

No. 745,935.

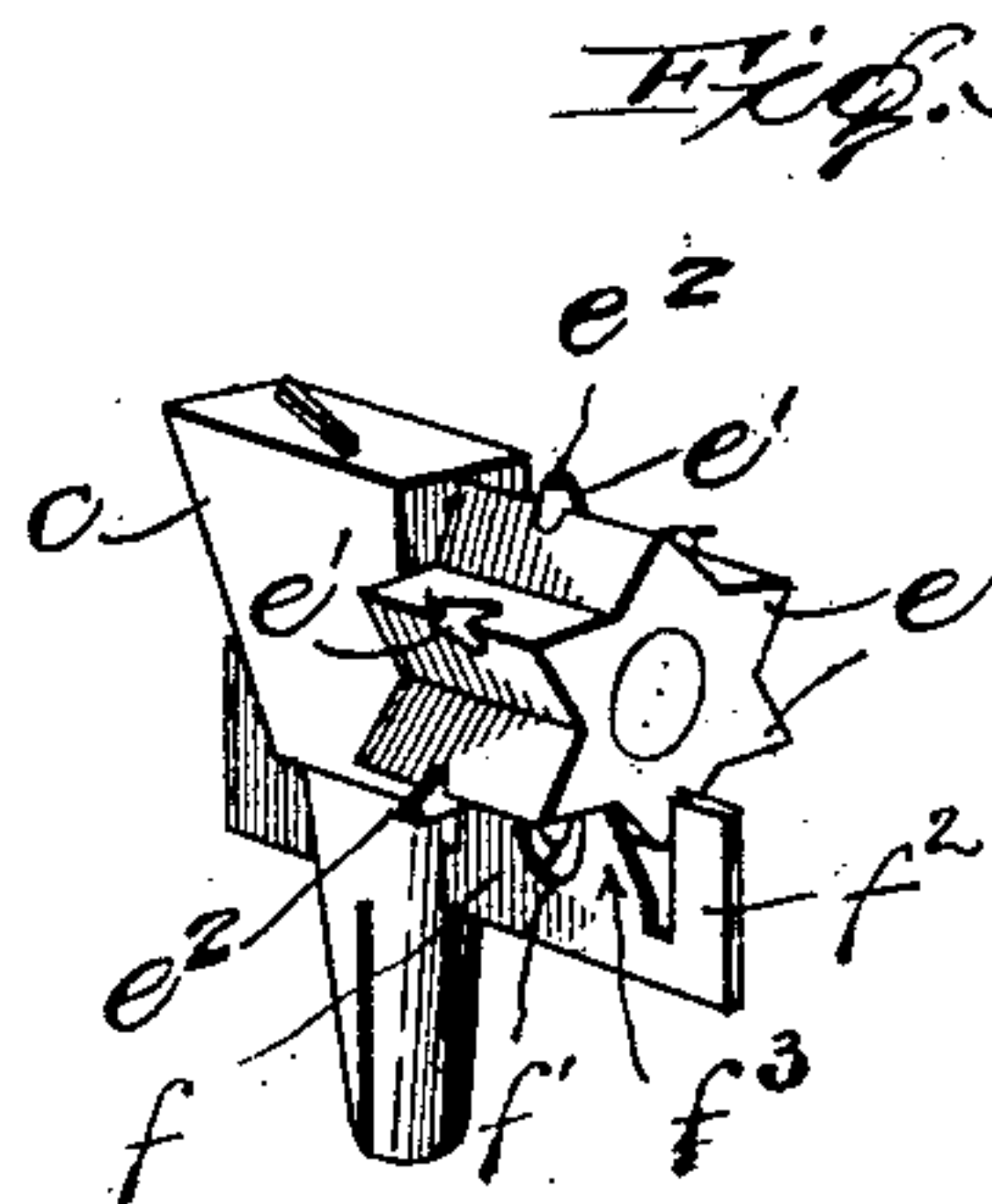
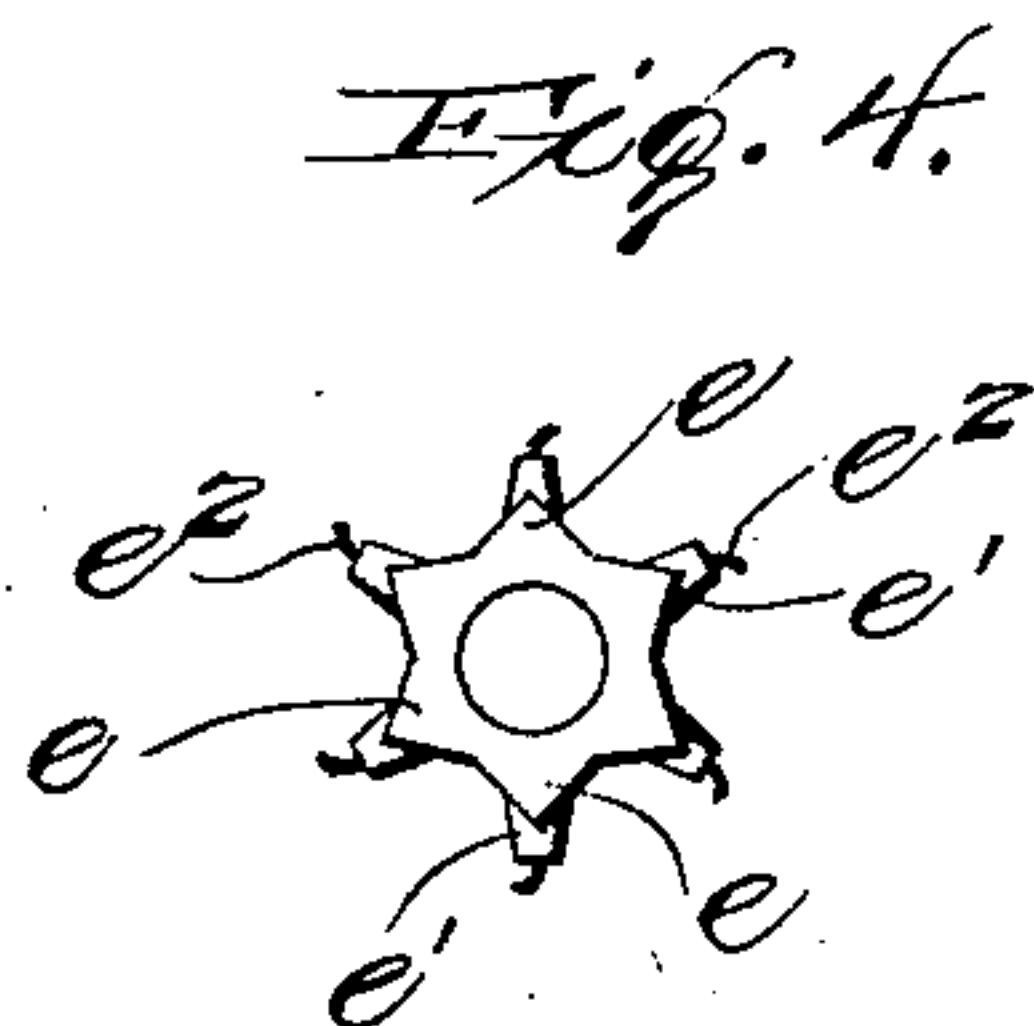
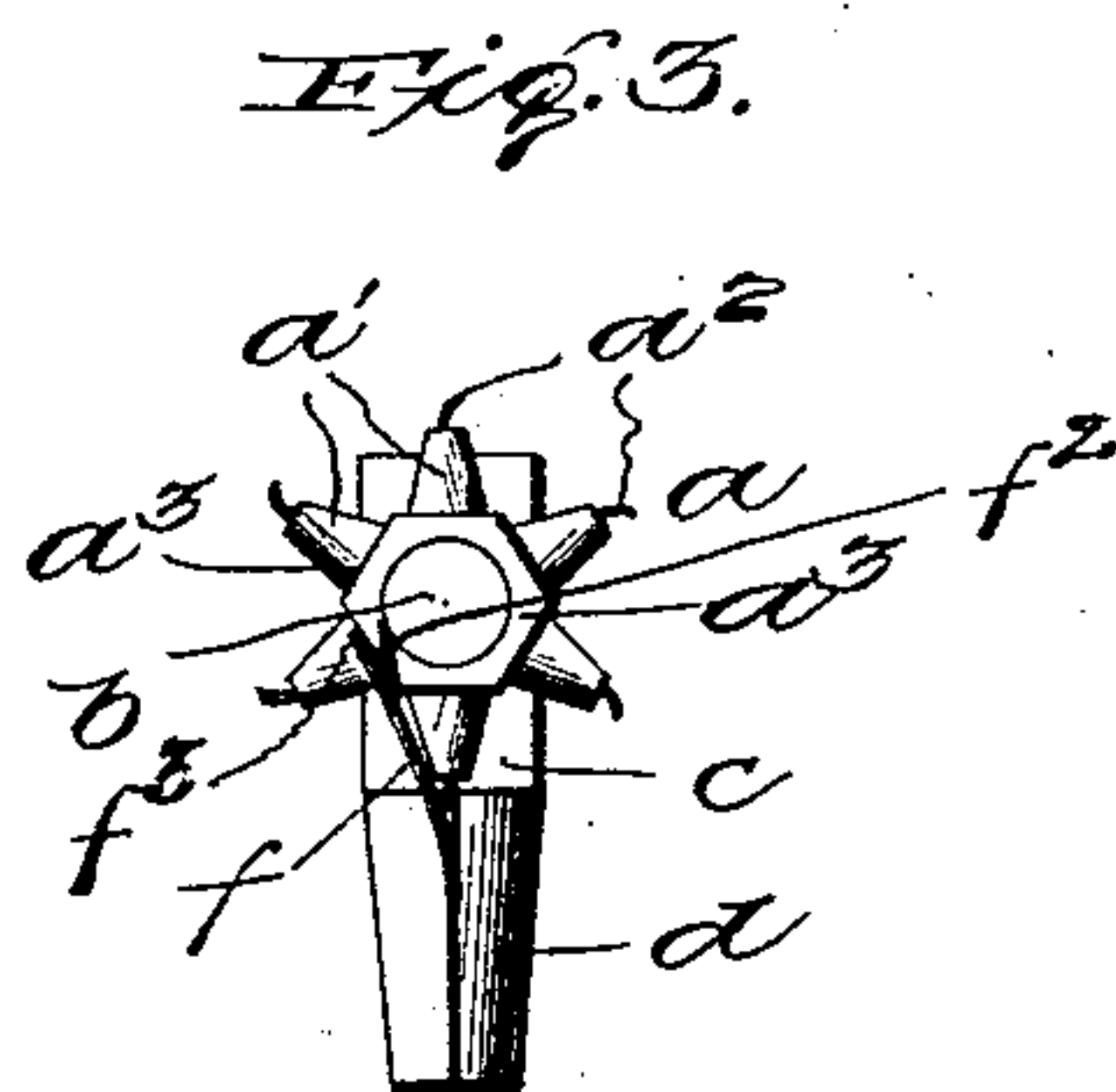
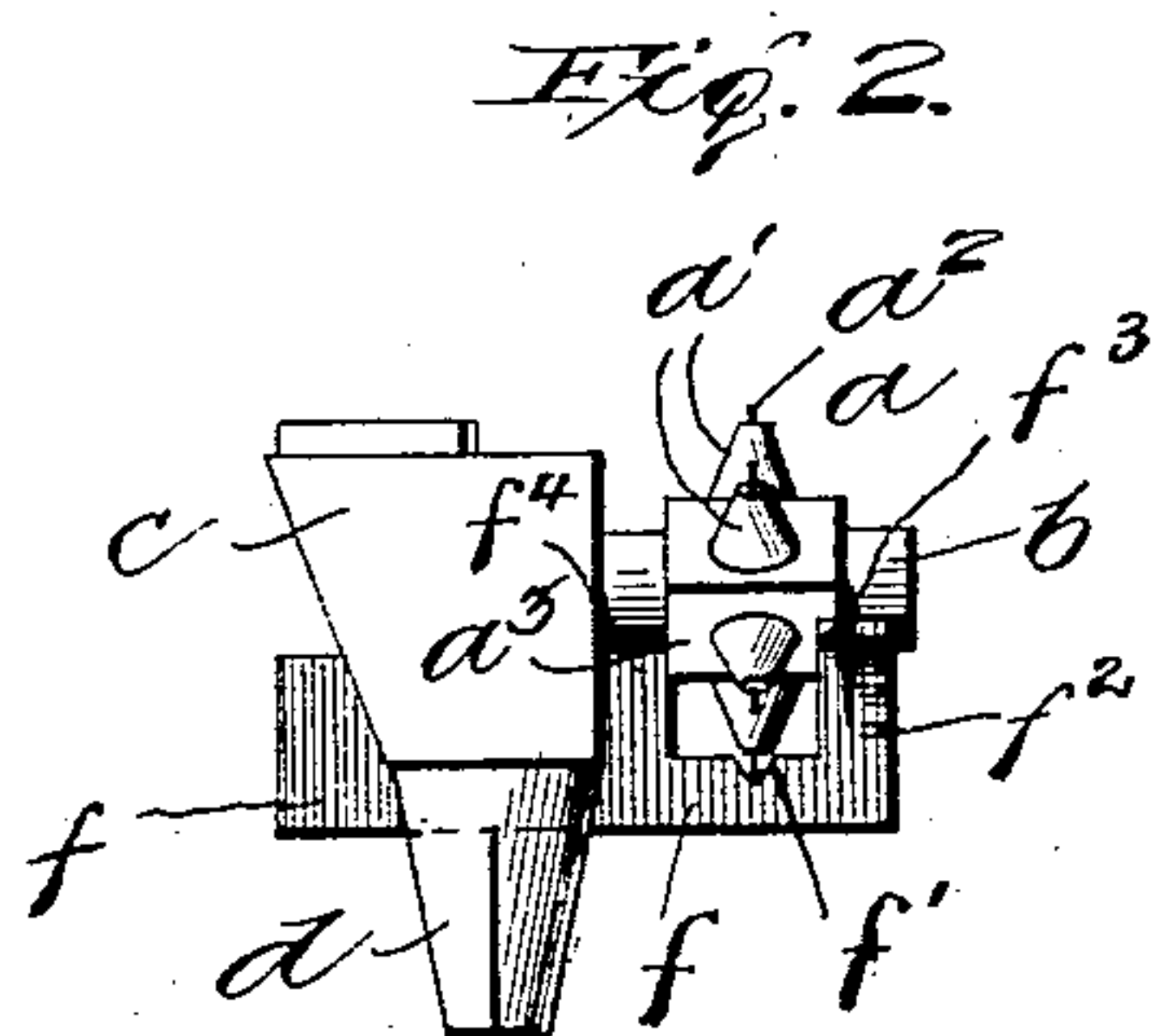
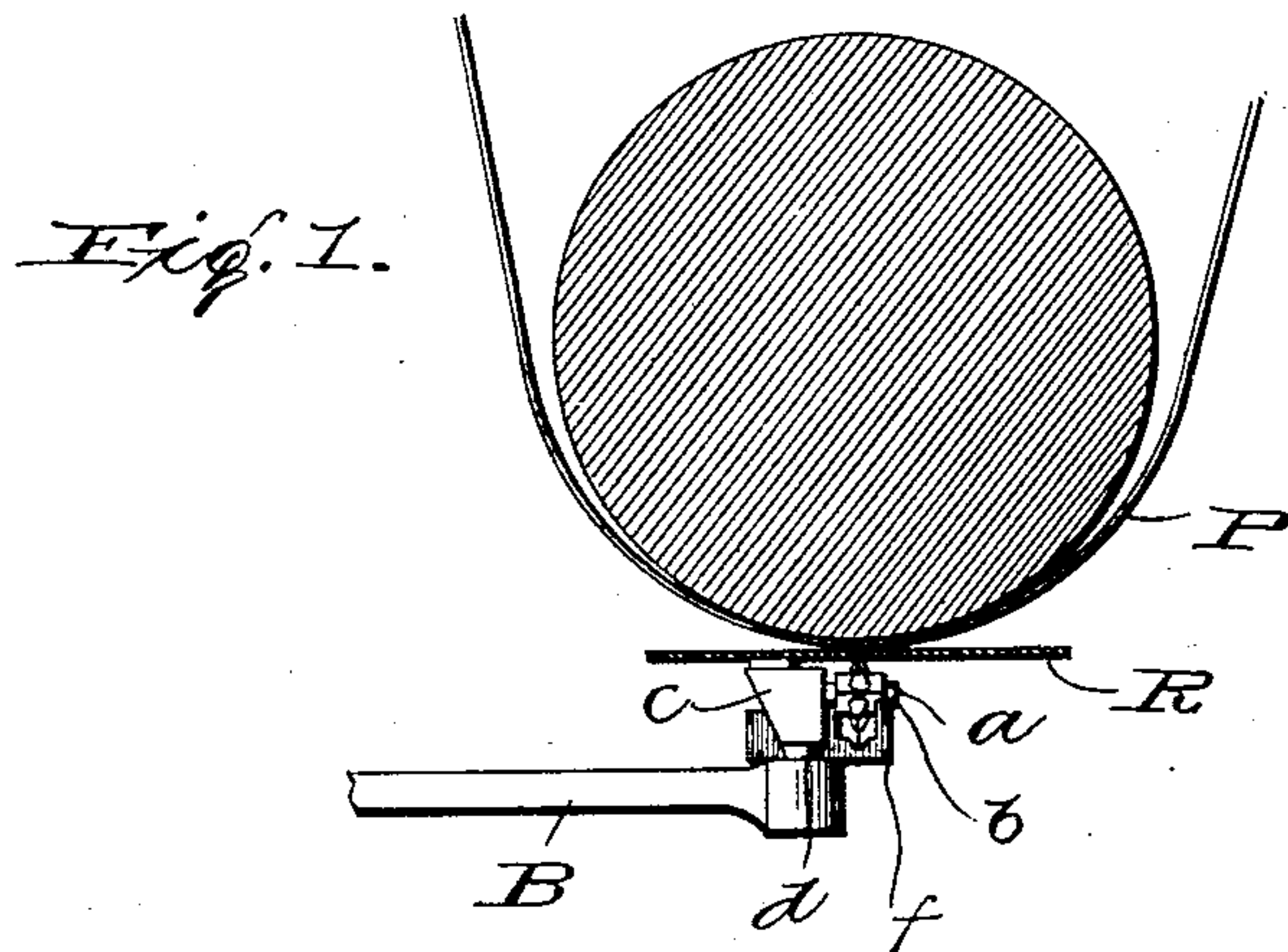
PATENTED DEC. 1, 1903.

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LINE MARKING TYPE ATTACHMENT FOR TYPE WRITING MACHINES.

APPLICATION FILED JUNE 19, 1903.

NO MODEL.



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# UNITED STATES PATENT OFFICE.

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LINE-MARKING-TYPE ATTACHMENT FOR TYPE-WRITING MACHINES.

SPECIFICATION forming part of Letters Patent No. 745,935, dated December 1, 1903.

Application filed June 19, 1903. Serial No. 162,249. (No model.)

*To all whom it may concern:*

Be it known that I, ARTHUR BAILY VANCE, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Line-Marking-Type Attachments for Type-Writing Machines; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form part of this specification.

This invention is an improvement in type-writing machines, and is a simple device for facilitating the making of lines, particularly dotted lines, in machines employing ink-ribbons, without the necessity of having to repeatedly strike a key, as has been heretofore necessary in tabulating or making statements of accounts. The device is especially designed for use on a type-bar type-writing machine, such as the Remington, but is not restricted to such a machine.

The invention, in brief, comprises a rotatable liner wheel or disk provided with needle-points and adapted to be held firmly against the ribbon and paper by the depression and holding down of a key, and while so held the carriage is released by depressing a release or paragraphing key, as now customarily employed, and as the carriage moves to the left the wheel is caused to rotate by the needle-points biting the paper, and thus forcibly turning the wheel so that it produces a series of dots on the paper from the interposed ribbon.

The accompanying drawings illustrate two forms of such a device and the manner of using the same on a type-bar machine; but I do not restrict myself to the precise construction shown, referring to the claims for summaries of the essential features of the invention. The device, moreover, is adapted to be used as an ordinary punctuation-type—for example, as the “period-type”—and it can be used on double-type-carrying-bar machines, such as the Remington, or on single-type-carrying-bar machines, such as the Caligraph.

In the accompanying drawings, Figure 1 is a detail sectional view of part of a type-writing machine, showing a platen, paper, ink-

ribbon, and type-bar carrying my lining device and uplifted in position to bring the liner in operative position. Fig. 2 is a magnified view of the lining device detached from the bar. Fig. 3 is a side view of Fig. 2. Figs. 4 and 5 are magnified front and side views of a modified form of the liner-wheel.

As shown in Figs. 1 to 3, the liner comprises a disk or wheel *a*, rotatably journaled on a stub-shaft *b*, projecting from the side of a body *c*, which body is provided with a shank *d*, adapted to be engaged with and secured to the end of a type-bar *B*, of ordinary construction or such as is used in any of the well-known type-bar machines. In the example shown the bar is one of the Remington machines. Hence the body *c* is a type-body and is provided with an upper-case-type character on its upper end, while the wheel *a* occupies the relative position thereto of the period-type, as in the present instance the wheel is a dotting-wheel, and when not used as a liner will serve as the period-type. This wheel *a* has a number of radial teeth *a'*, each terminating in a blunt point about equal in surface area to the ordinary period-type; but from the center of each tooth *a'* projects a fine needle-point *a<sup>2</sup>* just long enough to pass through the ribbon *R* and engage the paper *P* without damaging the ribbon or puncturing the paper in an unsightly manner. Attached to the shank *d* below the wheel is a spring-plate *f*, that extends under shaft *b* and is provided with a notch *f'* to permit the wheel *a* to rotate thereby. The tongue *f<sup>2</sup>* on the end of the spring lies against the end of the wheel, and in connection with the part *f<sup>4</sup>* at the rear side of the wheels keeps the wheel in the desired position on the shaft *b*. The adjacent tongue *f<sup>3</sup>* on the spring bears against one of the facets of the wheel and will ordinarily keep the wheel in such position that one of its teeth *a'* will be in position to serve as a period-type when the type-bar is properly actuated, but will not prevent the rotation of the wheel. In Figs. 4 and 5 the wheel is of simpler construction than in Fig. 1, being simply peripherally notched or serrated and having on the apex of each tooth *e* a period-point *e'*, from which spring the central needle-points *a<sup>2</sup>*. This



wheel is mounted upon the type-body C, just as wheel *a* in Figs. 2 and 3, and operates like the latter, and is provided with a spring *f*, which will normally keep some one of the points *e'* in position to act as a period-type when not used as a "liner."

The operation is simple. The liner-wheel *ab* or its equivalent is attached to one of the type-bars of the machine. It may be mounted on an individual-type body or mounted on a double-type body. I show it on the period-type body of the machine to be used in place of the period-type, which can be dispensed with where such a wheel is employed. Whenever the operator desires to use the device for lining—as, for instance, in tabulating accounts—he depresses the key controlling the bar carrying the wheel and holds it down, thereby pressing the wheel against the ribbon, its points *a'* passing through the ribbon and sticking into the paper. Then by releasing the carriage the latter moves to the left, and as the points *a'* engage the paper the wheel is forced to turn thereby, and at each needle-point puncture a dot is made by the blunt tooth pressing the ribbon against the paper, thus producing a line of dots very rapidly and with but two movements of the operator's hands—to wit, first, depression of the liner-key; second, depression of the carriage-release or paragraphing key. Obviously the construction and mounting of the liner-key and its support and attachment to the key-bar can be considerably varied within the scope of my invention, and must and will be varied to suit the particular machine to which the attachment is applied.

While I have described the liner-wheel as forming a dotted line, it might form a line of other character or design, continuous or broken, by properly shaping its configuration.

As above stated, the invention is especially designed for use on machines employing ink-ing-ribbons, and is not intended to be used as a printing-wheel, which receives ink from a supply and transfers it to the paper. Further, while I have described the wheel as used for making lines by the longitudinal motion of the carriage, it is obvious that if the wheel be turned to a position parallel with the axis of the platen it can be used to rule the latter with vertical lines by simply rotating the platen while the liner-key is depressed.

An important feature of the invention is the needle-points, whereby the wheel is rotated by being pressed upward into engagement with the paper on the moving platen while in contact with the ribbon and binding the latter against the paper. Another important feature is making a liner attachment which can be attached to a type-bar and operated like an ordinary type. Another feature is making a liner of this nature which when not used as a liner can be used as an ordinary type character.

Having thus described my invention, what

I therefore claim as new, and desire to secure by Letters Patent thereon, is—

1. A liner attachment for type-writing machine attached to a type-bar of the machine, and provided with needle-points adapted to penetrate the ribbon and engage the paper, substantially as described. 70

2. A liner attachment for type-writing machine, comprising a rotary wheel adapted to operate as a type character when not used as a liner, said wheel having needle-points adapted to penetrate the ribbon and engage the paper, for the purpose and substantially as described. 75

3. A liner attachment for type-bar type-writing machine, comprising a rotary wheel mounted on one of the type-bars of the machine, and adapted to operate as a type character when not used as a liner, said wheel having peripheral needle-points adapted to penetrate the ribbon and engage the paper, for the purpose and substantially as described. 80

4. A liner attachment for type-writing machine, comprising a rotatable wheel having peripheral marking-surfaces, and needle-points, for the purpose and substantially as described. 85

5. A liner attachment for type-bar type-writing machine, comprising a rotatable wheel having peripheral marking-surfaces, and needle-points; with means for securing said liner attachment to one of the type-bars of the machine, substantially as described. 90

6. An attachment for type-writing machine, comprising a rotatable wheel having peripheral marking-points, and peripheral needle-points adapted to perforate the ribbon and engage the paper; and means for locking the wheel with a marking-point in position to act as a type, for the purpose and substantially as described. 95

7. A liner attachment for type-bar type-writing machine, comprising a rotatable wheel having peripheral marking-points; with means for fastening said attachment to one of the type-bars of the machine; and means for locking the wheel with a marking-point in position to act as a type, for the purpose and substantially as described. 100

8. A liner attachment for type-bar type-writing machine, comprising a rotatable wheel having peripheral marking-points; and peripheral needle-points adapted to perforate the ribbon and engage the paper; with means for fastening said attachment to one of the type-bars of the machine; and means for locking the wheel with a marking-point in position to act as a type, for the purpose and substantially as described. 105

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses. 110

ARTHUR BAILY VANCE.

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MO. J. HOLLAND.