

H. WEBER.  
BRICK GRAPPLE.  
APPLICATION FILED DEC. 1, 1910.

995,830.

Patented June 20, 1911.

2 SHEETS—SHEET 1.

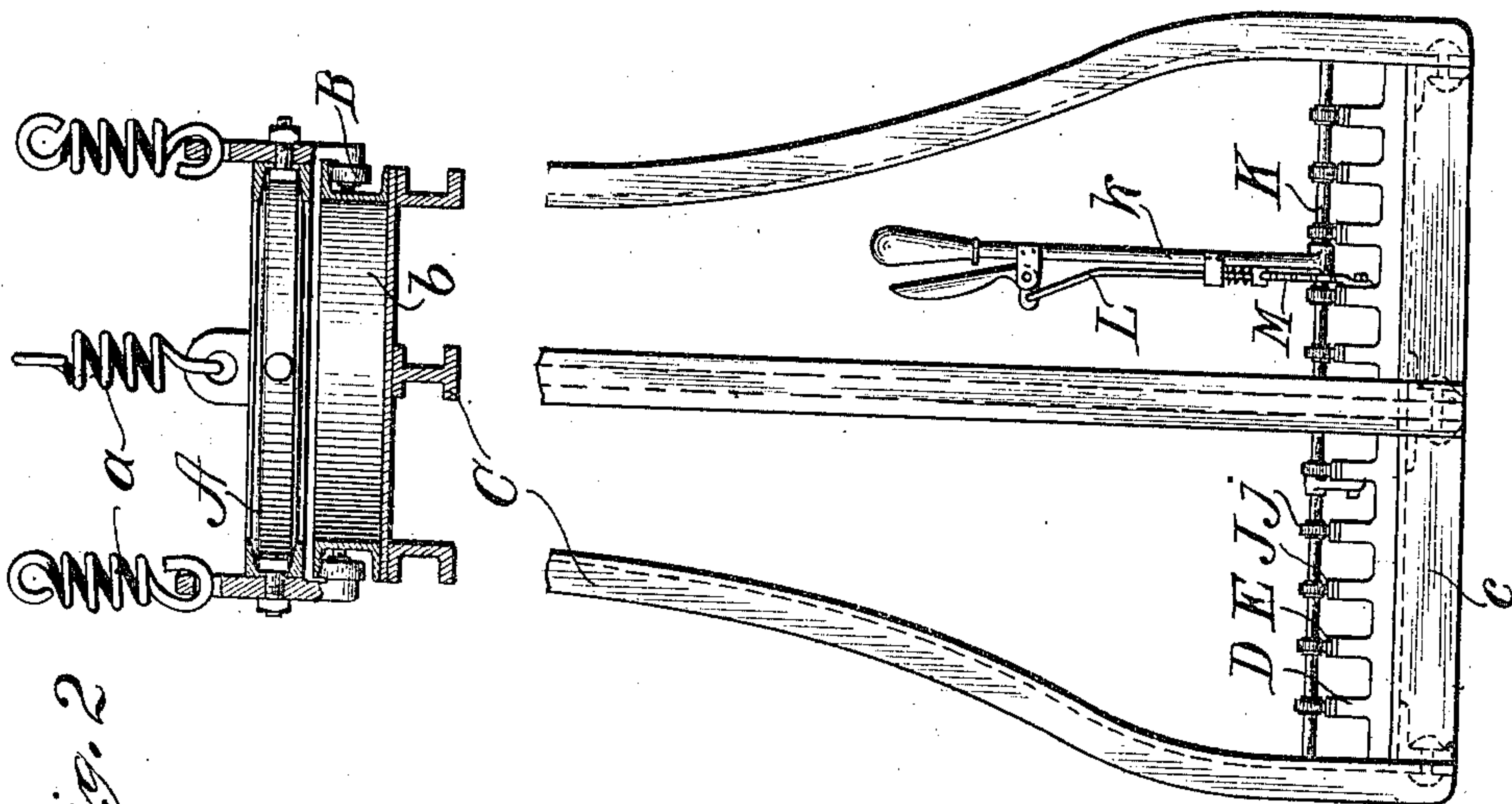


Fig. 2

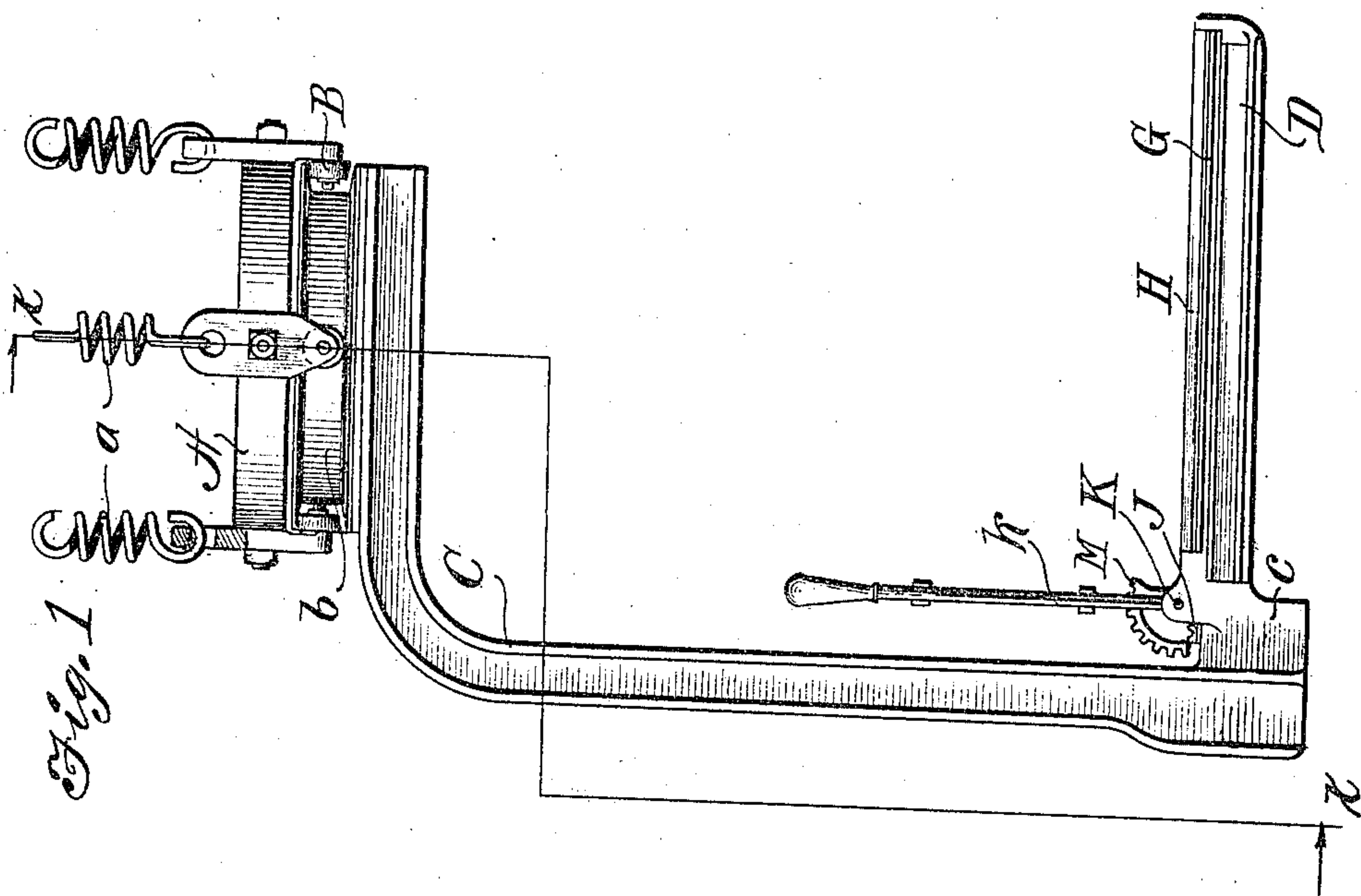


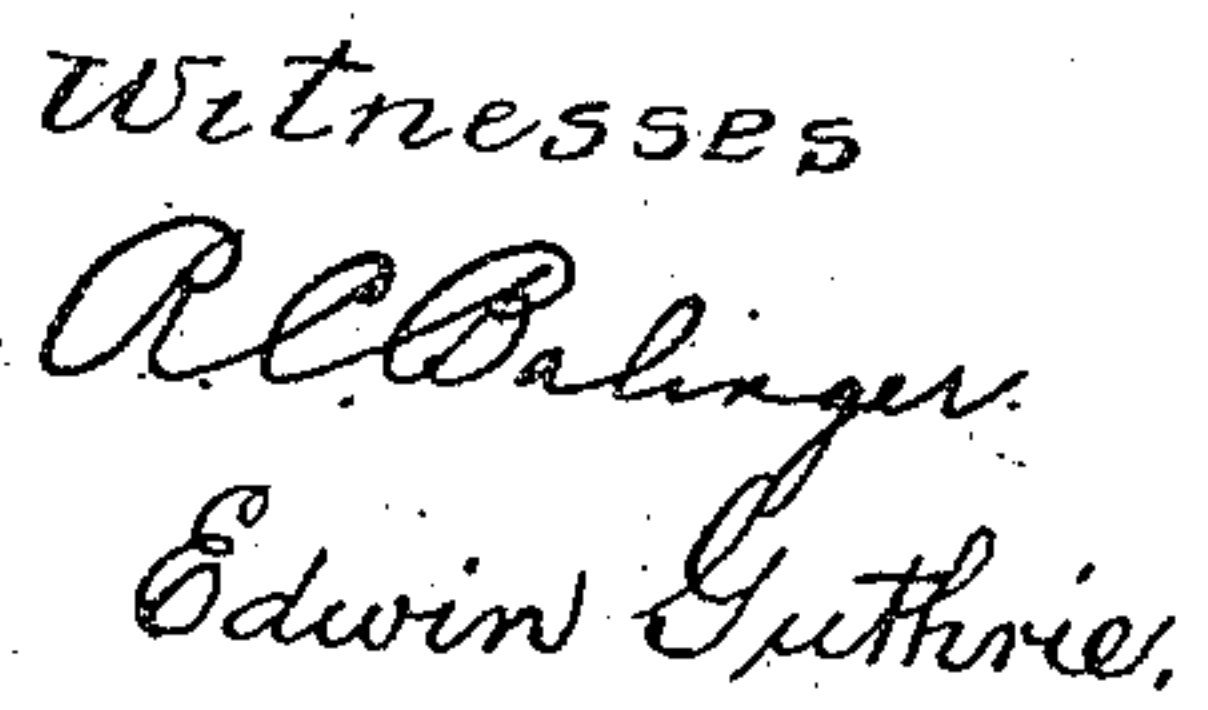
Fig. 1

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2 SHEETS—SHEET 2.



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# UNITED STATES PATENT OFFICE.

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## BRICK-GRAPPLE.

995,830.

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*To all whom it may concern:*

Be it known that I, HENRY WEBER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Brick-Grapples, of which the following is a specification.

This invention relates to brick grapples, and its object is the production of a device having parts of particular construction and special arrangement with respect to each other, whereon a number of bricks may be stacked in open order, or having the bottom row of bricks arranged in open order, may be placed on the device and lifted with it, the device being constructed to be withdrawn from the stack of bricks after they have been deposited as desired. For example, this invention may be employed to take bricks in the drying kilns or chambers of a brick-making plant, and to be carried with the bricks and to set them in the burning kilns, and then, without disturbing the stack of bricks or any part thereof, this invention may be withdrawn from its engagement with the bricks leaving them in the kiln for burning.

The construction and arrangement of parts constituting this invention are illustrated in the accompanying drawings, of which—

Figure 1 represents a side view. Fig. 2 is a part sectional view, on indirect broken line  $x-x$  of Fig. 1. Fig. 3 is a front view of this invention shown in engagement with a number of bricks stacked in open order. Fig. 4 is a top plan view of one of the grappling arms, with the cover-bar removed to disclose the movable parts beneath. Fig. 5 is a side view of a portion of one of the arms of this invention, showing the operating shaft, pinion and rack. Fig. 6 is a cross-section on the broken line  $y-y$  of Fig. 5. In the Figs. 4, 5, and 6, the scale of drawing has been increased for the purpose of rendering the illustration clearer.

The same letter of reference is used for the same part throughout.

A supporting ring A, usually having the spring hangers  $a$ , is provided with rollers B constructed to support by means of its flanges a revoluble ring  $b$ . Attached to ring  $b$ , are a number of inverted L-shaped members C, joined together at the bottom by a crosspiece  $c$ . From the base or cross-piece

$c$ , a number of arms D project, and, as best shown in Fig. 6, each arm has a groove  $d$  extending lengthwise in its top, and a movable bar E occupies the groove. Above the movable bar E, are arranged the bars F and G, and, it will be noted in Fig. 4, that the pins  $e$  which project upwardly at intervals alternately on opposite sides of the bar E, engage inclined slots  $f$  and  $g$  in the bars F and G. To keep the bars mentioned from being forced upwardly during the operation of this invention, a cover or keeper bar H is employed on each arm D. The bar E in groove  $d$  of arm D, is moved longitudinally, by the engagement of rack J on the bar, with the pinion  $j$  on transverse shaft K, and the shaft is rocked by means of an attached lever  $k$ , of ordinary construction, provided with a handlatch L, and toothed quadrant M, which enables the lever to be set at different angles, with reference to its perpendicular position shown in Fig. 1.

The operation of this invention may be set out as follows: When the bars E of the arms are moved outwardly, that is to say, in the direction from the members C, the pins  $e$  in the slots  $f$  and  $g$  of the bars F and G act to move those bars sidewise. It will be noted in Fig. 4, that the bars F and G are recessed, and that the recesses are formed in those edges of the bars that are inwardly, the recessed edge of bar F being presented to the like edge of bar G. From the same Fig. 4, it will be seen that as the bars are arranged the recesses of both are staggered with relation to each other, and the recesses of each bar are constructed to receive the portions of the other bar that lie between its recesses, when the bars are moved toward each other. The inclined slots  $f$  and  $g$  are formed in the portions of the bars lying between the recesses. As above stated, when the bars E are moved outwardly, the bars F and G are moved sidewise, and toward each other. If bars E are given an opposite movement by means of the lever acting through shaft K, pinion  $j$ , and rack J, the bars F and G are moved sidewise from each other.

Considering Fig. 3, it is illustrated that the bars F and G, having been moved sidewise from each other, extend for a short distance beneath the bricks of the lowest row of the pile of bricks, and, in Fig. 6, two bricks  $h$ , of the lowest row of the pile are



shown in section, with the edge portions of bars F and G beneath them for a short distance, but, for an ample distance to raise the pile of bricks when the supporting ring A is raised. In practice, after the bars F and G have been separated to the full extent, the bricks to be transported may be placed thereon, the lowest row of bricks *h* being arranged in open order with their edges upon the edges of the bars F and G as shown in Figs. 3 and 6.

The pile of bricks may be carried with this invention into a kiln and deposited in any position. The rollers B and the flanged ring *b* permit the pile of bricks to be turned about as desired. When the chosen situation is reached, the lever *k* is operated to move bars F and G sidewise toward each other, and the arms D are drawn out from under the pile of bricks leaving the bricks in the kiln. It will be noted that the supporting edges of the bars F and G are beneath the lowest row of the pile of bricks, and that all the bricks in the pile are thus supported when this invention is hoisted. From Fig. 6 it is also apparent that the arms D are below the pile of bricks, and that the cover bars H alone pass between the bricks of the lowest row, serving to accurately space them for the contact with the supporting or carrier bars F and G. It may be explained here, that the top row of the pile of bricks is arranged in the same manner as the lowest row, as illustrated in Fig. 3, and when one of the piles is deposited upon another like pile, the arms D pass between the uppermost bricks, and, keep those bricks in position until the pile of bricks is deposited upon them.

It will be understood that when a pile or stack of bricks carried by this invention and having the lower bricks *h* in open order as illustrated, is placed upon another like stack, which, as stated, has its uppermost row arranged in the same open order and position as the lower bricks *h* of the stack in transit, the edges of the bars F and G rest upon the bricks of the uppermost row of the stationary stack. The cover bars H are between the lower bricks *h* of the carried stack, and the arms D are between the bricks of the uppermost row of the stationary stack. Neither the bricks *h* nor the uppermost bricks of the stationary stack can be disturbed when the bars F and G are drawn together and out of engagement with those bricks. The fact

that the stack carried must settle downwardly a distance equal to the thickness of the bars F and G, is not important and does not affect the integrity of the stack carried or of the stationary stack.

Having now described this invention, and explained the mode of its operation, what I claim is:

1. In a brick grapple, the combination with arms, of bars movable lengthwise with respect to said arms, the said arms being constructed and arranged to support and guide the side bars, bars movable edgewise with respect to said arms, means constructed and arranged to reciprocate the said lengthwise-movable arms, and mutually-engaging devices whereby the movement of the said lengthwise-movable bars actuates the said edgewise movable bars, causing the edges of said bars to project beyond the said arms.

2. In a brick grapple, the combination with a vertical frame provided with a series of parallel arms projecting horizontally, of bars movably connected with the said arms, and means constructed and arranged to move the said bars laterally edgewise causing the edges of the bars to project beyond the sides of the arms.

3. In a brick grapple, the combination with a vertical frame provided with a series of parallel arms projecting horizontally, of bars arranged upon the said arms, means constructed and arranged to move the said bars laterally edgewise causing the edges of the bars to project beyond the sides of said arms, and spacing bars arranged above said edgewise-movable bars.

4. In a brick grapple, the combination with arms, of bars movable lengthwise with respect to said arms, the said arms being constructed and arranged to support and guide said bars, bars movable edgewise with respect to said arms, spacing cover bars, means constructed and arranged to reciprocate the said lengthwise-movable bars and mutually-engaging devices whereby the movement of the said lengthwise-movable bars actuates the said edgewise-movable bars, causing the edges of the bars to project beyond the arms.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY WEBER.

Witnesses:

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