

No. 671,588.

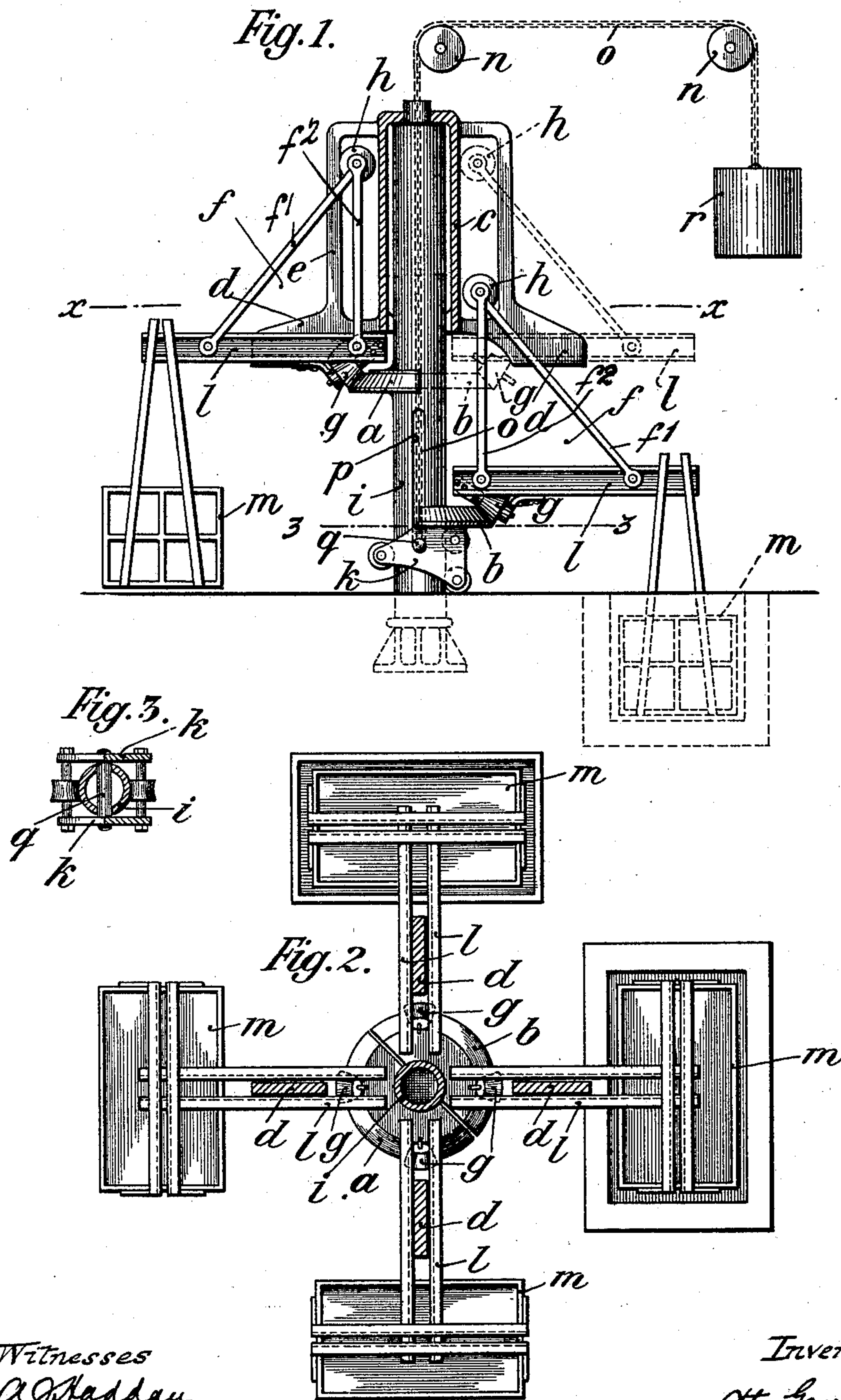
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O. GAUHE.

PICKLING MACHINE FOR SHEET METAL.

(Application filed July 17, 1900.)

(No Model.)



Witnesses  
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# UNITED STATES PATENT OFFICE.

OTTO GAUHE, OF OBERLAHNSTEIN, GERMANY.

## PICKLING-MACHINE FOR SHEET METAL.

SPECIFICATION forming part of Letters Patent No. 671,588, dated April 9, 1901.

Application filed July 17, 1900. Serial No. 23,931. (No model.)

*To all whom it may concern:*

Be it known that I, OTTO GAUHE, a subject of the Emperor of Germany, residing at Brückenstrasse No. 4<sup>a</sup>, Oberlahnstein-on-the-Rhine, in the Empire of Germany, have invented certain new and useful Improvements in Pickling-Machines for Sheet Metal or the Like, of which the following is a specification.

This invention relates to improvements in pickling-machines for sheet metal or the like.

In pickling-machines at present in use the rotary frame is provided with fixed arms from the ends of which the pickling-baskets are suspended, and it can only be raised and lowered as a whole in order to dip and raise the said baskets into and from the pickling-trough and the water-trough, so that the baskets to be emptied and those to be filled are also raised and lowered. This is a great disadvantage, because the baskets can only be emptied or filled when they are in their lowest resting position—that is to say, while the other two are in the troughs. The period during which this takes place is, however, limited and insufficient, because in order to pickle well and increase the output the process must be rendered as short as possible by using strong pickle. The present invention removes this disadvantage by providing an independent elevating and lowering device by means of which only those arms are raised or lowered which are above the troughs, and the other arms remain meanwhile at rest, while when the arms are raised the whole device can revolve like a rotary frame with fixed arms. By this means the time required for raising and lowering baskets is also utilized for filling and emptying the other baskets, and the filling and emptying of one set of baskets can be commenced and discontinued independently of the raising and lowering of the other set of baskets. Naturally in this device the arms of the rotary frame must be separate elements.

In the annexed drawings one form of the device is represented.

Figure 1 is a longitudinal section of the sheet-metal-pickling machine with the rotary frame, while Fig. 2 is a section thereof on the line  $x x$  in Fig. 1. Fig. 3 is a cross-section on line 3 3 of Fig. 1.

To the stationary hollow column  $i$  the part

$a$  of a horizontal circular race or track is fixed. The carriage  $k$  slides up and down the lower part of the said column and carries the part  $b$  of the said track, which is fixed to the carriage  $k$  in such a manner that when the latter is at its highest point the part  $b$  forms, with the part  $a$ , a complete circular track. The upper part of the column  $i$  carries upon a shoulder a rotary frame  $c$ , which does not rise or fall. At its lower end this frame  $c$  is provided with projections or arms  $d$  and above the latter with vertical rails  $e$ . The separate triangular carriers  $f$  consist of horizontal arms  $l$ , formed each of two parallel plates or bars, and the two bars  $f^1 f^2$ . These frames are each supported by a roller  $g$ , resting upon the track  $a b$ , and a second roller  $h$ , running against the rail  $e$ . When the said carriers  $f$  are in their highest position, the two plates of which each arm  $l$  thereof consists lie one on each side of the arms  $d$  of the revolving frame  $c$  in such a manner that the carriers  $f$  must follow the said frame  $c$  in its rotation and are firmly interconnected, so that the whole revolves like a frame with fixed arms, the rollers  $g$  running upon the track  $a b$ . If the carriage  $k$ , with the part  $b$  of the circular track, is lowered toward the foot of the column, the carriers  $f$ , resting upon the said part  $b$ , are thereby simultaneously lowered, and the arms  $l$  thereof in moving downward are disengaged from the arms  $d$ . The rollers  $h$  move downward along the rails  $e$ . The two carriers  $f$ , over the water-trough and the pickling-trough, respectively, rest upon the movable part  $b$  of the track, and when they are sufficiently lowered the baskets suspended therefrom dip into the liquids in the troughs. Meanwhile the other carriers upon the fixed part  $a$  of the track remain stationary, and the baskets suspended therefrom can be emptied or filled without hindrance. On the carriages  $k$  with the part  $b$  of the track being raised again the circular track is completed, the disengaged arms  $d$  enter between the arms  $l$  of the elevated carriers  $f$  from above, and the whole forms once more a rotary frame with fixed arms and can be caused to rotate.

The raising and lowering of the carriage  $k$  can be effected by various means—for in-



stance, by means of a chain *o*, passing over pulleys *n* and through the interior of the column *i*, one end of the said chain being attached to the cross-piece *q* of the carriage, moving in two slots *p*, provided opposite each other in the column *i*, and the other end of the chain carrying a counterweight *r*.

The two basket-carriers over the troughs move upward and downward under vertical guidance and are thus prevented from turning, so that in rising they always exactly meet together with their respective arms *d*.

I declare that what I claim is—

1. In a sheet-metal-pickling machine, the combination of a standard, a frame adapted to revolve thereon, carriers for the pickling-baskets vertically movable in said frame, a stationary part-circular track concentric with said standard for supporting said carriers in their higher position, a movable part-circular track concentric with said standard, and means for raising and lowering said movable part-circular track for the purpose of lowering and raising those of the carriers which are temporarily supported thereby.

2. The combination of a standard, a frame adapted to revolve thereon, carriers for the pickling-baskets vertically movable in said frame, a stationary part-circular track on said standard for supporting said carriers in their higher position, a carriage movable vertically on said standard, a movable part-circular track on said carriage, and means for lowering and raising said carriage for the

purpose of lowering and raising those of the carriers which are temporarily supported on the movable part-circular track.

3. The combination of a standard, a frame adapted to revolve thereon, a stationary part-circular track concentric with said standard, a movable part-circular track concentric with said standard, means for lowering and raising said movable part-circular track, and carriers for the pickling-baskets having rollers guided vertically in said frame and other rollers supported by said circular track.

4. The combination of a standard, a frame adapted to revolve thereon, and having projecting arms, carriers for the pickling-baskets vertically movable in said frame, and having their horizontal members adapted to engage said arms when the carriers are in their raised position, a stationary part-circular track concentric with said standard for supporting said carriers in their higher position, a movable part-circular track, concentric with said standard and means for lowering and raising said movable part-circular track for the purpose of lowering and raising those of the carriers which are temporarily supported thereby.

In witness whereof I have signed this specification in the presence of two witnesses.

OTTO GAUHE.

Witnesses:

KARL SCHMITT,  
L. BARNES.