

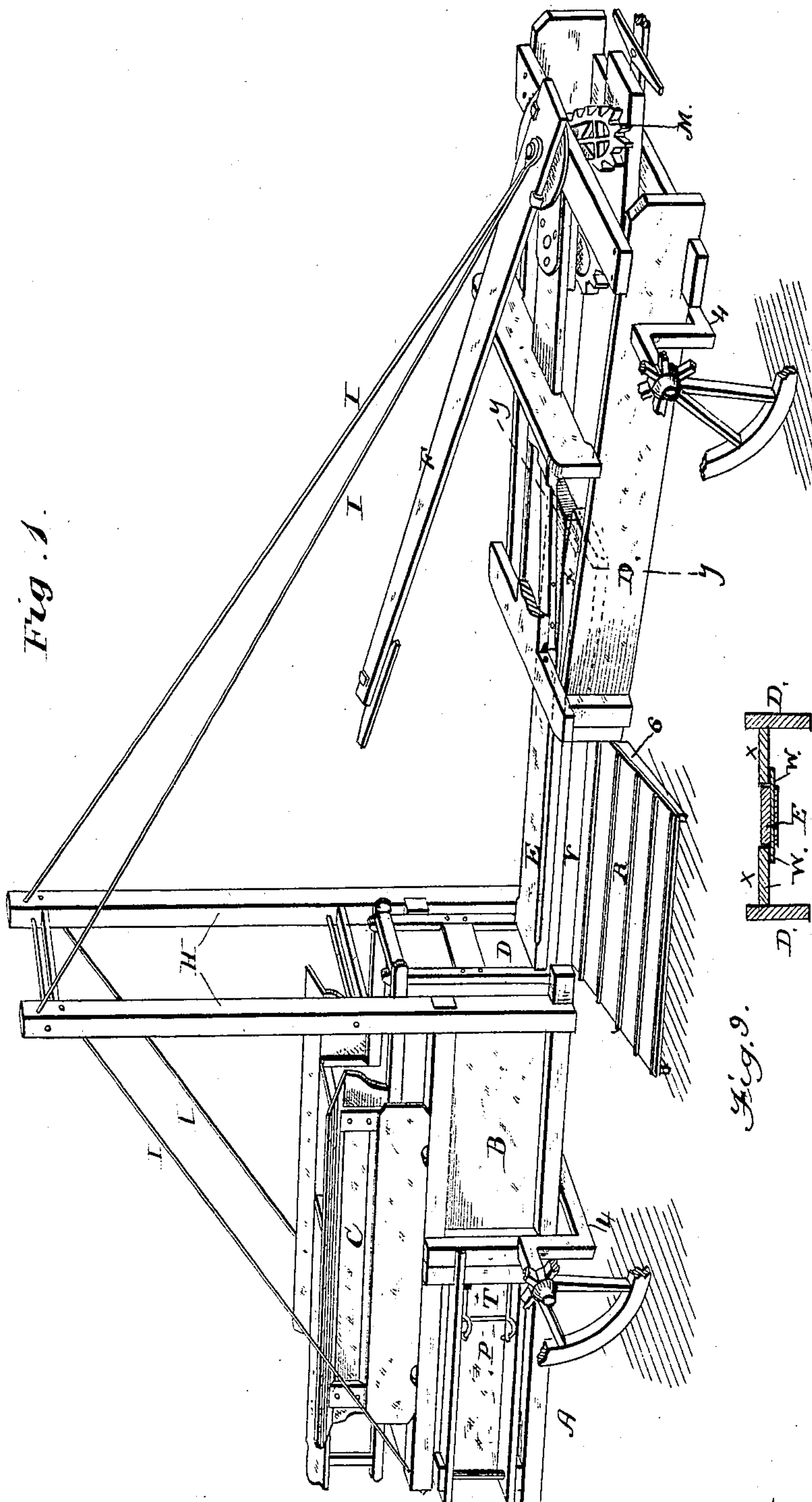
(No Model.)

2 Sheets—Sheet 1.

P. K. DEDERICK.
Baling Press.

No. 240,973.

Patented May 3, 1881.



Attest,
W. H. H. Knight
Fred P. Blumrich.

Inventor,
Peter K. Dederick
By Wm. H. Church
His atty

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2 Sheets—Sheet 2.

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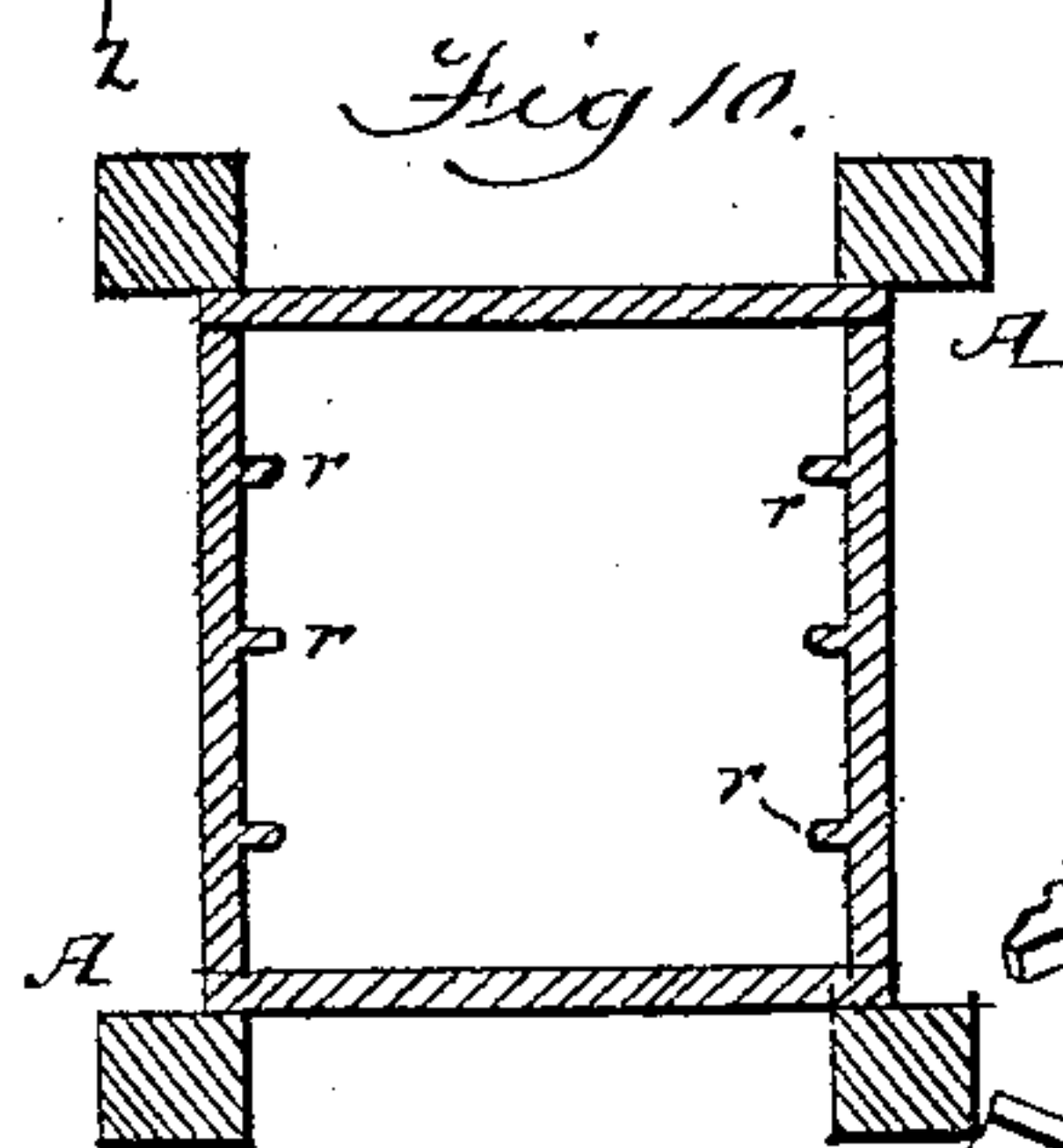
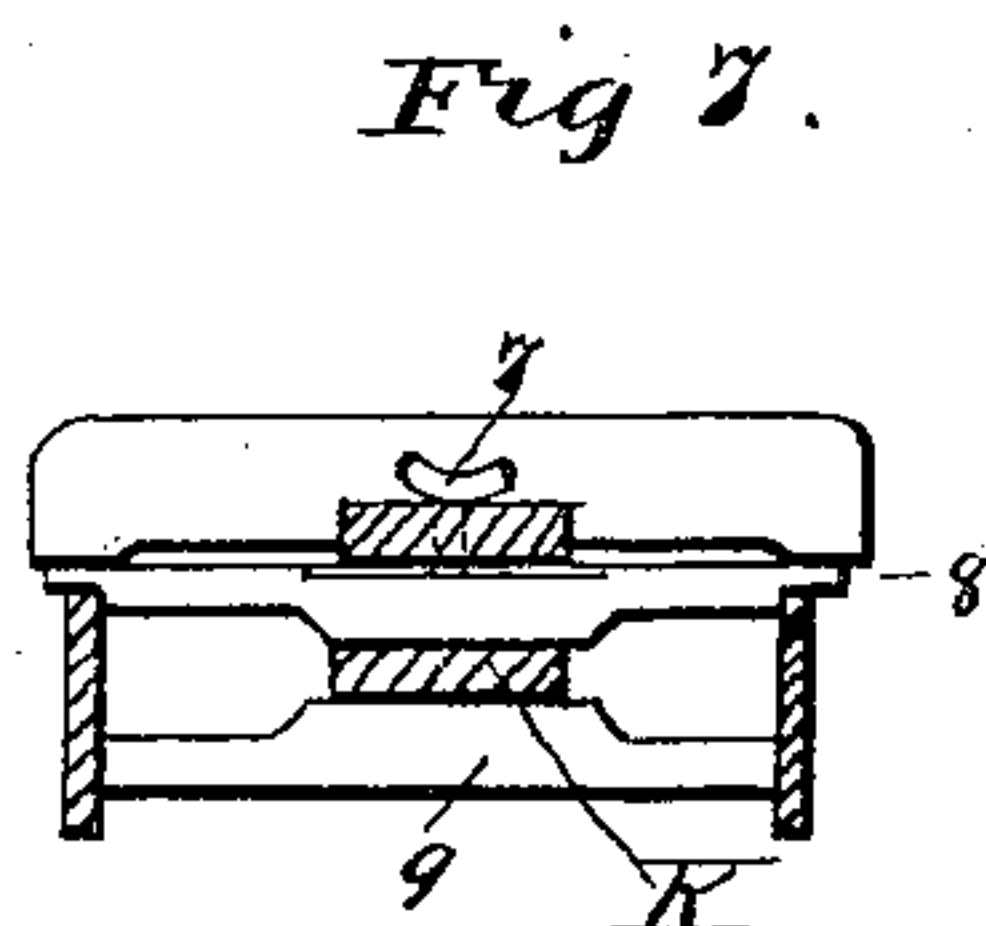
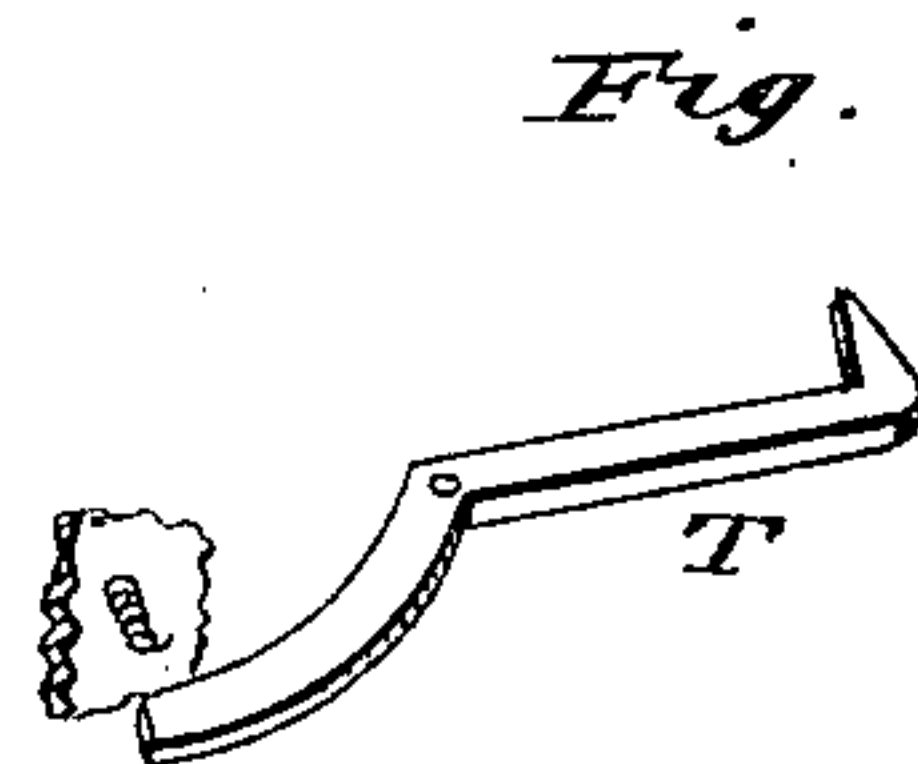
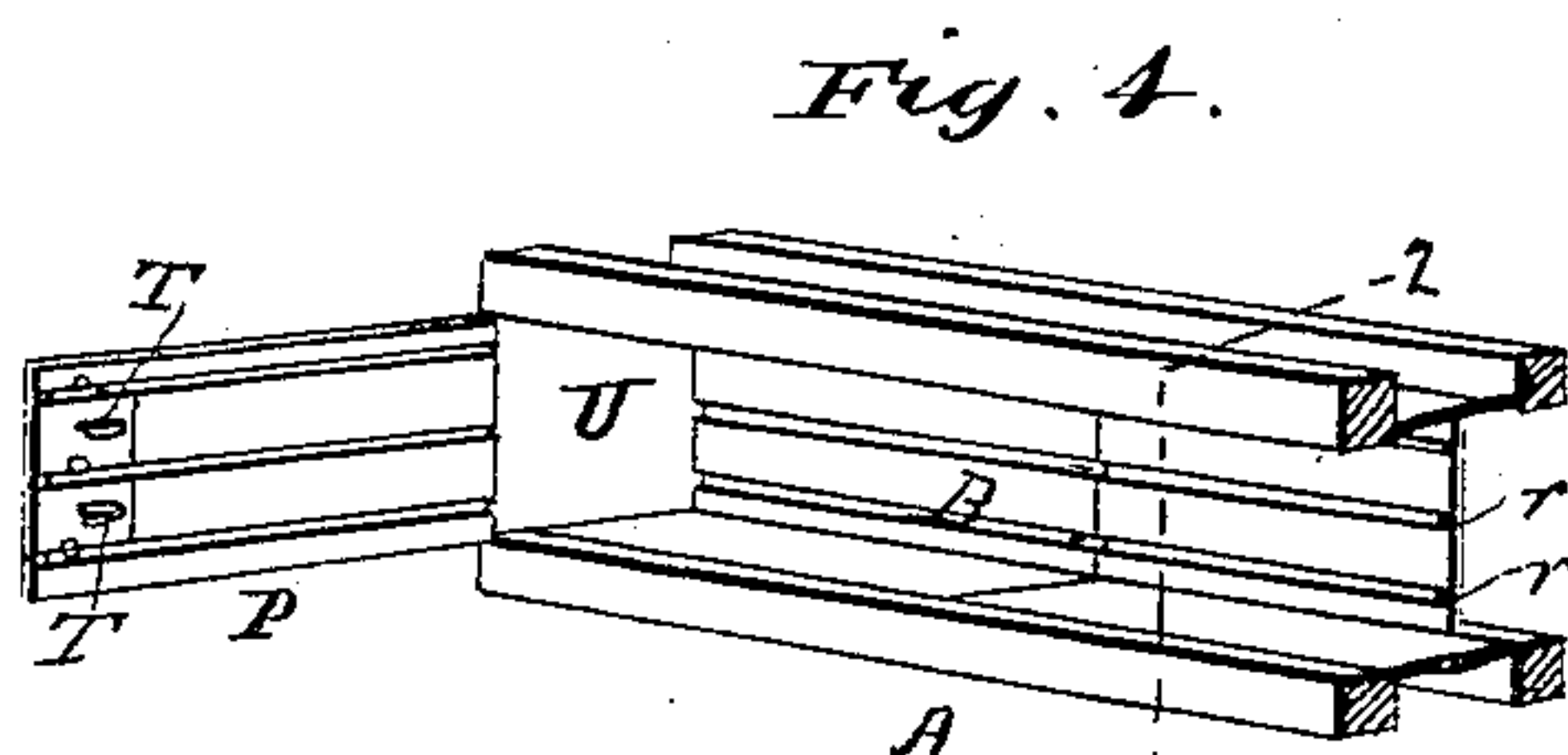
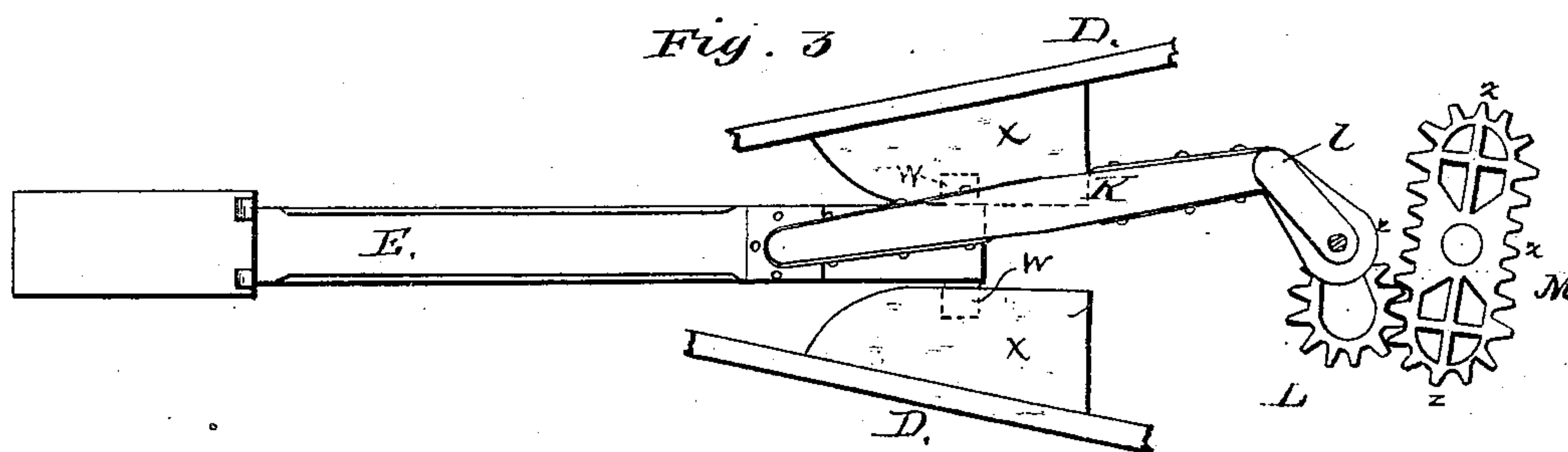
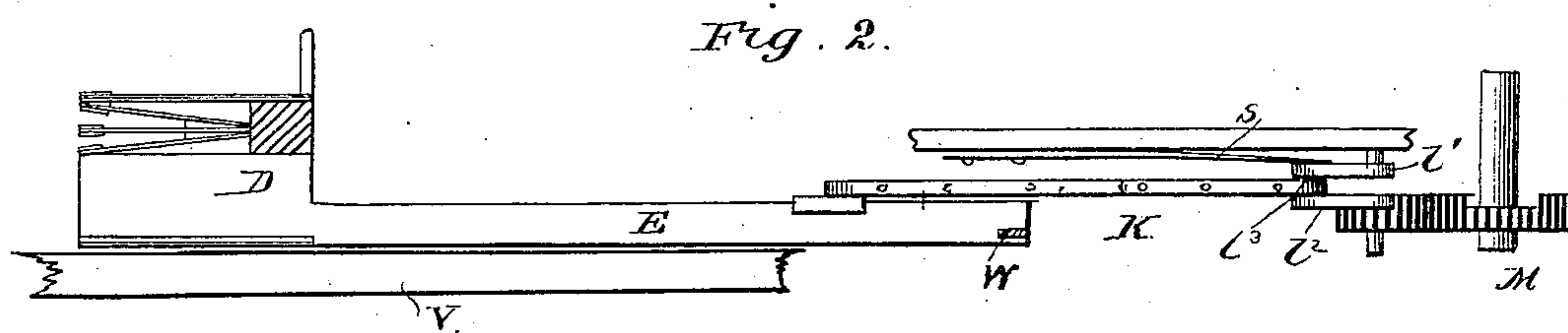
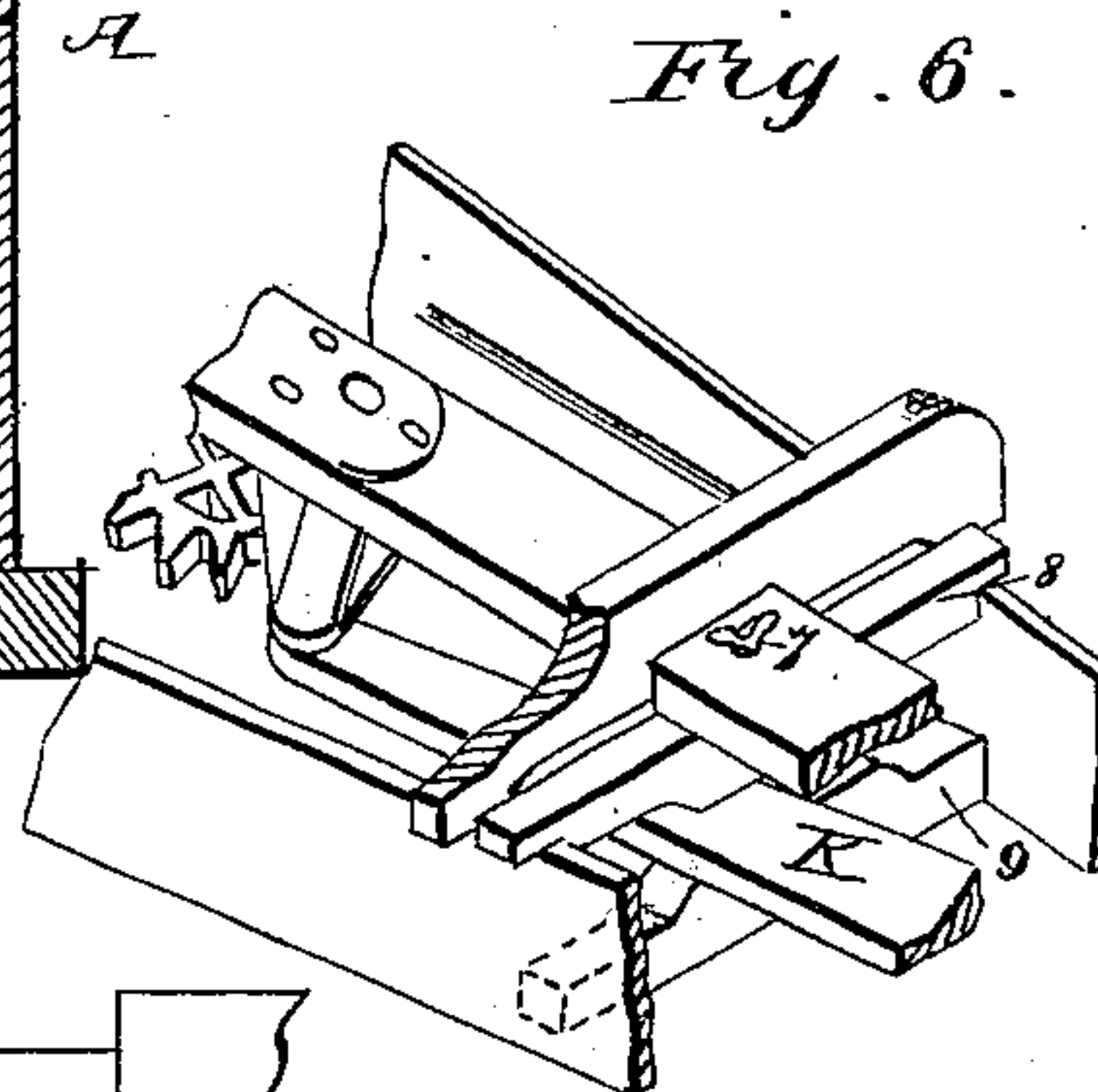
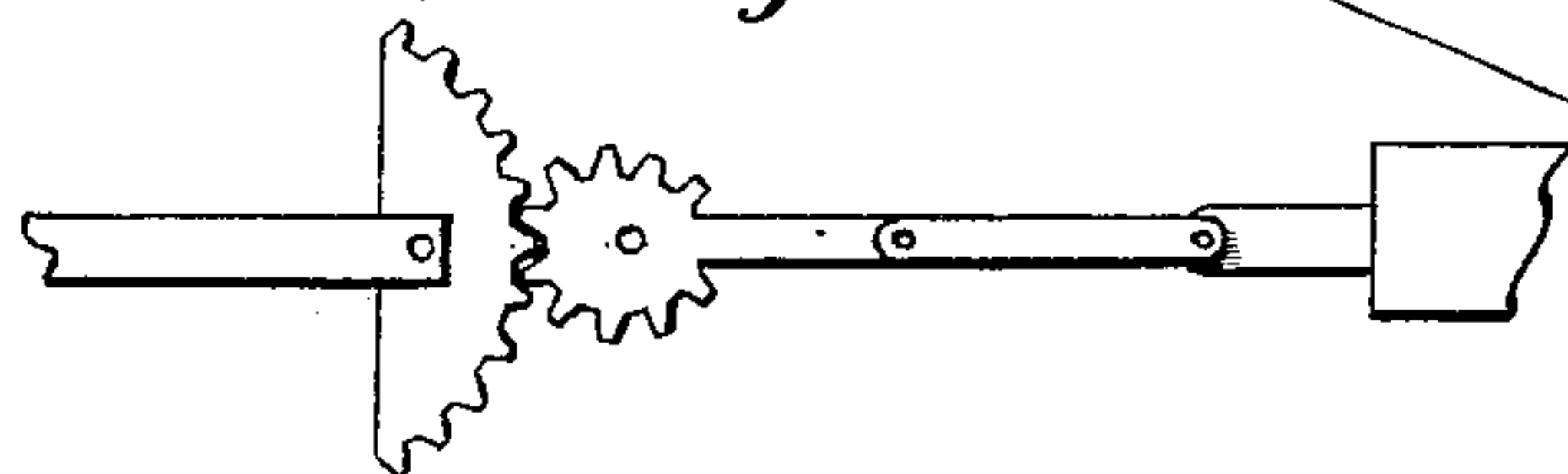


Fig. 8.



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UNITED STATES PATENT OFFICE.

PETER K. DEDERICK, OF ALBANY, NEW YORK.

BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 240,973, dated May 3, 1881.

Application filed September 1, 1880. (No model.)

To all whom it may concern:

Be it known that I, PETER K. DEDERICK, of Albany, in the county of Albany and State of New York, have invented certain new and useful Improvements in Baling-Presses; and I do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a perspective view of a press constructed in accordance with my invention. Figs. 2 and 3 are respectively side and top views of the power mechanism and connections. Fig. 4 is a detail view of the press-box and bale-chamber. Fig. 5 is a view of one of the retainers detached. Figs. 6, 7, and 8 are views of modifications of the power mechanism. Fig. 9 is a sectional view taken on the line *yy*, Fig. 1; and Fig. 10 is a sectional view taken on the line *zz*, Fig. 4.

Similar letters of reference in the several figures indicate the same parts.

This invention relates to that class of baling-presses for which Letters Patent Nos. 132,566 and 132,639 were granted and issued to me October 29, 1872, and for which numerous other Letters Patent have been granted me since that date; and it consists in certain improvements which I will now proceed to describe, and will point out particularly in the claims at the end of this specification.

Referring to the drawings, A represents the bale-chamber of the press, B the press-box, C the condensing-hopper, and D the traverser, all said parts occupying substantially the same relation to each other that they occupy in other presses of this class.

The condensing-hopper C, which is of the ordinary construction, is connected to the traverser as usual, and operates to condense the loose material and carry it over the opening in the press-box, in position to be forced down into the press-box in front of the traverser. The traverser reciprocates within the press-box, and at each forward movement forces a charge or section of material into the bale-chamber. The bale-chamber is provided with doors P on one or both of its sides, and has a solid head, U, against which the bale is formed. Longitudinal ribs or projections *r* are provided on the sides of the press-box, and also on the

doors of the bale-chamber, for the purpose of forming grooves or creases in the bale to receive the ties that bind the bale. As each section of material is forced into the bale-chamber it is made to conform to the contour of the same, and of course is grooved at the points where the ribs project.

In my Patent No. 214,282 I contemplated the grooving of the bale; but the means employed consisted of two thin ribs or strips parallel to each other and a short distance apart for forming each groove. These strips were objectionable, because the open space between them allowed the material to sometimes expand into said space and prevent the formation of a groove, or at least a groove of sufficient depth. No such objection applies to the present grooving-ribs, as they are made solid and entirely fill the groove.

For the purpose of preventing the return of the pressed material upon the withdrawal of the traverser, suitable retainers, T, are employed. They are preferably constructed as shown in Fig. 5, and applied to the doors of the bale-chamber, as represented in Figs. 1 and 4.

The power end of the press is connected to the press-box and bale-chamber by a longitudinal timber, V, and the connection is braced and supported by means of stay-rods I I I I and uprights H H. To further strengthen the connection the staff E of the traverser is extended beyond the point where the pitman K is jointed to it, as shown in Figs. 2 and 3, and is provided with a cross-head, W, formed by slotting a piece of iron into its end of sufficient length to project on both sides, the arms of which cross-head slide in ways under the planks or supports X X of the power-frame. By this arrangement the outer end of the traverser-staff, in both its forward and backward movements, is held down firmly to the connecting-timber V. As there is a tendency of the timber V to spring upward and a tendency of the staff E to spring downward by reason of its connection to the lower end of the traverser, said timber and staff, operating together, materially strengthen the connection.

Instead of employing the cross-head or slide to connect the staff and timber, a cross-timber might be arranged to bear upon the staff E, either in front or back of the point where it is

jointed to the pitman, or a girt or timber might be brought to bear upon the pitman itself or upon the wrist which connects the pitman to the staff. In a word, any manner of securing the staff and timber together on each side of the opening through which the horses travel, so that said parts cannot spread apart, will fulfill the requirements.

The power-gear M is of oblong form, and is constructed with teeth which are graduated both ways from each of four points, *z*, the smallest teeth being at said points *z* and the largest ones midway between any two such points. The teeth are also of long and gradually-tapered form.

Co-operating with the power-gear is the crank-gear L, the teeth of which mesh with the teeth of the power-gear, but are fewer in number and are graduated both ways from only two points. One revolution of the power-gear causes two revolutions of the crank-gear.

I have found from practical experience that in order to produce durable gearing for presses of this character it is necessary that they have graduated and tapered teeth. Otherwise, after a little usage, they bind and become inoperative.

Secured to the crank-gear L is a crank, *l*, cast solid or made in parts, and having an upper bearing, *l'*, a lower bearing, *l''*, and an intermediate wrist, *l'''*, to which the pitman K is connected. An advantage results from the employment of this double crank instead of a single crank—namely, it overcomes the tendency to press upward that exists in a single crank, and exerts a direct horizontal pressure against the power-shaft, which latter, in turn, is supported by the rods I.

In order to break the force of the shock or “backlash” caused by the reaction or back-expansion of the pressed material upon the traverser when the crank passes its center, I secure a spring, *s*, of wood or steel, to the frame of the power, as shown in Fig. 2, so that its free end will bear upon the upper arm of the crank when it arrives at the center and a little after it passes the center. Other means may be devised for accomplishing this same result—as, for instance, that shown in the modification represented in Figs. 6 and 7, wherein friction-timbers 8 and 9 are caused to exert friction upon the pitman K, instead of upon the crank at the time when the crank is passing its center, the amount of friction being regulated by means of a set-screw, 7.

Inasmuch as the crank and pitman in this press really form a toggle, the employment of a friction device to prevent the backlash enables the power to be worked by reversing the horses after the crank passes the center, instead of requiring them to go way round the circle. A loose sweep or horse-lever is not necessary when the press is so worked, because the retarding action of the friction device prevents the horse-lever from being crowded forward against the horses, as well as preventing shock.

The friction device might be applied with good effect to my other patented presses. In those in which a rigidly-secured horse-lever is employed the friction might be applied to the horse-lever itself or to its shaft, or, in short, to any movable part of the power whose retardation would retard the motion of the machinery as the crank or toggle passed the center.

As a substitute for the gears M and L, I may employ the arrangement of gearing shown in Fig. 8. In this arrangement the horses move from right to left, and then reverse, instead of traveling round in a circle, and the gears are constructed so as to exert their greatest power when the crank and pitman come into line, at which time the pressing is being done by the traverser.

The sweep or horse-lever may be rigidly fixed to the larger gear, or it may be pivoted thereto and made to engage with stops on said gear, and the form of gears may be varied so as to cause the horses to travel a greater or less distance and proportionately increase or diminish the power.

In mounting the press I use axles 4 4, securing firmly the one under the bale-chamber and pivoting the one under the power-frame, so as to use it as the forward axle, and attach the draft-pole to it, as shown. By bending the axles downward I am enabled to hang the press so low on the wheels that by the use of a table or platform, R, the horses may easily step over the connections V E. The table R is preferably formed of two side boards, 6, placed on edge and extending beyond the sides of the press, and cross-planked, as shown. The boards 6 are beveled a little, so that the platform will slope slightly outwardly; but they terminate abruptly at their ends, instead of tapering clear down to the ground, and form a step for the horses. This form of platform I find much preferable to a platform tapered way to the ground, as the horses are less liable to slip upon it.

I claim as my invention—

1. In that class of baling-presses in which the hay or other material is pressed by a reciprocating traverser and driving mechanism, the combination, with such driving mechanism, of a friction brake or spring which is automatically applied to said driving mechanism as the traverser begins to reverse to prevent backlash and shock, substantially as described.

2. The combination, with the crank *l* of the power-gear, of the spring-plates *s*, secured to the power-frame and operating to exert friction upon the crank as it passes its center, substantially as described.

3. In a baling-press adapted to be mounted on transporting-wheels, the combination, with the two sections or ends of the press containing respectively the pressing-chamber and the mechanism for reciprocating the traverser, of the timber V, for connecting the said sections of the press, the staff E of the traverser, and

devices for holding said staff firmly against said timber, whereby the staff serves to strengthen the connection, substantially as described.

5 4. The combination, with the traverser, its staff, the pitman and crank of the power-gear M, constructed with teeth graduated both ways from each of the four points z, and with the

smaller crank-gear L, having teeth graduated both ways from only two points, substantially as described.

P. K. DEDERICK.

Witnesses:

R. J. VAN SCHOONHOVEN,
E. S. DEDERICK.