

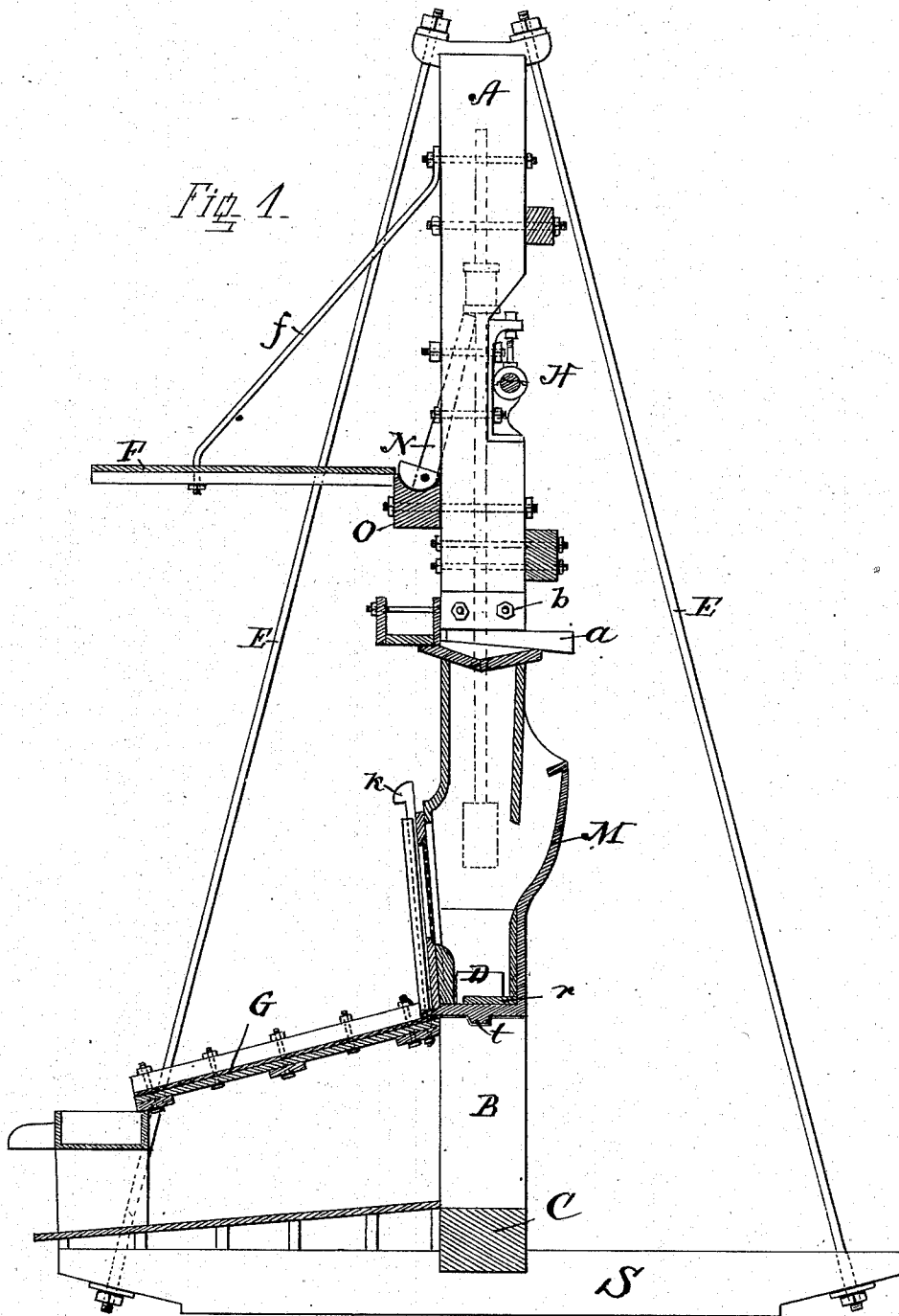
(No Model.)

2 Sheets—Sheet 1.

F. W. HALL.
STAMP MILL.

No. 276,582.

Patented May 1, 1883.



Attest
Carl Spengel
Otto Fluiger.

Inventor
Frank W. Hall
by Heloisea Atty.

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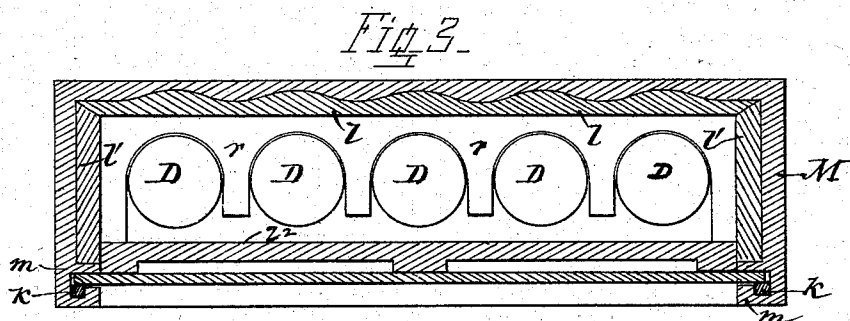
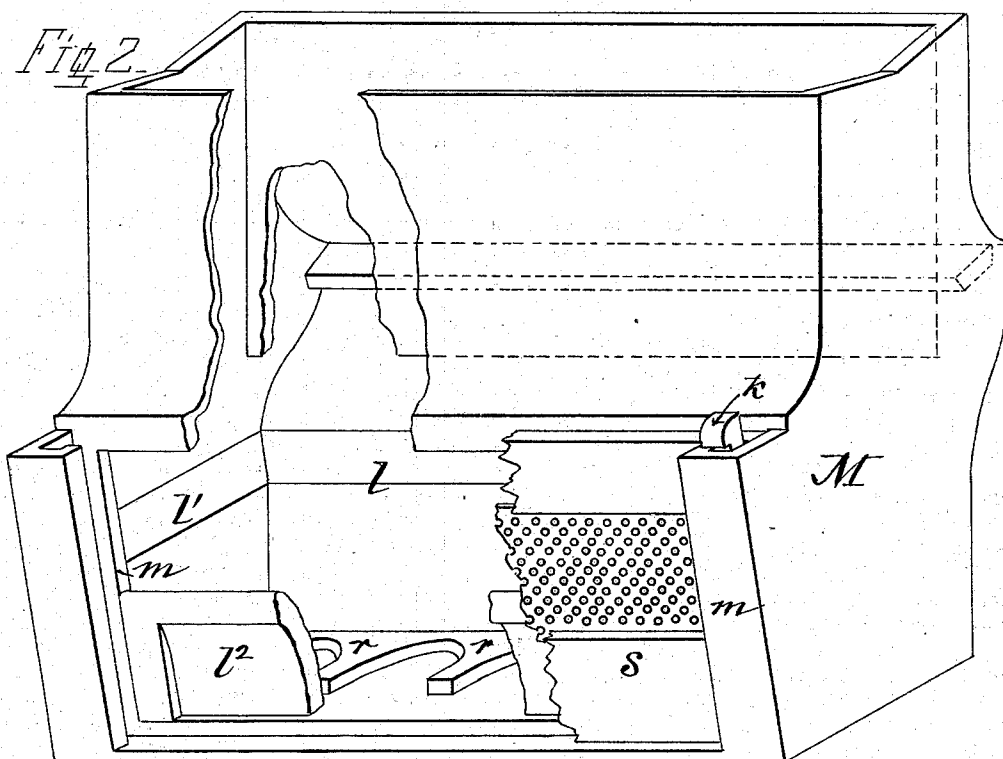
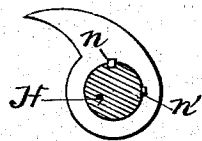
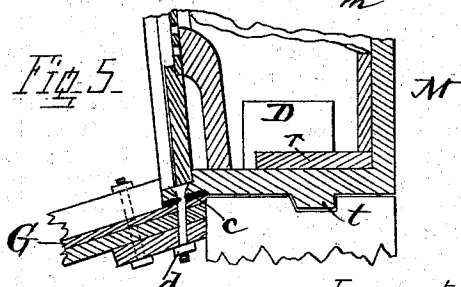


Fig. 4.



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Fig. 5.



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UNITED STATES PATENT OFFICE.

FRANK W. HALL, OF DAHLONEGA, GEORGIA.

STAMP-MILL.

SPECIFICATION forming part of Letters Patent No. 276,582, dated May 1, 1883.

Application filed September 6, 1882. (No model.)

To all whom it may concern:

Be it known that I, FRANK W. HALL, a citizen of the United States, residing at Dahlonega, Georgia, have invented new and useful Improvements in Stamp-Mills, of which the following is a specification.

My invention relates to stamp-mills, its object being to improve their construction and efficiency in several respects, as more fully hereinafter described and claimed.

My invention is illustrated in the drawings accompanying and illustrating this specification, in which Figure 1 is a vertical section of my improved mill, taken through the mortar between the uprights. Fig. 2 is a perspective view of the mortar with part of the front removed, showing the die-seats. Fig. 3 is a plan section of the mortar, taken through the liners. Fig. 4 is a detached view of the cam, showing the mode of securing the same to the shaft; and Fig. 5 is a detached cross-sectional view of the mortar-flange, showing the mode of connecting the copper plate therewith.

Corresponding letters of reference are used in the drawings and in the following specification to facilitate the description.

A designates the uprights, extending at each side of the mortar from the base sill upward to the top of the framing; B, the base block on which the mortar rests; C, a longitudinal sill on which the blocks B rest; S, the cross-sills, extending beneath each upright A, and connected with and supported from the top of the frame by diagonal guy-rods E. It will be understood that these parts may be further duplicated in a frame for a battery containing more than one mortar or set of stamps, and the frame enlarged to any extent, without departure from the principles of construction constituting my invention.

The mortar M consists of the usual cast-iron box with open front, arranged to rest upon the block or blocks B, and held in position by a tongue, *t*, cast upon its bottom, and a corresponding groove in the block B, as indicated. The mortar thus rests upon its supports B between the uprights A, and is securely held in position by wedges *a*, driven between the top of the mortar and cleats *b*, bolted to the inner sides of the uprights A. By this mode of mounting the mortar and the construction of the frame, the guy-rods E are kept taut and

the shocks of the falling stamps are transmitted through and absorbed by the frame, the force of reaction at the mortar being neutralized by the transmitted impulse of the direct blow. The details of construction may be varied without departing from the essential principle, consisting in so constructing the frame that the mortar shall rest upon cross-sills connected by chord-bars or their equivalents with the uprights; to which the mortars are secured, thereby affording a means of transmitting the force of the direct impulse back to the starting-point, so as to neutralize the reaction. The result is that so long as the guy-rods are kept taut the impact of the stamps is wholly neutralized and no injury to the frame ensues, and I am thus able to dispense entirely with the ordinary expensive foundations with manifest and great advantage in cost of erection, besides being able thus to arrange and locate the stamp-mill wherever otherwise most convenient, without regard to the foundation, besides which in actual operation there is a reduction in the wear and tear of shoes and dies.

I also regard as a feature of practical importance the permanent arrangement of a stage, F, extending horizontally outward from the uprights A and sustained by guy-rods *f* above the copper plate G. The stage affords a standing-place by which convenient access is afforded to the cam-shaft H, and at the same time serves to protect the copper plate from falling objects.

The construction of the mortar with a view to the retention and removal of the liners and the dies is clearly indicated in Figs. 1, 2, and 3. The front of the mortar is entirely open, excepting a slight projection, *m m*, of the front wall inward from each end, behind which end liners, *l' l'*, are inserted, having their rear ends beveled, as shown, to rest against and engage the similarly-beveled ends of the side liner, *l*, thus mutually supporting and retaining each other in position.

In the opening of the front wall the front liner, *l'*, is inserted, and held in place by the screen *s*, which is arranged to slide in vertical grooves formed in the edges of the wall *m*, and to be held by keys *k*, driven in the grooves alongside the screen. This construction, as will be seen, permits the ready removal of the screen *s* and front liner, *l'*, the mortar being

thus entirely opened at the front down to its floor. This affords convenient access to the dies and facilitates their removal. To the same end the dies or anvil-blocks are set in
 5 semicircular sockets open in front, formed by re-enforced portions *r* of the mortar-bottom. When necessary to remove the blocks for any purpose, the screen and front liner are taken out, and the blocks can then be moved forward
 10 on the floor of the mortar or replaced with ease and dispatch.

It is found that the liners *l* wear most rapidly in the vicinity of the dies *D*, and, taking advantage of this fact, I construct the liners
 15 with corrugated backs, with the thickened portions opposite the dies, as shown in Fig. 3, by which construction the weight and cost of the liners are reduced without lessening their wearing efficiency—a consideration of importance
 20 in view of the usual remoteness of the localities where such mills are used from points where such parts can be made or repaired.

The mode of securing the cam to the shaft consists of the ordinary taper key, *n*, engaging in corresponding slots in the cam and shaft,
 25 with the blind-key *n'* set quartering therewith, as shown in Fig. 4. The key *n* is concave on the side next to the shaft, and therefore makes its own seat and adds the additional strength and security to the cam without loss of time or uncertainty in the fitting.

The mode of attaching the copper plate *G* to the mortar is shown in Fig. 5. A flange, *c*, extends forward from the bottom of the mortar,
 35 to the under side of which I attach the copper plate by taper-headed bolts *d*, with an intervening strip of wood as a gasket or packing. By this construction a permanent connection is secured between the mortar and the
 40 copper plate, which always remains tight and prevents leakage in case the mortar settles.

The devices for holding the stamps out of reach of the cams consist of arms *N*, provided with semicircular bases arranged to rest in a
 45 groove cut longitudinally in a bar, *O*, bolted to the uprights *A* in front of the stems. The arms are held in place by a rod, to which they are pivoted; but in use they have their bearing upon the bar *O* by means of their semicircular
 50 bases and the groove in which they rest.

The bases of the arms *N* are arranged eccentrically to the pivot-rod and the bearing-groove, so that when the arms are thrown backward out of use they remain in an elevated position held by the eccentric bases.
 55 The construction is fully indicated in Fig. 1.

I claim as my invention and desire to secure by Letters Patent—

1. In a stamp-mill, the combination of the uprights *A*, the mortar *M*, the adjusting-wedges
 60 *a*, base-block *B*, cross-sills *S*, and guy-rods *E*, arranged as shown, whereby the shocks of the stamps are transmitted by tensile action of the guy-rods to the uprights, and thence back to the mortar, substantially as set forth. 65

2. In combination with the stamp-battery and its plate *G*, the stage *F*, substantially as and for the purpose set forth.

3. The mortar *M*, provided with the re-enforce *r* upon its floor, forming sockets open in front for the insertion and removal of the dies,
 70 substantially as set forth.

4. The mortar *M*, constructed with open sockets in the base-plate for the dies, and a front open to the base-plate, and provided with a removable screen and liners, substantially
 75 as set forth.

5. The liner *l*, as constructed with plane front and corrugated back, the thickened portions corresponding with the portions of the
 80 dies in the battery, substantially as set forth.

6. The mortar constructed with open front between the projecting front walls, *m m*, the end and side liners, *l l'*, the side liner, *l*, being held in position by interposing the end
 85 liners, *l'*, between it and the projections *m*, substantially as set forth.

7. The mortar constructed with a projecting flange, *c*, at the base, in combination with the copper plate *G*, secured thereto by bolts *d*
 90 and interposed packing, substantially as set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

FRANK W. HALL.

Witnesses:

ALONZO C. JOHNSON,
 LUTHER B. RAMSAW.