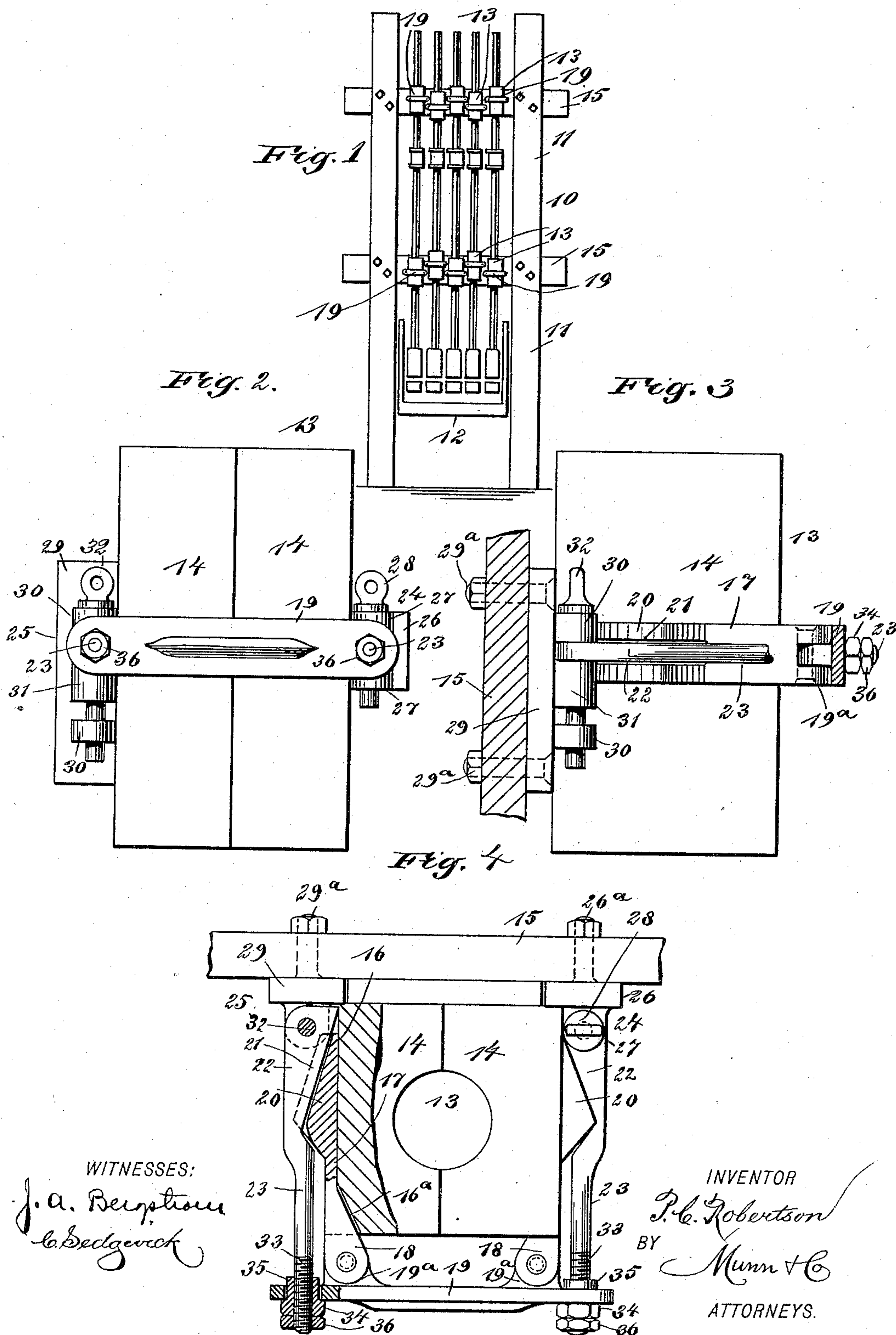


(No Model.)

P. C. ROBERTSON.
GUIDE HOLDER FOR STAMP MILLS.

No. 488,453.

Patented Dec. 20, 1892.



WITNESSES:

J. A. Beuphron
C. Bedgewick

INVENTOR

P. C. Robertson

BY

Munn & Co.
ATTORNEYS.

UNITED STATES PATENT OFFICE.

PETER C. ROBERTSON, OF PHILLIPSBURG, MONTANA.

GUIDE-HOLDER FOR STAMP-MILLS.

SPECIFICATION forming part of Letters Patent No. 483,453, dated December 20, 1892.

Application filed August 3, 1892. Serial No. 442,009. (No model.)

To all whom it may concern:

Be it known that I, PETER C. ROBERTSON, of Phillipsburg, in the county of Deer Lodge and State of Montana, have invented a new and Improved Guide-Holder for Stamp-Mills, of which the following is a full, clear, and exact description.

My invention relates to improvements in guides and holders such as are used to guide the vertically reciprocating stamps of a stamp mill which is used for crushing ore. These guides or boxes are secured to the rails or other convenient portions of the frame of the battery of stamps, and they serve to guide the stamps so that they will work properly.

The object of my invention is to construct a guide and holder so that a series of the guides and holders may be conveniently applied to a series of stamps, which will hold the same so that they will reciprocate easily and without excessive friction, which are arranged so that any guide and its holder may be easily removed when necessary, and which may be tightened so as to force the back portion of the guides or boxes together with the same pressure as the front portion of said parts. The last item mentioned is of special importance, as when the ordinary guide holders are tightened, they force the boxes or guides together in front, but permit them to gap behind, and consequently the wear on both guide and stamp is great.

To these ends, my invention consists in certain features of construction and combinations of parts, which will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a front elevation, showing in a general way the battery of stamps; Fig. 2 is an enlarged detail front elevation of one of the guides and its holder; Fig. 3 is a side elevation, partly in section, of the same; and Fig. 4 is a broken sectional plan of the guide and holder.

The stamps are of the usual kind, and are held to reciprocate vertically in a suitable frame 11 above a bed 12. Each stamp

is held to slide in a guide 13, which comprises two boxes 14, having a central bore to fit the stamp, as shown in Fig. 4, and these guides or boxes are carried by the rails 15 of the main frame 11. Each box 14 has on its outer side a horizontal groove 16, as best shown in Fig. 4, which groove is inclined inward near the front of the box, as shown at 16^a in the same figure, the object of this inclination being to enable the boxes to be crowded together as hereinafter described. These grooves 16 in the boxes 14, receive the keys 17 of a clamp which serves to lock the guide to the rails 15. The keys 17 have wedge-shaped front ends 18, which fit against the inclined walls 16^a of the groove 16, and these front ends of the keys are pivoted to lugs 19^a on the back side of a face plate 19, which extends across in front of the guide.

On the outer portions of the keys 17, and near their rear ends, are produced wedges or cams 20, the faces of which are horizontally and longitudinally grooved, as shown at 21, and the grooves receive corresponding but oppositely inclined wedges 22, which are produced on the clamping bolts 23. These bolts extend parallel with the keys 17, and they are pivotally connected with the rail 15, of the machine by keepers 24 and 25. The keeper 24 comprises a plate 26, and forwardly-projecting horizontal lugs 27, between which one of the bolts 23 is pivoted, the bolt being held in place by a pin 28, which extends downward through the lugs 27 and through the end of the bolt. The plate 26 is fastened to the rail 15 by suitable bolts 26^a. The keeper 25 comprises a plate 29, which is secured to the rail by bolts 29^a, and lugs 30 produced near the top and bottom of the plate, and a central heavier lug 31, arranged between the lugs 30. The inner end of one of the bolts is arranged between one of the lugs 30 and the lug 31, and held in place by a pin 32 extending through the lugs and bolt, as shown in Figs. 3 and 4.

In a battery there are usually five stamps, as shown in Fig. 1, although any number may be used, and the arrangement of the keepers just described is to enable the inside keeper 25 to serve the purpose of supporting two of

the bolts 23. In carrying out this arrangement, the keepers 24 are arranged on the outer sides of the series of guides, and all the other keepers will be like the keeper 25. This will make it necessary to use two keepers between a pair of guides, as the bolt 23 of one guide may be pivoted between the upper lug 30 and the lug 31, while the other guide bolt may be pivoted between the lug 31 and the lower lug 30. The outer ends of the bolts 23 are screw-threaded, as shown at 33, and project through holes in the ends of the face plate 19; the bolts are fastened to the face plate by nuts 34 and check nuts 36. The nuts 34 have shanks 35, which project through the holes in the face plate 19 and between the face plate and the thread of the bolts. This arrangement saves the bolts, as if the thread came in direct contact with the face plate, the jar of the battery would soon wear it away.

In attaching the guides and holders, the bolts 23 are secured to the rails 15, the boxes 14 are adjusted around the stamps, the keys 17 are pushed into the grooves of the boxes and the face plates 19 attached to the bolts 23. The nuts 34 and 36 are then tightened and the guides are thus securely locked in place. When the nuts on the bolts are tightened it causes the face plate 19 and keys 17 to be pushed backward, and the wedges 18, acting on the inclined wall 16^a, crowd the front portions of the boxes together, and at the same time the wedges 20 come in contact with the wedges 22, and the back portions of the boxes are forced together with the same power, and consequently the guides bear evenly upon the stamps and will last a long time. By having the keys held in grooves in the guides, and the bolts made to enter grooves in the keys, the guides are held in place vertically, as were it not for this or an equivalent arrangement, the friction of the stamps would displace them. After the guides and holders are once in place, any holder and guide may be conveniently removed by pulling out the necessary number of the pivot pins 28 and 32. It will be noticed that as the clamping bolts 23 are pivoted to the rails 15, the guides will have a very slight side movement which will prevent the stamps and guides from being unduly strained.

Having thus described my invention, I claim as new, and desire to secure by Letters Patent,—

1. The combination with the stamp guides, of clamps secured to an adjacent support and arranged to embrace the guides, and a wedge mechanism for forcing the front and rear por-

tions of the guides together by tightening the clamps, substantially as described.

2. The combination, with the guides having grooves in their sides, of bolts pivoted to an adjacent support and extending parallel with the sides of the guides, keys carried by the bolts and held in grooves in the guides, and a wedge mechanism for forcing the front and rear portions of the guides together by tightening the bolts, substantially as described.

3. The combination, with the guides having side grooves with inclined walls near the front of the guides, of keys held in the grooves, the keys having wedges near their rear ends and on their outer sides and wedges near their front ends to fit the inclined walls of the guide grooves, bolts pivoted to an adjacent support and having wedges to contact with the outer wedges on the keys, and face plates carried by the bolts and connected with the keys, substantially as described.

4. The combination of the frame of the machine, the separable guides held therein and provided on their outer sides with horizontal grooves having inclined walls near the front, the keys held to slide in the guide grooves, the said keys having wedges near their front ends to engage the walls of the grooves and exterior wedges near their rear ends, the face plates connecting the two keys, keepers secured to the machine frame adjacent to the guides, bolts pivoted in the keepers and adapted to extend through the face plate, the bolts having wedges near their pivoted ends to engage the exterior wedges of the keys, and nuts on the outer ends of the bolts, substantially as described.

5. The combination of the grooved guides, the movable keys held in the grooves of the guides and having grooved wedges on their outer sides, the clamping bolts pivoted adjacent to the guides and having wedges which enter the grooves of the key wedges, and a face plate connected with the keys and adjustable in and out on the bolts, substantially as described.

6. The combination of the guide fastening keys, the face plate connecting the keys, the clamping bolts held adjacent to the keys and projecting through holes in the face plate, and the nuts secured to the bolts and having shanks to enter holes in the face plate, substantially as described.

PETER C. ROBERTSON.

Witnesses:

SAMUEL BRAUND,
T. S. MCCONKEY.