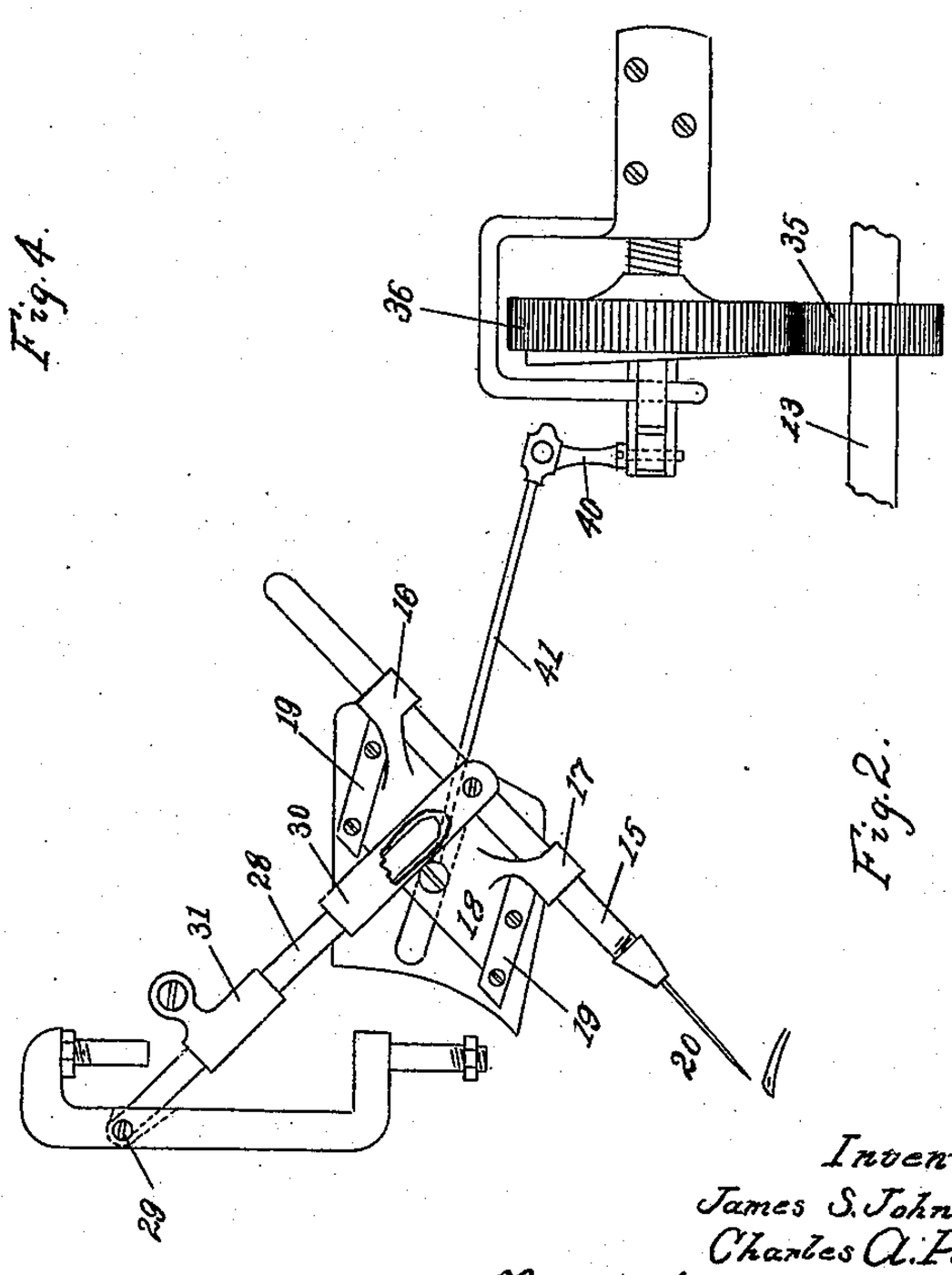

Fig. 2.

Witnesses

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UNITED STATES PATENT OFFICE.

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SEWING-MACHINE.

No. 924,236. Specification of Letters Patent. Patented June 8, 1909.

Application filed May 20, 1908. Serial No. 433,836.

To all whom it may concern:

Be it known that we, JAMES S. JOHNSTON, of Utica, and CHARLES A. POWELL, of Whitesboro, both in the county of Oneida and State of New York, have invented certain new and useful Improvements in Sewing-Machines; and we do hereby declare that the following is a full, clear, and exact description thereof, which 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 the characters of reference marked thereon, which form part of this specification.

The object of our invention is to provide an improved sewing machine having a vibrating inclined needle, whereby it is adapted to perform specific work with facility and neatness.

Figure 1 shows a side elevation of an incomplete machine exhibiting details of the parts constituting our invention. Fig. 2 is a similar detail view of the main parts constituting elements of our invention removed from the machine frame. Fig. 3 is a sectional view showing the mode of operation of the features of our improvement. Fig. 4 is a detailed view largely in section of one of the operative parts.

Referring to the reference letters and figures in a more particular description, 10 indicates the frame of the machine which carries the working parts, particularly the needle bar lever 19 with the needle and its appurtenances, and operated by a connecting rod 12 from an eccentric on the main shaft 13. The needle bar 15 is supported from the overhanging arm of the frame at an inclined angle to the work table plate by being mounted slidingly in bearings 16 and 17. The bearings 16 and 17 are provided on a slide 18 supported in ways 19, 19 on the overhanging arm. The needle 20 is mounted in the end of the needle bar and is adapted to operate through the eye or opening 21 provided in the work table or plate 22. Beneath the table 22 there is provided a stitch forming mechanism—for instance, the looper hook 23—and a feed dog 24. Above the table at the opening 21, the presser foot 25 is provided, the same being mounted in the usual manner from the overhanging arm of the frame. The presser foot 26 will preferably be provided with two vertically movably pressing members 25^a and 25^b connected by a rocking bar 26, by means of which they are automatically self-adjusting to various thicknesses of work or material on the table.

For operating the needle bar 15 from the main lever 11, there is provided a lever rod 28 at one end secured by a fixed pivot 29 to a bracket on the frame and at the other end telescopically engaging in a socket or sleeve 30 secured to the needle bar, and on the bar 28 there is provided a sliding sleeve 31 coupled directly to the end of the lever 11.

For vibrating the needle bar 15 transversely of the line of movement of the feed, there is provided on the shaft 13 a pinion 35 of half the circumference and meshing with the pinion 36 mounted on a suitable bearing in the frame. On one side the pinion 36 is provided with an inclined cam face 37. Operating in connection with the face 37 is a stirrup-shaped rocker 38, the opposite ends of which rest on the cam 37 at diametrically opposite points and the same is pivotally mounted at 39 in a fixed support. This rocker 38 carries a post 40 which connects by a rod 41 with the slide 18, carrying the needle bar bearings.

For operating the looper hook 23, there is provided the usual connecting rod 45 connecting with the lower end of the lever 11.

The work that this machine is particularly intended to perform is to sew the doubled or folded edge of one piece of material, as A, to the surface of another piece of material, as B. When the material is fed through the machine, the two members of the presser foot will automatically adjust themselves to the differences in thickness, and one member, as 25^a, will furnish as to its side a guide for the folded edge of the material A. When the machine is put in operation the needle will be driven down at an inclined angle through the folded edge of the material A and through the material B, and when withdrawn moved or vibrated laterally so that the next stitch will be through the material B alone at one side of the folded edge of the material A, producing what is known as a zigzag stitch, by means of a vibrating needle bar. By providing the needle bar and needle working at an inclined angle, the parts can be so adjusted that the needle will pass through only the lower half of the folded edge of the material A, so that when after removal from the machine the free edge of the

part A is turned down parallel with the part B, the stitches will roll over in such a manner as to be out of sight from the front or face side. It may be noted that this work is particularly useful and desirable on waistbands for garments and particularly pantaloons.

It is evident that numerous changes in and from the construction herein described may be made without departing from the spirit of our invention.

What we claim as new and desire to secure by Letters Patent is:

1. The combination in a sewing machine of a flat work-table having a needle opening, a pressure foot having independent working faces operating adjacent to the needle opening, a sliding needle bar arranged at an inclined angle with reference to the table, a straight needle carried by the needle bar and directed by the needle bar into and through the needle opening, means under the table for forming a stitch in connection with the needle, means for feeding the material across the needle opening, and means for reciprocating the needle bar to drive the needle through the work and withdraw it therefrom, and means for vibrating the needle bar and needle transversely of the line of feed, substantially as set forth.

2. The combination in a sewing machine of a plain, flat, work-table having an elongated needle opening, a pressure foot operating adjacent to the needle opening, a sliding needle bar arranged at an inclined angle with reference to the table, a straight needle carried by the needle bar and directed thereby into and through the needle opening, means under the table for forming a stitch in connection with the needle, means for feeding the material across the needle opening transversely of its elongated dimension, means for reciprocating the needle bar longitudinally, and means for shifting the needle bar and needle bodily in a direction parallel to the elongated dimension of the needle opening and across the line of feed, substantially as set forth.

In witness whereof, we have affixed our signatures, in presence of two witnesses, this 14 day of May 1908.

JAMES S. JOHNSTON.
CHAS. A. POWELL.

Witnesses:
SARAH E. CLARK,
EMMA S. HESSE.