

(No Model.)

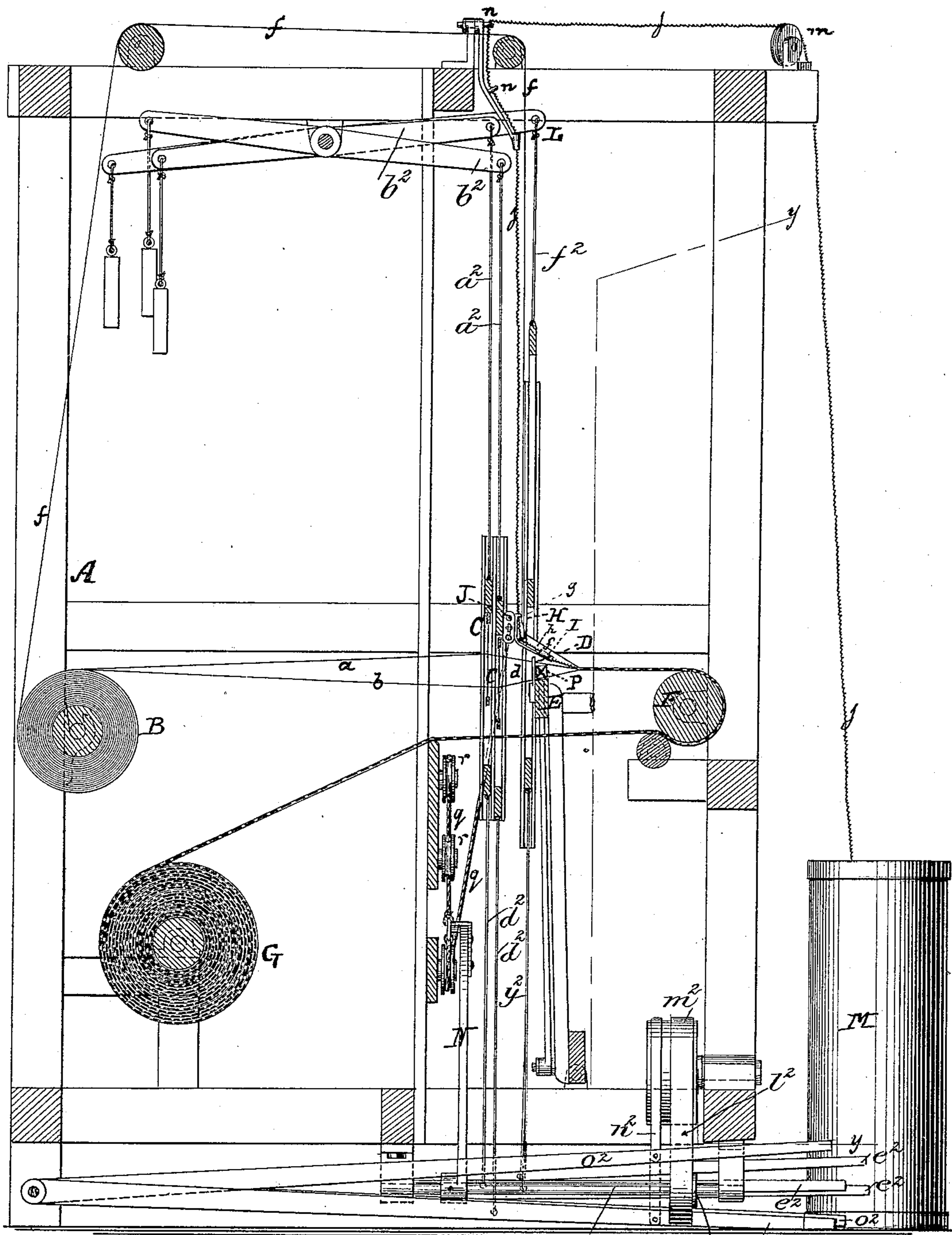
3 Sheets—Sheet 1.

A. URBAHN.
LOOM.

No. 397,156.

Patented Feb. 5, 1889.

Fig. 1



WITNESSES

John Becker
John M. Speer.

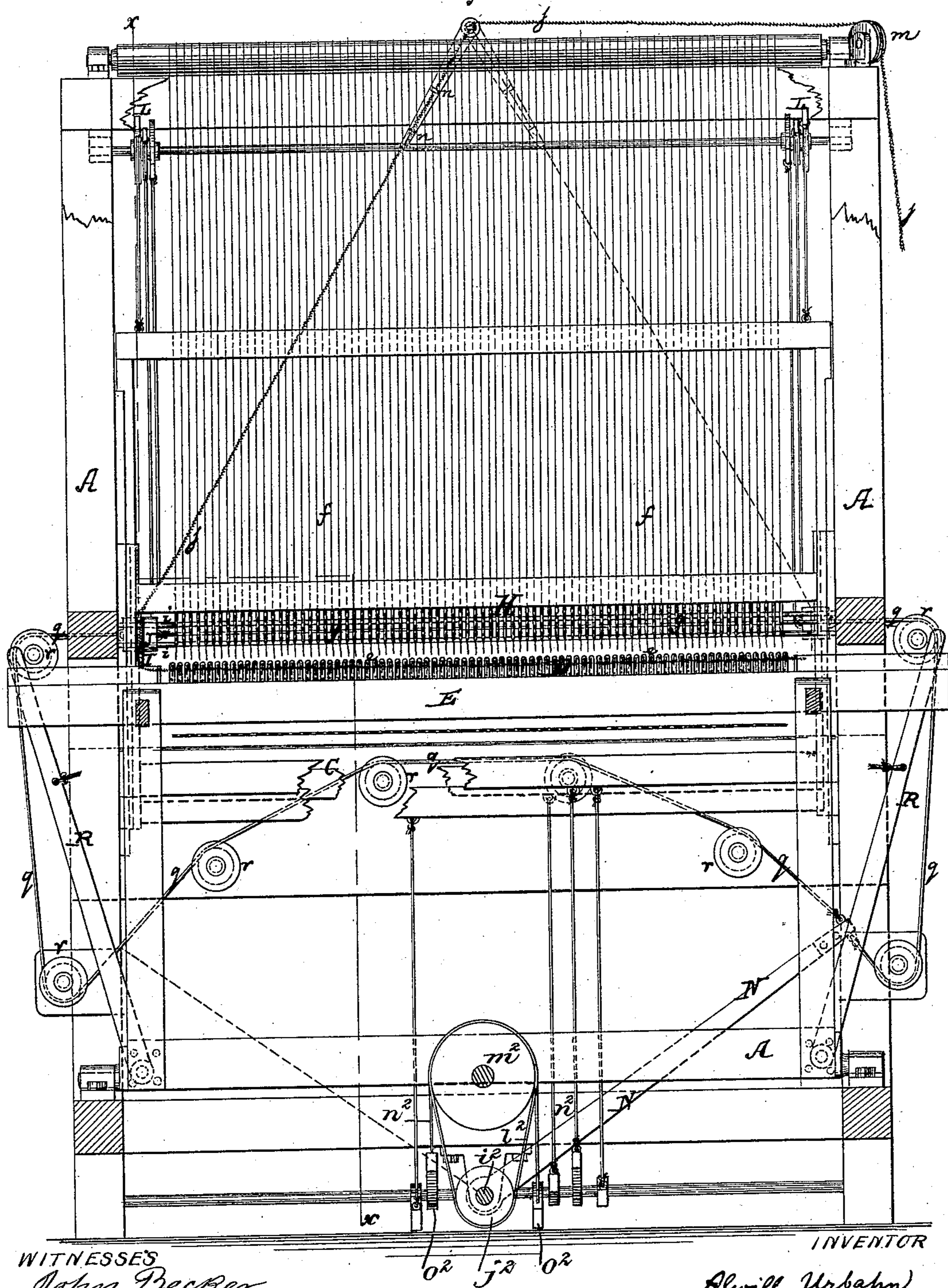
INVENTOR
Alwill Urbahn
by his attorneys
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No. 397,156.

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Fig. 2



WITNESSES

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(No Model.)

3 Sheets—Sheet 3.

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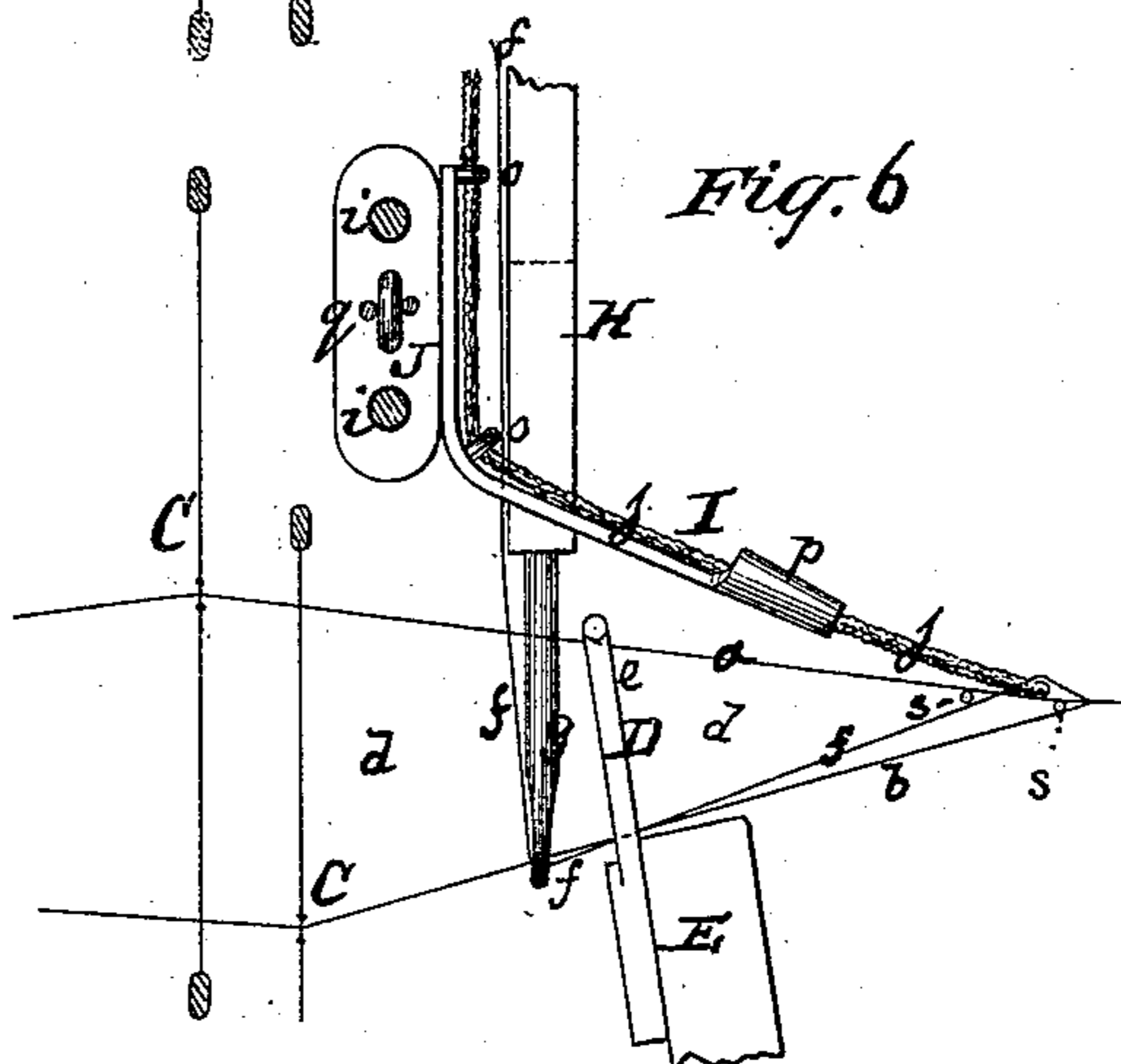
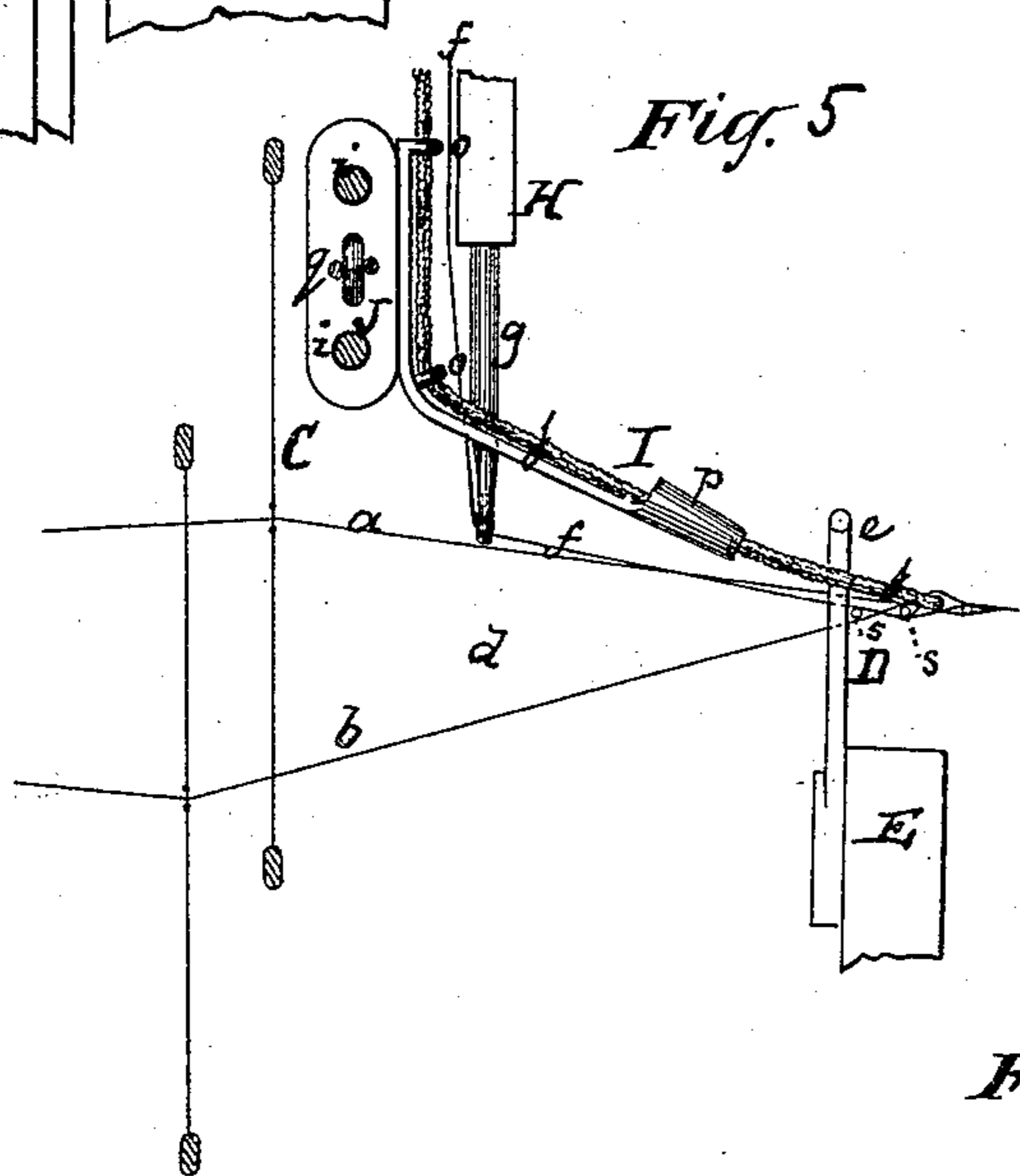
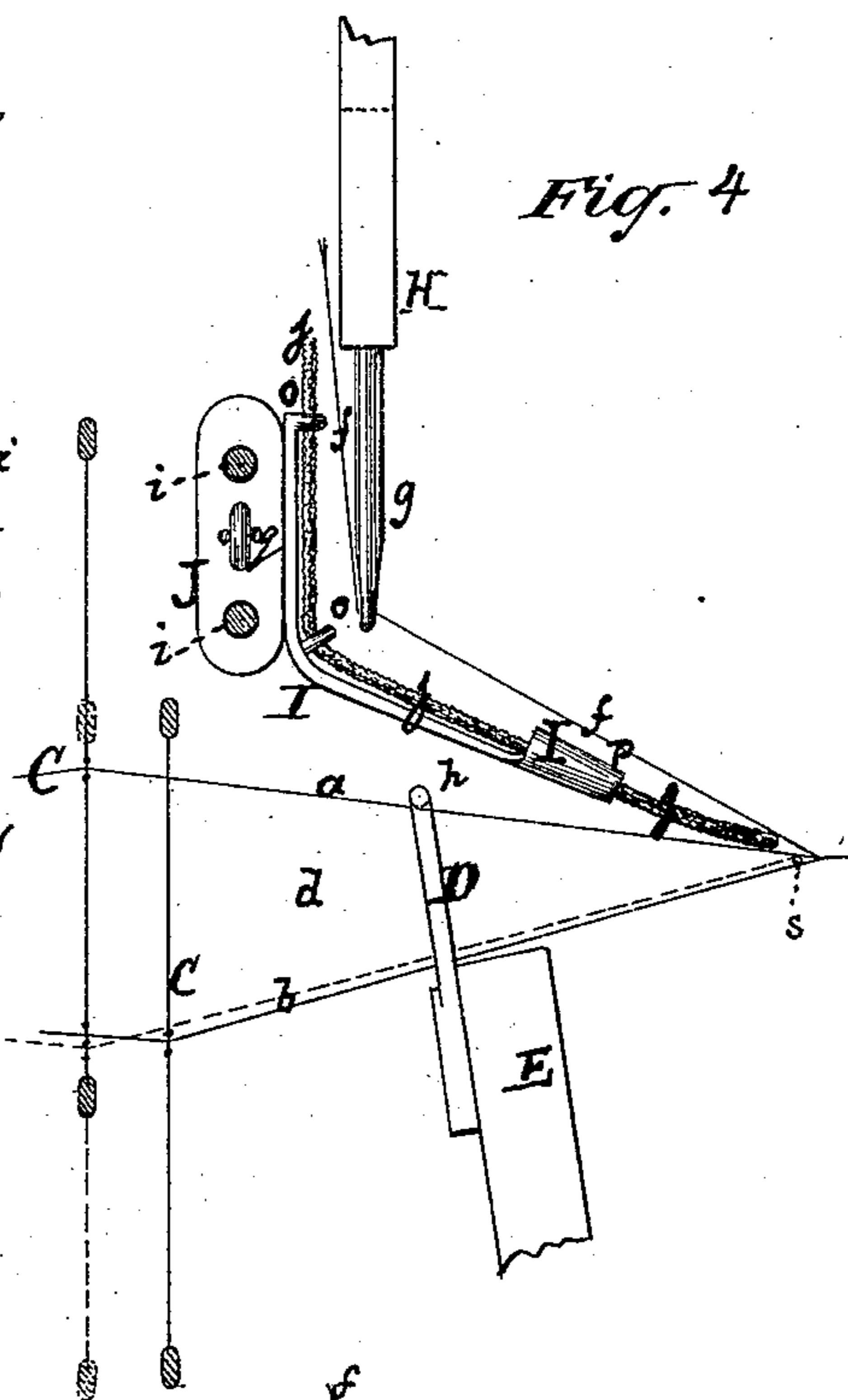
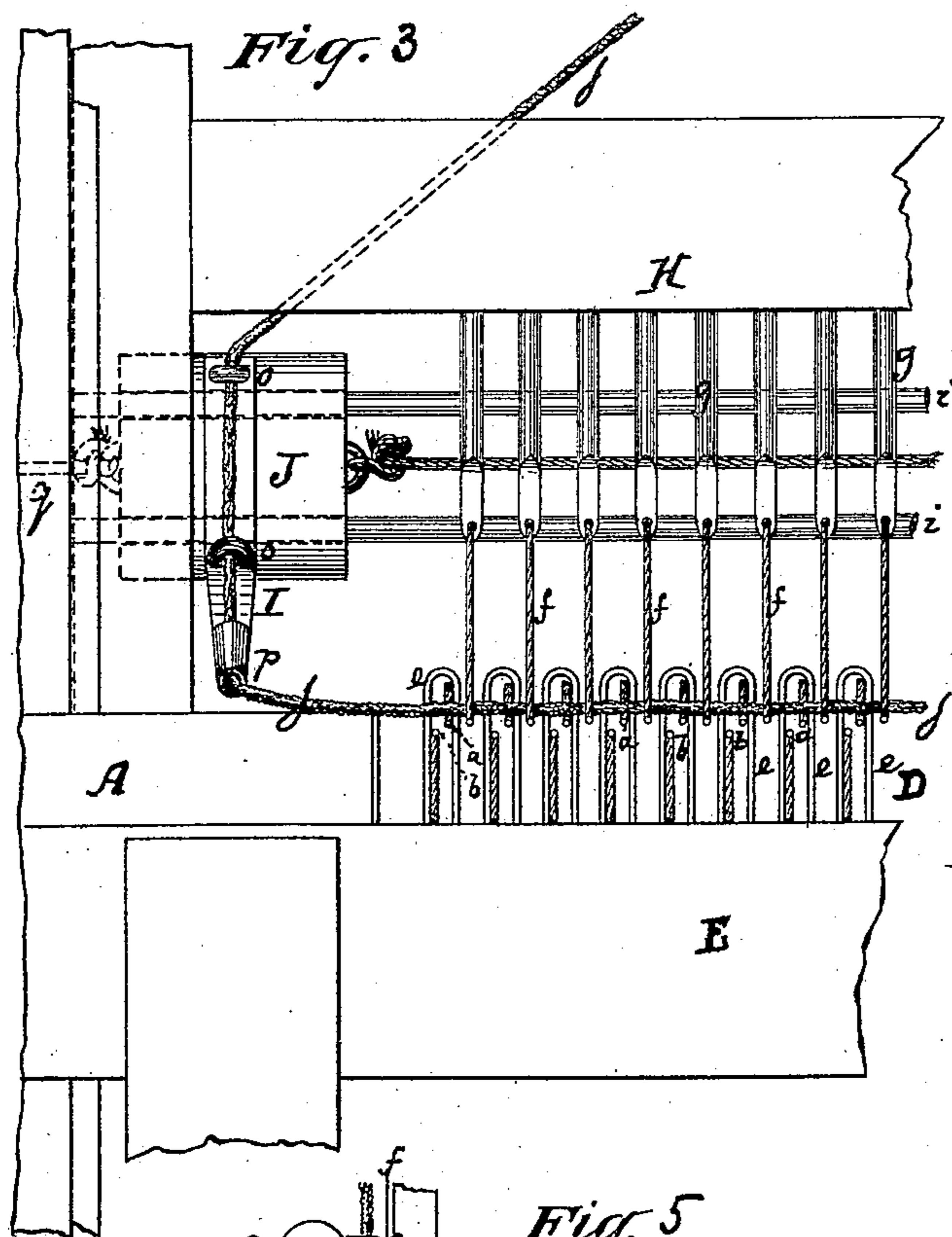
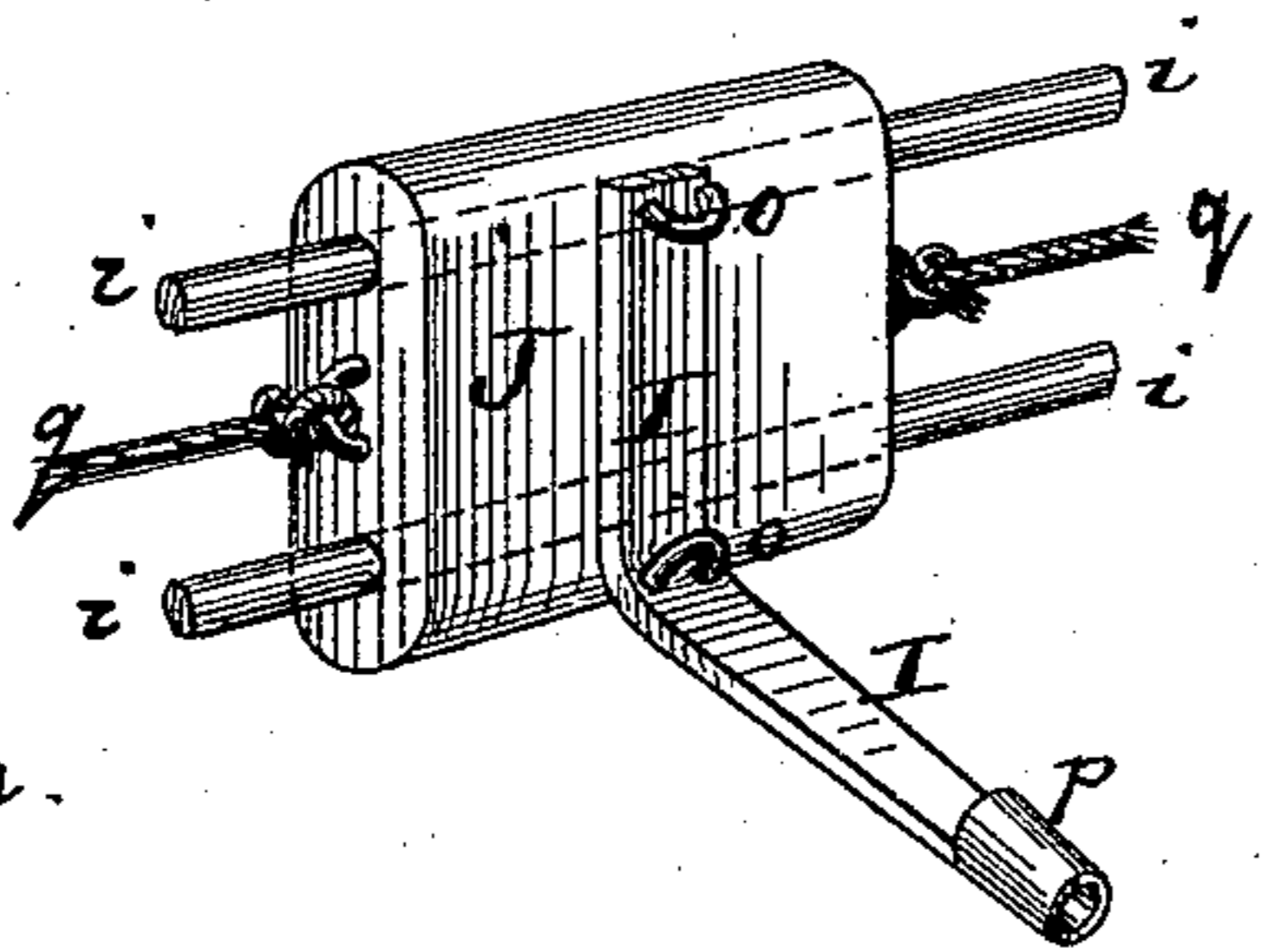


Fig. 7



WITNESSES.

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INVENTOR

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UNITED STATES PATENT OFFICE.

ALWILL URBAIN, OF NAGELSBAUM, NEAR BURSCHEID, GERMANY.

LOOM.

SPECIFICATION forming part of Letters Patent No. 397,156, dated February 5, 1889.

Application filed September 9, 1887. Serial No. 249,205. (No model.)

To all whom it may concern:

Be it known that I, ALWILL URBAIN, at present residing in Nagelsbaum, near Burscheid, Germany, have invented an Improvement in Looms, of which the following is a full and complete specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a vertical longitudinal section of a loom containing my improvement, the line X X, Fig. 2, indicating the plane of section, the weft-carrier being moved to nearly the middle of the loom. Fig. 2 is a front elevation, partly in section, of said loom. Fig. 3 is a front view, on an enlarged scale, of part of the reed and upper needle-heddle, showing also the adjoining parts of the loom. Figs. 4, 5, and 6 are detail sectional views showing the different positions of the warp and inlay thread during the operation of the loom. Fig. 7 is a perspective view of the guide for putting the inlay into place.

This invention relates to a loom of the general class described in my patent, No. 289,731, of December 4, 1883, and has for its object so to arrange the mechanism of the loom that an inlay thread or cord may be placed crosswise in the warp by a traversing guide without the aid of a shuttle.

I find that when it is desired to weave into a fabric an ornamental cord of loose texture—such as chenille or the like—it is not practicable to first wind such a cord on a spool or set of spools, because by so doing the looseness of the cord is lost. It would therefore be impracticable to weave such a cord into a fabric by carrying it in a shuttle in the usual manner. By my invention these difficulties are overcome, and I am enabled to weave such an ornamental cord into a fabric with facility.

My invention consists in the details of improvement that I hereinafter more clearly point out.

In the accompanying drawings, the letter A represents the frame of the loom.

B is the beam from which the ground-warp or main warp is taken. The main warp-threads a b pass through heddles C C in the usual manner to form a shed, d , of the ordinary kind. The heddles C C are suspended by cords a^2 a^2 from weighted levers b^2 b^2 , that are pivoted at the upper part of the loom.

The lower part of the heddles C C are connected by cords d^2 d^2 with treadles e^2 e^2 , that are pivoted at the lower part of the loom. By depressing the treadles e^2 e^2 the heddles will be lowered, the weights on the levers b^2 b^2 acting to raise said heddles; but said heddles may be operated by other suitable means, if desired. These main warp-threads a b also pass through the reed D, which is attached to the batten E. The batten E is pivoted in the frame and may be provided with a handle and operated by hand, or may be operated as shown in United States Patent No. 121,161, dated November 21, 1871, or otherwise, as desired. The reed D is composed of upright loops e e , as is more clearly shown in Fig. 3 of the drawings. Through these loops the warp-threads a b are passed. After passing through the reed, the warp-threads pass around a beam, F, and finally the finished fabric is received on a beam, G, to which intermittent rotary motion is imparted by suitable mechanism. Part of the warp of the fabric to be produced is taken from the beam B, or any other suitable beam, through a needle-heddle, H. In the drawings, the letter f represents this additional or auxiliary warp.

The needle-heddle H consists of a heddle-frame having downwardly-projecting pins g , which are perforated at or near their points, and through these perforations the threads of the auxiliary warp f are passed.

The needle-heddle H is suspended by a cord or strap, f^2 , from a suitable weighted beam, L, or otherwise, and connected by a cord, g^2 , with a suitable treadle, h^2 , or other contrivance, so that up-and-down motion may be imparted to it. The auxiliary warp-threads f , after having passed through the needles g of the heddle H, are passed around the beam F, without, however, passing through the reed D. This, as appears more clearly from Fig. 4 of the drawings, leaves a shed, h , above the shed d , which shed h is open at the back. Into this shed h thus open at the back enters the cord or inlay-thread guide I, which is attached to a reciprocating traversing carriage, J, that travels on fixed rails i i . The ornamental or other cord j , which is to form the inlay of the fabric, is taken from a suitable box or receiver, M, in which it was deposited when manufactured, passed over guide-rollers m ,

and through suitable guide-loops, $n n$, to the final inlay-guide I, which has loops $o o$ and p for finally guiding the inlay-cord to its place in the shed h .

5 It will be perceived from Fig. 3 that the needles g of the heddle H are above the spaces between the loops e of the reed D. The carriage J has reciprocating traversing motion imparted to it by suitable means. In the
10 drawings it is shown connected with the ends of a cord, q , which is attached to an oscillating lever, N, and passed over guide-rollers r . Cord l^2 is passed around a wheel or drum, m^2 , that is suitably hung on the framing of the
15 loom. To the wheel m^2 are also secured cords $n^2 n^2$, that are secured to treadles o^2 , carried at the side of the wheel m^2 , as shown in Fig. 2. By alternately depressing the treadles o^2 the wheel m^2 , and thereby the lever N, will
20 be oscillated, the lever N being secured to a shaft, i^2 , hung in suitable bearings in the loom, and the said shaft i^2 carrying pulley j^2 , around which passes the cord l^2 .

When the lever N is moved from the position shown by full lines in Fig. 2 to the dotted position shown in the same figure, the carriage J will be moved from the left to the right side of the loom, so as to deposit one
25 layer of thread or cord j in the open shed h . The loom is also provided with an ordinary shuttle, which is adapted to place a shuttle-thread, s , in the shed d . This shuttle is indicated at P in Fig. 1, the letters R R in Fig. 2 indicating the picker-sticks, by which the shuttle is
30 or may be moved. These picker-sticks R R may be operated in any well-known manner, or as shown in United States Patent No. 70,186, dated October 29, 1867, and need not here be further described.

40 The loom, being thus described with sufficient exactness, operates as follows: Ordinary fabric is woven in it from the warp-threads $a b$ with the assistance of the shuttle-thread s , and into this ordinary fabric also enters
45 the auxiliary warp f , which is raised or lowered to form part of the shed d when required. Thus in Fig. 6 the auxiliary warp f is repre-

sented as carried down to the lower part of the shed d , the threads f passing between the loops e containing the warps $a b$, while in
50 Fig. 5 it is represented as in the upper part of said shed. The shuttle is thrown from time to time to properly interlock with the threads of the warp $a b f$; but when an inlay thread or cord j is to be placed into the
55 fabric the heddle H is raised, as in Fig. 4, to form the open shed h , and the carriage J is then traversed or moved across the face of the loom from end to end, so as to lay one length
60 of cord j into the shed h , whereupon the heddle H is lowered to carry its warp-threads f over this length of cord so deposited, and then the shuttle is thrown, as in Fig. 6. Thus
by means of this loom I may from time to time, as occasion requires, lay into the fabric
65 a length of cord j without being required to wind this fabric upon spools or reels, and without using a shuttle for depositing it in the fabric. The looped reed D, co-operating
70 with the needle-heddle H, prevents the auxiliary warp-threads f from interfering during the up-and-down motion of the heddle H with the main warp-threads $a b$.

I claim—

1. In a loom, the cord-guide I, having loops
75 o and p , and its carriage J, combined with the lever N, cord q , connecting-carriage J, and lever N, shaft i^2 , wheel j^2 on said shaft, wheel m^2 , connected with the wheel j^2 , and the treadles o^2 , connected with the wheel m^2 , all
80 arranged and operating substantially as herein shown and described.

2. The combination of the cord-guide I, its carriage J, cord q , lever N on shaft i^2 , shaft
85 i^2 , pulley j^2 , treadles o^2 , straps $l^2 n^2$, and wheel m^2 , all arranged for operation substantially as described.

In testimony whereof I have hereunto set my hand this 26th day of August, 1887.

ALWILL URBAHN.

Witnesses:

CHARLES G. M. THOMAS,
HARRY M. TURK.