L. BULASKY.

FEED MECHANISM FOR SEWING MACHINES.

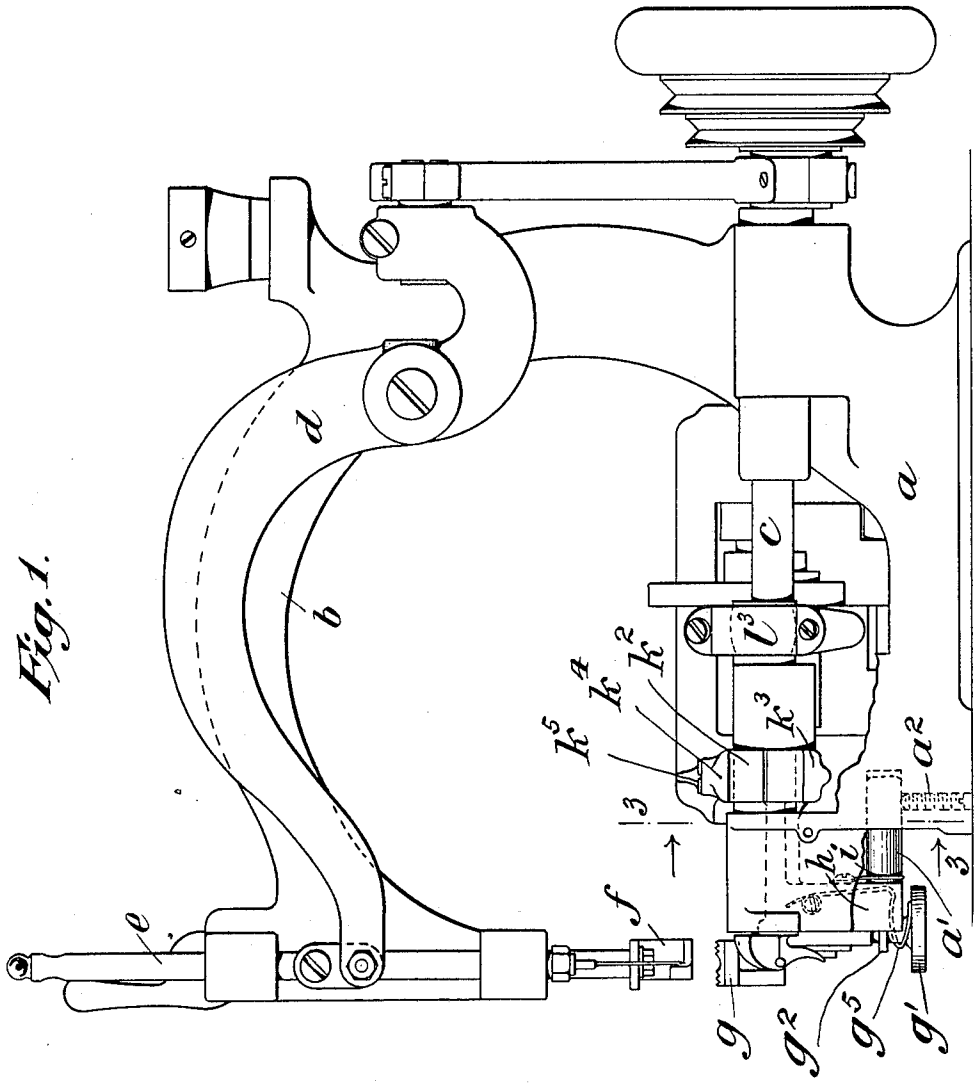
APPLICATION FILED DEC. 24, 1908.

1,085,401.

Patented Jan. 27, 1914.

3 SHEETS—SHEET 1.

Fig. 1.



Attest:

Edgeworth Bruce

Ella J. Kruger

Inventor:

by Louis Bulasky

Redding, Gaeder & Austin

Attys.

L. BULASKY.

FEED MECHANISM FOR SEWING MACHINES.

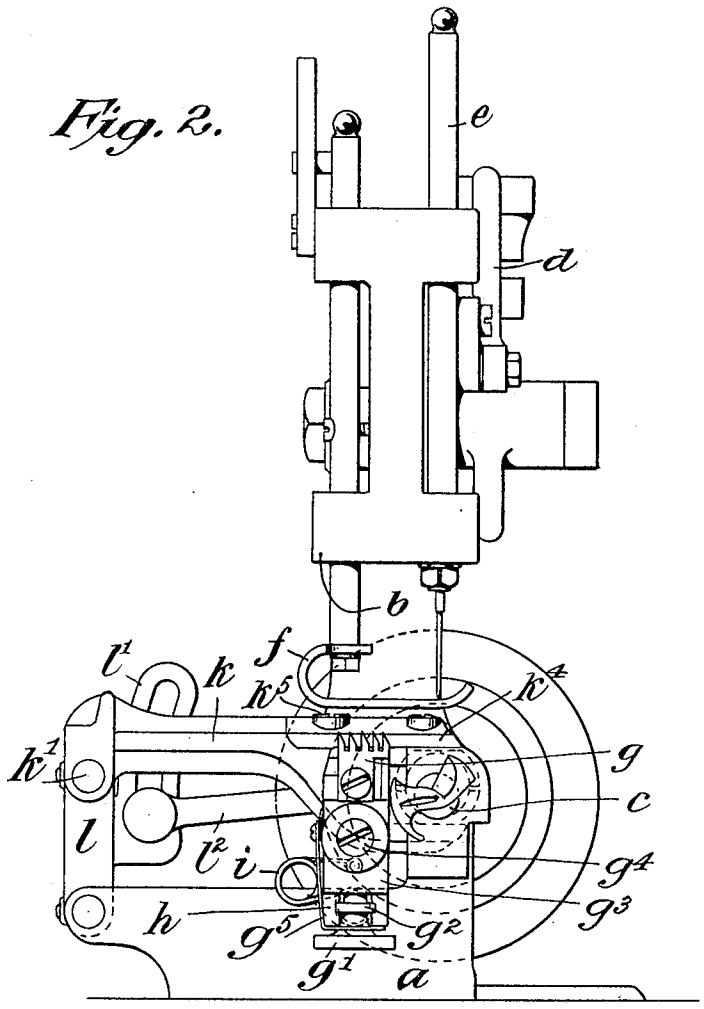
APPLICATION FILED DEC. 24, 1908.

1,085,401.

Patented Jan. 27, 1914.

3 SHEETS—SHEET 2.

Fig. 2.



Attest:

Edgworth Greene

Ella J. Kruger

Inventor:

by Louis Bulasky

Redding, Greeley & Austin

Attys.

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

L. BULASKY.

FEED MECHANISM FOR SEWING MACHINES.

APPLICATION FILED DEC. 24, 1908.

1,085,401.

Patented Jan. 27, 1914.

3 SHEETS—SHEET 3.

Fig. 3.

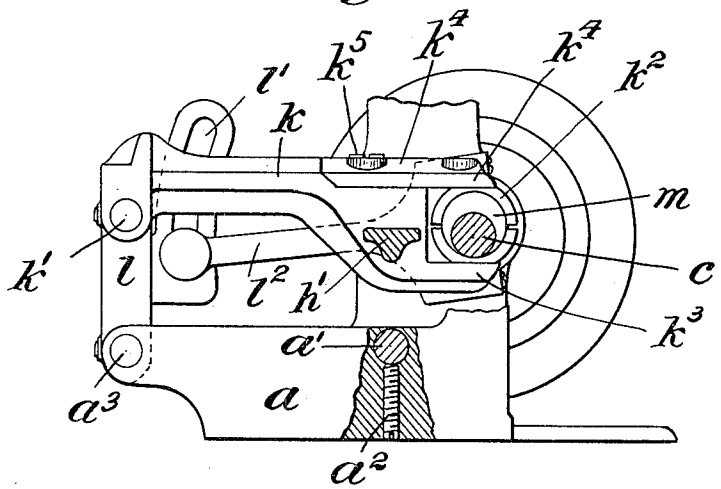


Fig. 4.

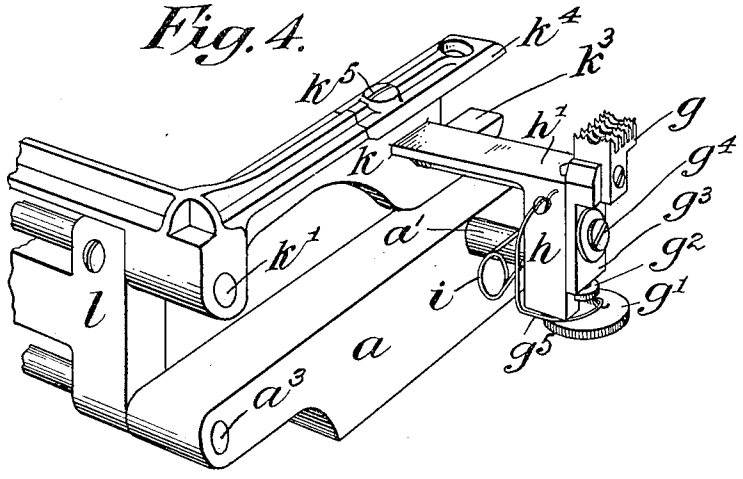
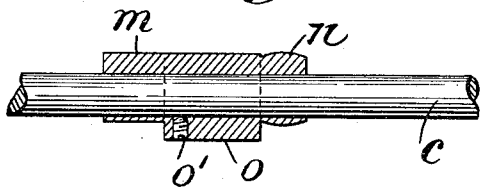


Fig. 5.



Attest:

Edgerton & Greene

Ella J. Krugen

Inventor:

by Louis Bulasky

Redding, Greeley & Austin

Atty's.

UNITED STATES PATENT OFFICE.

LOUIS BULASKY, OF NEW YORK, N. Y.

FEED MECHANISM FOR SEWING-MACHINES.

1,085,401. Specification of Letters Patent. Patented Jan. 27, 1914.

Application filed December 24, 1908. Serial No. 469,159.

To all whom it may concern:

Be it known that I, LOUIS BULASKY, a citizen of the United States, residing in the borough of Manhattan of the city of New York, in the State of New York, have invented certain new and useful Improvements in Feed Mechanism for Sewing-Machines, of which the following is a specification, reference being had to the accompanying drawings, forming a part hereof.

This invention has relation to the mechanism for supporting and actuating the feeder by which the work is fed forward under the presser foot in sewing machines and the object of the invention is to improve such mechanism in various particulars so that it shall be less expensive to produce, shall be less liable to breakage in operation, shall be capable of easy adjustment to take up wear, and generally shall be more efficient and better adapted to withstand the wear to which it is subjected, especially in power machines which are driven at a high rate of speed.

The invention will be more fully explained hereinafter with reference to the accompanying drawings, in which—

Figure 1 is a view in front elevation of a sewing machine to which the invention is applied. Fig. 2 is a view thereof in end elevation. Fig. 3 is a detail view in section on the plane indicated by the line 3—3 of Fig. 1 looking in the direction of the arrows thereon. Fig. 4 is a detail view in perspective of the feed mechanism. Fig. 5 is a detail view, partly in section, showing the eccentrics which operate the feed mechanism.

The invention is shown in the drawings as applied to a sewing machine of a well known type, comprising a base or frame *a*, an arm or standard *b*, a main shaft *c*, an oscillating arm *d* operated from an eccentric on the main shaft, a reciprocating needle bar *e* and a presser *f*. All of these parts are constructed and operate as usual and it will be understood that any other usual or suitable construction might be employed so far as the application of the present invention is concerned.

The feeder *g* receives, as usual, a compound oscillating movement which is derived from eccentrics on the main shaft through suitable intermediate levers. The construction and arrangement of the eccentrics and levers usually employed is such as to require much labor and finishing of the parts in such manner as to produce a smoothly running mechanism, and moreover the feeder itself has so lacked proper support that it is frequently broken off when the machine is operated at high speed upon heavy work. In the present invention, however, while the feeder *g* has the same movements as heretofore the actuating mechanism is so reconstructed as to obviate the difficulties referred to and others. The feeder is mounted upon a feed slide g^3 so as to be adjustable vertically upon a head *h*. An adjusting screw *g'* is mounted in the head *h* and has a collar g^2, engaging slots in the head *h* by which the screw is held from longitudinal movement. The screw is threaded into the feed slide g^3 of the feeder and a clamping screw g^4 is provided to hold the feeder in adjusted position. When the machine is driven at very high speed it is found that the adjusting screw *g'* soon becomes loosened and fails to hold the feeder properly. There is, therefore, secured to the head *h* a spring g^5 which bears with considerable tension upon the screw *g'* and prevents rattling and loosening of the screw. Furthermore, in order to counter-balance the weight of the feeder and head, as is very desirable in view of the high speed at which the head is reciprocated, a counter-balancing spring *i* is secured to the head and is arranged to bear upon an abutment provided therefor as hereinafter described.

The head *h* is connected to the feed bar *k* by an intermediate arm *h'* which should be as light as is consistent with strength. In fact, strength is often sacrificed for lightness with the result that in the usual construction the arm is frequently broken off when the machine is operated at high speed upon heavy work. This breakage is due to the fact that the feeder head is not properly supported. To meet this difficulty, in the present case, there is provided upon the base or frame *a* an abutment *a'* against which the vertical inner face of the head *h* bears during the movements of the head and feeder. This abutment, which also serves as an abutment for the spring *i*, is conveniently formed by seating a rod in a hole in the frame or base and securing it therein by a set screw a^2.

The feed bar *k* of the feeder is pivotally connected, as at *k'*, as usual, to a vertical arm or frame *l* which in turn is pivoted to the base or frame, as at a^3. The vertical movements of the feeder are swinging move-

ments about the axis k' and are produced by an eccentric m which is carried by the shaft c as hereinafter described. A split shoe k^2 embraces the eccentric m and is itself embraced between the two members k^3 and k^4 of the forked end of the feed bar k. One member, as k^4, of the fork is separable, being held upon the arm or feed bar by a screw k^5. By this means wear which takes place between the split shoe k^2 and the eccentric m and between the split sleeve and the fork members is taken up or compensated for by removing the separable member k^4 of the fork, filing off the seat of such separable member slightly and then replacing the separable member.

The swinging arm or frame l is provided, as usual, for the purpose of adjusting the horizontal throw of the feeder, with a slotted rocker l' which is engaged adjustably by the connecting rod l^2, the other end of such rod having an eccentric strap l^3 to embrace the eccentric n, also mounted on the shaft c. For convenience in application, the eccentrics m and n are formed on opposite ends of a sleeve o which is secured on the shaft c by a set screw o', but it will be observed that these eccentrics are separate or offset, the one from the other, and the feed bar k and connecting rod l^2 are likewise offset or separate or are independent, the one of the other. The eccentrics can thus be turned up and the parts assembled without requiring a great amount of time and care. Furthermore, the eccentric n forms a spherical bearing for the eccentric strap so that the connecting rod l^2 may accommodate itself to slight differences without binding or requiring special fitting of the parts in assembling.

Although the improvements thus described are mainly in details of construction and have been developed to meet difficulties experienced in the manufacture and operation of feeding mechanism of the character referred to, it will be found that they have contributed largely to the efficiency, durability and ease of adjustment of such feeding mechanism.

I claim as my invention:

In a sewing machine, the combination of a main shaft, two independent eccentrics mounted on said shaft in spaced relationship, a sleeve on the opposite ends of which said eccentrics are integrally formed, said sleeve being removably mounted on the main shaft, means to secure the sleeve to the shaft, a pivoted supporting arm, a connecting rod engaging one of said eccentrics and adjustably connected to said supporting arm, and a feed bar independent of said connecting rod and pivotally mounted on said supporting arm and forked to embrace the other of said eccentrics.

This specification signed and witnessed this 14th day of December, A. D., 1908.

LOUIS BULASKY.

Signed in the presence of—

W. B. GREELEY,

AMBROSE L. O'SHEA.