

(No Model.)

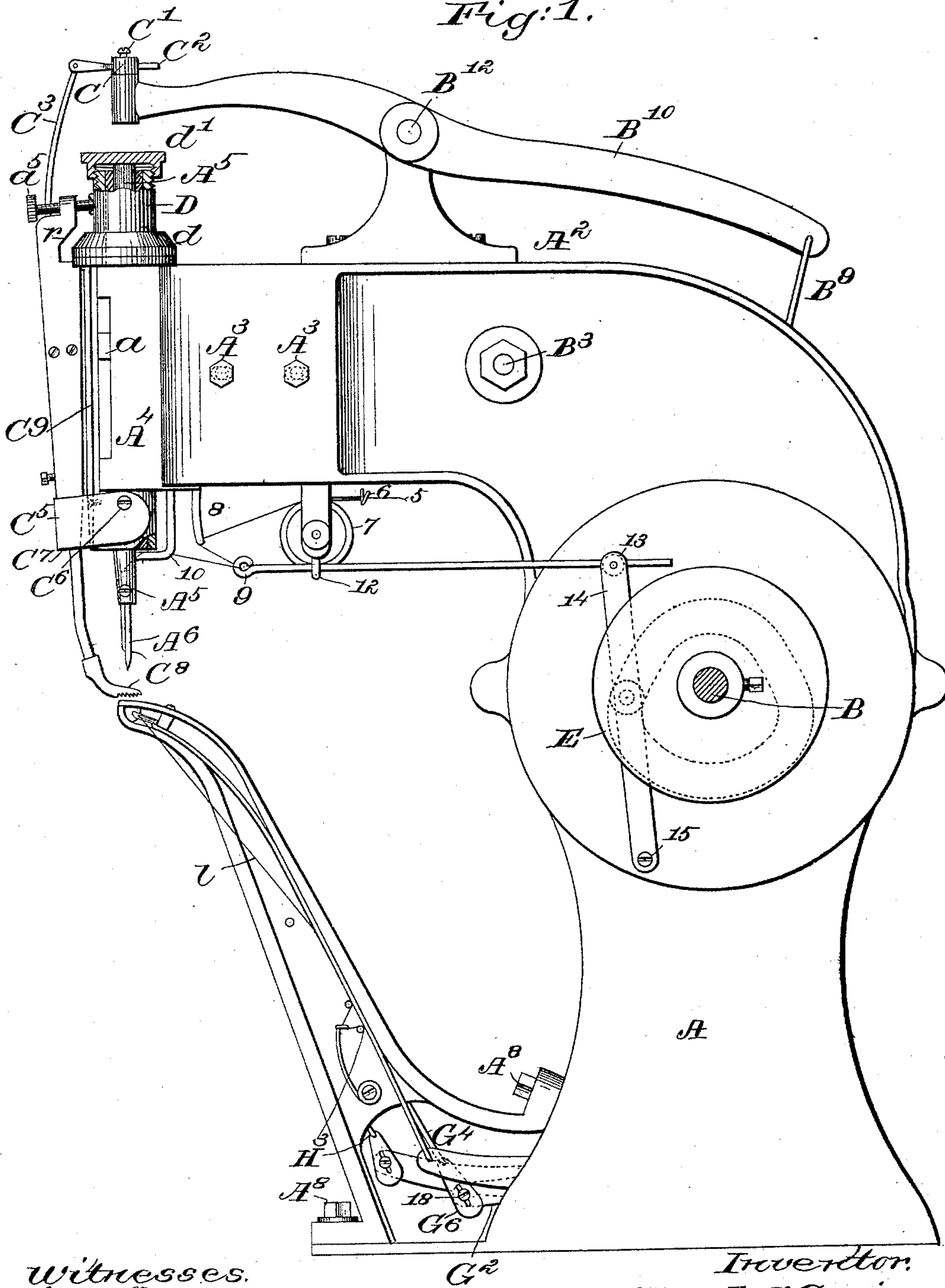
2 Sheets—Sheet 1.

A. A. CUMING.
FEEDING MECHANISM FOR SEWING MACHINES.

No. 485,175.

Patented Nov. 1, 1892.

Fig: 1.



Witnesses.

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Frederick Greenleaf.

Inventor.

Alfred A. Cuming.

by Crosby & Nease Attys.

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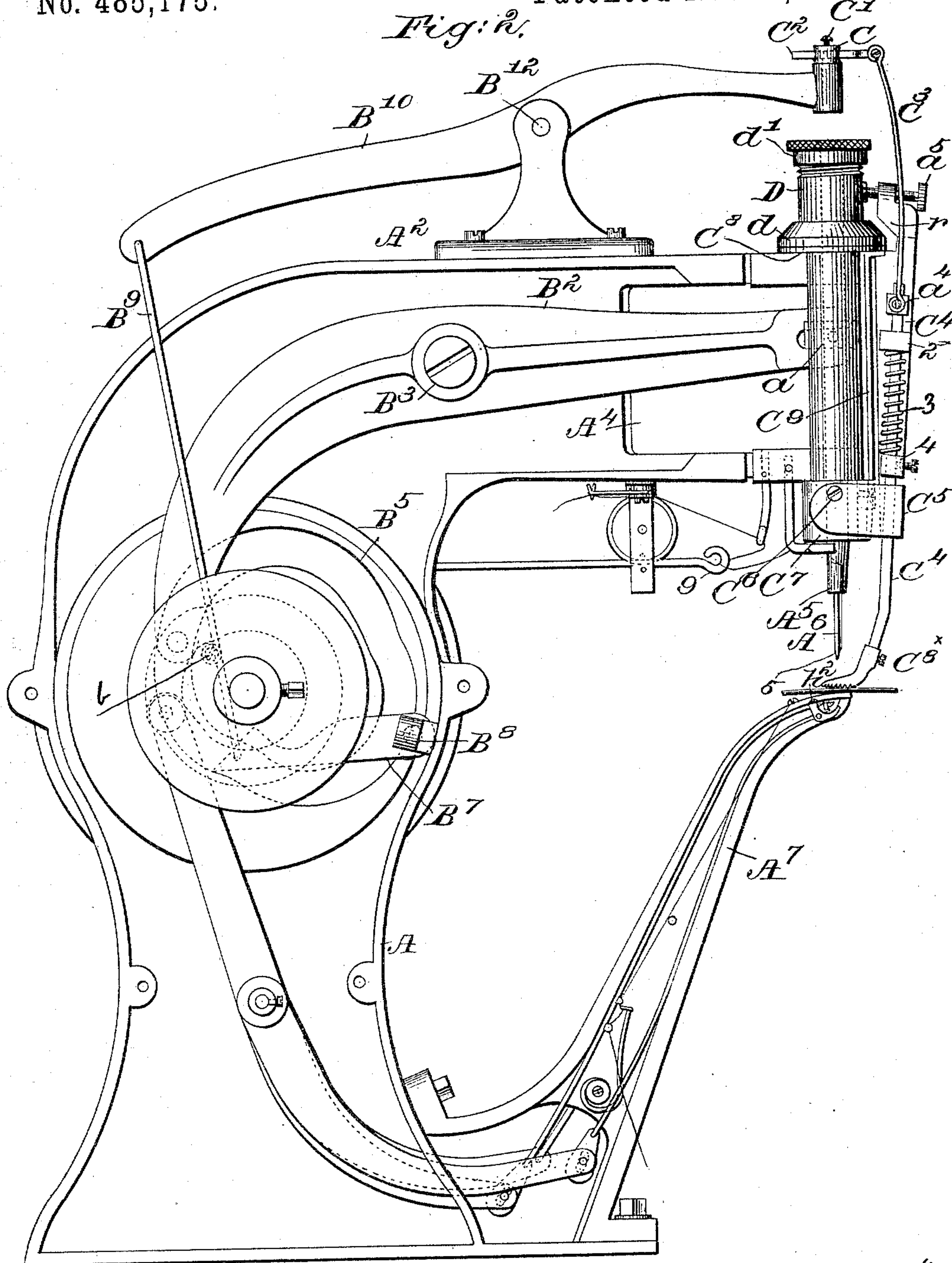
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No. 485,175.

Patented Nov. 1, 1892.

Fig. 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

ALFRED A. CUMING, OF HINGHAM, MASSACHUSETTS.

FEEDING MECHANISM FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 485,175, dated November 1, 1892.

Application filed January 11, 1892. Serial No. 417,659. (No model.)

To all whom it may concern:

Be it known that I, ALFRED A. CUMING, of Hingham, county of Plymouth, State of Massachusetts, have invented an Improvement
5 in Feeding Mechanism for Sewing-Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters and numerals on the drawings representing like parts.

10 This invention has for its object the production of a novel feeding mechanism adapted to act upon the upper surface of the material and feed the same over a horn or other suitable work-support.

15 My improved feed device is adapted to feed the material toward the needle from most any point in about one hundred and eighty degrees of a circle.

20 My improved feeding device consists, essentially, of a yoke adapted to turn about a vertical pivot or to turn in the arc of a circle about the longitudinal center of the needle-bar; a feeding-frame adapted to turn about a pivot at right angles to the longitudinal center
25 of the needle-bar, the pivot of said feeding-frame being substantially in line with the center of the needle-bar; a bar having a foot and adapted to be reciprocated in said frame; a feeding-cone adapted to operate upon the
30 feeding-frame, and means to reciprocate the said bar and also the said feeding-cone.

Figure 1 in side elevation shows a sufficient portion of a sewing-machine with my improvements added to enable my invention
35 to be understood. Fig. 2 is an opposite side elevation.

Referring to the drawings, A A² represents the frame-work of a sewing-machine, the part A² having adjustably attached to it by suitable bolts or set-screws A³ a head A⁴, provided at its upper and lower end with suitable journals and containing suitable bearings for a needle-bar A⁵, provided with a
40 needle A⁶, the said needle-bar deriving its movement of reciprocation from a suitable lever B², pivoted at B³, and acted upon by a suitable cam B⁵.

In the drawings I have shown part of a work support or horn A⁷.

50 The journals of the head referred to receive two collars C⁷ C⁸ of a yoke C⁹, which is

adapted to be turned by the operator about the said journals and needle-bar as a center, according to the direction it is desired to feed the material.

55 Above the collar C⁸, at the upper end of the frame referred to, the journal receives upon it a feeding-cone D, provided with a beveled or inclined surface *d* and a cap or top *d'*, the said feeding-cone being raised by
60 the contact of the upper end of the needle-bar against the cap *d'*, it descending by gravity or otherwise. The collar C⁷ has pivoted upon it a frame C⁵, the pivots of the latter frame consisting of screws C⁶ in line with the
65 longitudinal center of the needle-bar. The frame C⁵ at its upper end is provided with a suitable inclined projection *r*, adapted to be struck by the portion *d* of the feeding-cone, a feed-regulating device preferably in the form
70 of a screw *a*⁵, provided, preferably, with a shoe or block, being also carried by the said frame and coming against the body of the cone when the latter is depressed. The frame C⁵ has
75 suitable bearings, one of which is marked 2 for the bar C⁴, surrounded below the bearing 2 by a strong spiral spring 3, which rests on a collar 4, attached to the bar, and acts normally to keep the foot C^{8x}, attached to the bar, down upon the
80 surface of the material, keeping the latter upon the work support or horn and feeding the same thereon. To enable the foot to retire from the material preparatory to feeding the same, the said bar must be lifted, and to
85 effect this I have joined to the upper end of the bar C⁴, preferably to a collar *a*⁴ fast thereon by a set-screw, a connection C³, which is jointed to a stud C², mounted in a swivel-post C, carried at one end of a bar-lifting lever B¹⁰,
90 pivoted at B¹² on a stand erected upon the framework, the opposite end of the said lever having a link B⁹, which is attached to one end of a lever B⁷, pivoted at B⁸, the said lever B⁷ being acted upon when it is desired to lift the
95 foot from the material by means of a roller or other stud *b*, carried by the cam B⁵. The stud C² is adjustable longitudinally in the swivel-post C by means of a screw C¹. To vary the length of feed, the screw *a*⁵ will be turned in or out. The drawings show a small piece of
100 the material between the foot C^{8x} and the work-support. The feed takes place just as

the needle-bar is completing its upper stroke, at which time the incline d strikes the projection r or whatever device of the frame C^5 then bears against it. The foot is lifted from the material and moved backwardly over the material while the needle is in the material, and this is done by or through the lever B^{10} , referred to, the foot when once elevated positively being quickly released to let the spring 3 keep the foot upon the material ready to be moved to effect the feed when the frame C^5 is rocked at the next ascent of the needle-bar. It will be noticed that the pivot of the frame C^5 is located between that end of the frame which is acted upon by the feeding-sleeve and the foot, and as a result thereof the foot C^{8x} , when feeding the material, is made to move the material toward and under the needle, and it may so move the material from substantially any point throughout one hundred and eighty degrees of a circle described from the center of the needle-bar, and while the foot acts to feed the material it bears upon the material close to and about the point where the needle is to penetrate the same, the spring 3 acting during such time to keep the foot firmly down upon the material. The arrangement of the pivots of the frame C^5 , substantially in the line of the longitudinal center of the needle-bar, insures a steady uniform feed movement.

I claim—

1. A head to receive and guide a needle-bar and provided with journals, a yoke having collars mounted loosely on said journals and adapted to be rotated partially in one or the other direction about said journals, a bar-carrying frame pivoted upon one of the collars of the said yoke and provided with an incline, as r , and screw or projection a^5 , the said pivot being in line with the longitudinal center of

the needle-bar, a needle-bar adapted to be moved in said head, a rod provided with a foot, a spring to normally depress said rod, and a feeding-cone adapted to be moved vertically by the needle-bar, combined with means to lift the said needle-bar and the bar-carrying foot, and with a work-support, substantially as described.

2. The frame C^5 , provided with a projection r , a yoke upon which the said frame is pivoted, vertically arranged journals about which the said yoke may be turned in one or the other direction, a bar C^4 , having a foot C^{8x} to bear upon the material, a feeding-cone, means to move it vertically, a lever, as B^{10} , connections between it and the said bar C^4 , and means to move the said lever B^{10} , combined with a work-support, substantially as described.

3. A feeding mechanism for sewing-machines containing the following instrumentalities, viz: a feeding-cone, means to move the same vertically, a yoke-like frame having ears and adapted to be rotated more or less about the longitudinal center of the needle-bar, a guiding-frame, as C^5 , a feeding-bar mounted in said frame and provided with a feeding-foot, a work-support, and devices to lift the said feeding-bar, the journals of the frame being connected with the yoke at right angles to the longitudinal center of the needle-bar and in the vertical line of the longitudinal center of the needle-bar, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALFRED A. CUMING.

Witnesses:

GEO. W. GREGORY,
EDWARD F. ALLEN.