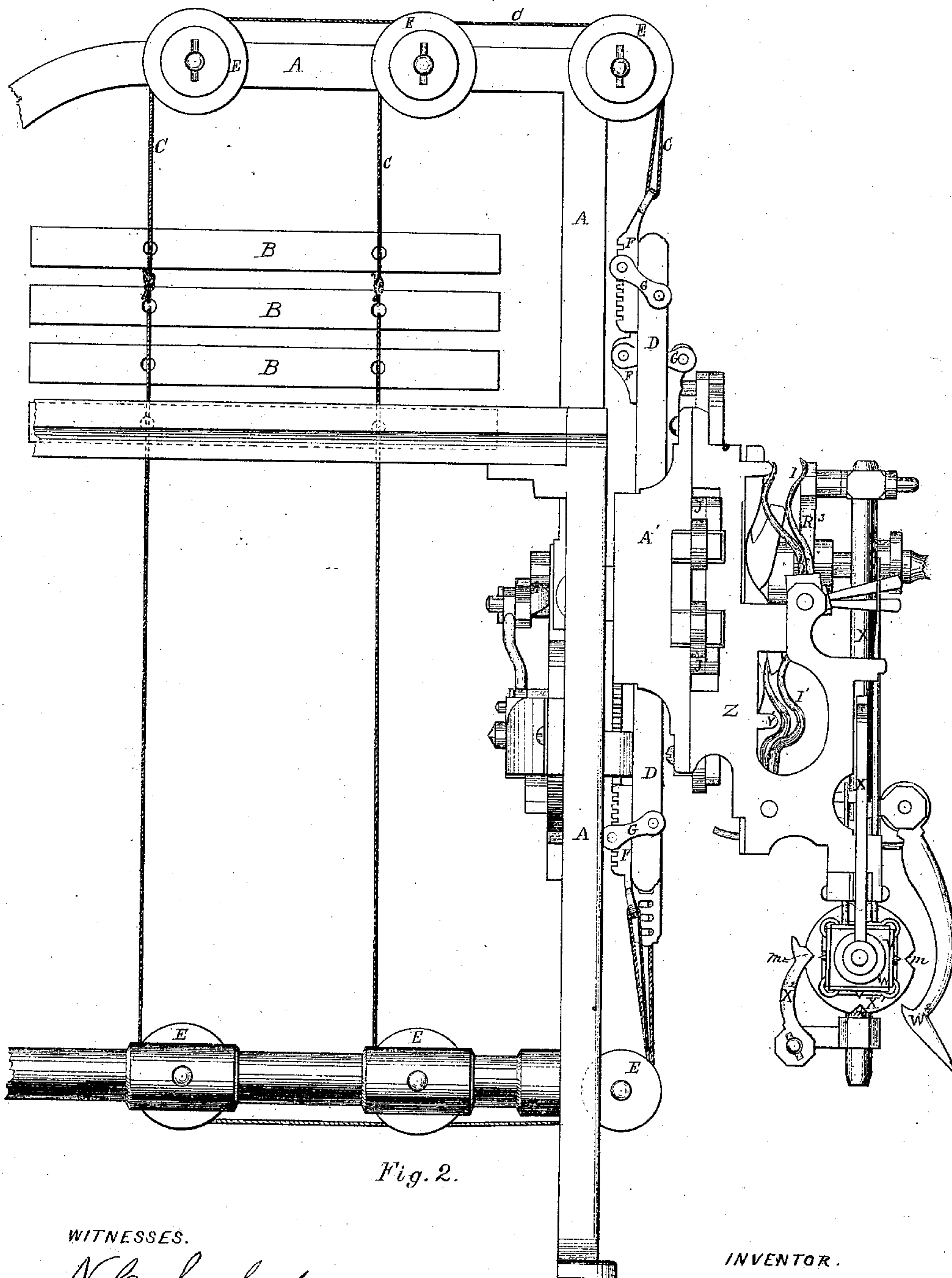


Loott.

3 Sheets-Sheet 2

No. 106,334.

Patented Aug 16, 1870.



WITNESSES.

N. B. Lombard
Wm. C. Hibbard

Wm. C. Hibbard

INVENTOR.

Heilas D Davis

H. J. Davis,

3 Sheets - Sheet 3

Loom.

No. 106,334.

Patented Aug 16, 1870.

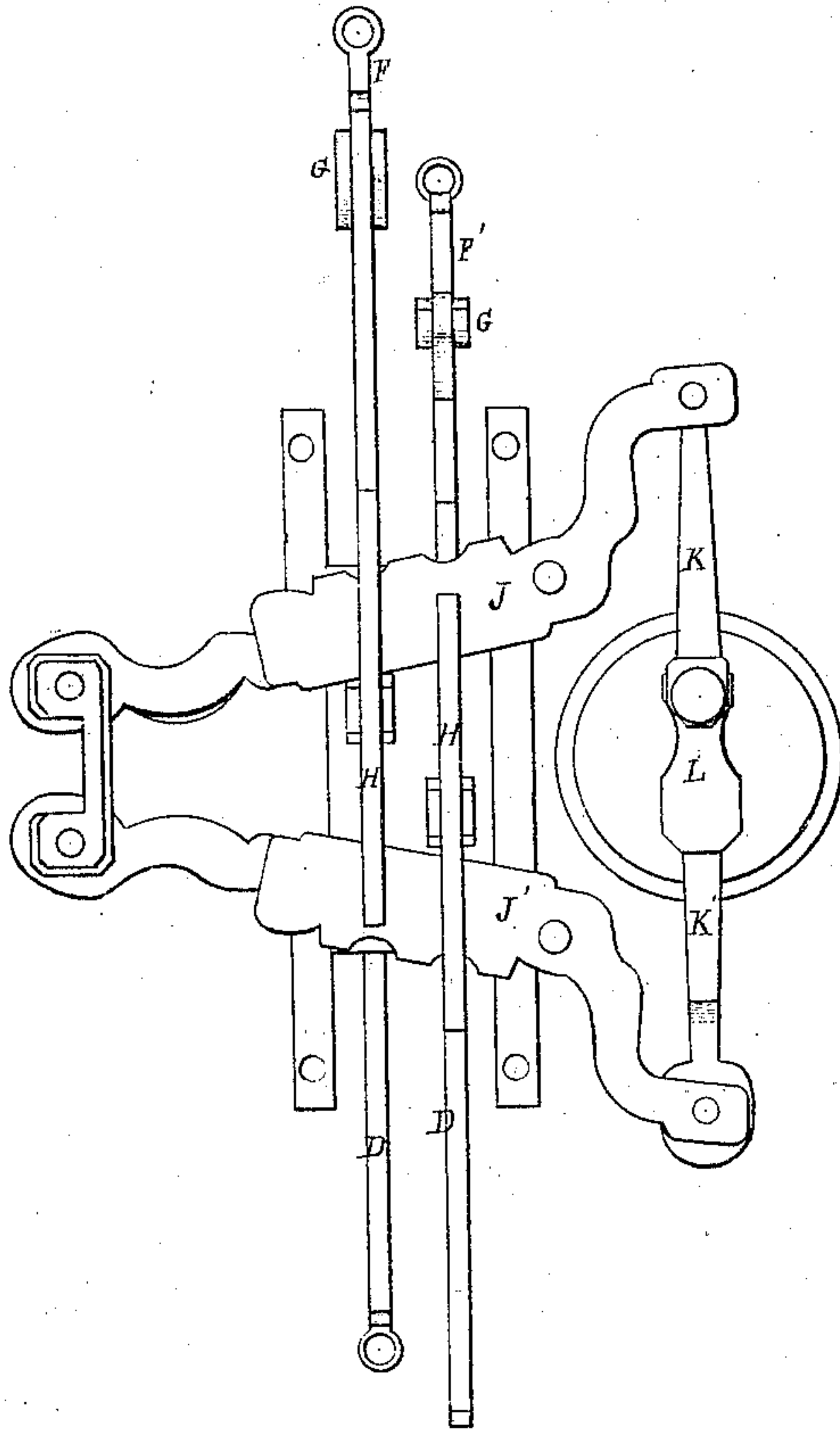


Fig. 4.

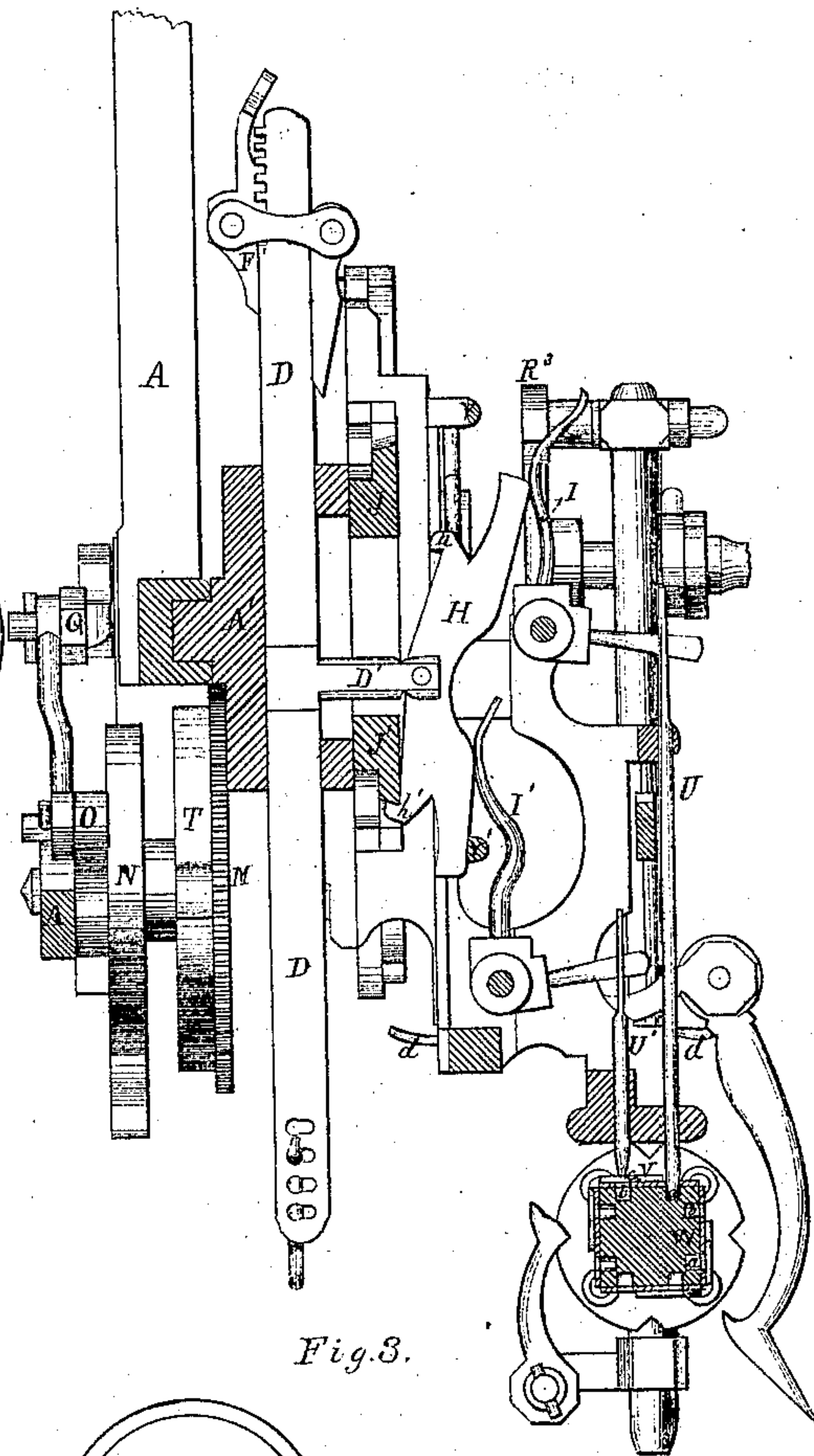


Fig. 3.

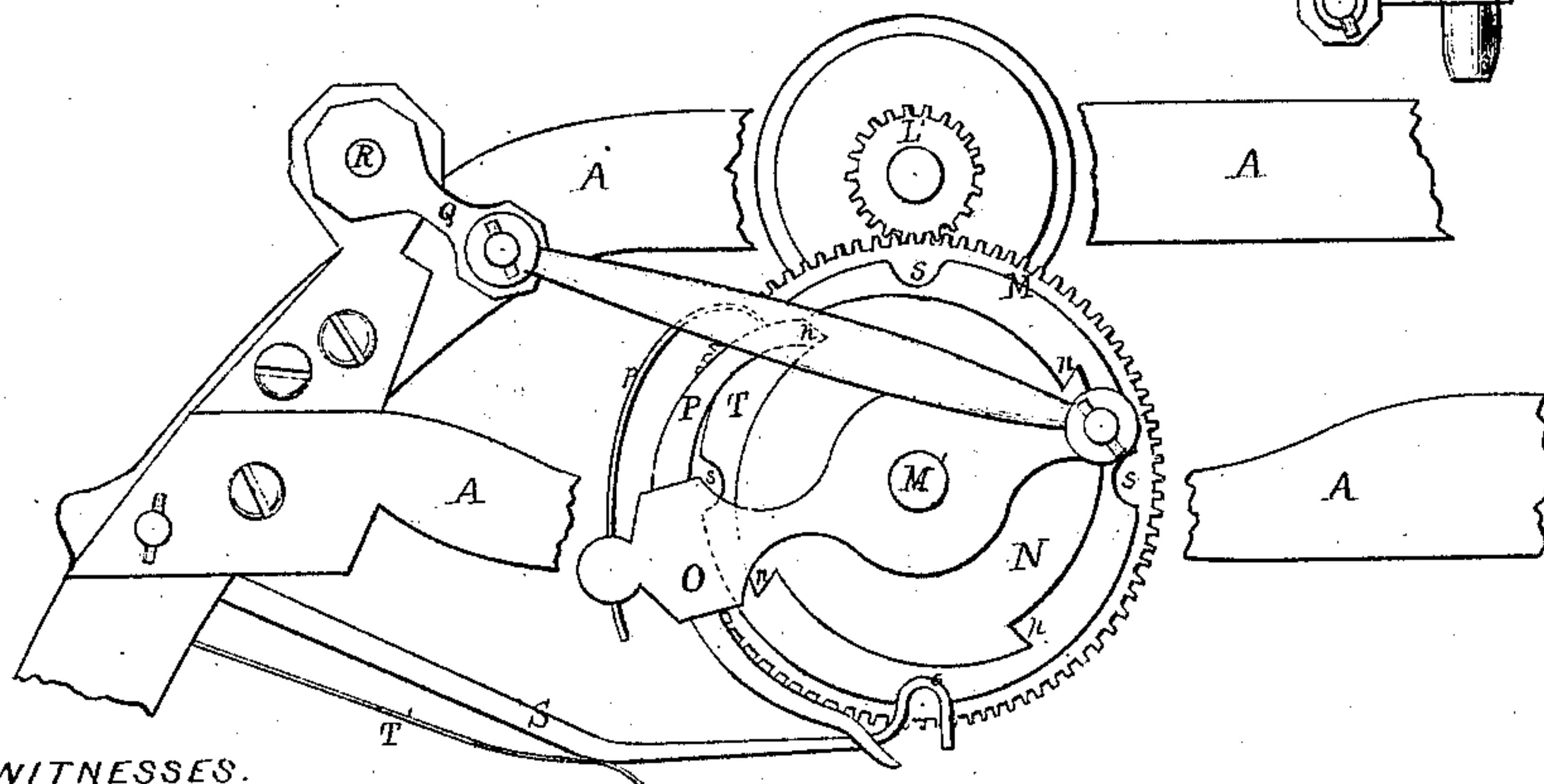


Fig. 5.

WITNESSES.

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Thos. Hibbard

INVENTOR.

Heiler D Davis

United States Patent Office.

HILAS D. DAVIS, OF NORTH ANDOVER, MASSACHUSETTS.

Letters Patent No. 106,334, dated August 16, 1870.

IMPROVEMENT IN LOOMS.

The Schedule referred to in these Letters Patent and making part of the same.

I, HILAS D. DAVIS, of North Andover, in the county of Essex and State of Massachusetts, have invented certain Improvements in Looms, of which the following is a specification.

Nature and Object of the Invention.

My invention consists of certain improvements in the construction of the mechanism which works the heddles of a fancy loom, so called, by which the operation of the heddles is rendered more positive, and certain difficulties are avoided that are to be found in other modes of construction.

My first improvement relates to the application of the pattern-chain and its accessories to select the heddles to be raised or depressed, so that the engagement of the lifter and depresser with the jacks shall be made positive and certain. In the ordinary constructions of fancy looms the pattern-chain throws the jack in one direction only, so as to engage with the lifter or with the depresser, and it is thrown in the opposite direction, to disengage it from the one and engage it with the other, by a weight or a spring, or by the draft of the cording which connects it with the heddle, but these sometimes fail to act, and, in consequence, the shed is not properly opened, making what is called in the trade a miss-pick. The purpose of this part of my invention is to avoid this, and consists in the use of two needles or pushers in combination with each jack, one of which throws the hook of the jack into engagement with the lifter, and the other with the depresser, and also in combination with a pattern-chain that works both sets of needles or pushers, so that both the lifter and depresser are made to engage with the jack by the direct action of the chain.

My second improvement relates to a modification of the mechanism which rotates the prism upon which the pattern-chain works, in order to avoid moving the prism when the loom is turned backward by pushing back the lay in tending the loom, by which the pattern-prism may be left in a position that would break the needles or connecting parts when the loom is again started, and consists in combining with the hook or pawl that turns the prism, a cam and connections or other suitable devices which are worked in connection with the lay-shaft, so arranged that they will move the pawl away from the ratchet on the prism at such times as that the turning of the loom backward would do mischief, and still leave the pawl in position at the proper time to do its proper work.

My third improvement relates to the construction of mechanism which will work the lifter and depresser by an easy movement, and also leave them at rest for a portion of the time, and consists in working the lifter and depresser by a crank motion, which makes an en-

tire revolution, and then rests for a portion of the time, which intermittent motion is imparted to the crank by a ratchet and intermediate gearing, or by some other suitable device, as will be described.

My fourth improvement relates to the method of connecting the cords to the jacks, so as to thereby adjust the height of the heddles, and consists in attaching to each end of the jack an adjustable eye for receiving the cord by which either end of the jack may be lengthened or shortened, as will be described.

Description.

In the drawing—

Figure 1 represents the end elevation of so much of a loom as shows the application thereto of my improvements;

Figure 2 is a side elevation of the same.

Figure 3 is a sectional elevation of a part of fig. 2; and

Figures 4 and 5 are detailed views of detached parts of the mechanism.

A is the frame of the loom.

B B are the heddles.

C C, &c., are the cords for connecting the heddles with the jacks D D, &c., being led over the sheaves E E, &c., arranged above and below the heddles, as is shown, in a well-known manner.

The cords C are connected with the jacks by adjustable extension pieces, F F, which are provided with eyes to receive the cords, and are attached to each end of the jacks by the clamps G.

These clamps are attached to the jack and engage with some one of a series of notches in the piece F, and confine it to the edge of the jack either by the draft of the cords C, in connection with the diagonal draft of the clamp, or by a cam attached to the clamp, by the turning of which the piece F and jack are drawn together, and a projection on the piece F' takes into the notches on the edge of the jack, which holds the piece securely in position. Both of these modes of construction are shown in the drawing, and various other methods of connecting the parts might be adopted which would answer the same purpose.

The jacks D slide lengthwise in suitable guides in a framing, A', and are each provided with a vibrating hook-piece, H, which is jointed at the middle to the projection D', near the middle of the jack.

The hook-piece H is provided, at each end, with a hook, h h', one or the other of which engages with the lifter J or depresser J', and raises or lowers the leaf of heddles connected therewith in a well-known manner.

The projection D' also serves to bring the jack back to a central position, by coming in contact with the

H. I. Davis,

Sheave.

No. 106,335.

Patented Aug. 16. 1870.

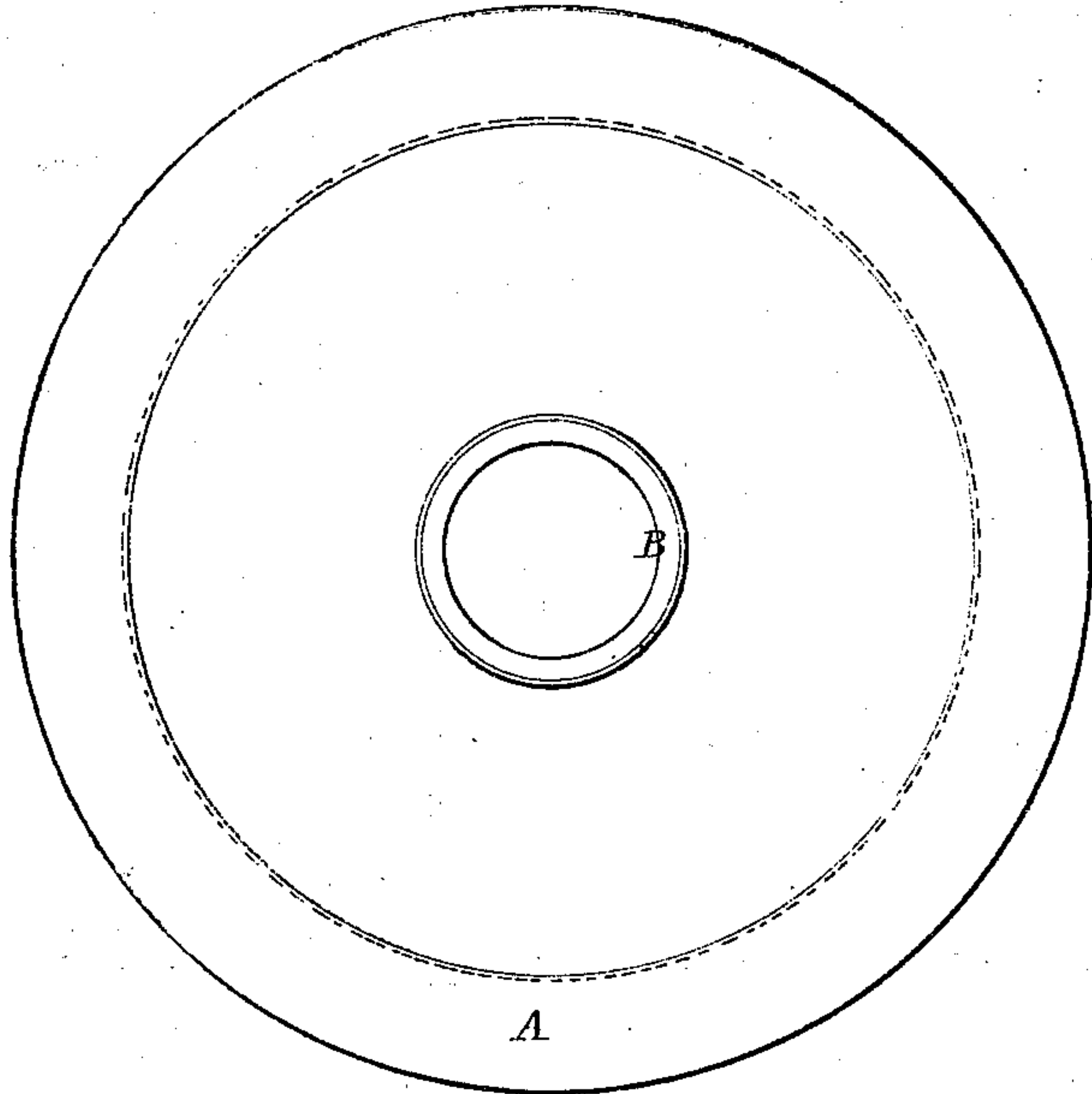


Fig. 1

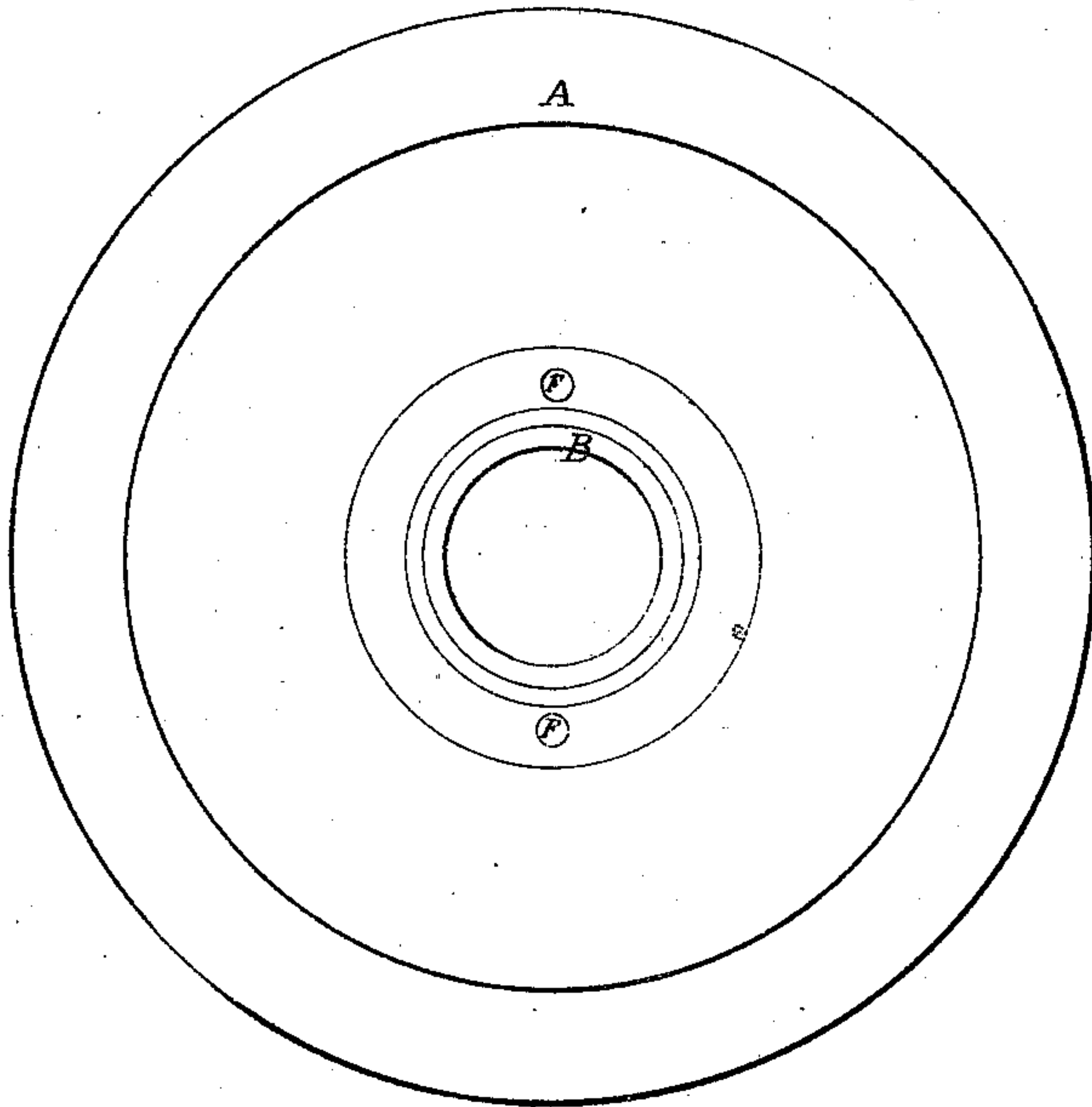


Fig. 3



Fig. 2.



Fig. 4.

Witnesses.

G. E. Whitney

Wm. C. Hibbard

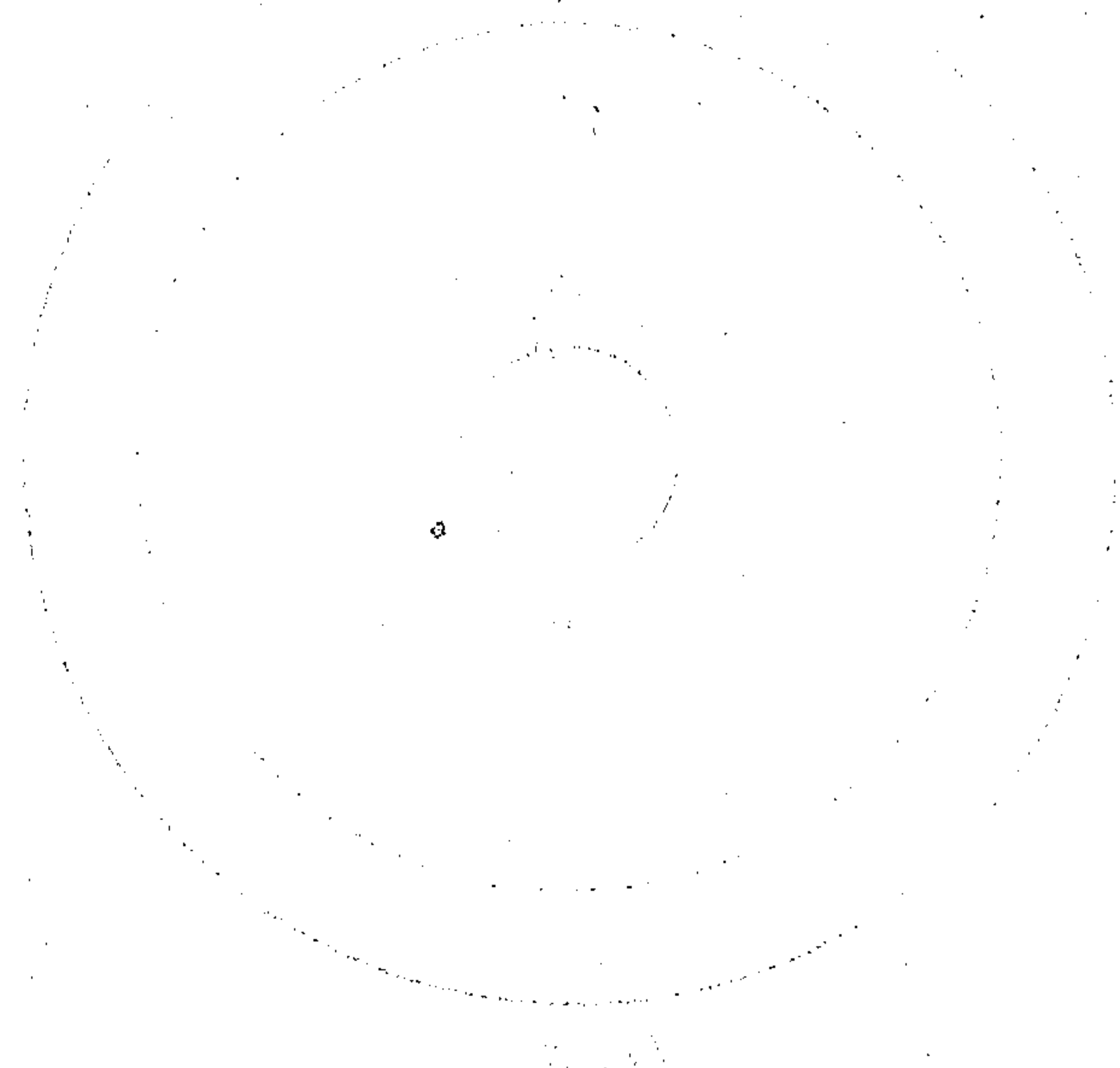
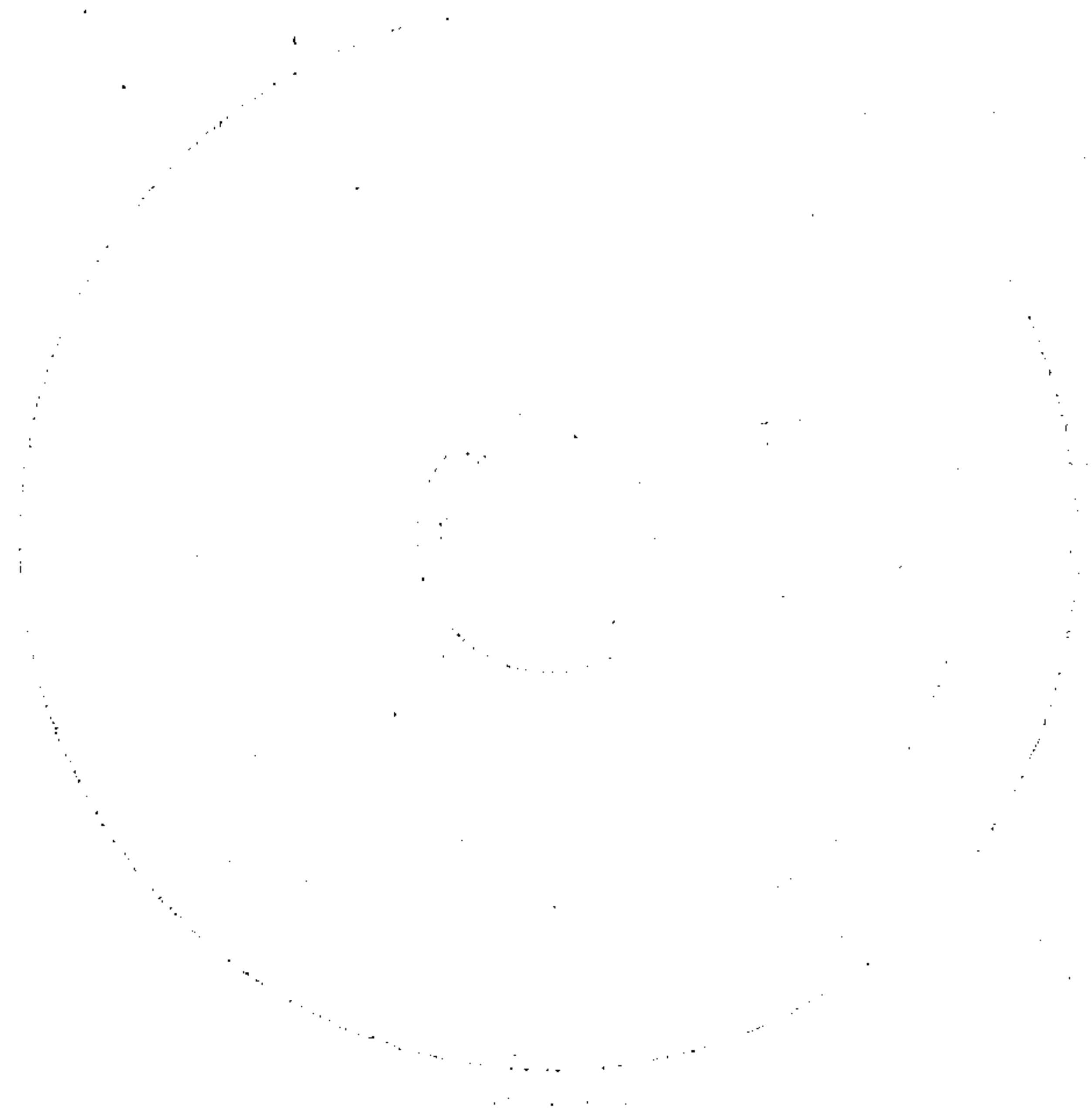
Inventor.

Hilas D. Davis

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