March 16, 1926. 1,577,347

C. F. NEUMANN

GRASPING DEVICE FOR LOADING OR PILING BRICKS OR THE LIKE

Filed June 27, 1925 3 Sheets-Sheet 1

Fig. 1.

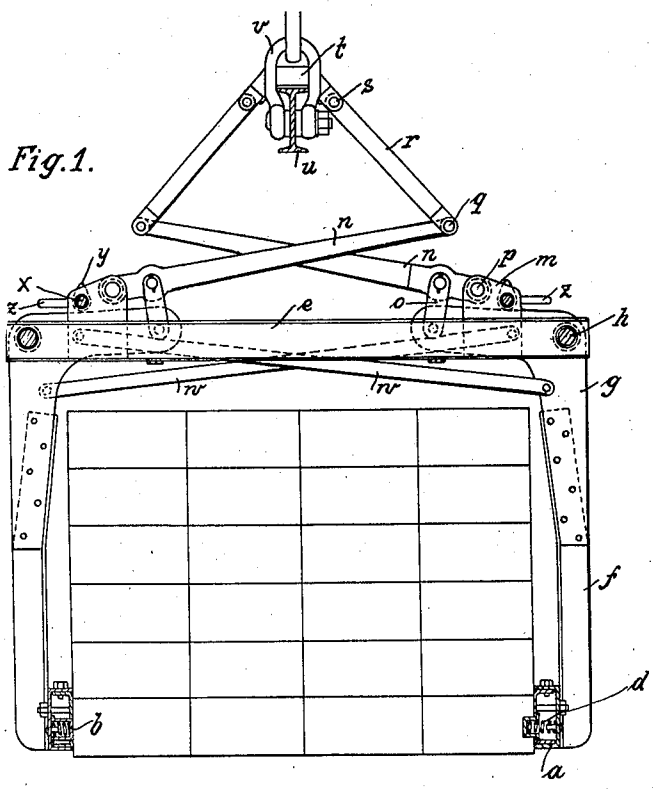
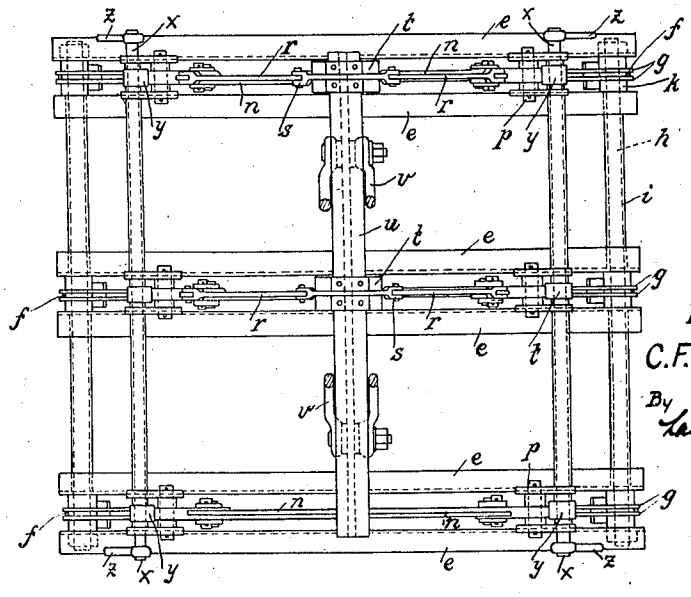


Fig. 2.



Inventor:
C.F. Neumann
By Langner, Parry, Card & Langner
Attys

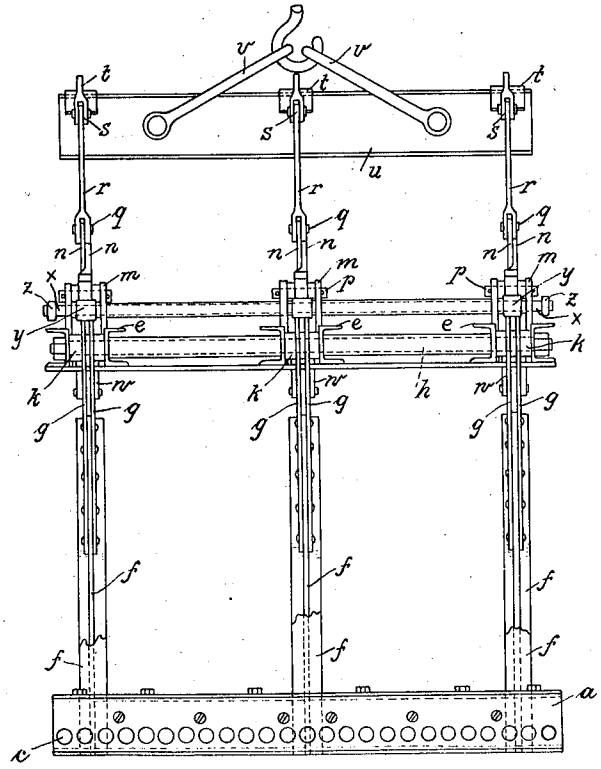
March 16, 1926. 1,577,347

C. F. NEUMANN

GRASPING DEVICE FOR LOADING OR PILING BRICKS OR THE LIKE

Filed June 27, 1925 3 Sheets-Sheet 2

Fig. 3.



Inventor:
C. F. Neumann

By
Langner, Parry, Card & Langner

Attys

March 16, 1926. 1,577,347

C. F. NEUMANN

GRASPING DEVICE FOR LOADING OR PILING BRICKS OR THE LIKE

Filed June 27, 1925 3 Sheets-Sheet 3

Fig. 4.

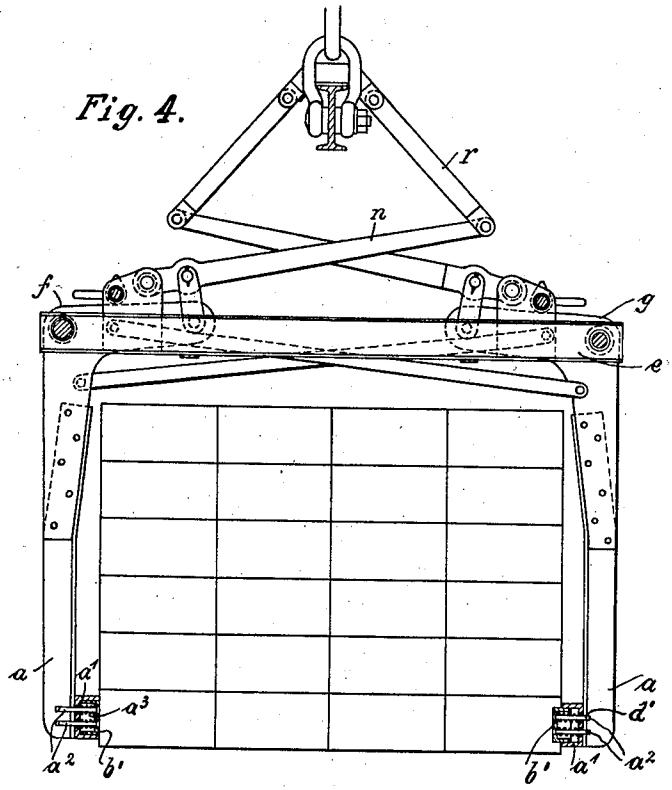


Fig. 5.

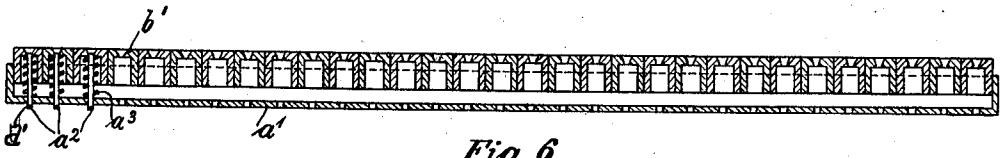
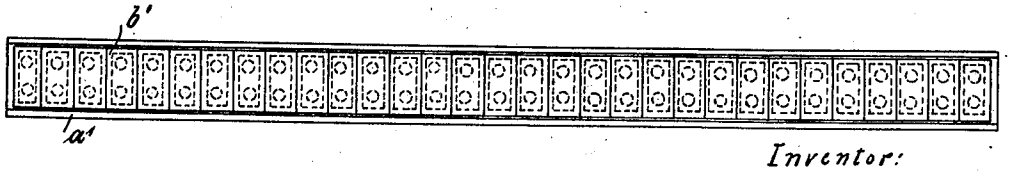


Fig. 6.



Inventor:
C.F. Neumann

By
Langner, Parry, Card & Langner

Attys

Patented Mar. 16, 1926. 1,577,347

UNITED STATES PATENT OFFICE.

CARL FRANZ NEUMANN, OF GEESTHACHT, NEAR HAMBURG, GERMANY.

GRASPING DEVICE FOR LOADING OR PILING BRICKS OR THE LIKE.

Application filed June 27, 1925. Serial No. 40,047.

To all whom it may concern:

Be it known that I, CARL FRANZ NEUMANN, a citizen of Germany, residing at Geesthacht, near Hamburg, Germany, have invented certain new and useful Improvements in a Grasping Device for Loading or Piling Bricks or the like, of which the following is a specification.

Grasping devices for loading or piling bricks and similar articles are known, by the aid of which complete piles of bricks or other stones are grasped as a unit, raised and placed at any desired place. These devices consisted of complete frames, on which shafts provided with pressure buttons were journaled parallel to one another, and which were provided with cranks which at the end were connected with suspension bars, which when a pull was exerted, turned the cranks and thus also the said shafts. The said buttons, which were arranged eccentrically on the shafts, grasped the pile of stones and carried it, when raised upwardly. This device has proved to be well adapted for its purpose, when it was not important to save room and when the loaded piles could be treated in rooms, which were designed to correspond to the dimensions of the piles, or where it was convenient to have intermediate spaces between the piles for the purpose of allowing a free circulation of air intermediate or about the piles. However, it is frequently necessary to lodge the piles close to one another, and this was not possible with the devices known heretofore owing to the size of the frame embracing the piles.

To avoid this inconvenience, according to the present invention, a device is designed consisting essentially of a grasping implement operating similarly to a grasping tongue comprising bar shaped gripping jaws. The tongue-like grasping device consists preferably of levers rotatably journaled on cross beams and provided at their ends with gripping jaws, the upper shanks of these levers being provided with spanning means in such a manner, that by giving a pull the gripping jaws are pressed firmly against the bricks. This spanning device preferably consists of a system of levers hung to a crane or pulley block or the like. Any other kind of spanning device can be used, as for instance a screw spindle or the like by the operation of which the levers carrying the jaws and forming the tongue are moved in the desired manner. Means may be provided for equalizing the pressure, when different sized bricks are to be piled or loaded. In case of lime-sand stones such equalizing devices are not such an indispensable necessity, but when common bricks are to be piled the differences in the length are so great, that the gripping jaws do not engage all the rows of stones with equal power. In order to allow for this requirement the gripping jaws are provided at their gripping faces with yielding equalizing buttons arranged beside one another, so that in pulling the grasping device upwardly the equalizing buttons engage also those rows of stones in which there are some of lesser length. Particular provision may be made to compel the levers of each pair of toggle bars to move equally, so that in oscillating one of the levers the corresponding counter lever will also be compelled to move to the same degree.

In the accompanying drawings,

Fig. 1 is an end view of the grasping device shown partly in section,

Fig. 2 is a plan,

Fig. 3 is a side view,

Fig. 4 is a view similar to Fig. 1, of a modification,

Fig. 5 is a longitudinal horizontal section of the gripping means, and

Fig. 6 an elevation of such gripping means as used in the modified construction shown in Fig. 4.

In the construction shown in Figs. 1 to 3 the jaws *a* in which the equalizing buttons *b* are yieldingly mounted, consist of two channel irons telescoping into one another, of which the inner one is provided with a series of perforations through which the buttons *b* project outwardly, each one having a flange at the inner end bearing against the web of the channel under the action of a spring *d*. The jaws *a* are attached to bell crank levers *f*, *g*, which are pivoted to cross beams *e*, and which consist of angular plates *g* riveted to T-irons *f*, which are connected with the jaws *a* by rivets or the like. The pivoting of the bell crank lever *f*, *g* to the channels *e* is effected by longitudinally rods *h* surrounded by distance tubes *i* to keep the different parts of the device at the required distance from one another. Beside the distance tubes *i* distance rings *k* are provided intermediate the two channels of each pair of beams and of the angular plates *g*

so that the bell crank levers are able to freely oscillate on the rods h. On the beams e moreover brackets m are mounted, to which levers n are pivotally attached, which at a short distance from the pivot pin are connected with the bell crank levers f, g by rods o, and at the outermost ends the levers n are connected to arms r, which are pivoted by pins s to a connecting pin t. The latter can be carried by a beam u, which by a shackle v may be suspended from any known crane. Evidently when the shackle is raised the rods r, n, o cause a closing up of the pair of bell crank levers f, g forming a tongue, thus grasping and holding firmly the complete pile of bricks, whereby the equalizing buttons b secure a firm pressure on all stones of the lowest layer of the pile. In further pulling the device upward the pile of bricks will be raised.

To ensure that both bell crank levers f, g of the pair of bell crank levers move uniformly and symmetrically the horizontal arm of each bell crank lever is connected with the vertical arm of the opposite bell crank lever by a tension rod w.

In the above named brackets m shafts x are rotatably journaled having locking cams y and handles z, by the operation of which the cams y can be so rotated, as to press against the horizontal arms of the bell crank levers f, g, thus preventing automatical closure of the tongue, when the device is moved away after loading a pile of bricks.

The above described device engages the pile only on two sides, while the other two sides of the pile are completely unobstructed, so as to enable a series of piles to be deposited close to one another without intermediate spaces. This is of particular importance for loading vessels with bricks.

In the construction shown in Figs. 4 to 6 care is taken, that between the equalizing buttons there are no spaces, in order to ensure that every brick in the bottom layer is grasped.

With this object in view the equalizing buttons are not guided in openings of the gripping jaw, but they are guided against one another which is made possible by having opposite parallel sides placed close to one another in the channels a'. These equalizing buttons b' are held in position by bolts a^2, which project through openings in the beam a'. Helical springs a^3 embrace these bolts and bear at one end against the beam a' and at the other end against the button b'. Pins d' at the ends of the bolts a^2 limit the outward movement of the buttons by the pressure of the springs a^3. Preferably each equalizing button has two spring pressed bolts a^2 so as to prevent jamming or tilting of the buttons.

By the fact that the equalizing buttons in the construction shown in Figs. 4 to 6 are arranged close to one another, the brick will be engaged with perfect safety without any fear that any bricks will jam or tilt and thus possibly cause breaking off of parts of the bricks.

I claim:

1. A gripping device for loading piles of bricks and having tongue like gripping elements, comprising, oppositely arranged bell crank levers with vertically positioned arms, beams mounted on the lower ends of the vertical arms of the bell crank levers for gripping the bottom layer of a pile of brick from opposite sides, and rods connecting the vertical arm of each bell crank lever with the horizontal arm of the other bell crank lever.

2. A gripping device for loading piles of bricks and having tongue like gripping elements, comprising, oppositely arranged bell crank levers with vertically positioned arms, beams mounted on the lower ends of the vertical arms of the bell crank levers for gripping the bottom layer of a pile of brick from opposite sides, rods connecting the vertical arm of each bell crank lever with the horizontal arm of the other bell crank lever, and equalizing buttons on the beams having side faces which are parallel to each other for guiding the buttons against each other.

3. A gripping device for loading piles of bricks and having tongue like gripping elements, comprising, oppositely arranged bell crank levers with vertically positioned arms, beams mounted on the lower ends of the vertical arms of the bell crank levers for gripping the bottom layer of a pile of brick from opposite sides, rods connecting the vertical arm of each bell crank lever with the horizontal arm of the other bell crank lever, and equalizing buttons on the beams having side faces which are parallel to each other for guiding the buttons against each other, the equalizing buttons also having parallel top and bottom faces and being arranged to be guided within the beams.

In testimony whereof I have signed my name to this specification.

CARL FRANZ NEUMANN.