H. CASE & D. A. MARSHALL.

SCREEN PLATE LOCK.

APPLICATION FILED APR. 9, 1910.

964,753. Patented July 19, 1910.

2 SHEETS—SHEET 1.

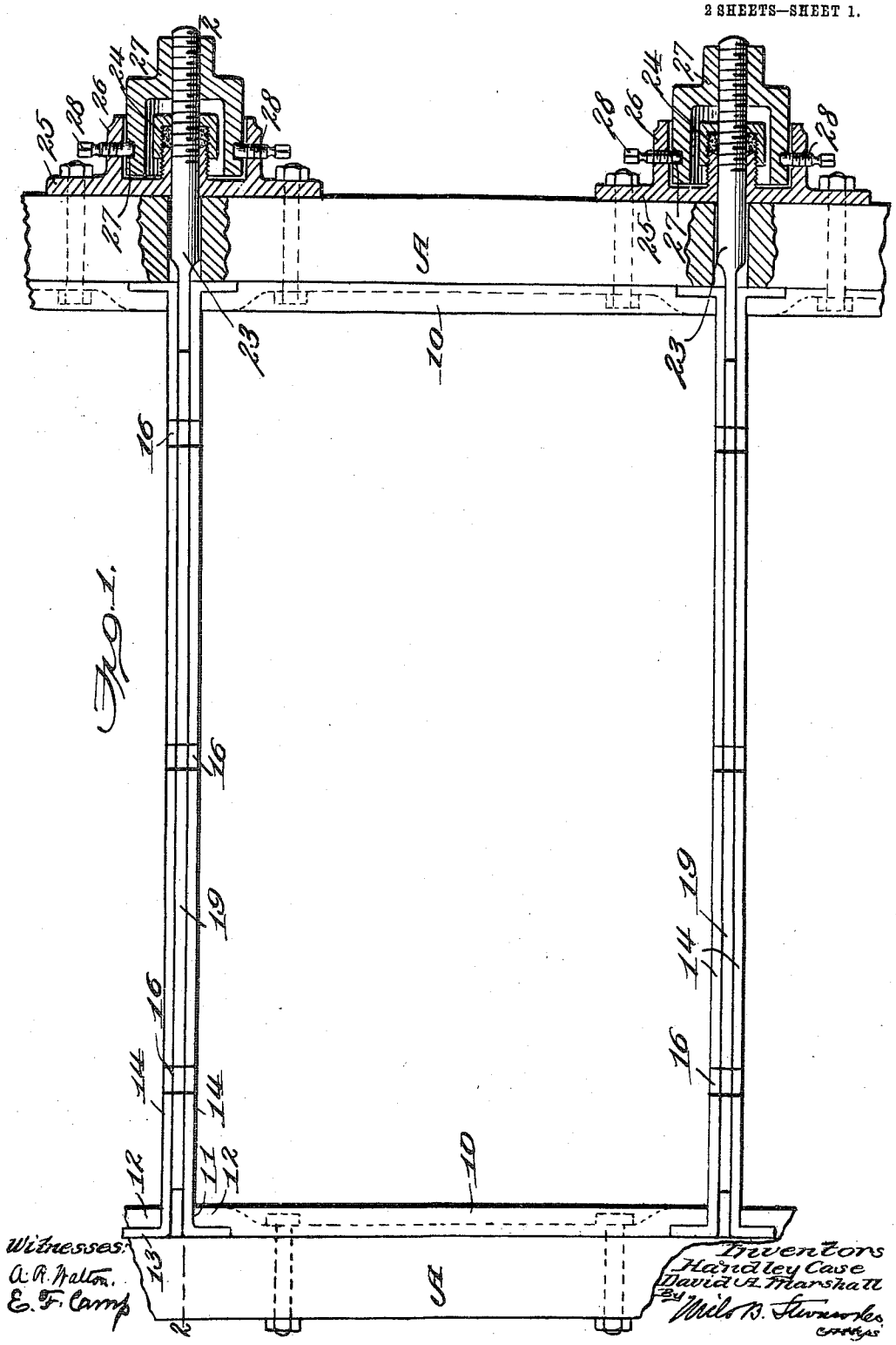

Fig. 1.

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Attys

THE NORRIS PETERS CO., WASHINGTON, D. C.

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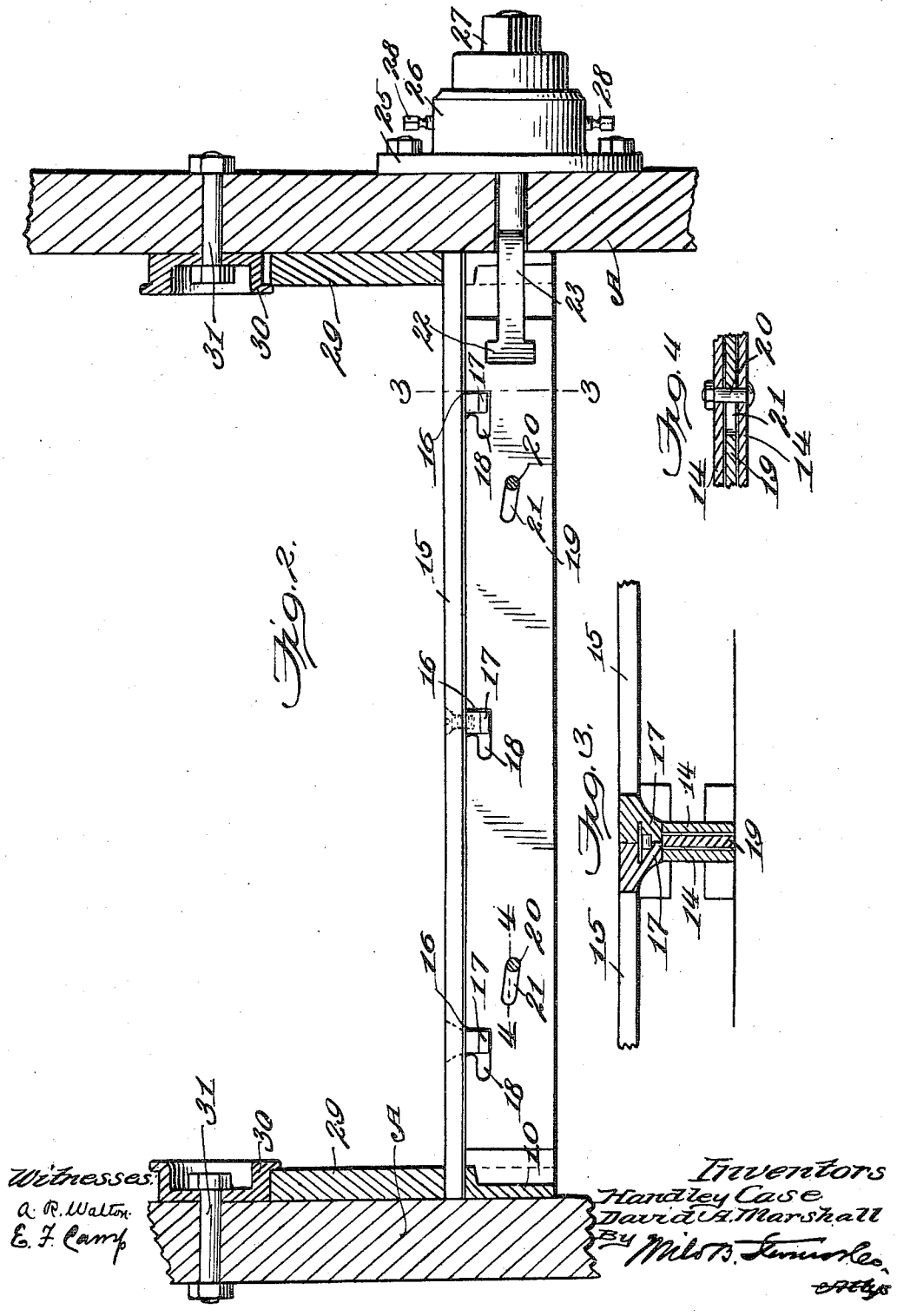

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

HANDLEY CASE AND DAVID A. MARSHALL, OF DEXTER, NEW YORK.

SCREEN-PLATE LOCK.

964,753. Specification of Letters Patent. Patented July 19, 1910.

Application filed April 9, 1910. Serial No. 554,360.

To all whom it may concern:

Be it known that we, HANDLEY CASE and DAVID A. MARSHALL, citizens of the United States, residing at Dexter, in the county of Jefferson and State of New York, have invented certain new and useful Improvements in Screen-Plate Locks, of which the following is a specification.

Our present invention relates to pulp-screens used in the paper-making industry, our object being to provide a simple strong and positive locking apparatus for securing the screen plates within a screen frame in such manner that they may be readily removed for the purpose of substitution.

To this end, our invention resides in the features of construction and arrangement shown in the accompanying drawing, in which,

Figure 1 is a plan view of a portion of a screen frame with its ends broken away, and with a screen plate removed. Fig. 2 is a transverse section therethrough on line 2—2 of Fig. 1. Fig. 3 is a detail section on line 3—3 of Fig. 2, and, Fig. 4 is another detail section on line 4—4 of Fig. 2.

The usual screen frame or box is made up of vertical longitudinal side walls shown at A in the drawings, and similar end walls (not shown).

In accordance with our invention, we provide a plurality of cleats 10 extending in line along the inner surfaces of the side wall A adjacent their lower edges, the contiguous ends of said cleats being spaced apart and provided with recesses 11 next to said walls to receive the projections 12 at the extremities of lateral end flanges 13 of the spaced horizontal guide beams 14, whereby when said cleats are bolted through the side walls, these guide beams will be rigidly secured. As shown, these guide beams 14 are arranged in pairs which are equi-distantly spaced so that the meeting edges of the several screen plates 15 arranged horizontally, are located over a pair thereof, and they are provided with transversely alined slots or cut out portions 16 into which project downwardly extending angular and contacting lugs 17, from the said screen plates 15 adjacent their said meeting edges, these lugs also projecting within the vertical portions of bayonet slots 18 in the upper edge of a locking plate 19 disposed between each pair of said guide beams 14. The guide beams also have transversely alined openings through which extend bolts 20 projecting through longitudinal slots 21 in locking plates 19 whereby longitudinal movement of the latter is permitted in order to cause locking engagement of the screen plate lugs 17 in the inner portions of the bayonet slots 18, said locking plates each having a T shaped slot in one end to receive the similarly shaped head 22 of a bolt or operating rod 23 extending exteriorly through the adjacent side wall A and through a stuffing box 24 in the center of a stay-plate 25 bolted upon the outer surface of said wall and having an annular outstanding flange 26 surrounding said stuffing box in spaced relation. The outer portion of the rod or bolt 23 is threaded centrally through a boss-nut 27, the outer portion of which is squared and the inner portion of which rests against the stay plate 25 inside of its flange 26 whereby set-nuts 28 threaded radially through flange 26 may engage in radial recesses in the wall of nut 27 and lock the same in position. Thus to secure the screen plates in the frame, they are placed so that the meeting edges of adjacent pairs are above the center of a locking plate 19 between a pair of guide beams 14, with their lugs 17 extending downwardly as described. The corresponding nut 27 is then rotated in the proper direction, causing rod or bolt 23 to move longitudinally, outwardly and imparting a similar movement to the locking plate. After the screen plates have been thus secured, cleats 29 are placed with their lower longitudinal edges thereon and arranged against the inner surfaces of the walls of the frame and locked thereto and thereon by means of eccentric buttons 30 on bolts 31 extending through these walls.

As seen, particularly in Fig. 3, the lugs 17 of the screen plates are slightly cut away immediately adjacent said plates so as to provide a space through which a layer of rubber or other similar material may be introduced and adapted to form a cushion between the locking plates and guide members, and the screen plates.

We claim:

1. The combination with a screen frame comprising vertical walls, of guide beams arranged in pairs between certain of said walls and having alined slots, bolts extending through each pair of said beams, a locking plate longitudinally slidable between each pair of said beams, having slots to receive said bolts and bayonet slots alined with

the beam slots, screen plates having their meeting edges alined above the locking plates and provided with depending lugs having angular abutting ends projecting within the alined beam and locking plate slots, and means to move said locking plates longitudinally to secure the screen plates.

2. The combination with a screen frame comprising vertical walls, and screen plates having depending lugs, of a locking plate longitudinally movable beneath said screen plates to engage and disengage the lugs thereof, stationary guides for said locking plate having end flanges against certain of the frame walls, provided with projections at their extremities, cleats secured to the said side walls below the screen plates, having end recesses to interlockingly receive said projections, cleats arranged above the screen plates and along said walls, and means to removably secure the latter cleats.

3. The combination with a screen frame comprising vertical walls, and screen plates having depending lugs, of a locking plate movable beneath said screen plates to engage and disengage said lugs thereof, guides for said locking plate, cleats connected to the walls beneath the edges of the screen plates and adapted to support the said guides, a cushion interposed between the screen plates and said guides and locking plate, a rod connected at its inner end to said locking plate and extending through one of the frame walls and threaded upon its outer end, a rotatable nut upon said threaded rod end, and means to prevent lateral movement of said nut in one direction.

In testimony whereof we affix our signatures in presence of two witnesses.

HANDLEY CASE.
DAVID A. MARSHALL.

Witnesses:
WILLIAM AT LEE,
FRANK B. CLARKE.