

No. 801,043.

PATENTED OCT. 3, 1905.

E. VON DER OSTEN.  
BRICK PRESS.

APPLICATION FILED APR. 11, 1905.

2 SHEETS—SHEET 1.

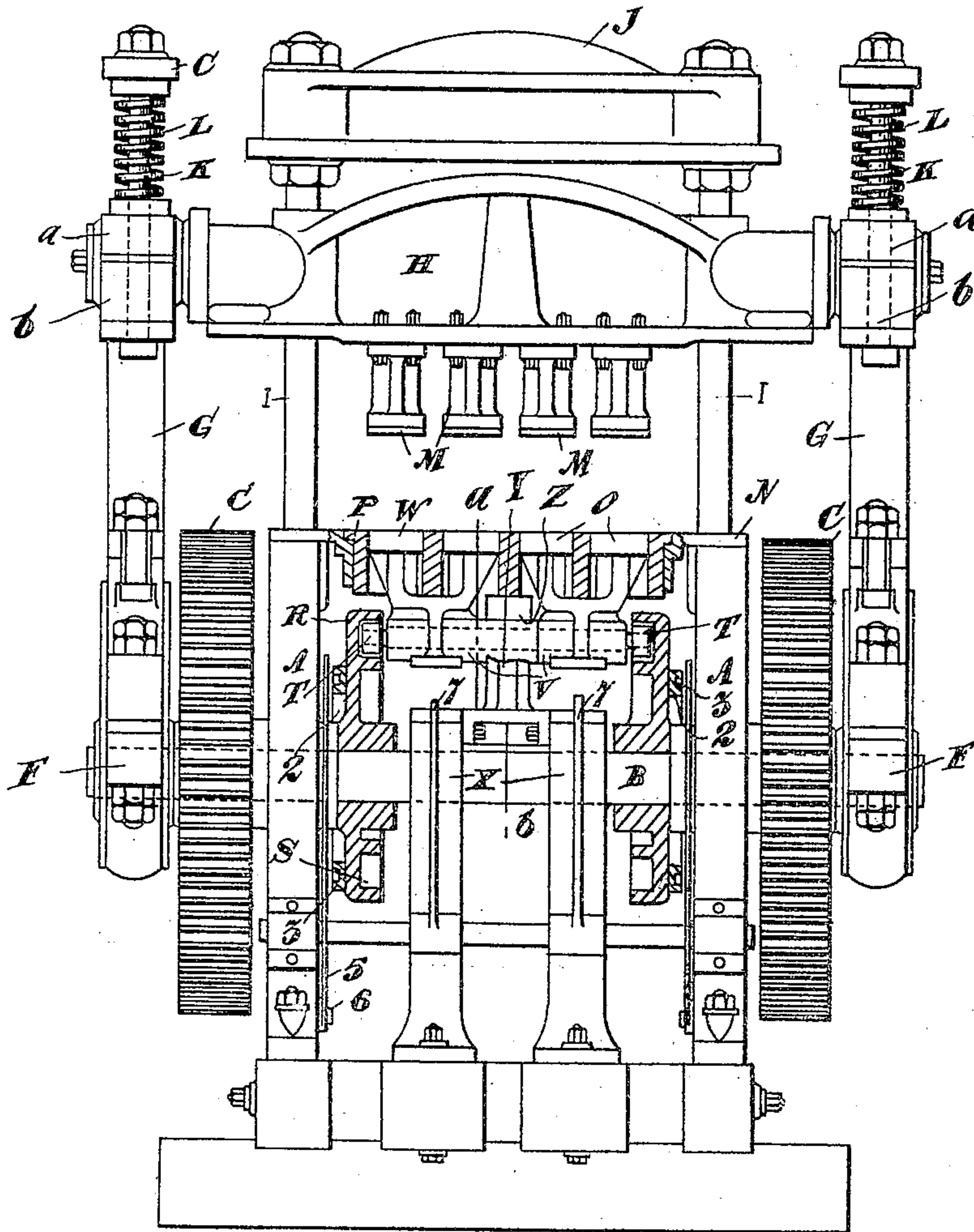


Fig. 1.

Witnesses.

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L. S. Sharpe.

Inventor

E. von der Osten  
by Egerton R. Case,  
Atty.

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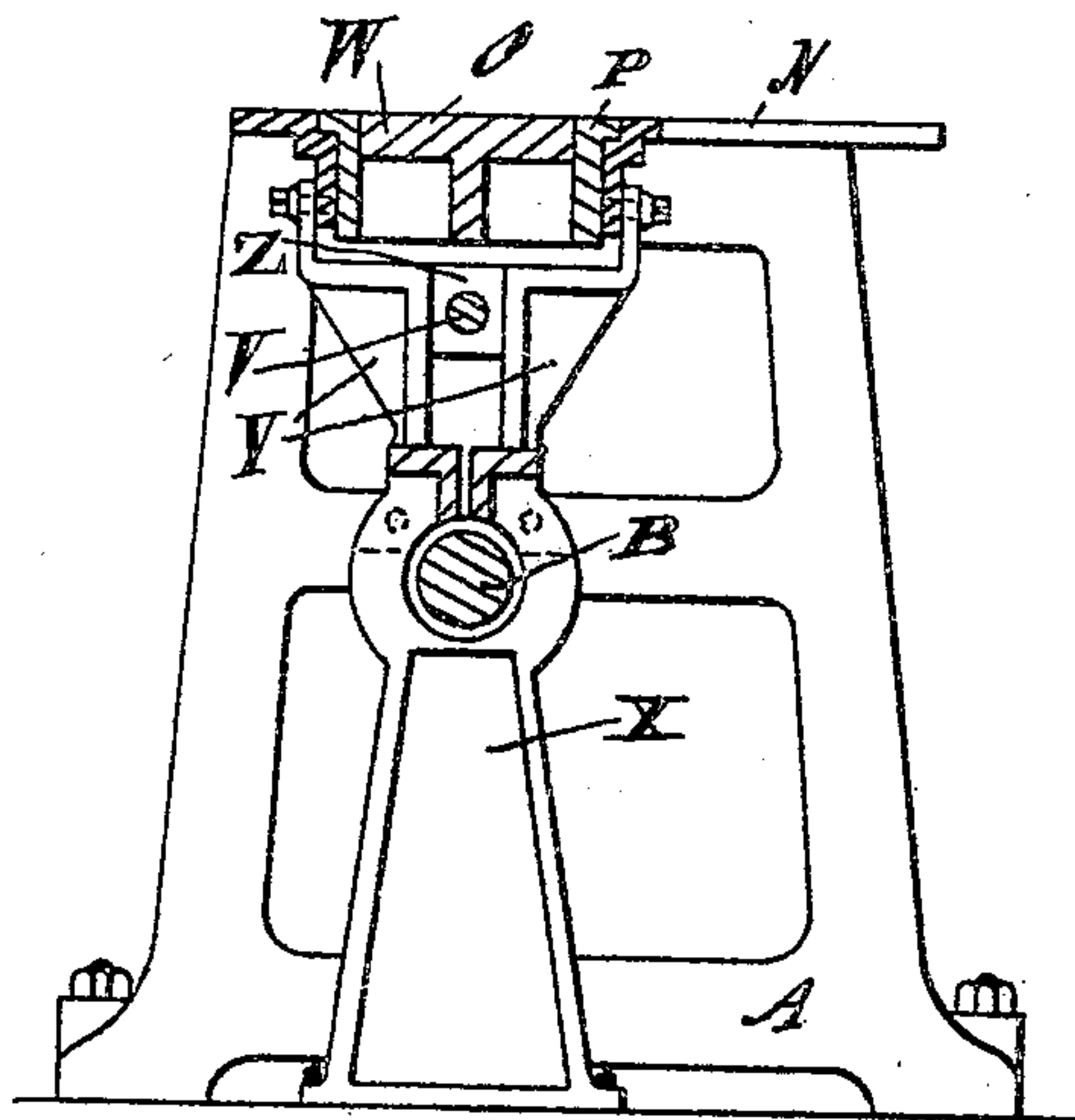


Fig. 2.

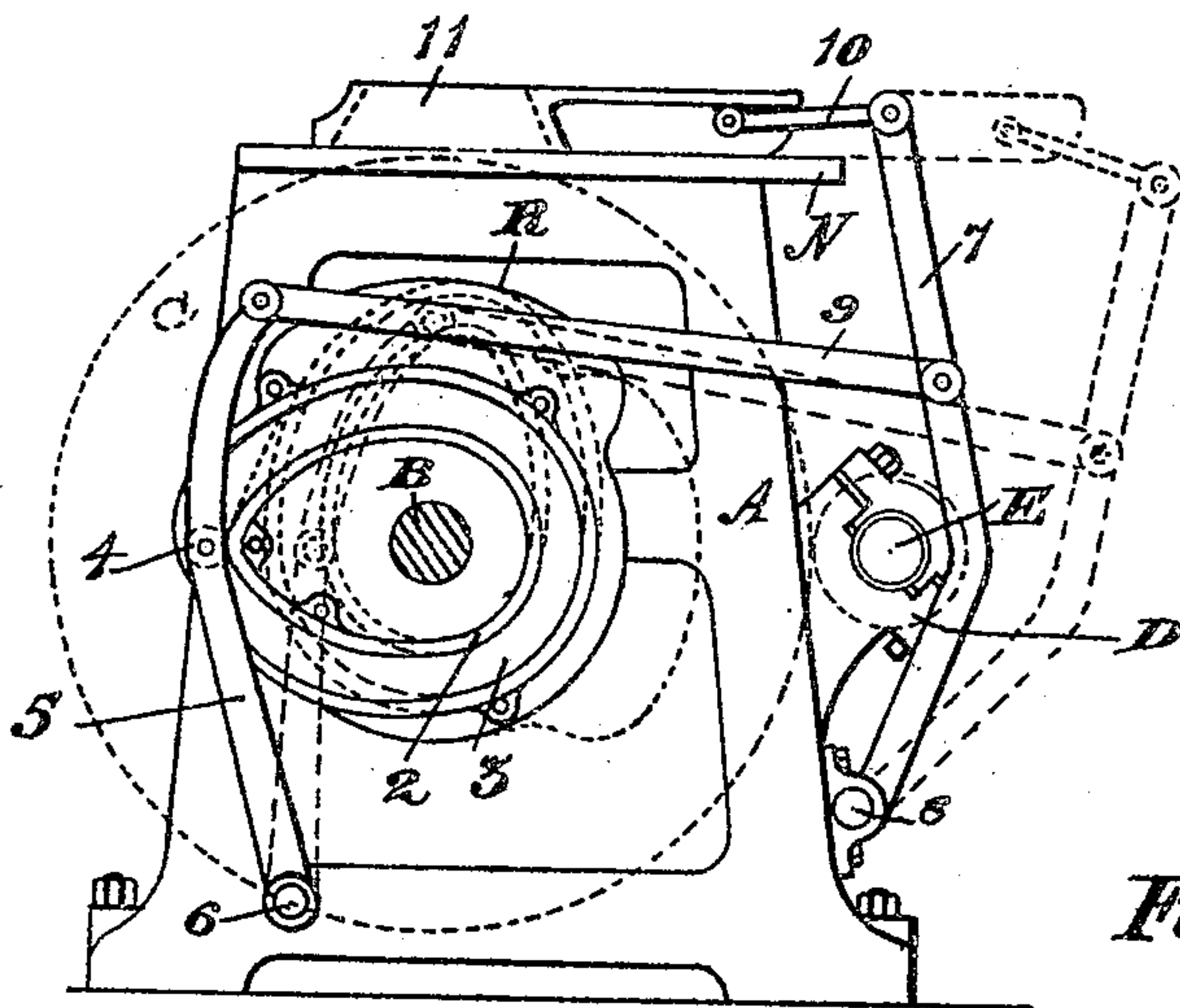


Fig. 3.

Witnesses.

L. L. Sharpe  
A. M. O'Brien

Inventor:

E. von der Osten,  
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# UNITED STATES PATENT OFFICE.

EMILE VON DER OSTEN, OF TORONTO, CANADA, ASSIGNOR TO WILLIAM BEITH, OF TORONTO, CANADA.

## BRICK-PRESS.

No. 801,043.

Specification of Letters Patent.

Patented Oct. 3, 1905.

Application filed April 11, 1905. Serial No. 254,999.

*To all whom it may concern:*

Be it known that I, EMILE VON DER OSTEN, consulting engineer, residing in the city of Toronto, in the county of York and Province of Ontario, Canada, have invented certain new and useful Improvements in Brick-Presses, of which the following is a specification.

My invention relates to improvements in brick-presses; and one object of my invention is to entirely relieve the operating means for the lower plungers from all pressure during the filling of the molds and the compressing of the bricks.

Another object is to provide a simple yet positive means for filling the molds and removing the compressed brick from the top of the lower plungers.

A still further object of my invention is to provide a compact and simple machine.

The invention consists, essentially, of two operating-cams mounted on the main shaft and provided with cam-grooves in which operate the ends of a bar on which the lower plungers are mounted, means for keeping said lower plungers in alinement with the molds, and means independent of the machine-frame and extending above the main shaft and between said cams upon which said lower plungers rest during the filling of the molds and the compressing of the bricks, so as to entirely relieve said cams of all strain or pressure during these periods.

I show the preferred form of machine-frame and operating parts for same; but it must be distinctly understood that I do not confine myself to using my improvements in any particular construction of brick-press.

Figure 1 is a side elevation of my machine, parts being in section. Fig. 2 is a vertical section on the line *a b*, Fig. 1; and Fig. 3 is a side elevation of part of the machine, showing the means for filling the molds and removing the compressed bricks from the top of the lower plungers.

In the drawings like characters of reference indicate corresponding parts in each figure.

A represents the standards of the machine-frame and are secured to any suitable foundation. Suitably journaled in said standards is the main shaft B, on which is secured the gear-wheels C in the position shown. By means of the pinion D meshing with one of the gear-wheels C and the drive-shaft E the machine is operated. Secured to each end of the

main shaft B are eccentrics F, which are connected by the pitmen G to the end of the cross-head H, which has vertical movement on the uprights I, secured to the machine-frame. The upper ends of the uprights I are braced together by a cross-piece J. If desired, I may make the bearing ends of the pitmen G on the cross-head H of upper and lower parts *a* and *b* and pass down therethrough and on each side of the ends of the cross-head H the rods K, the upper ends of which extend above the upper parts *a*. Surrounding said upper ends of said rods and resting upon the upper ends *a* and between the plates *c*, suitably held on said rods, are compensating springs L. I use these compensating springs so as to relieve the molds of any undue pressure, so as to prevent them from bursting. It will be understood that when the upper plungers descend and in case they meet with more than the usual resistance within said molds, the upper bearing ends *a* of the pitmen G will rise up sufficient to prevent undue strain within the molds. When this undue strain is relieved, of course the springs L force the upper parts *a* back to normal position. I of course claim nothing new in reference to these parts.

As will be seen from Fig. 1, I suitably secure a plurality of upper plungers M to the under side of the cross-head H. Formed in the table N of the machine and in alinement with the upper plungers M are the molds O. These molds may be made integral with said table or, as shown, constructed in a separate piece P, which may be held in any suitable manner in said table. Secured on the main shaft B and between the standards A are the operating-cams R for the lower plungers. Each of these operating-cams is provided with a side cam-groove S, in which operate the friction-rollers T, suitably held on the bar U, which passes through the lower parts V of the lower plungers W. In the position shown in Fig. 1 the upper plungers M are moved to the limit of their upward movement and the lower plungers W moved by the cams R to the limit of their upward movement, thus elevating the compressed brick to the top of the table N, and are held there a sufficient length of time to enable the means hereinafter described or any other suitable means that I may wish to use to remove the bricks from off said plungers. As soon as the bricks have been removed the cams R lower the bar U, and con-



sequently the lower plungers W, until their lower portions rest upon the top of the pedestals X. The said lower plungers always move within said molds and form the bottoms thereof. While said lower plungers rest upon said pedestals the molds are filled by any suitable means (the preferred form of which I shall hereinafter describe) and the upper plungers are depressed to compress the bricks. After this operation they are then moved upward out of the way and the cams R elevate the lower plungers W to the position shown in Fig. 1, so that the manufactured bricks may be removed from the machine. As the cam-grooves S are concentric to the main shaft B during the period in which the lower plungers rest upon the pedestals, it will be understood that no strain nor pressure will be exerted upon said cams, but that same will pass down through said lower plungers and into the pedestals. These pedestals are suitably secured to the foundation of the machine. In my preferred form of construction the main shaft B passes through said pedestals, as shown in Fig. 2. As will be seen from Fig. 1, the pedestals X are situated between the cams R and extend above the main shaft B.

As will be clearly seen from Fig. 1, the bricks will be manufactured in a row of four, so that when they are removed from the machine they will not abut against each other. In order to simplify the construction of the machine, I construct the lower plungers W in pairs of two, as will be seen from Fig. 1. In order to keep these lower plungers in alinement with the molds, I provide the following preferred means: Bolted at their lower portions to the top of the pedestals X and at their upper portions to the side of the table N are the guides Y, between which operates the block Z, held on the bar U. It will be understood that during the up-and-down movement of the lower plungers W the block Z operates between said guides and keeps said lower plungers in alinement with said molds. I do not confine myself to the particular means shown for maintaining said lower plungers in alinement with said molds.

I shall now describe my preferred means for filling the molds and removing the compressed bricks from off the lower plungers. Suitably secured on the outside of the cams R are cams 2, which are provided with cam-grooves 3, in which operate the friction-rollers 4 of the arms 5, suitably pivoted at their lower ends 6 to the machine-frame. By means of the cams 2 and the arms 5, and the links 9 connecting the upper ends of said arms 5 to the arms 7, secured at their lower ends to the rock-shaft 8, suitably held in bearings in the machine-frame, the said arms 7 are moved into the position shown in Fig. 3, and by means of the swinging connections 10 between top of same and the filling-box 11 the said filling-box is moved into the position shown

in Fig. 3, so as to move the compressed bricks from the top of the lower plungers W while they are held in the position shown in Fig. 1. As the filling-box 11 holds the material, the molds are of course filled, and during the further rotation of the cams 2 and through the means before described the filling-box 11 is moved back to normal position (shown in dotted lines) and is refilled by any suitable means. (Not shown.)

I do not confine myself to the exact construction shown and described, as changes may be made therein without departing from the spirit of my invention.

What I claim as my invention is—

1. In a machine of the class described, the combination with the machine-frame; the main shaft mounted therein; cams keyed on said main shaft and within said machine-frame and provided with cam-grooves on their inner sides; the table of the machine provided with molds; a plurality of lower plungers operating therein and above said main shaft; a bar passing through the lower portions of said lower plungers, and friction-rollers on the ends of said bar and operating in said cam-grooves, of a pedestal independent of the machine-frame and extending above said main shaft and between said cams, upon which said lower plungers rest during the filling of the molds and the compression of the bricks, thus entirely relieving said cams of all strain or pressure during these periods.

2. In a machine of the class described, the combination with the machine-frame; the main shaft mounted therein; cams keyed on said main shaft and within said machine-frame and provided with cam-grooves on their inner sides; the table of the machine provided with molds; a plurality of lower plungers operating therein and above said main shaft; a bar passing through the lower portions of said lower plungers; and friction-rollers on the ends of said bar and operating in said cam-grooves; of a pedestal independent of the machine-frame and extending above said main shaft and between said cams, upon which said lower plungers rest during the filling of the molds and the compression of the bricks, thus entirely relieving said cams of all strain or pressure during these periods; guides secured at their lower ends to the top of said pedestal and at their upper ends to said table, and a block, mounted on said bar, operating between said guides so as to keep said lower plungers in alinement with said molds.

3. In a machine of the class described, the combination with the machine-frame; the main shaft mounted therein; the gear-wheels keyed to said main shaft and without said machine-frame; cams keyed on said main shaft and within said machine-frame and provided with cam-grooves on their inner sides; the table of the machine provided with molds; a plurality of lower plungers operating there-



in and above said main shaft; a bar passing  
through the lower portions of said lower  
plungers; friction-rollers on the ends of said  
bar and operating in said cam-grooves; up-  
5 rights secured to said machine-frame; a cross-  
head having movement thereon; the pitmen  
depending from said cross-head and eccentric-  
ally connected to said gear-wheels, and a plu-  
rality of upper plungers secured to the under  
10 side of said cross-head and above said main  
shaft and designed to operate within the  
molds in said table, of a pedestal independent  
of the machine-frame and extending above

said main shaft and between said cams, upon  
which said lower plungers rest during the 15  
filling of the molds and the compression of  
the bricks, thus entirely relieving said cams  
of all strain or pressure during these periods.

In testimony whereof I have signed my name  
to this specification in the presence of two sub- 20  
scribing witnesses.

EMILE VON DER OSTEN.

Witnesses:

EGERTON R. CASE,  
L. G. SHARPE.