

(No Model.)

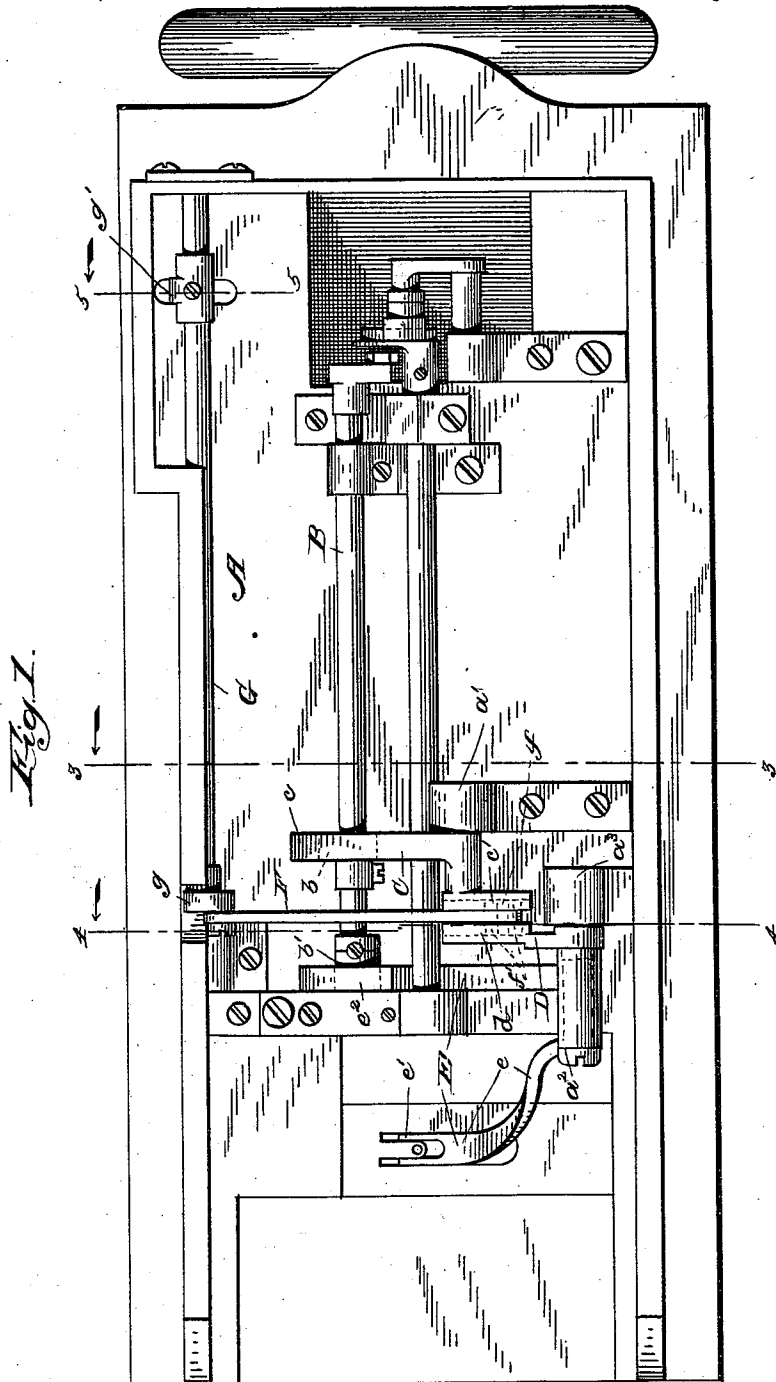
3 Sheets—Sheet 1.

J. VANNETTE.

FEEDING MECHANISM FOR SEWING MACHINES.

No. 543,068.

Patented July 23, 1895.



Witnesses

W. C.ushman
C. M. Sweeney.

Inventor:

Jasper Vannette
by *Maxwell, Cabot & Randall,*
his Attorneys.

(No Model.)

3 Sheets—Sheet 2.

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Fig. 2.

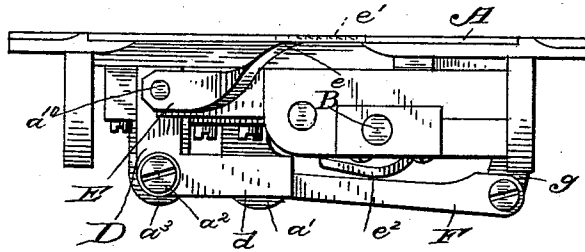


Fig. 3.

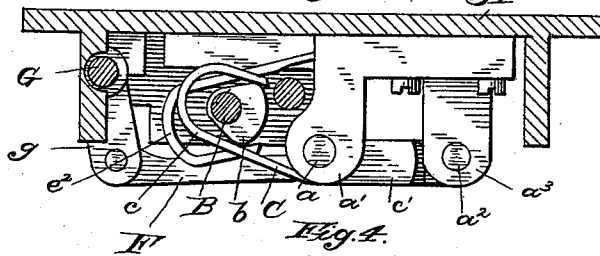


Fig. 4.

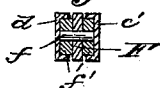


Fig. 5.

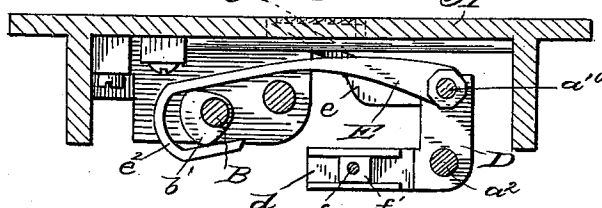
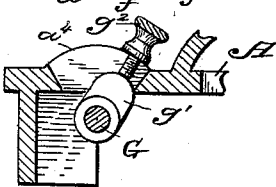


Fig. 6.



Witnesses:
O. Cushman.
C. M. Sweeney.

Inventor:
Jasper Vannette,
by Macleod, Cairns & Randell,
his Attorneys.

(No Model.)

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Fig. 7.

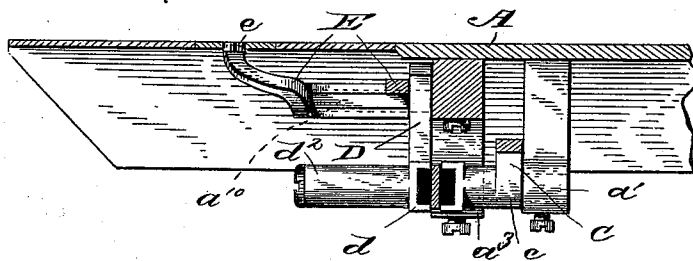
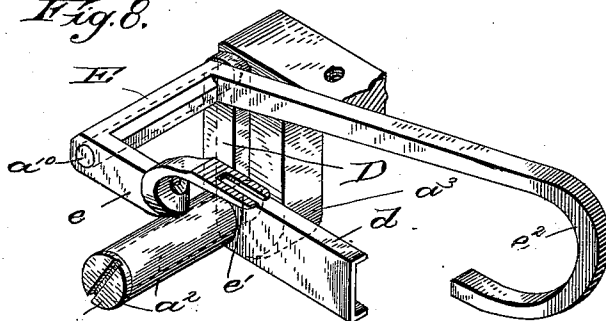


Fig. 8.



Witnesses

W. E. Chapman
C. M. Sweeney

Inventor:

Jasper Vannette
by *MacLeod, Calver & Randall*
his Attorneys

UNITED STATES PATENT OFFICE.

JASPER VANNETTE, OF TIFFIN, OHIO, ASSIGNOR TO THE SINGER MANUFACTURING COMPANY, OF NEW JERSEY.

FEEDING MECHANISM FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 543,068, dated July 23, 1895.

Application filed June 27, 1892. Serial No. 438,168. (No model.)

To all whom it may concern:

Be it known that I, JASPER VANNETTE, a citizen of the United States, residing at Tiffin, in the county of Seneca and State of Ohio, have invented certain new and useful Improvements in Feeding Mechanism for Sewing-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention has for its object to provide a novel feeding mechanism for sewing-machines, which will be strong and positive in its operation and which can be easily regulated, while the machine is in motion, to produce a feeding movement of any desired extent.

In carrying my invention into effect I furnish a rotating shaft, which is arranged beneath the work-plate of the machine, with two cams, one of which is embraced by a yoke formed on one arm of a transverse lever pivoted between its ends, the other arm of said lever having a groove in which fits an adjustable pin on a regulating-link, said pin thus forming a connection between the said grooved arm of the said lever and a similar grooved horizontal arm of a bell-crank-operating lever, the vertical arm of which is jointed to a frame carrying the feed-dog, said frame being provided with a yoke embracing the the other of the cams above referred to. The link which carries the pin forming the adjustable connection between the two levers above mentioned is jointed at one end to an arm of a regulating-shaft, the position of which may be changed to vary the position of the adjustable pin, and thereby regulate the throw of the feed-dog. The regulating-pin is preferably provided with blocks or slides pivoted thereon and which fit closely in the grooved arms of the levers.

In the accompanying drawings, Figure 1 is a bottom view of a sewing-machine embodying my invention, some parts not relating to the feeding mechanism being omitted for clearness of illustration. Fig. 2 is an end view looking from the left of Fig. 1, and Fig. 3 is a cross-section on the line 3 3 of Fig. 1. Fig. 4 is a detail cross-section showing the connection between the grooved arms of the feed-operating levers. Fig. 5 is a detail cross-

section on line 4 4, Fig. 1, looking in the direction of the arrow adjacent thereto; and Fig. 6 is a detail section on line 5 5 of Fig. 1. Fig. 7 is a partial longitudinal section of the machine, and Fig. 8 is a detail perspective view of a portion of the feeding mechanism.

A denotes the bed-plate of the machine, and B a rotating shaft journaled in suitable lugs or hangers depending from said bed-plate, said rotating shaft being operated in any suitable way, as by a pitman-lever connection with the driving-shaft in the upper portion of the arm of the machine. The shaft B is provided with two cams b and b' , the former being embraced by a yoke c , formed on a transverse lever C, said lever being pivoted on a pin a , attached to a bracket or lug a' , depending from the bed-plate A.

D denotes a bell-crank lever, pivoted on a pin a^2 , carried by a hanger or bracket a^3 , the vertical arm of said lever being jointed to the frame E by pin a^{10} , said frame having an arm e , carrying the feed dog e' , the said frame being also provided with a yoke e^2 , embracing the cam b' on the rotating shaft B. The horizontal arm d of the bell-crank lever D is provided with a groove, and the arm c' of the lever C is similarly grooved, these two arms being arranged adjacent to each other, as more clearly shown in Figs. 1, 4, and 7, and being connected by an adjustable pin f at the free end of the link F, the opposite end of the said link being jointed to an arm g of a feed-regulating shaft G, provided at its rear end with an arm g' , having a set-nut g^2 at its upper end, said nut engaging with a segmental portion or abutment a^4 of the bed-plate A to hold the said shaft G in any position in which it may be placed. The pin f is preferably provided with two blocks f' , fitting in the grooves in the arms c' and d of the levers C and D, these blocks sliding back and forth in the grooves of the said arms when the connecting-pin is adjusted by means of the shaft G and link F, and the said blocks rocking freely on the pin f when the machine is in operation.

When the shaft B is set in motion, the cam b thereon will impart a vibrating motion to the lever C, and the latter, through its above-described connection with the lever D, will

cause the latter to vibrate and thereby impart back-and-forth movements to the frame E and to the feed-dog carried thereby, the extent of the said back-and-forth movements of the said frame E and of the feed-dog being determined by the position of adjustment of the pin *f* on the link F. Thus if the said pin *f* be so adjusted that it is coincident with the pin *a*, which forms the fulcrum or pivot of the lever C, no motion will be imparted to the lever D, and the said feed-dog will, therefore, have no back-and-forth movement; but when the said pin *f* is moved so that it is not coincident with the fulcrum of the lever C more or less movement will be imparted to the lever D and thus to the feed-dog, the extent of such movements being determined by the position of adjustment of the said pin *f*, this being controlled by the regulating-shaft G.

The up-and-down movements of the feed-dog are imparted thereto from the cam *b'*, rotating in the yoke *e'* on the frame E, said movements, it will be observed, being positive in both directions.

It will of course be understood that the cams *b* and *b'* are so arranged relatively to each other that they will operate alternately, so as first to move the feed upward, then forward, then downward, and backward, as is usual in four-motioned feeds, this timing of the feed-cams being a well-known feature of sewing-machine feeding mechanisms.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. In a sewing machine, the combination with a rotating shaft arranged beneath the work plate thereof and provided with two

its ends one arm of said lever having a yoke embracing one of said cams and the other arm of said lever being provided with a groove, a bell-crank lever having a grooved arm arranged adjacent to the grooved arm of the said transverse lever, an adjustable pin forming the connection between said grooved arms of said levers, a frame connected to said bell-crank lever and provided with an arm carrying the feed dog said frame also having a yoke embracing the other of said cams, and means for adjusting said pin so as to vary the throw of the said bell crank lever, and thereby regulate the horizontal movements of the said feed dog.

2. In a sewing machine, the combination with the rotating shaft B provided with the cams *b* and *b'*, of the transverse lever C having a yoke embracing the said cam *b*, and having a grooved arm *c'*, a bell-crank lever D having a grooved arm *d*, a pin *f* forming a connection between the said grooved arms of said levers, the link F by which said pin is carried, the feed regulating shaft G having the arms *g* and *g'*, the latter provided with a set nut co-operating with a fixed abutment to hold said shaft in any position of adjustment, and the frame E connected to said lever D and provided with the arm *e* carrying the feed dog *e'*, said frame being also provided with a yoke *e'* embracing the said cam *b'*.

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

JASPER VANNETTE.

Witnesses:

C. J. YINGLING,
J. C. STONER.