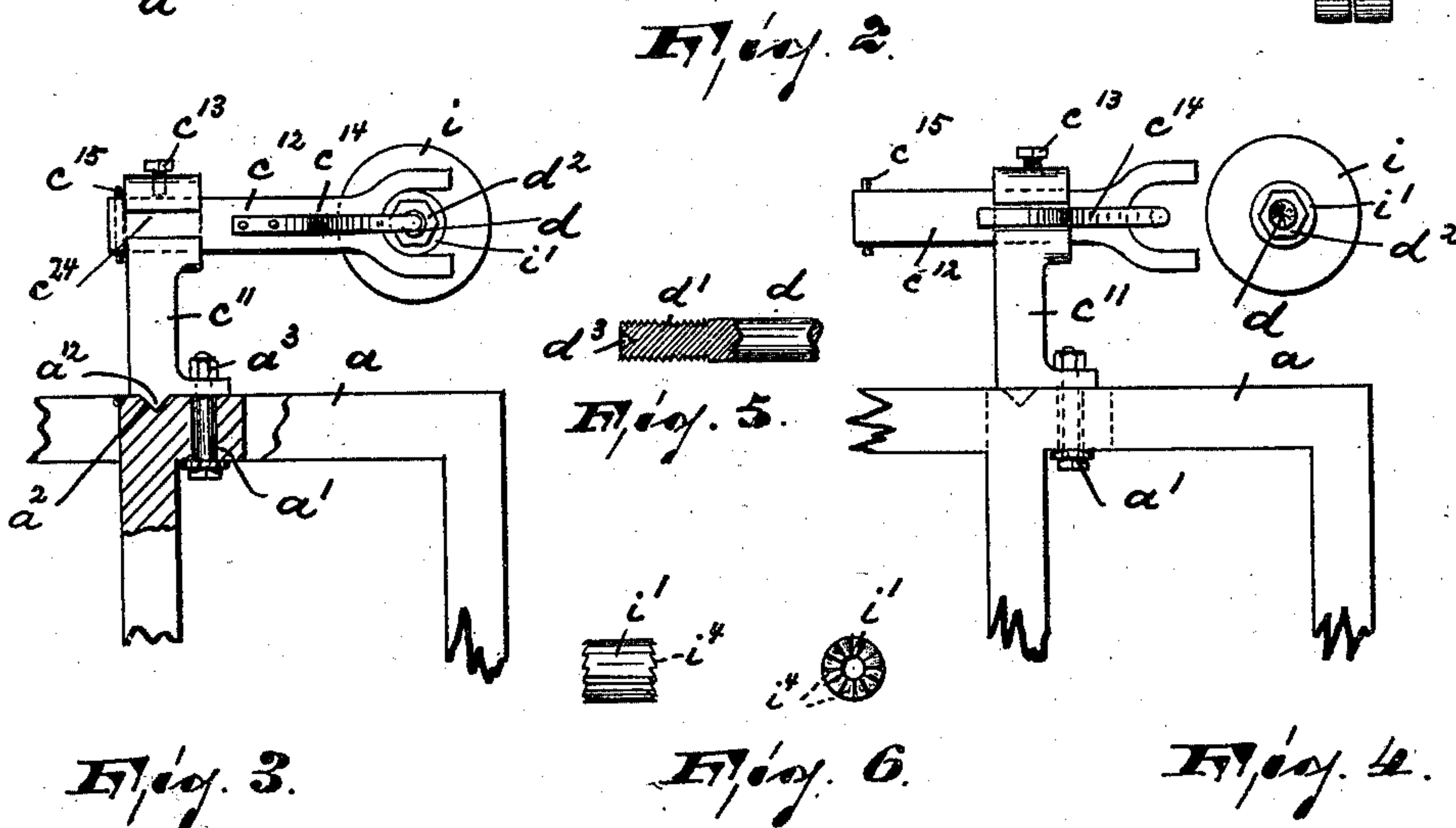
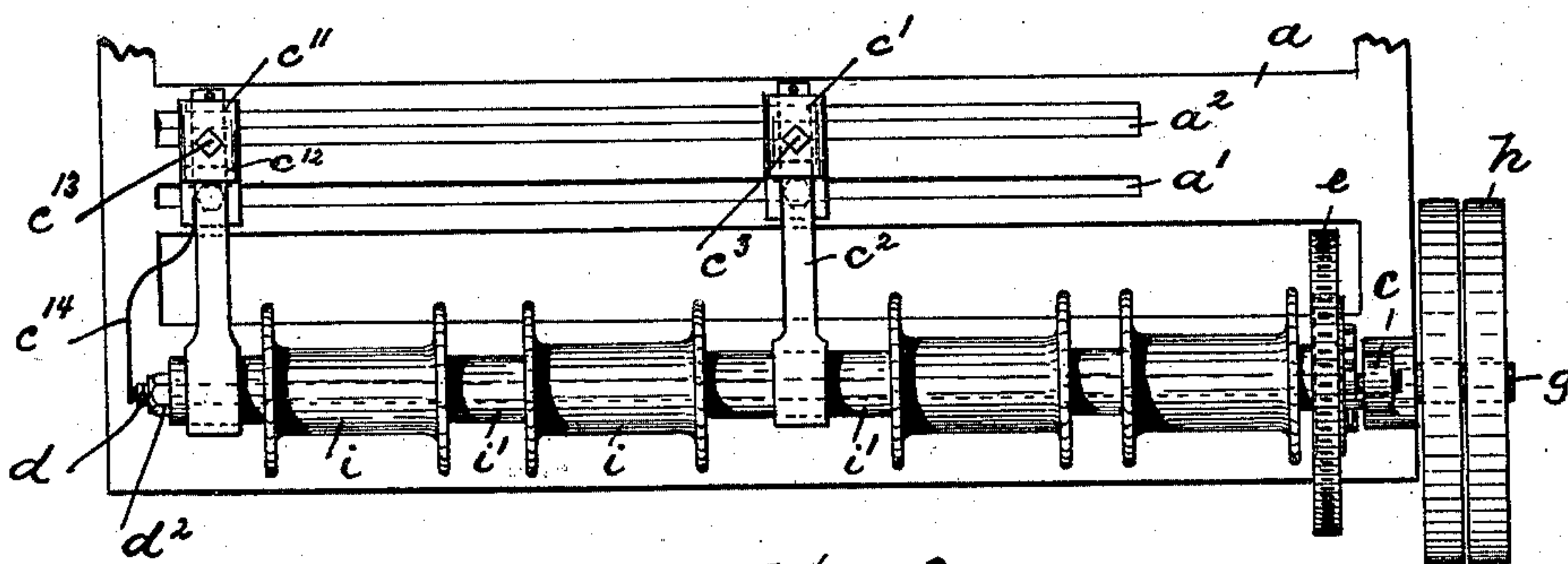
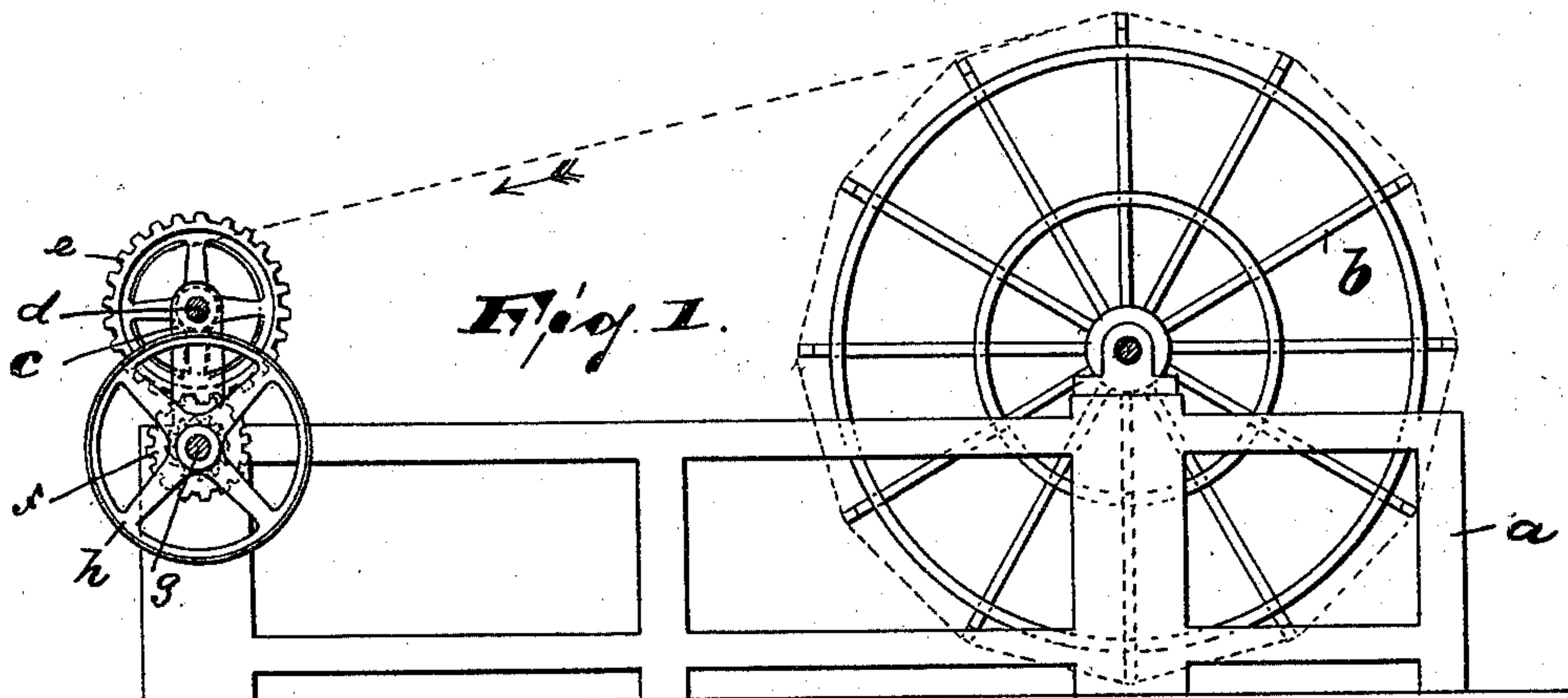


2 Sheets—Sheet 1.

No. 561,344.

Patented June 2, 1896.



WITNESSES:

INVENTORS:

Duncan M. Robison.
W H Harris

Adam Scheid ^{and}
Robert Atherton

BY

Partner & Co

ATTORNEYS.

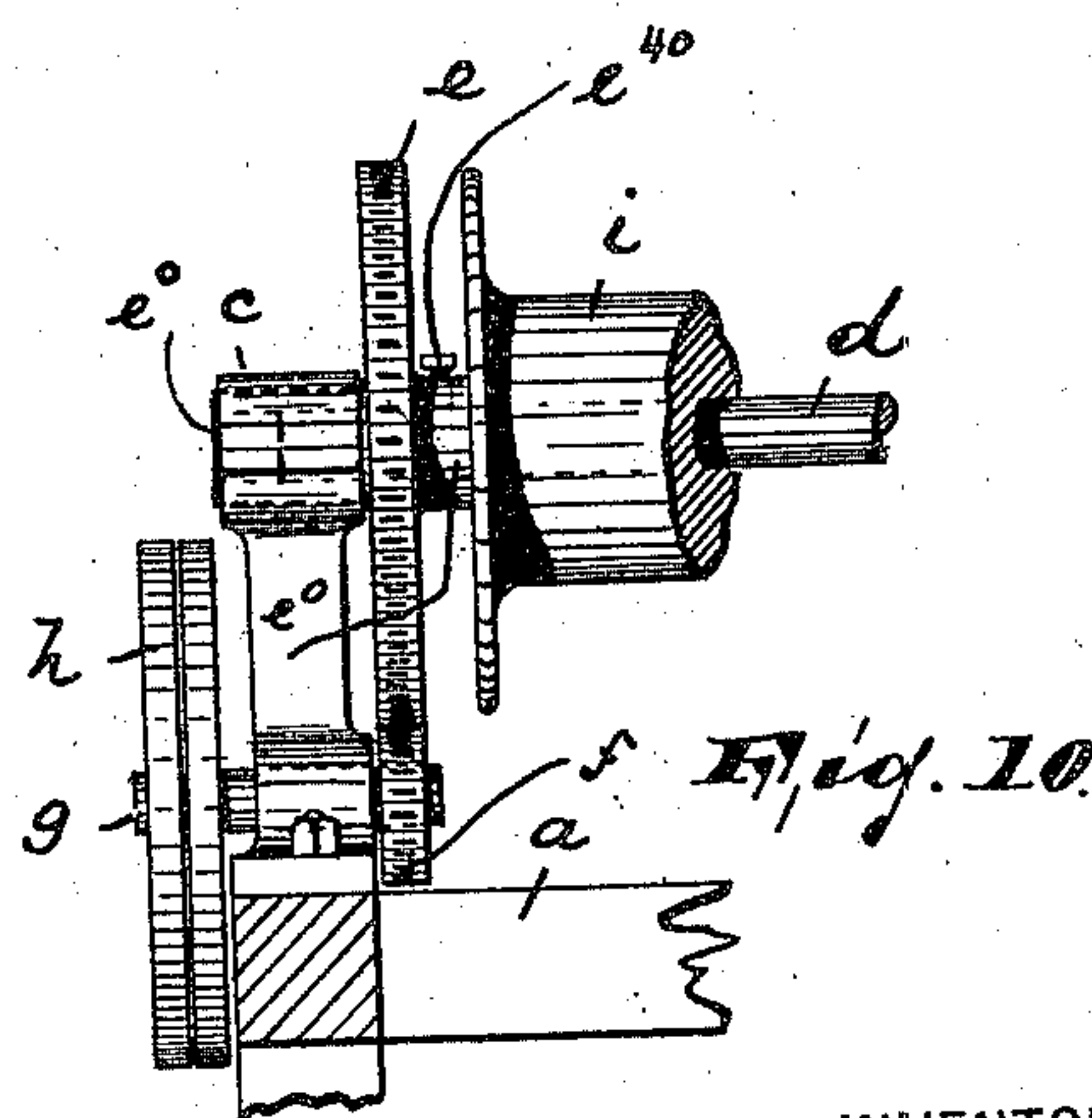
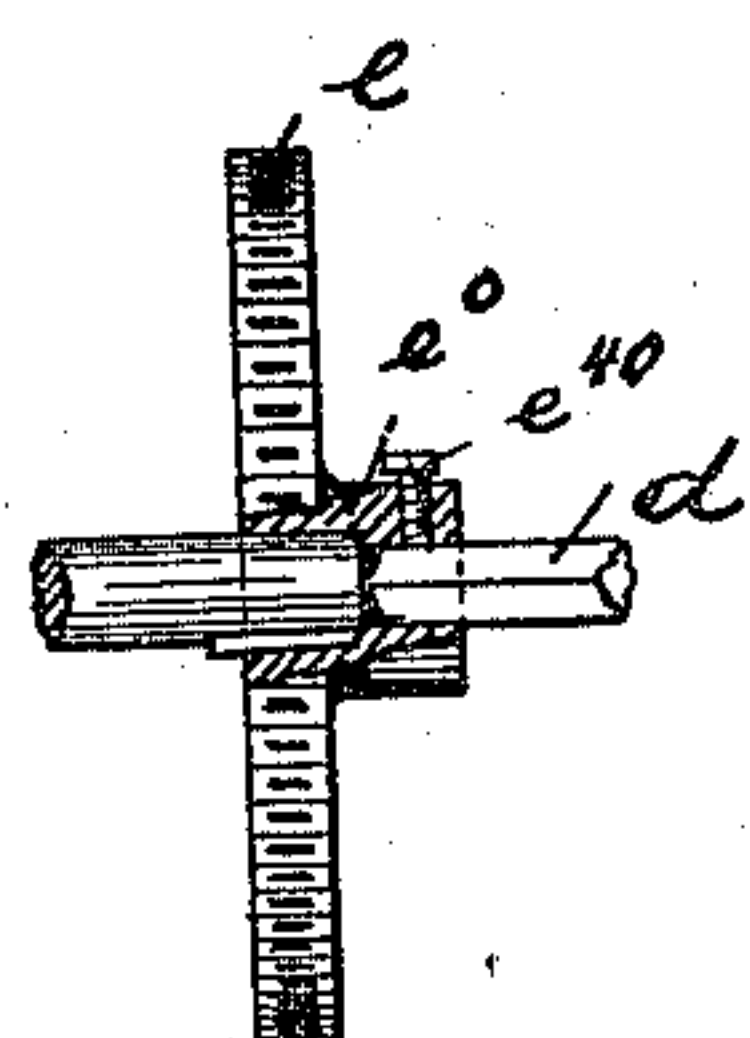
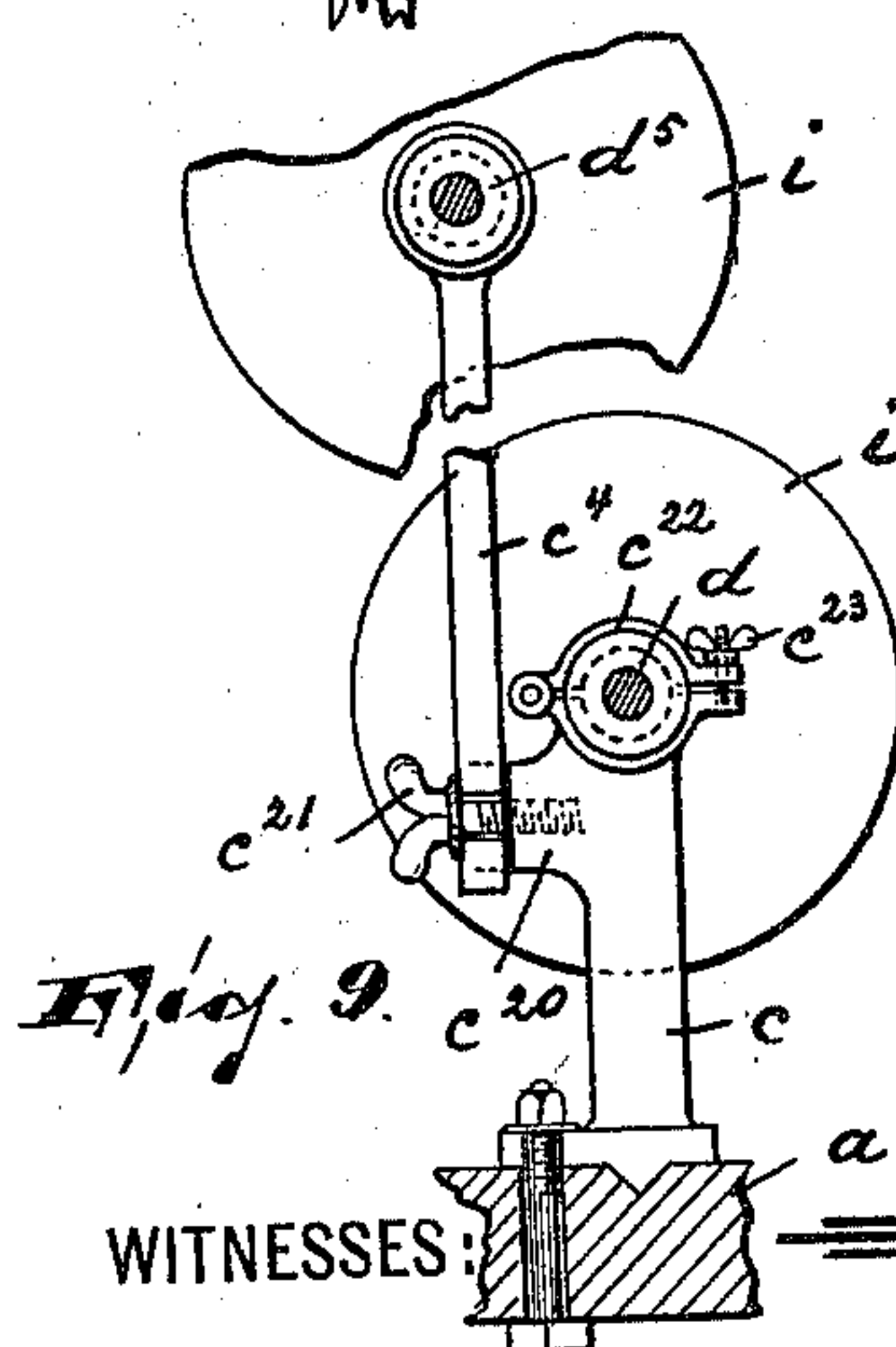
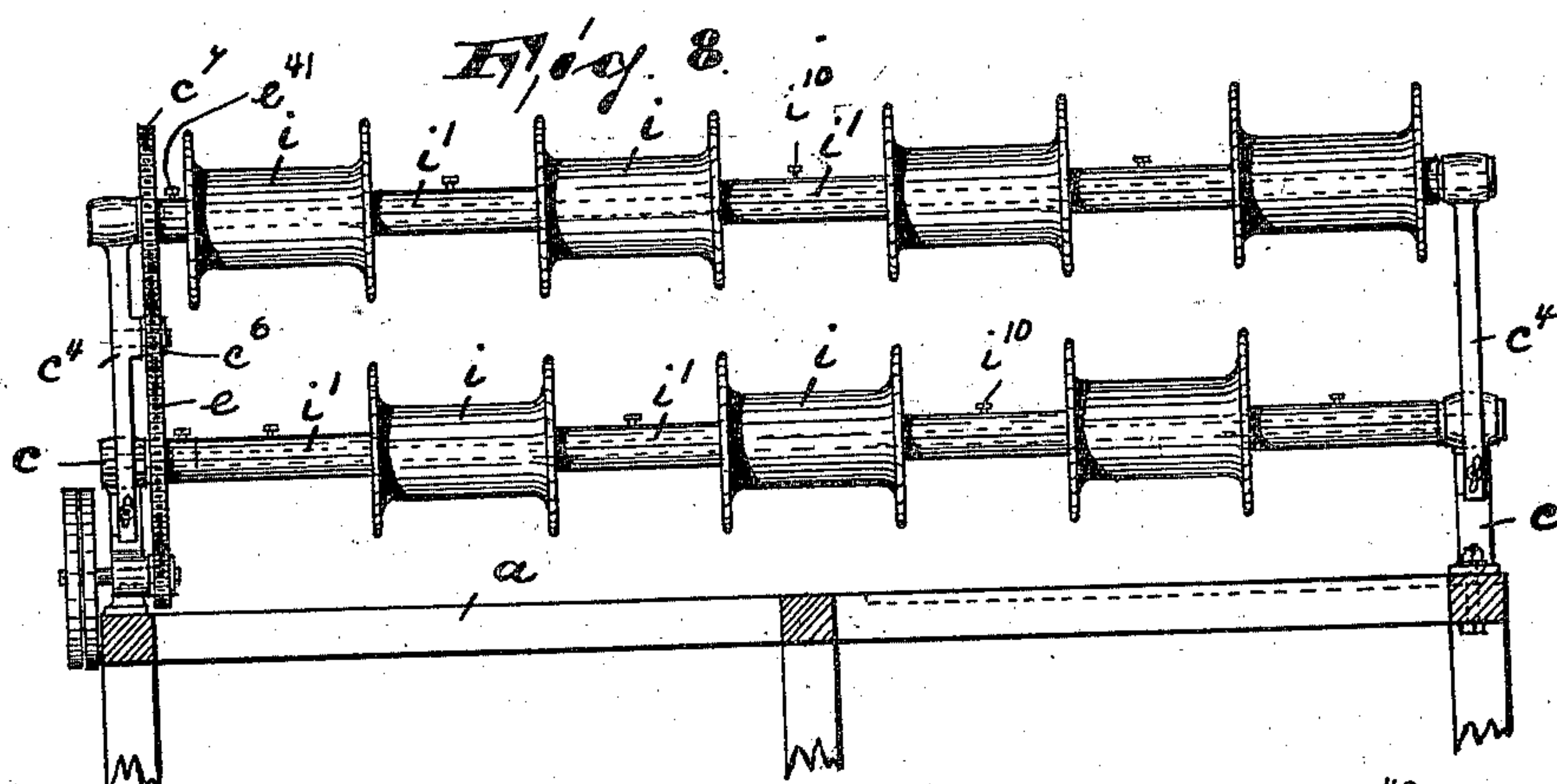
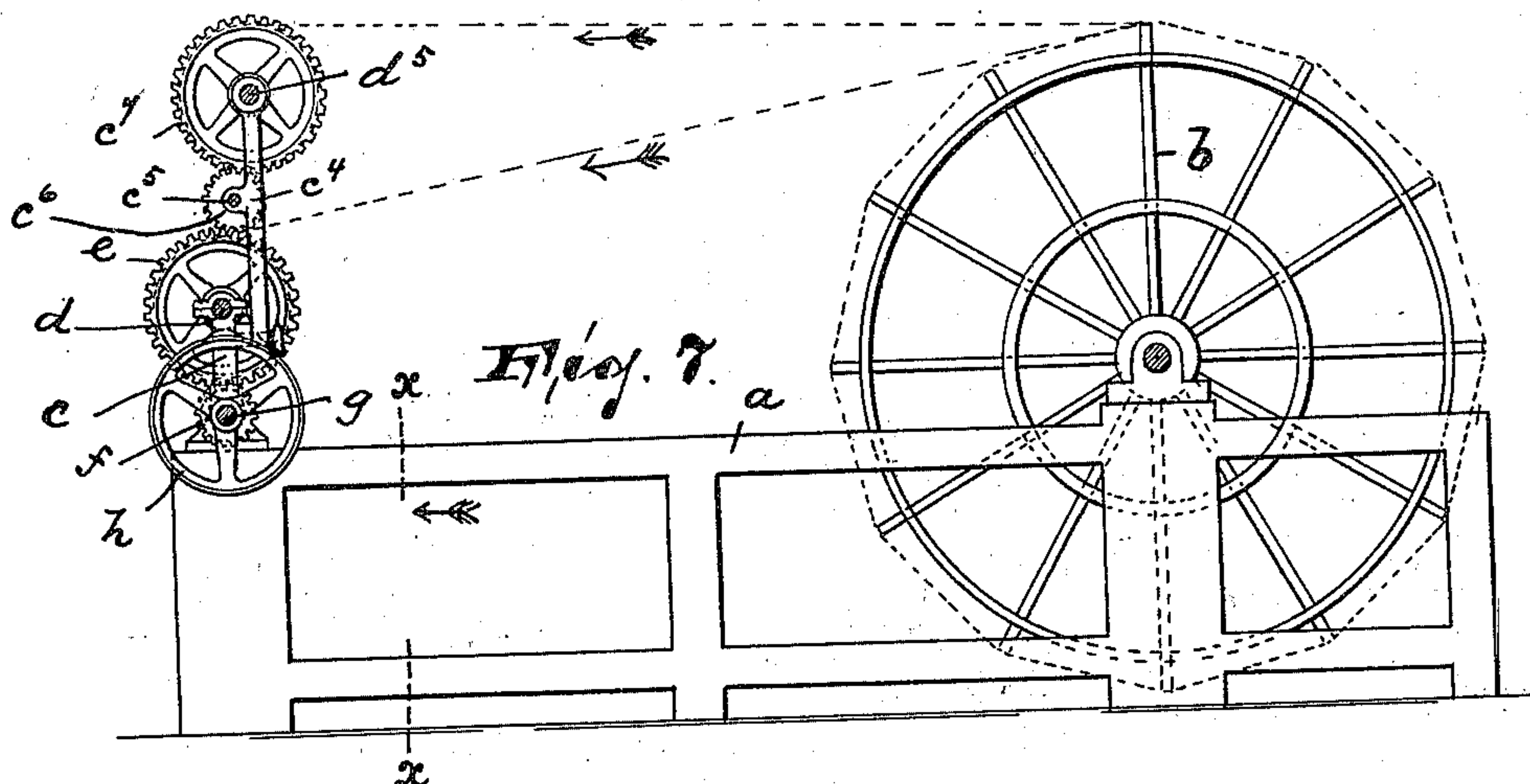
(No Model.)

2 Sheets—Sheet 2.

A. SCHEID & R. ATHERTON.
WARP BEAMING MACHINE.

No. 561,344.

Patented June 2, 1896.



WITNESSES:

James D. Robinson.
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INVENTORS:

Adam Scheid &
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UNITED STATES PATENT OFFICE.

ADAM SCHEID, OF HARRISON, AND ROBERT ATHERTON, OF PATERSON,
NEW JERSEY.

WARP-BEAMING MACHINE.

SPECIFICATION forming part of Letters Patent No. 561,344, dated June 2, 1896.

Application filed September 14, 1895. Serial No. 562,489. (No model.)

To all whom it may concern:

Be it known that we, ADAM SCHEID, residing at Harrison, Hudson county, and ROBERT ATHERTON, residing at Paterson, Passaic county, State of New Jersey, citizens of the United States, have invented certain new and useful Improvements in Warp-Beaming Machines; and we 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, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Our invention relates to beaming attachments for warping-mills adapted to beam the warp for narrow-warp looms.

The object of the invention is to provide a beaming attachment for warping-mills of simple, strong, and durable construction, reliable in operation, and easily handled and operated.

The invention consists in the improved beaming attachment, its adjustable brackets, in the peculiar alternate arrangement of the beams and sleeves on a series of one or more round or square shafts, and in the combination and arrangement of the various parts, substantially as will be hereinafter more fully described, and finally embodied in the clauses of the claim.

Referring to the accompanying drawings, in which like letters of reference indicate corresponding parts in each of the several views, Figure 1 is an end elevation of a winder and of a portion of a beaming attachment provided with our improvements; Fig. 2, an enlarged top plan view of the beaming attachment proper. Figs. 3 and 4 are end elevations of the adjustable end bracket in normal and withdrawn position, respectively; Fig. 5, a detail view of the end portion of the beam-carrying shaft; Fig. 6, a detail view of a modified form of one of the intermediate binding-sleeves; Fig. 7, an end elevation of a winder provided with a beaming attachment having a series of two beaming-shafts; Fig. 8, a sectional view on the line $x x$ of Fig. 7; Fig. 9, an enlarged detail view, partly broken away and in section, of the end bracket used in the construction shown in Figs. 7 and

8; and Figs. 10 and 11 are enlarged detail views illustrating the connection of a round and square beaming-shaft, respectively, with the mechanism.

In said drawings, a represents the frame, and b the winder, from which the warp is to be wound upon a series of beams i , arranged on shaft d , as in Figs. 1 and 2, or on the shafts d and d^5 , as in Figs. 7 and 8. In the former construction the shaft d is arranged with one end in the stationary bracket c and is provided with a gear-wheel e , meshing with pinion f , secured on the shaft g , which latter receives its motion through the driving-pulley h , as in the usual and well-known construction. The outer end of the shaft d is screw-threaded, as at d' , adapted to be engaged by a tightening-nut d^2 , and is also provided with a socket d^3 , as clearly shown in Fig. 5 of the drawings.

The frame a is traversed by a slot a' , and a guide groove or recess a^2 , adapted to be engaged, respectively, by the tightening and adjusting bolt and nut a^3 and the projecting portion a^{12} of the bracket c^{11} . The upper portion of said bracket forms the guide and bearing for the forked arm c^{12} , adapted to support the outer end of the shaft d . Said arm is provided with a stop-pin c^{15} on its outer end, and is securely fastened in said bracket c^{11} by means of the set-screw c^{13} . A spring c^{14} is secured on one side of said arm and is provided at its free end with a centering-block adapted to engage the socket d^3 of the shaft d . To allow the said arm c^{12} and its spring c^{14} to be withdrawn out of the path of the shaft d and beams i , respectively, the bracket c^{11} is provided with a longitudinal slot c^{24} , as clearly shown in Figs. 3 and 4.

On the shaft d the beams are arranged alternately with a series of sleeves i' , the end one of which is adapted to be engaged by the tightening-nut d^2 , whereby all the beams are securely fastened to said shaft and are bound to rotate with the same.

If found necessary, an intermediate bracket c' , with forked arm c^2 and tightening-screw c^3 , may be adjustably arranged about midway between the two end brackets, and the forked portion of said arm will then engage one of the intermediate sleeves i' and thus

give additional support to the beams carrying shaft d . The sleeves i' may also be provided with corrugated or notched edges i^4 , Fig. 6, to insure a firmer contact between the said sleeves and the heads of their adjoining beams.

In operation, when the warp has been wound on the beams and the latter are to be replaced by empty ones, the arms c^{12} and c^2 are withdrawn after the tightening-nuts c^{12} and c^3 have been loosened.

The tightening-nut d^2 is unscrewed from the shaft d and the sleeves i' and beams i are easily slid off the said shaft. Others are now put in their respective places and the arms c^{12} and c^2 returned to their normal positions, when the machine is again ready for operation.

From the foregoing it can be seen that the beams i can be readily put on and taken off the shaft, whereby a good deal of time and labor are saved. By inserting sleeves of different lengths various-sized beams can be used on the same shaft without changing the construction and the relative arrangements of the various parts of the machine.

In the construction illustrated in Figs. 7 to 11, inclusive, the bracket c is provided with an upwardly-extending bracket c^4 , secured to the said bracket c , or to an enlargement c^{20} of the same by a thumb-screw c^{21} , or in any desired manner. In that case (reference being made to Fig. 10) the gear e has a sleeve e^0 , having its bearing in the bracket c , and provided with a hole or socket in which the lower beaming-shaft d is adapted to be secured by a thumb-screw e^{40} . The upper portion of the extension-bracket c^4 forms the bearing for the sleeve of the gear-wheel c^7 , in which sleeve the upper beaming-shaft d^5 is secured in a similar manner, (thumb-screw e^{41} .) The gear c^7 meshes with pinion c^6 on stub-shaft c^4 and the latter with gear e , as clearly shown in Figs. 7 and 8.

The outer bracket c and extension c^4 are of similar construction to the inner one, excepting that the bearing for the lower shaft d is provided with a hinged cap c^{22} , adapted to be secured to said bearings by means of a thumb-screw c^{23} . (See Fig. 9.) On each of the shafts d and d^5 are arranged a series of beams i alternately with a series of sleeves i' , which latter are secured to their respective shafts by thumb-screws i^{10} .

Should it be necessary to replace the beams of the upper shaft d^5 , the thumb-screw c^{21} is loosened and the bracket moved out of the path of the said shaft and its respective beams. The shaft d^5 , by unscrewing the thumb-screw e^{41} , can now be withdrawn, together with the beams, and can be replaced by another similar shaft, on which the empty

beams have been previously placed, or the beams and intermediate sleeves can be removed separately after their respective tightening-screws i^{10} have been loosened.

For replacing the beams on the lower shaft the hinged portion c^{22} is opened, and the shaft or the beams on the shaft can be replaced in a similar manner, as above described.

If desired, a square shaft can be used in place of the round one, in which case the tightening-screws i^{10} are not required.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a warping attachment, the combination with the beaming-shaft, of a series of beams loosely mounted on said beaming-shaft, a series of sleeves alternately arranged with said series of beams, a bracket and a horizontally-arranged forked arm adjustable in said bracket and at right angles to the beaming-shaft and adapted to engage with its forked portion the said shaft, substantially as and for the purposes described.

2. In a warping attachment, the combination with the beaming-shaft, of a series of beams loosely mounted on said shaft, a series of sleeves alternately arranged with said series of beams, a bracket provided with a rectangular hole, said hole being arranged horizontally and at right angles to the beaming-shaft, and forked arm adjustably secured in said rectangular hole, substantially as and for the purposes described.

3. In a warping attachment, the combination with two beaming-shafts arranged parallel to each other, of a series of beams on each of said shafts, a bracket supporting one of said shafts, and an extension-bracket removably secured to said bracket and adapted to support the other shaft, substantially as and for the purposes described.

4. In a warping attachment, the combination with two beaming-shafts arranged parallel to each other, of a series of beams on each of said shafts, a series of sleeves on said shafts and alternately arranged with the series of beams, a series of brackets supporting one of said shafts, and an extension-bracket removably secured to each of said brackets and adapted to support the other shaft, substantially as and for the purposes described.

In testimony that we claim the foregoing we have hereunto set our hands this 9th day of September, 1895.

ADAM SCHEID.
ROBERT ATHERTON.

Witnesses:

ALFRED GARTNER,
DUNCAN M. ROBERTSON.