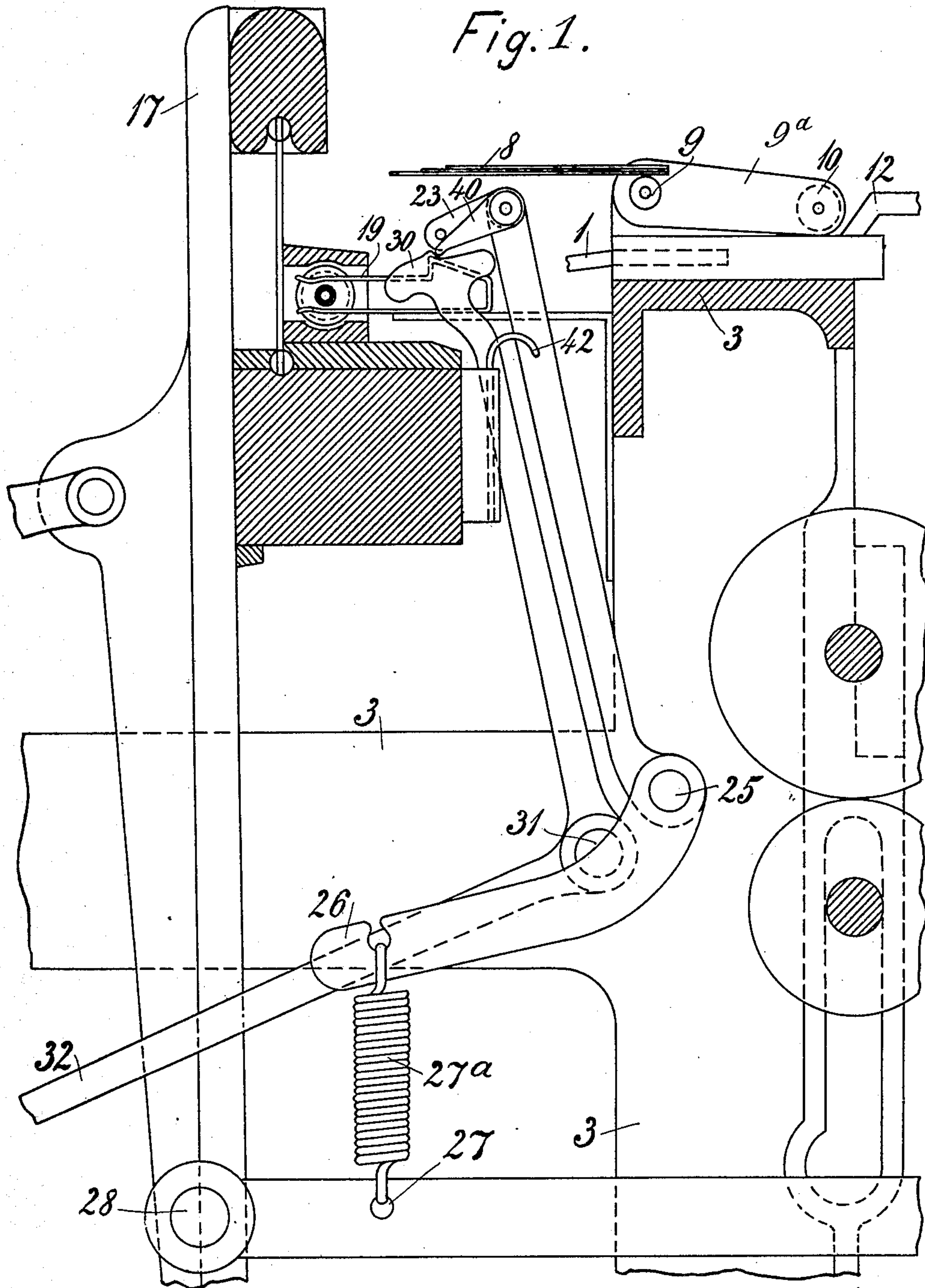


J. GABLER.
WEFT CUTTING MECHANISM FOR WEFT REPLENISHING LOOMS.
APPLICATION FILED SEPT. 13, 1906.

925,891.

Patented June 22, 1909.

4 SHEETS—SHEET 1.



Witnesses:-

E. E. E. E. E.

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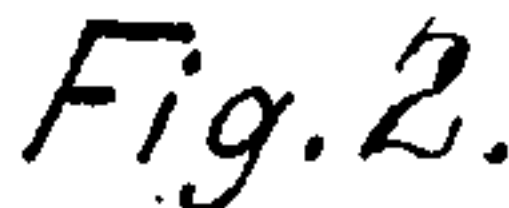
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4 SHEETS--SHEET 2.



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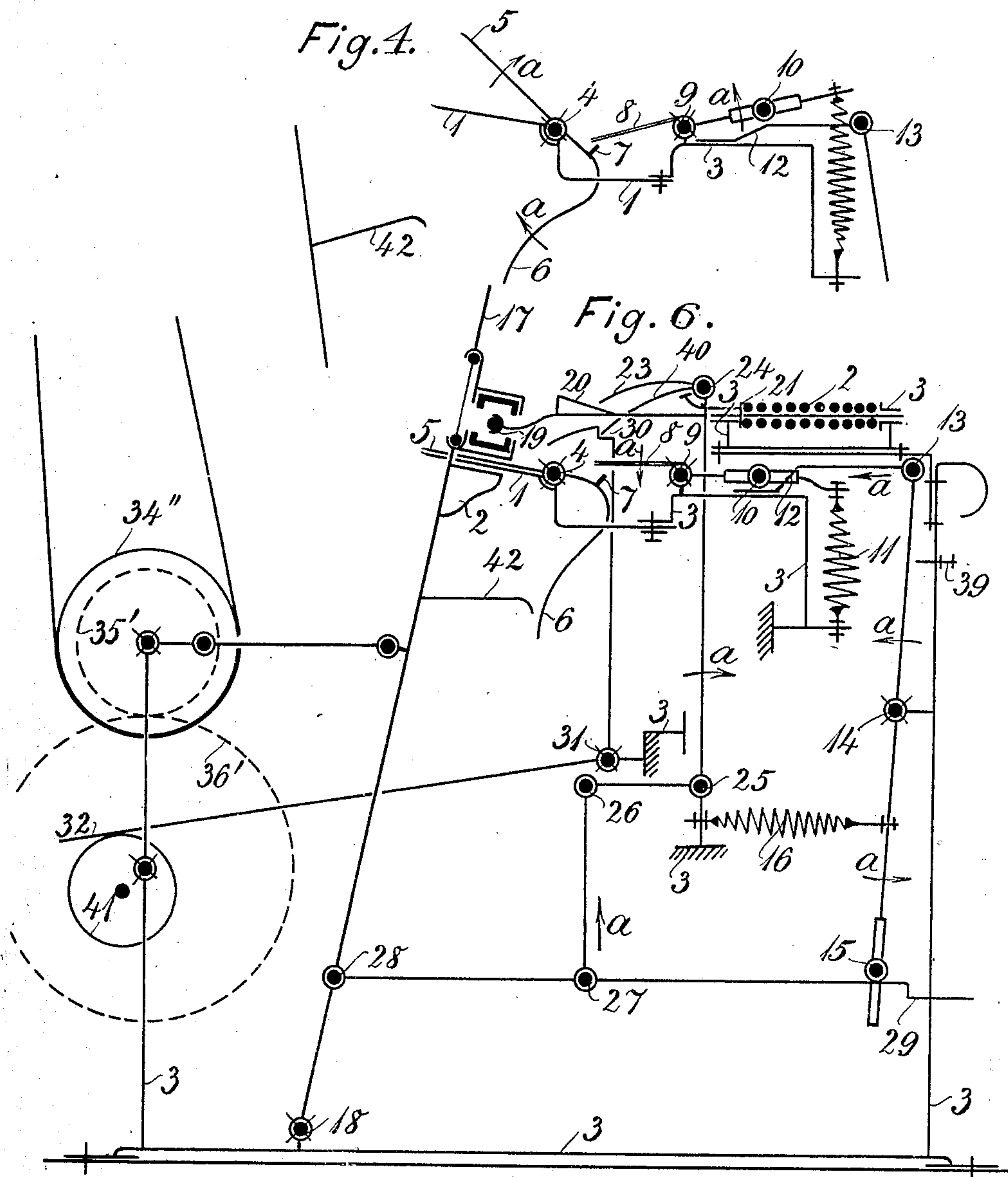
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4 SHEETS—SHEET 3.



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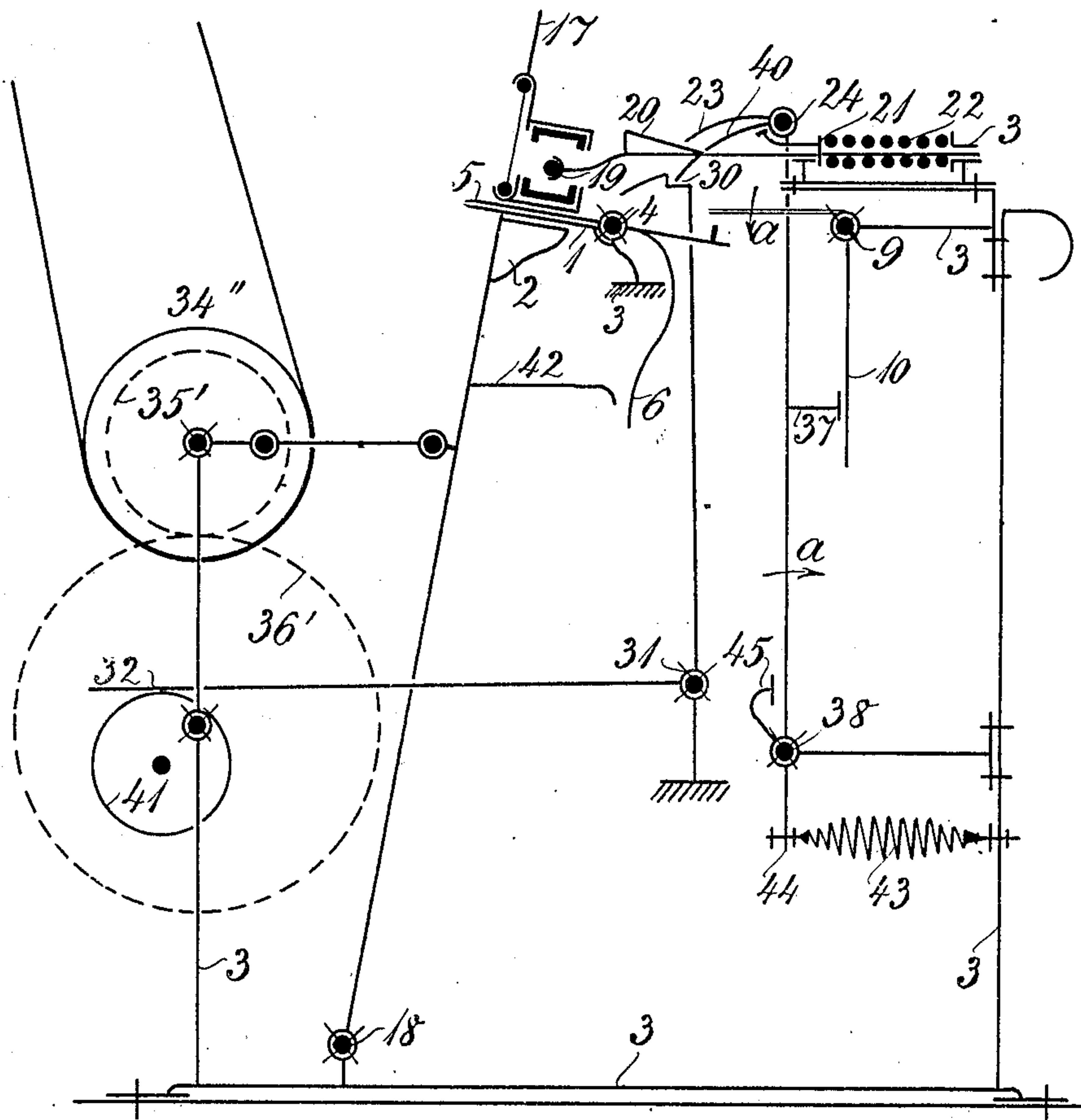
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4 SHEETS—SHEET 4.

Fig. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

JOHANNES GABLER, OF MÜLHAUSEN, GERMANY.

WEFT-CUTTING MECHANISM FOR WEFT-REPLENISHING LOOMS.

No. 925,891.

Specification of Letters Patent.

Patented June 22, 1909.

Application filed September 13, 1906. Serial No. 334,557.

To all whom it may concern:

Be it known that I, JOHANNES GABLER, head foreman, subject of the German Emperor, residing at 32 Altkircherstrasse, Mülhausen, in Alsace-Lorraine, German Empire, have invented certain new and useful Improvements in Weft-Cutting Mechanism for Weft-Replenishing Looms, of which the following is a full, clear, and exact description.

My invention relates to weft replenishing looms, and the object of the invention is to provide a shearing apparatus which will sever the thread of the empty pincop, and also the thread coming from under the pincop at the time of their exchange.

In a weft replenishing or continuously running loom in which the nearly empty pincop, shortly before its thread has been exhausted, is replaced by a full one, it is necessary to cut off (close to the list not only the end of), the thread of the old pincop, between the list of the web and the lay, and also the end of the thread coming from the new pincop which is situated between the lay and the list of the web. For this purpose a pair of double action shears are employed. This double action for weft cutting was effected either by actuating a double cutting blade or by preventing the return of the cutting blade after the first cutting by means of special arrangements and by bringing the moved blade of the shears, after the second cutting, into its initial position.

It is the object of my invention to avoid this difficulty and to cause the actuation of the shears by the weft feeler at the time of exchange of the pincops, and finally automatically brought to their initial position.

With these and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts, as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings the invention is diagrammatically represented in two alternative constructional forms.

Figure 1 is an enlarged detail side elevation with parts removed and parts in section to better illustrate the machine; Fig. 2 is a side elevation with parts in section

showing the shears in forward or tilted position; Fig. 3 is a similar view showing the shears retracted; Figs. 4 and 6 are diagrammatic side views illustrating the invention, and, Fig. 5 is a similar diagram of an alternative arrangement.

The lower blade 1 (Figs. 4, 5 and 6), of the shears is mounted upon the block 4, carried by the frame 3, in such a manner as to allow the shuttle to easily pass over it when the shears are closed. An extension of the lower blade 1 of the shears, carrying the fulcrum 4 of its upper blade comprising parts 5, 4 and 6 is adjustably mounted in a guide in the frame 3. The upper blade of the shears is so constructed as to remain closed except when positively actuated, and is provided with a stud 7 which extends beneath the spring arm 8 of a lever 9, 9^a which is fulcrumed at and carries an extension which is provided with a friction roller 10. The roller 10 of this lever, by means of the spring 11, is caused to press against the downwardly bent arm 12, pivotally mounted on a vertical lever 13 which is connected to the frame 3, at 14. This lever is under the influence of a spring 16 and its movement is limited by the adjusting stop 39. When the lever 9^a is oscillated in the direction of the arrow *a*, (Fig. 6), in opposition to the action of the spring 11, the spring arm 8 thereof causes the shears to open by rotating the upper blade 5, in the direction of the arrow *a*¹ (Fig. 6). For the purpose of effecting the exchange of the pincops, the shears must be opened before the lay 17, has assumed its forward position as shown in Figs. 4 and 5. This is effected by means of the weft feeler 19 which operates in the side of the lay opposite to the shears.

The feeler 19 which is furnished with a cam 20 is mounted in guides in the frame 3 and is actuated by a spring 22 arranged between the outer guide of the feeler rod and an adjustable nut 21 thereon. A finger 23 pivoted on the lever 24¹ (Fig. 4), or on the lever 24^a (Fig. 5), and actuated respectively by the springs 16 or 43, is provided with a tongue 40 which bears against the cam of the feeler. A lever 30 pivoted at 31, to the frame is provided with an extension 32, which is actuated by the eccentric 41 keyed on the shaft of the wheel 36¹, which

is driven from the wheel 34¹¹ by means of suitable gearing 35¹; and the notched extremity of this lever oscillates beneath the tongue 40. When a pin-cop has become sufficiently empty for the feeler 19 to embrace it, the finger 23 slides down the cam 20 and the tongue 40 becomes engaged with the notched end 30¹ of the lever 30, which thus moves the tongue in the direction of the arrow α^2 and by this means causes the lever 24, (Fig. 4), or the lever 24^a (Fig. 5), to move in the direction of the arrow α^3 .

In the form of the apparatus first illustrated the arm 26, which is connected to the lever 24 at 25 is connected to the lever 28 as at 27 through a spring 27^a. When the lever 24 is moved in the direction of the arrow α^2 the arm 26 and the lever 28¹ are raised in the direction of the arrow α^4 , the deflected end 29 of the said lever engaging with a roller 15 on the lever 13, and causing this latter lever to move in a direction opposed to the action of the spring 16. In this manner the incline of the arm 12, which rides upon the frame 3, is caused to pass beneath the roller 10 of the lever 9^a, and the spring arm 8 to be pressed against the stud 7 of the upper blade 5, of the shears causing them to open. In the form of apparatus illustrated in Fig. 5, the opening of the shears is, as in the previously described construction, effected by the action of the lever 9^a, and its spring arm 8; this lever being actuated by the impact upon its roller 10, of the projection 37 on the lever 24^a. The shears are opened while the lay is in its rearward position, as shown in Fig. 6. When the lay moves forward an adjustable arm 42 on the vertical arm of the lay pushes against the curved end 6 of the upper blade 5, thus closing the shears. The cutting off of the end of the thread situated between the list of the web and the lay takes place simultaneously with the substitution of a full pin-cop for an empty one. As the lay moves backward the adjustable arm 42 is moved from engagement with the curved portion 6 of the upper blade, which is now actuated by the spring arm 8 so as to be separated from the lower blade 1. When the lay is in its rearward position the throwing through of the new pin-cop is effected, its end being attached to the side of the loom. When the lay moves forward the arm 42 will again cause the end of thread between the lay and the list of the web to be cut off. Simultaneously the full pin-cop will force back the feeler, and the cam 20 will raise the finger 23 and the tongue 40 and thus disengage the tongue from the notched end 30 with the result that the lever 24, (Fig. 4), the arm 26, together with the lever 28¹, under the influence of gravity again return to their initial positions, moving in the direction

opposite to those indicated by the arrow α^4 . The lever 28¹ is thus caused to assume a position so low that, when the lay moves to and fro it no longer comes in contact with the roller 15, upon the lever 13. The lever 13 actuated by the spring 16 then moves backward until it strikes against the adjusting screw 39, with the result that the incline on the arm 12 moves from beneath the roller 10 of the lever 9^a, which is now again subjected to the action of the spring 11. The part 8 consequently no longer presses against the stud 7 of the upper blade 5, and the shears remain closed. In the arrangement shown in Fig. 5 the spring 43 comes into action when the finger 23 and the tongue 40 are raised, and moves the lever 24^a back into its initial position which is limited by a stop, while the lever 9^a swings back and the shears remain closed.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention as defined in the appended claims.

What I claim and desire to secure by Letters Patent is:—

1. In a device of the class described, the combination of a weft feeler, a lay, means controlled thereby for severing the weft thread at the time of engaging of the pin-cop by the weft-feeler, means for holding the severing means in operative position until the next forward movement of the lay, and means controlled by the weft feeler by a full pin-cop to restore the severing means to normal position.

2. A device of the class described, the combination with a weft feeler, of a pair of shears, a lay, means controlled by the weft feeler for opening the shears, means controlled by the lay for closing the shears so as to sever the thread at the time of engaging of the pin-cop by the weft-feeler, means to hold the shears in operative position until the next forward movement of the lay, and means controlled by the weft feeler when operated by a full pin-cop to restore the severing mechanism to normal position.

3. In a device of the class described, the combination with a weft feeler, of a pair of shears, a lay, means controlled by the weft feeler for pressing the shears in operative position to sever the thread of the exhausted pin-cop, means carried by the lay for operating the shears to sever the thread at the time of engaging of the pin-cop by the

weft-feeler, a spring for normally holding
the shears in open or operative position, and
means controlled by the weft feeler for
throwing the spring out of engagement with
5 the shears upon the engagement of the weft
feeler with the full pin-cop upon the next
forward movement of the lay.

In witness whereof, I subscribe my signature, in presence of two witnesses.

JOHANNES GABLER.

Witnesses:

EMILIE KASPER,

WALTER C. SCHNEIDER.