

(No Model.)

2 Sheets—Sheet 1.

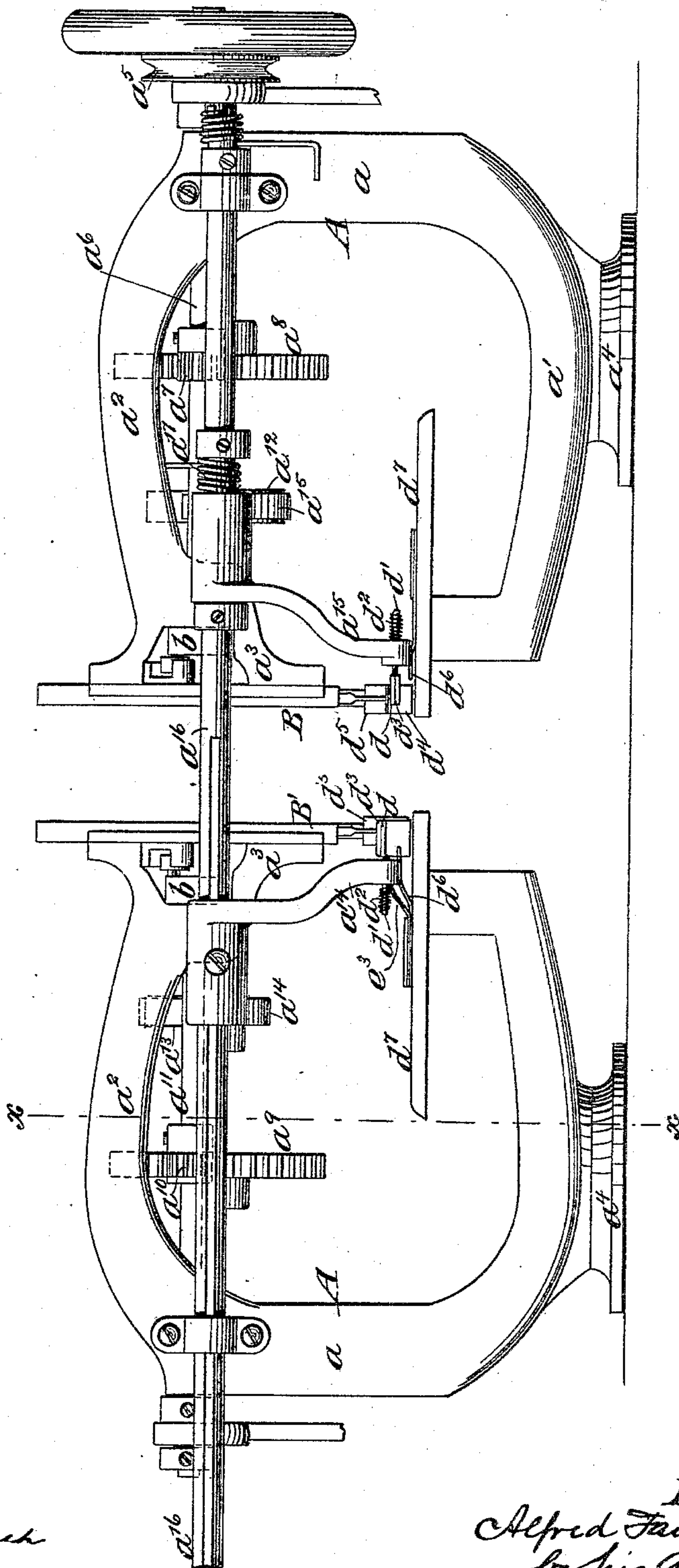
A. FAULKNER.

PLAITING ATTACHMENT FOR SEWING MACHINES.

No. 411,917.

Patented Oct. 1, 1889.

Fig. 1.



Witnesses:
John Barker
Arthur H. Hamblen

Inventor:
Alfred Faulkner
by his Attorneys
Brown & Griswold

(No Model.)

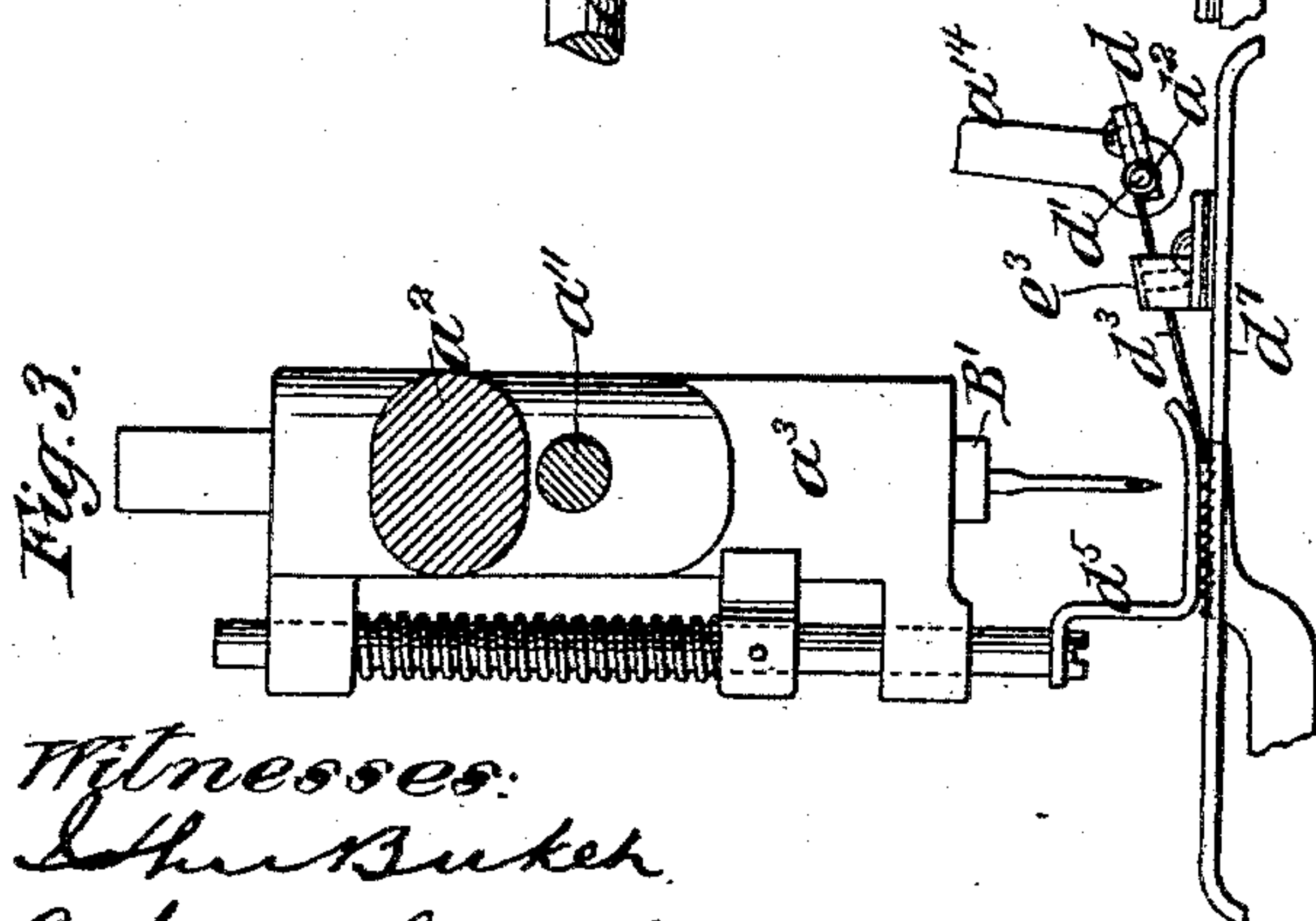
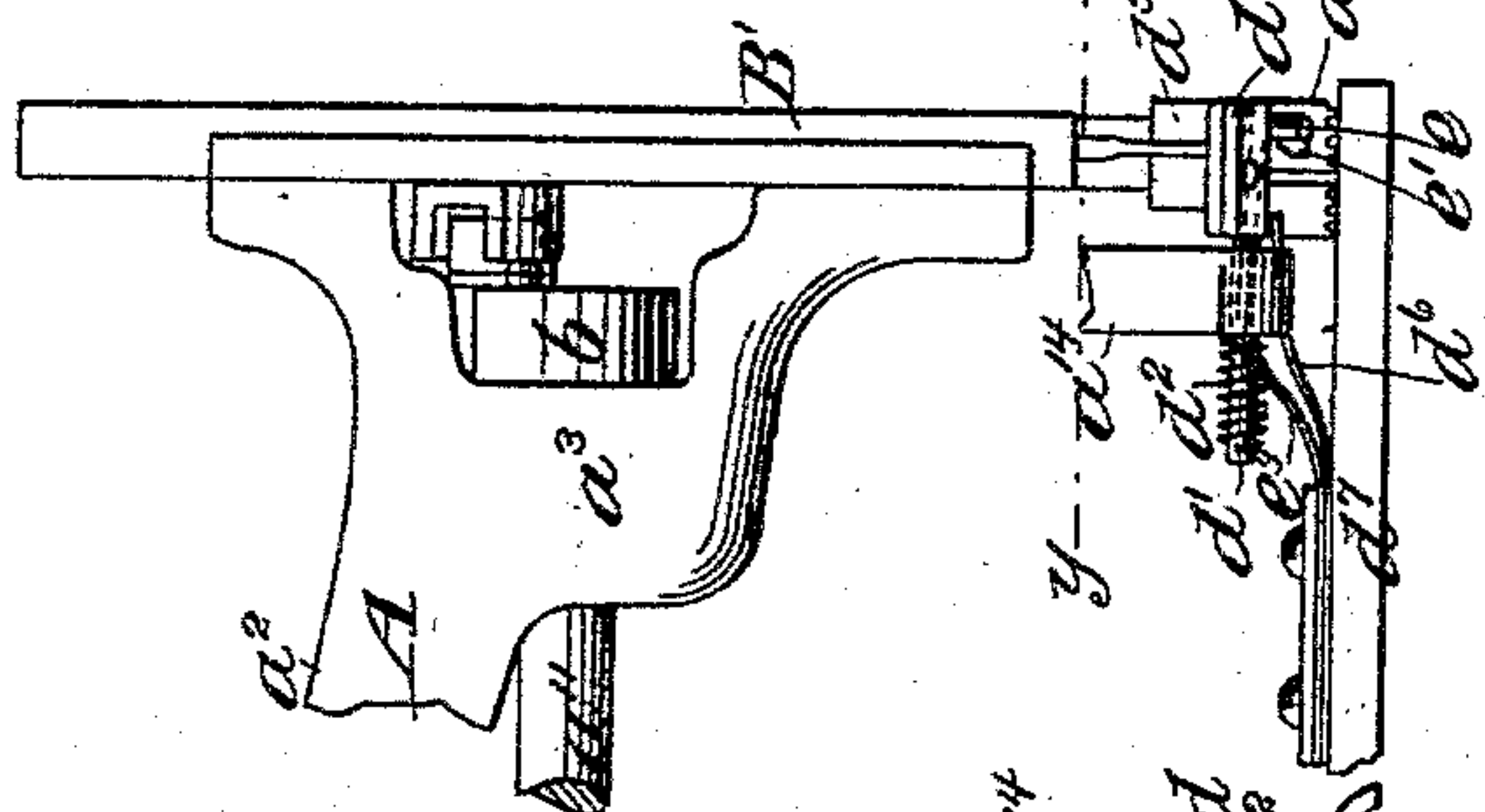
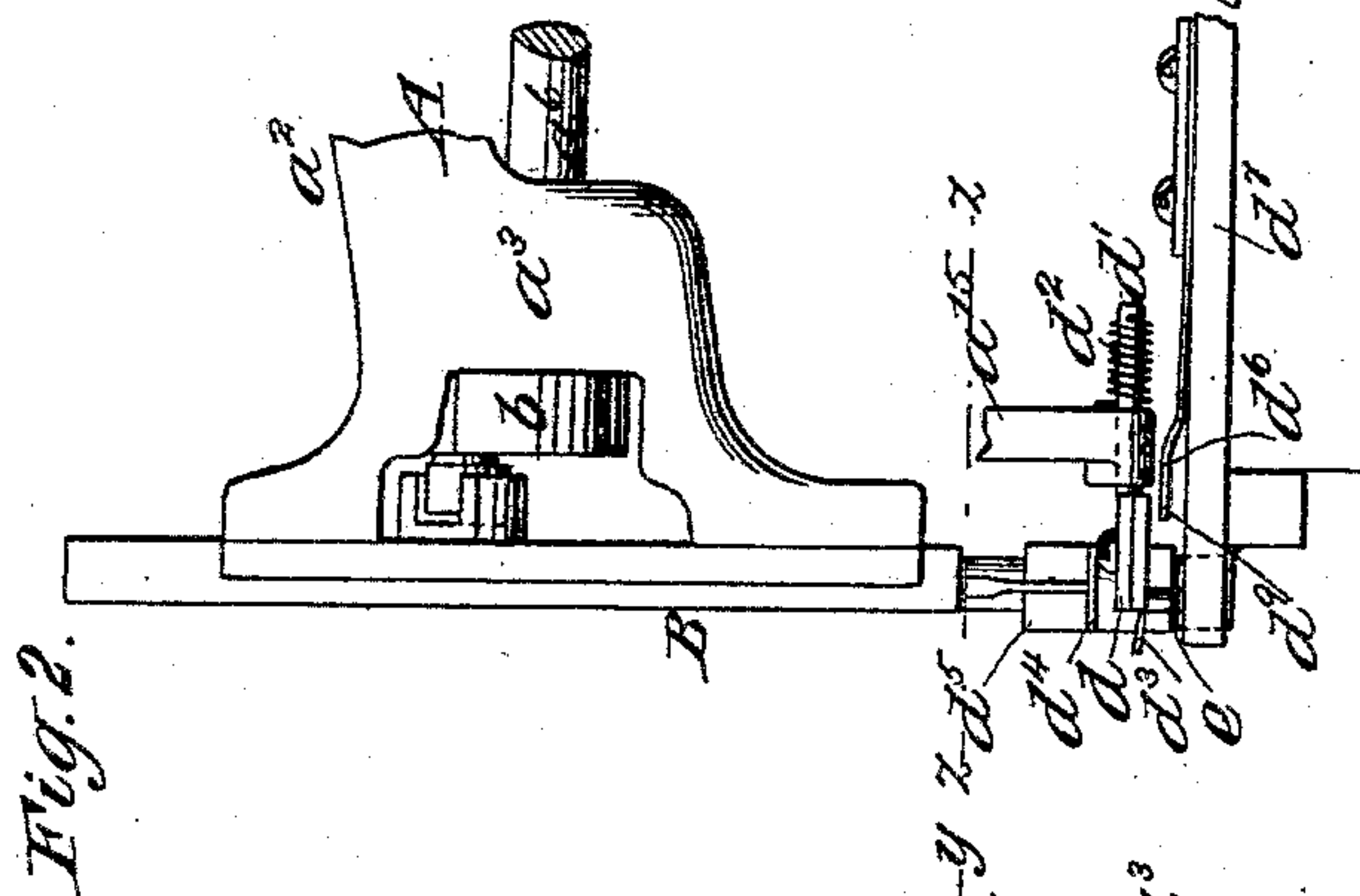
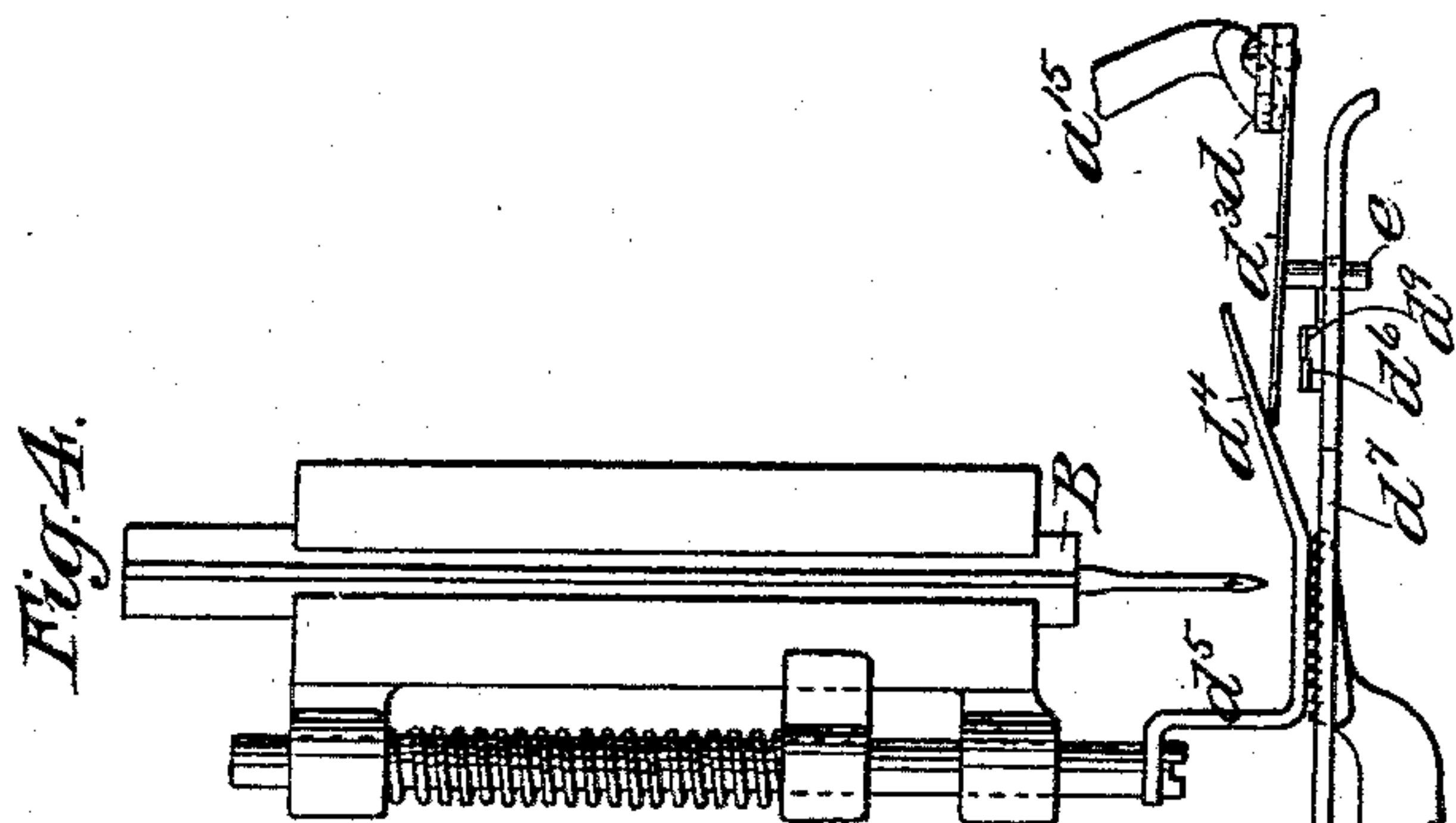
2 Sheets—Sheet 2.

A. FAULKNER.

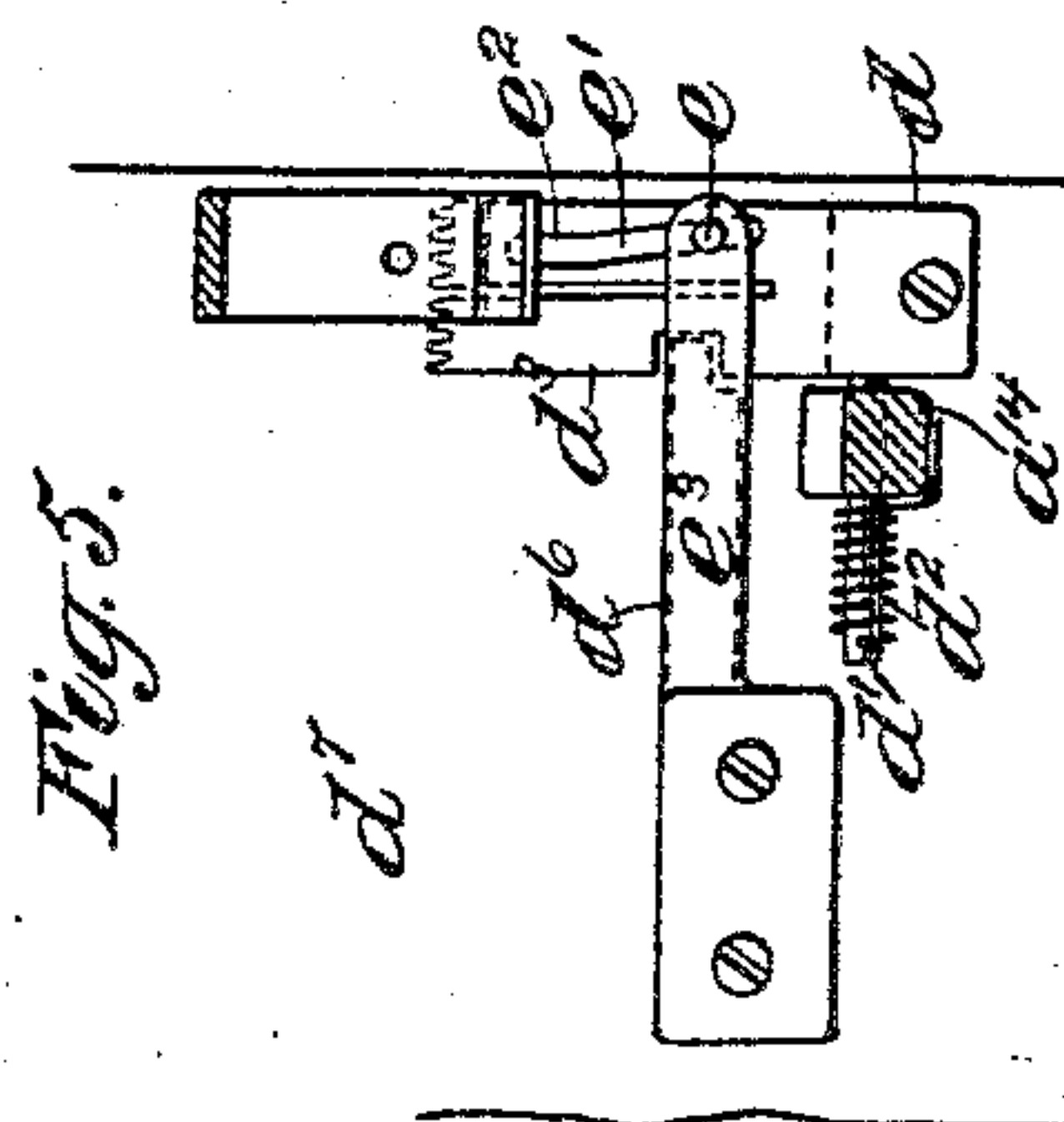
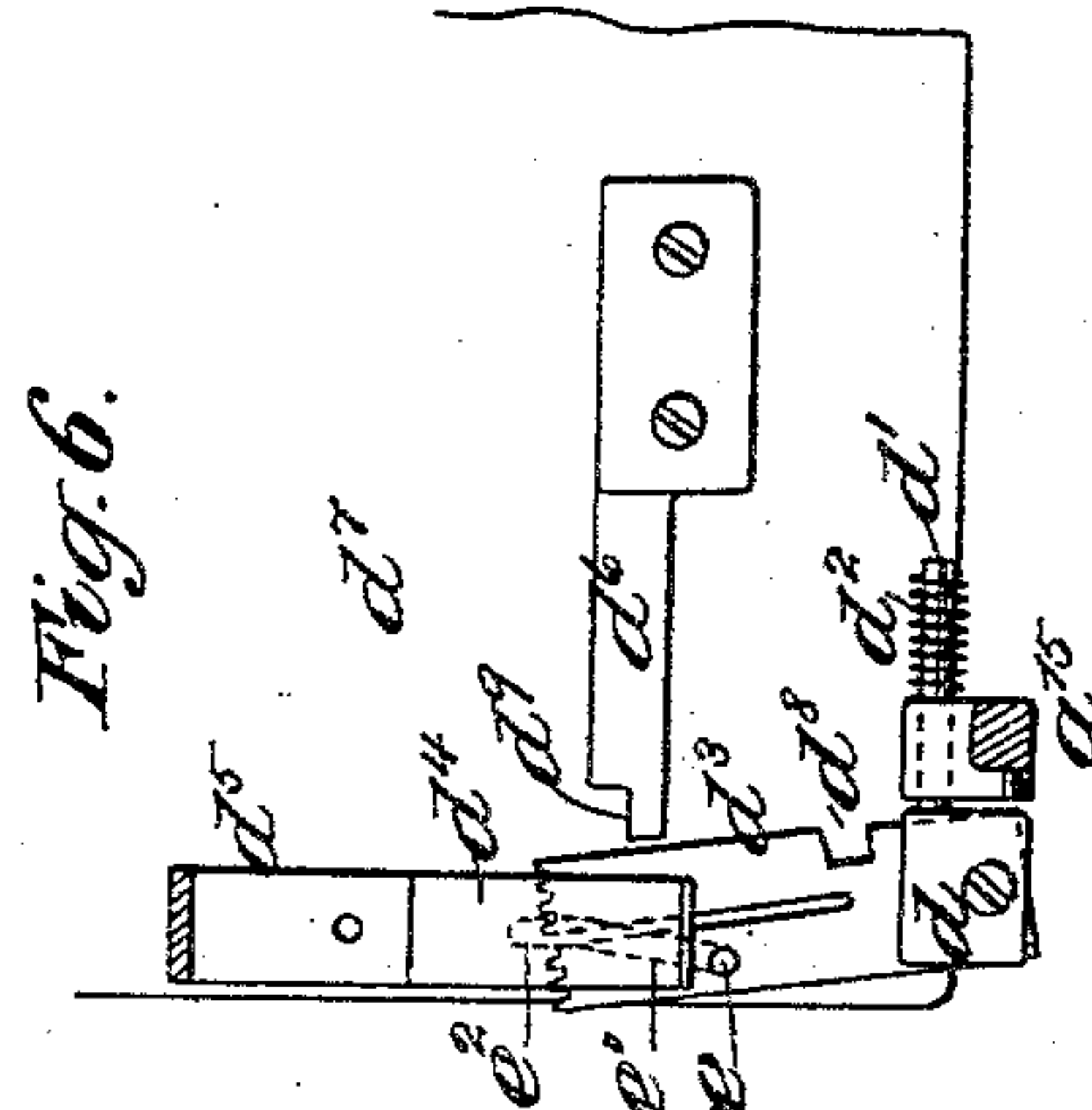
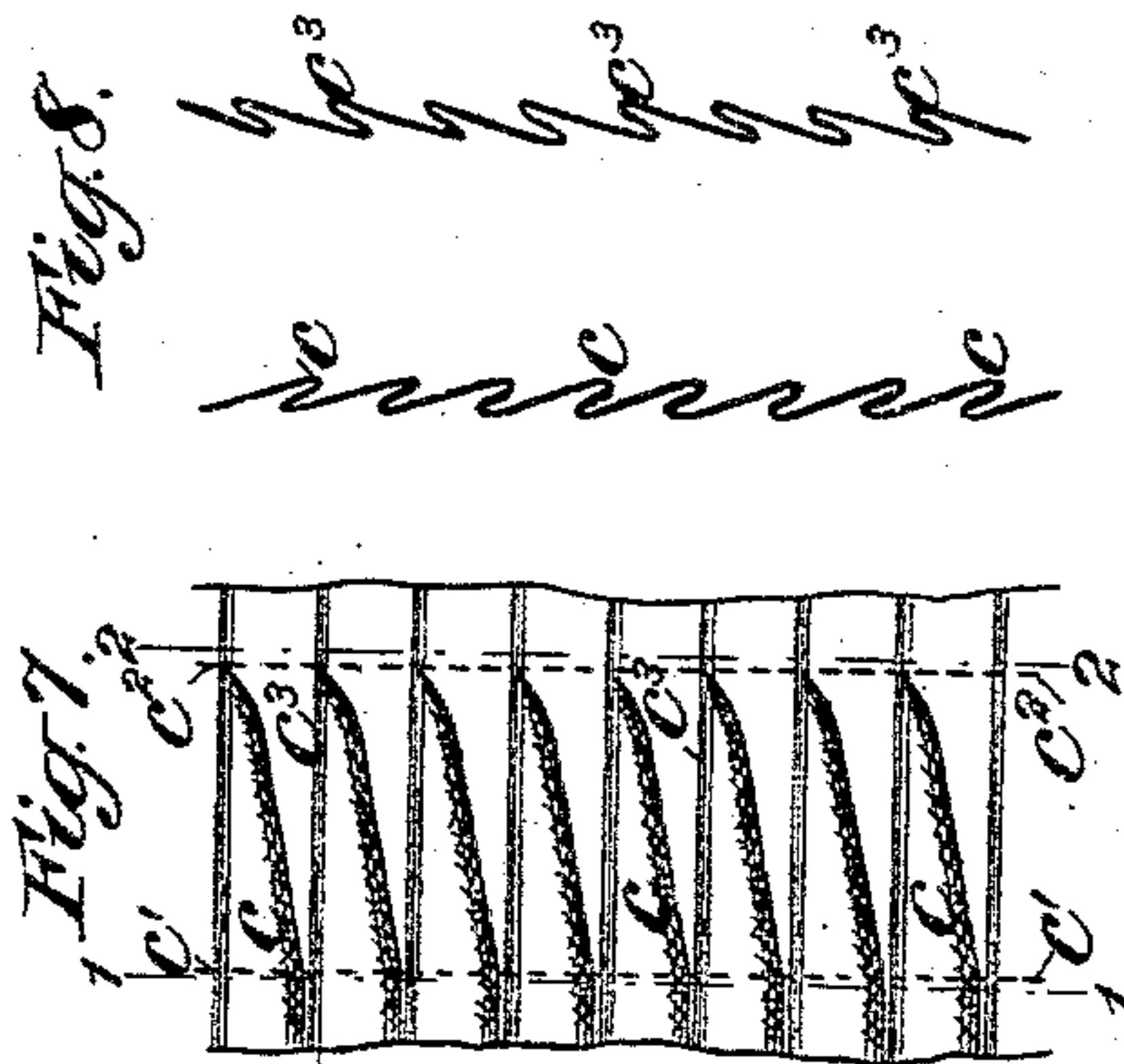
PLAITING ATTACHMENT FOR SEWING MACHINES.

No. 411,917.

Patented Oct. 1, 1889.



Witnesses:
 John Burke
 Arthur C. Gamblin



In witness whereof
Alfred Faulkner
by his Attorneys
Brown & Griswold

UNITED STATES PATENT OFFICE.

ALFRED FAULKNER, OF JERSEY CITY, NEW JERSEY, ASSIGNOR TO ELI W. BROADBENT, OF NEW YORK, N. Y.

PLAITING ATTACHMENT FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 411,917, dated October 1, 1889.

Application filed January 10, 1889. Serial No. 295,964. (No model.)

To all whom it may concern:

Be it known that I, ALFRED FAULKNER, of Jersey City, in the county of Hudson and State of New Jersey, have invented a certain
5 new and useful Improvement in Plaiting Attachments for Sewing-Machines, of which the following is a specification.

My improvement relates to plaiting attachments for sewing-machines, which attachments
10 co-operate with two sewing-machines in order to form plaiting of a peculiar kind, hereinafter to be more particularly described.

I will describe in detail a plaiting attachment for sewing-machines, and then point out
15 the novel features in claims.

In the accompanying drawings, Figure 1 is a side elevation of two sewing-machines on a reduced scale and showing part of the mechanism embodied in my improvement. Fig. 2
20 is a side elevation of the head portions of two sewing-machines, showing my improvement more in detail. Fig. 3 is a vertical section of the head portion of the machine to the left in Fig. 1 and taken on the plane of the dotted
25 line xx of said figure. Fig. 4 is a front elevation of the head portion of the machine shown at the right in Fig. 1. Fig. 5 is a horizontal section taken on the plane of the line
30 yy of the machine shown to the left in Fig. 2. Fig. 6 is a horizontal section taken on the plane zz of the machine to the right in Fig. 2. Fig. 7 is a face view showing one side of plaiting done on the machine. Fig. 8 is a sectional view showing the form of the plaits as
35 appearing upon opposite sides of the goods, the sections being taken on the lines 1 1 and 2 2 of Fig. 7.

Similar letters of reference designate corresponding parts in all the figures.

40 I have only illustrated such parts of a sewing-machine as are essential to an understanding of my invention.

A designates the frames of the machines. Each of these frames comprises an upright portion a , lower arms a' , upper arms a^2 , and heads
45 a^3 . The machines are supported upon base-pieces a^4 . The heads of the machines extend toward each other. The machines are driven from a common source—namely, pulley a^5 ,
50 mounted on a main shaft a^6 , upon which is a pinion a^7 , gearing with a gear-wheel a^8 . The

gear-wheel a^8 is mounted upon a shaft. (Not shown in the drawings, but extending throughout the length of both machines and journaled in suitable bearings upon the
55 frames thereof.) Upon this shaft is mounted another gear-wheel a^9 , meshing with a pinion a^{10} , mounted upon the main shaft a^{11} of the second machine. Upon the same shaft upon which
60 are mounted the gear-wheels a^8 and a^9 are also mounted cams a^{12} a^{13} . With these cams contact bell-crank levers a^{14} a^{15} , from which the plaiting attachments are operated. The
65 levers a^{14} a^{15} are mounted upon a rock-shaft a^{16} , journaled in suitable bearings on the frames of the machines. The lever a^{14} has a sliding connection with said shaft, but rotates
70 therewith. The lever a^{15} is loosely mounted on said shaft, and a spring a^{17} operates to return it to one of its positions after it has been
75 moved out of such positions by the cam a^{12} .

B B' designate needle-bars deriving motion from cranks b upon the shafts a^6 a^{11} . The arrangement of these cranks is such that
80 when one of the needle-bars is rising the other is moving downwardly, so that the machines form stitches alternately, although I have illustrated the needle-bars and needles in all the figures as occupying positions about
85 midway in the lengths of their reciprocations. The arrangement and conformation of the cams a^{12} a^{13} is such that the levers a^{14} a^{15} are rocked alternately in the same direction, as shown.

These machines are designed to form plaiting such as is illustrated in Figs. 7 and 8—that is to say, folds c are formed upon one
90 side of the goods between two rows of stitches c' c^2 , which folds extend in the direction of the arrow, Fig. 7, and other folds c^3 are formed upon the same side of the goods,
95 which extend in a direction contrary to that of the arrow. The result is that approximately wedge-shaped plaits appear upon the goods, which plaits are folded in opposite directions. In order to accomplish this it is
100 necessary that the tuck should be made by one of the attachments from the upper side of the goods and by the attachment of the other machine from the lower side of the goods. This will be quite clear from examination of Fig. 8.

I will first describe the attachment adapted to operate upon the under side of the goods. This attachment is illustrated more clearly in Figs. 4 and 6. To the lever a^{15} is secured
 5 a plate d , which plate is provided with a stem d' , extending loosely through an aperture in the lever a^{15} , so that it may rock therein. A spring d^2 , connected at one end to the stem d' and at the other to the lever
 10 a^{15} , operates to rock the plate d in one direction. Pivotaly connected to the plate d is a knife or tongue d^3 , which knife or tongue is caused by the spring d^2 to bear at its outer or free end against the under side of an up-
 15 wardly and angularly extending portion d^4 upon a presser-foot d^5 . Adjacent to the knife or tongue and extending in approximately right angles thereto is a spring d^6 , having its free end turned up somewhat. This spring
 20 is secured to a work-plate d^7 . In the side edge of the knife or tongue d^3 adjacent to the spring d^6 is a notch d^8 . When by the rocking of the bell-crank lever a^{15} the knife or tongue d^3 is being moved inwardly or to-
 25 ward the needle to its farthest position, the knife or tongue passes over the spring d^6 , carrying with it the folded or tucked material, and is maintained by the spring d^2 against the incline d^4 . When it has reached
 30 its farthest inward position, the knife or tongue has been moved downwardly until it lies approximately flat against the surface of the work-plate, and a lip or extension d^9 upon the spring d^6 will then be sprung up-
 35 wardly by the spring through the notch d^8 in the knife or tongue. As the knife or tongue d^3 is moved backwardly now by the lever, the knife or tongue rides under the spring d^6 for a distance, while the spring
 40 bears directly upon the knife or tongue, thus preventing any drag of the knife or tongue upon the material which may tend to withdraw the latter from beneath the lever. During this operation the spring d^6 is of
 45 course acting against the resistance of the spring d^2 . A precisely similar operation occurs with the attachment shown on the machine illustrated more particularly to the left of Fig. 2 and in Figs. 3 and 5, except that the
 50 action of the spring d^2 in this case is such as to force the knife or tongue d^3 downwardly against the work-plate. As this knife or tongue operates upon the upper side of the goods, it will of course form the fold or tuck
 55 in a reverse direction to that of the other knife or tongue. In this instance also the spring d^6 is arranged so that during the forward movement of the knife or tongue the same will pass under the spring; but during
 60 the rearward movement of the knife or tongue it passes over the spring.

It is desirable that the goods as fed to the needles should be stretched laterally in order to effect more perfect and even plaiting. For
 65 this purpose I cause the knives or tongues d^3 upon being fed forward to swing upon the plates d , so that their forward ends will be

carried inwardly or away from the fronts of the machine as the forward progression of the knives or tongues takes place. In the ma-
 70 chine illustrated to the right of Fig. 2, the attachment for which is illustrated more particularly in Fig. 6, the knife or tongue d^3 is provided upon its under side with a pin e , which pin extends into a slot e' , formed in the
 75 work-plate. This slot extends inwardly at an angle for a distance from the front of the work-plate. Assuming that the knife or tongue is in the position as shown in Fig. 6, when the tongue or knife is moved inwardly
 80 the pin e , acting in the slot e' , causes the knife or tongue to swing inwardly, and thus to stretch the goods toward the machine. The slot e' has a straight portion e^2 at its inner end, which, when the pin is traveling along,
 85 will cause a straightforward motion of the knife or tongue. The operation in the other machine is the same as that just described, except that the slot e' is formed in the knife or tongue and the pin e is mounted upon an
 90 arm e^3 , in this instance above the spring d^6 , and secured by the same means to the work-plate. The pins e and slots e' constitute guides for causing the oblique movements of
 95 the knives or tongues.

I prefer that the inner ends of the knives or tongues d^3 shall be provided with teeth, so that they will the more readily grasp the goods.

It will be observed that the knives or
 100 tongues d^3 when being fed forward or toward the needle have an oblique movement away from each other.

The under surface of the portion d^4 of the presser-foot, co-operating with the attachment
 105 shown in the machine to the right in Fig. 1, and the surface of the work-plate d^7 , co-operating with the attachment shown to the left in Fig. 1, constitute in effect bearing-surfaces for the knives or tongues.
 110

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, with two sewing-machines, of two knives or tongues, levers for operating said knives or tongues, mechanism,
 115 substantially such as described, for operating both said sewing-machines and said levers in unison, springs on the levers for forcing said knives or tongues in one direction, bearing-surfaces against which said knives or tongues
 120 are forced by said springs, and other springs adjacent to said knives or tongues adapted to bear directly thereon to force them away from the goods when moved in one direction and acting against the resistance of the springs
 125 first named, substantially as specified.

2. The combination, with two sewing-machines, of two reciprocating knives or tongues, levers for operating said knives or tongues
 130 and with which the latter have pivotal connections, bearing-surfaces, springs on the levers exerting pressure in opposite directions for forcing the knives or tongues against said bearing-surfaces, and other springs adjacent

to said knives or tongues and adapted to bear directly against the same to force the knives or tongues away from the goods when moving in one direction, the operation of said first-
5 named springs being such that one of said knives will be forced downwardly while the other is being forced upwardly, and vice versa, substantially as specified.

10 3. The combination, with two sewing-machine, of two knives or tongues having oblique movements in contrary directions, guides for the knives or tongues guiding them in oblique direction, levers for operating said knives or tongues and with which the latter

are pivotally connected, bearing-surfaces adjacent to each of said knives or tongues, springs on the levers for forcing said knives or tongues against the bearing-surfaces, and
othersprings adjacent to the knives or tongues and adapted to bear directly upon the same
20 in order to move the knives or tongues away from said bearing-surfaces when moving in one direction, substantially as specified.

ALFRED FAULKNER.

Witnesses:

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