

No. 657,944.

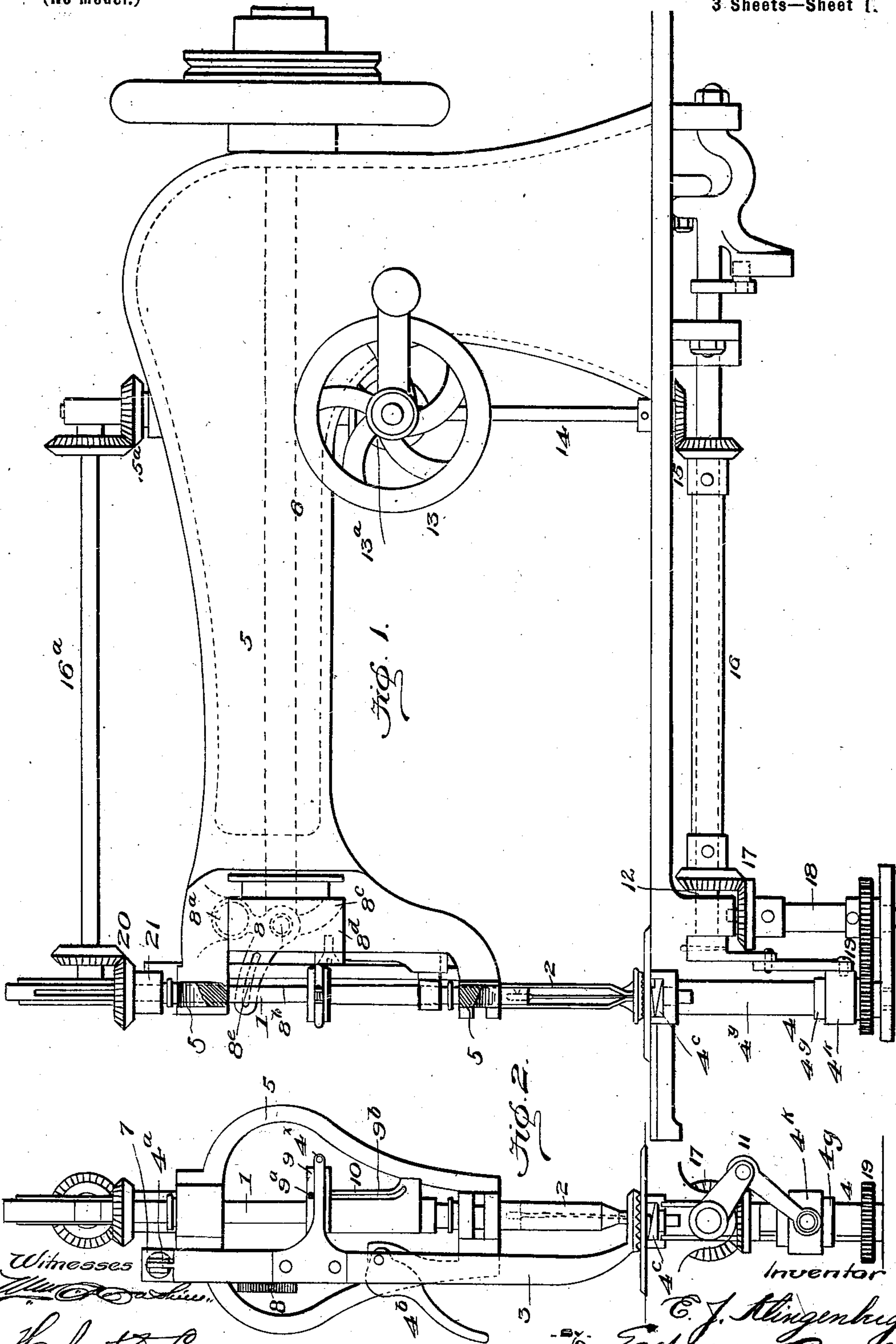
Patented Sept. 18, 1900.

E. J. KLINGENBERG.
EMBROIDERING MACHINE.

(Application filed Aug. 3, 1899.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses
Herbert D. Rawson

Inventor

E. J. Klingenberg
By *Edwin Perot*
Attys.

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Fig. 3.

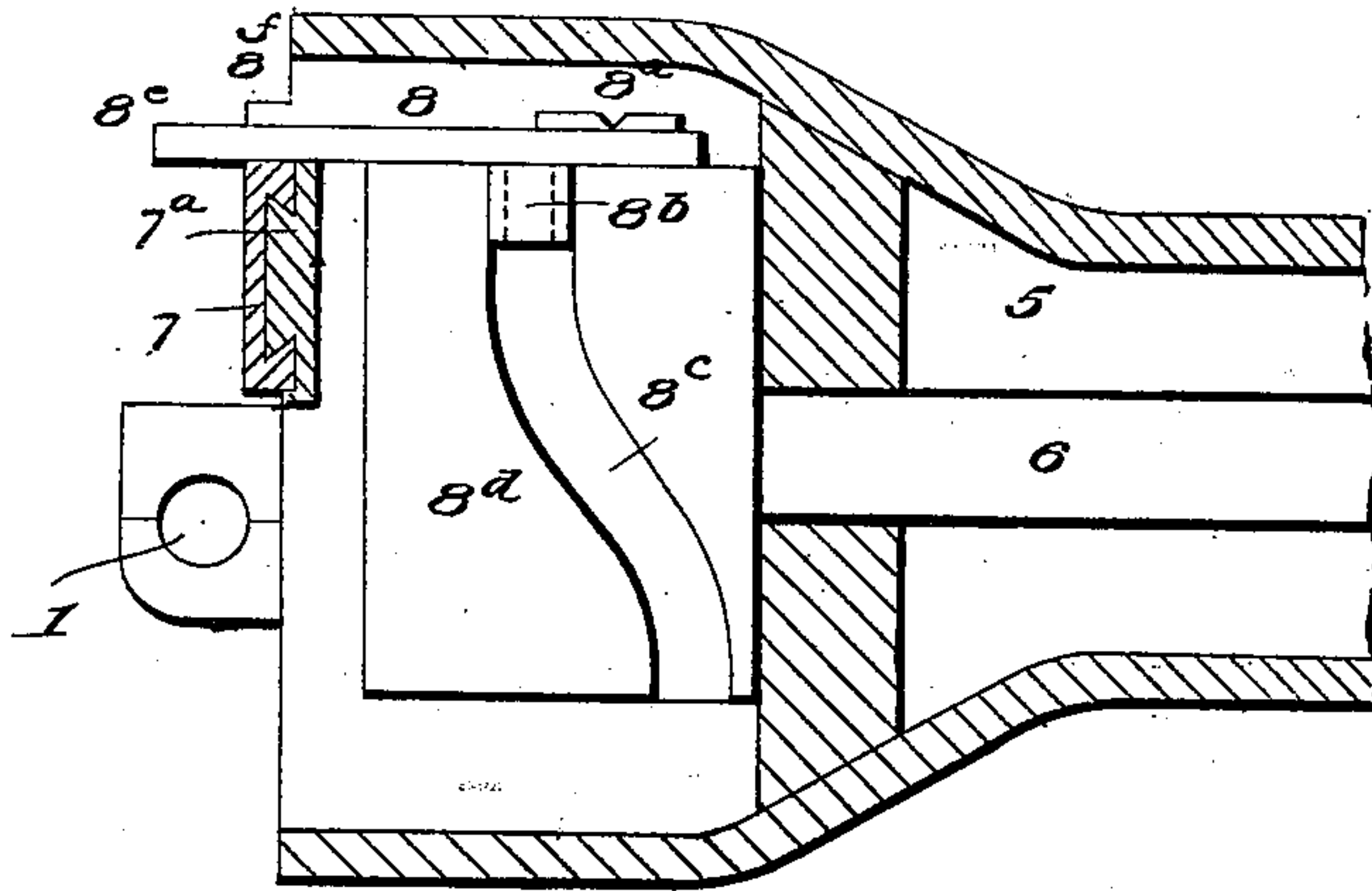


Fig. 4.

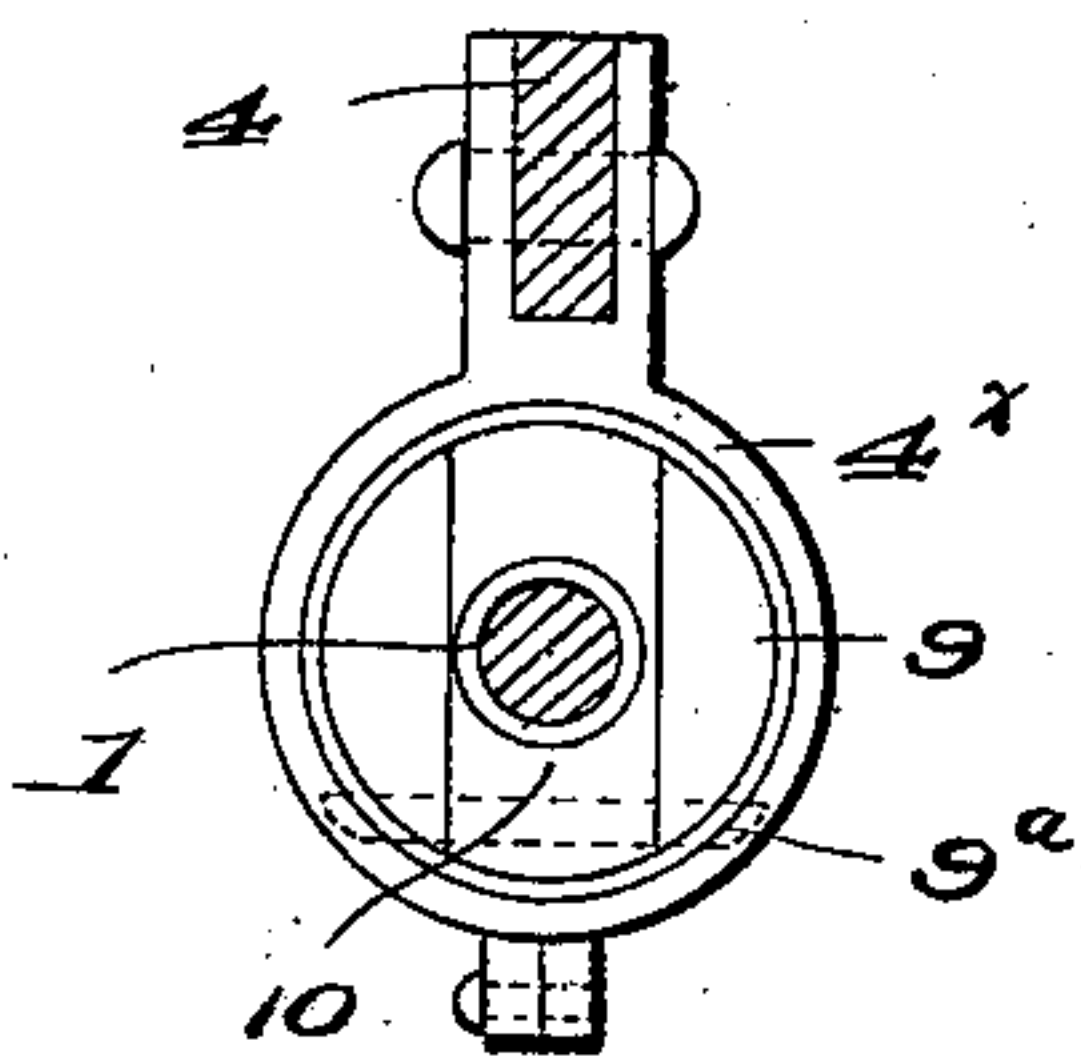
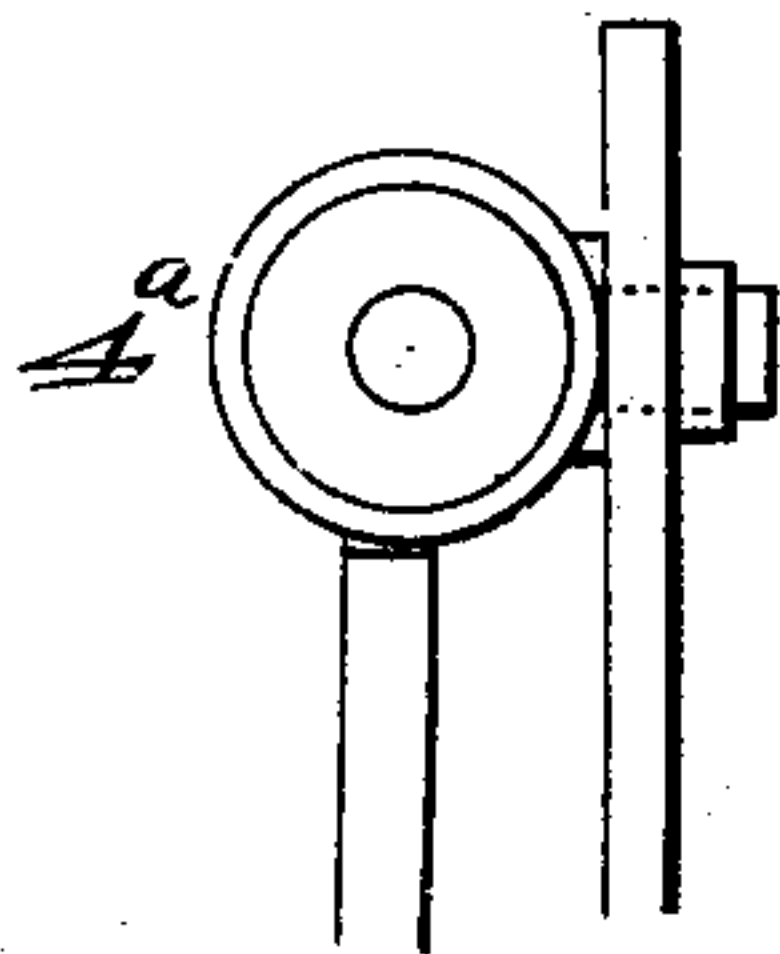


Fig. 6.



Witnesses:

Herbert W. Lawson,
Edoorn Bros.

Inventor

E. J. Klingenberg
Edoorn Bros.
Mfgs.

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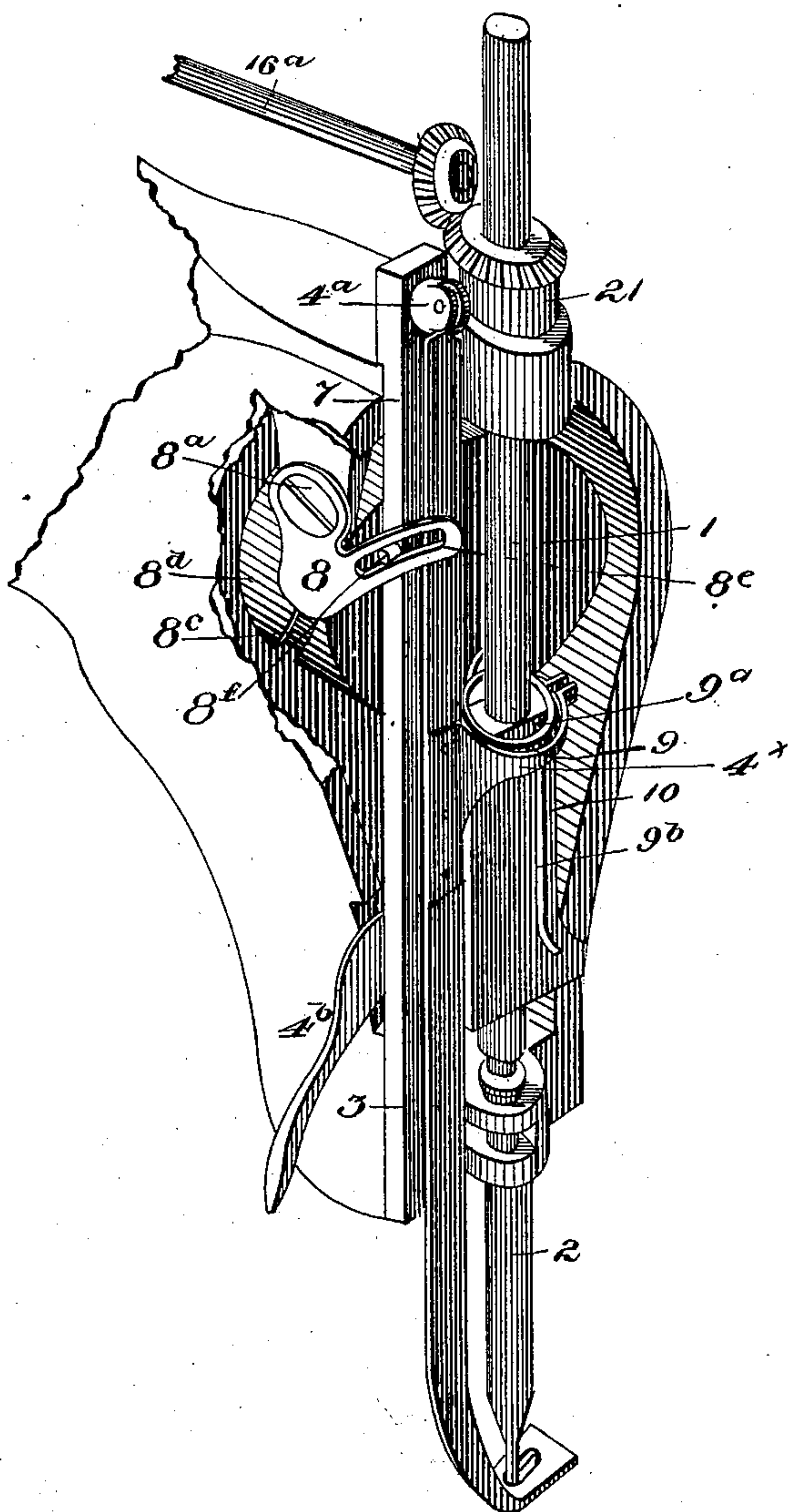
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3 Sheets—Sheet 3.

Fig. 5.



Witnesses

Edw. D. H. Power, Jr.
[Signature]

Inventor

E. J. Klingenberg

By *[Signature]*
Edwin Brod,

Attorney

UNITED STATES PATENT OFFICE.

ERNEST J. KLINGENBERG, OF CHICAGO, ILLINOIS.

EMBROIDERING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 657,944, dated September 18, 1900.

Application filed August 3, 1899. Serial No. 726,022. (No model.)

To all whom it may concern:

Be it known that I, ERNEST J. KLINGENBERG, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Sewing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in sewing-machines. It is designed mainly for making and patching such articles as bags, tents, and the like and is capable of sewing on an ordinary patch, or the rent or impairment may be remedied by darning or weaving a patch of the thread without the aid of other material to fill in the opening or rent, as heretofore, or, in other words, the stitch alone produced by the thread carried by the needle is made to serve that purpose. It is also equally applicable for doing work of a fancy or decorative character.

It consists of the sundry combinations of parts, including their construction and arrangement, substantially as hereinafter more fully disclosed, and specifically pointed out in the claims.

It will be understood that latitude is allowed herein as to details, as they may be varied or changed without departing from the spirit of my invention and the same yet remain intact and be protected.

In the accompanying drawings, illustrating the preferred embodiment of my invention, Figure 1 is a side elevation, partly in section. Fig. 2 is an end elevation. Fig. 3 is a broken plan view disclosing more especially the slide carrying the knuckle-joint of feed-bar. Fig. 4 is a cross-section showing more fully the shifting-ring of the feed-bar. Fig. 5 is a broken detail perspective view disclosing the principal features of the invention. Fig. 6 is a detail plan view showing more fully the feed-bar knuckle-joint.

In carrying out my invention I assemble the various or sundry parts of my machine as generally disclosed in Fig. 1, wherein 1 is the needle-bar; 2, the nipple; 3, the feed-bar, and 4 the looper. The needle-bar, as usual,

is suitably supported or carried by the arm or bracket 5, as commonly provided for that purpose in sewing-machines generally, said needle being crank-actuated from the driving-shaft 6, operated in the usual manner. The feed-bar 3 is preferably connected by a knuckle-joint 4^a at its upper end to the same end of a vertical slide-bar 7, having preferably a dovetail tongue-and-groove connection 7^a with the outer end of the bracket or arm 5 and having secured to its lower end the nipple 2, through which the needle passes or is guided, said knuckle-joint permitting said feed-bar to be moved in any required direction for the feeding action. This slide is actuated by a lever 8, suitably pivoted or fulcrumed, as at 8^a, at the outer end of the arm or bracket 5 and having a pin or stud 8^b, adapted to engage a cam-groove 8^c in a hub or enlargement 8^d on the driving-shaft 6, said fork or lever having a slotted arm and pin or stud connection 8^e 8^f with said slide-bar. Said slide-bar, by reason of the action of said lever, imparts an up-and-down movement to the feed-bar and nipple, said nipple being designed to hold the stitch upon the cloth or work-plate of the machine while the needle is on its upward stroke and the feed-bar at the same time feed the work. By the use of said nipple a stitch can be made without the aid, as usual, of the material operated upon. Ordinarily a stitch cannot be made without requiring the aid of said material, the nipple thus providing for the formation, virtually, of the stitch in the air, as it were, as will more fully appear farther on.

Connected to the feed-bar 3 by a suitable bearing 4^x, extending therefrom, is a "shift" ring or collar 9, having a pin 9^a engaging a partly-curved or cam slot 9^b in a "throw" or cam 10, secured to the needle-bar 1. The action between said parts is such that when said pin engages the curved portion of said slot, as it will do when the needle-bar has about reached the upper end of its stroke, carrying with it the throw or cam, the foot of the feed-bar, normally resting upon the material or work, will be actuated so as to feed said material or work in whichever direction the throw may point, as controlled by the operator. The feed-bar may be lifted by

hand when the machine is not in operation by the suitable manipulation of a hand-lever 4^b, as is common.

Below the work-plate is suitably arranged the looper 4, having a head or point 4^c, secured in a tubular shaft (not shown) inclosed within an outer tube 4^y. Compassing the sleeve 4^s of the tube 4^y is a collar 4^k, adapted to move said sleeve up and down upon the tube 4^y by means of a jointed crank or pitman 11, connecting with a shaft 12 of connected-up gear-and-shaft mechanism, said collar operating the looper in any well-known way. The hook of the needle carries the thread up through the plate into the mouth or lower end of the nipple 2, and the needle repeats the stitch-forming operation, the nipple holding down the stitch on the plate. The feed-bar and nipple are simultaneously actuated by the same means as above disclosed, the nipple being in contact with the work or stitches while the feed-bar is operating, the work being passed under said nipple by the operator.

For the simultaneous actuation or adjustment by a common means of the needle-bar, the feed-bar, and looper, according to the direction it is desired to give to the feed, I provide a hand or crank wheel 13, whose shaft is suitably geared, as at 13^a, to a vertical shaft 14, geared at its ends, as at 15 15^a, to a horizontal tubular shaft 16 on the shaft 12 and to a shaft 16^a, respectively, the shaft 16^a being geared, as at 17, to a vertical shaft 18, geared, as at 19, to the looper, and the shaft 16 being geared, as at 20, to a sleeve 21, splined or keyed in the usual way to the needle-bar 1.

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

1. In a sewing-machine, the combination of a feed-bar, a slide-bar having said feed-bar jointed thereto, at its upper end, and carrying a nipple at its lower end, and means to actuate said slide-bar and feed-bar, substantially as set forth.

2. In a sewing-machine, the combination of a feed-bar, a slide-bar having said feed-bar universally jointed thereto at its upper end

and carrying a nipple at its lower end, and means to actuate said slide-bar and feed-bar, substantially as set forth.

3. In a sewing-machine, the combination of a feed-bar, a needle-bar, and a "throw" or cam mechanism carried by said needle-bar having a partly-curved slot and pin or stud connection with said feed-bar, substantially as set forth.

4. In a sewing-machine, the combination of a feed-bar, a needle-bar and a "throw" or cam mechanism comprising a cam on said needle-bar, having a partly-curved slot, and a ring having a pin or stud adapted to engage said slot, and an extension or bearing of said feed-bar adapted to carry said ring, substantially as described.

5. In a sewing-machine, the combination of a slide-bar carried by the head of the needle-bar arm or bracket, a cam-lever having a cam-slot-and-pin connection with the driving-shaft, and a slotted arm and pin or stud connection with said slide-bar and a feed-bar carried by said slide-bar and means for actuating the feed-bar, substantially as specified.

6. In a sewing-machine, the combination of a slide-bar carried by the needle-bar arm or bracket, a nipple carried by said slide-bar, a feed-bar jointed to said slide-bar, and a lever having a cam-slot-and-pin connection with said slide-bar and a similar connection with the driving-shaft and means for actuating the feed-bar, substantially as set forth.

7. In a sewing-machine, the combination of a slide-bar carried by the needle-bar arm or bracket, a nipple carried by said slide-bar, a feed-bar jointed to said slide-bar, a lever having a slot-and-pin connection with said slide-bar and a similar connection with the driving-shaft, and a "throw" or cam-actuating mechanism adapted to impart the feeding motion to the feed-bar, substantially as set forth.

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

ERNEST J. KLINGENBERG.

Witnesses:

A. C. WERNLE,
T. W. KLINGENBERG.