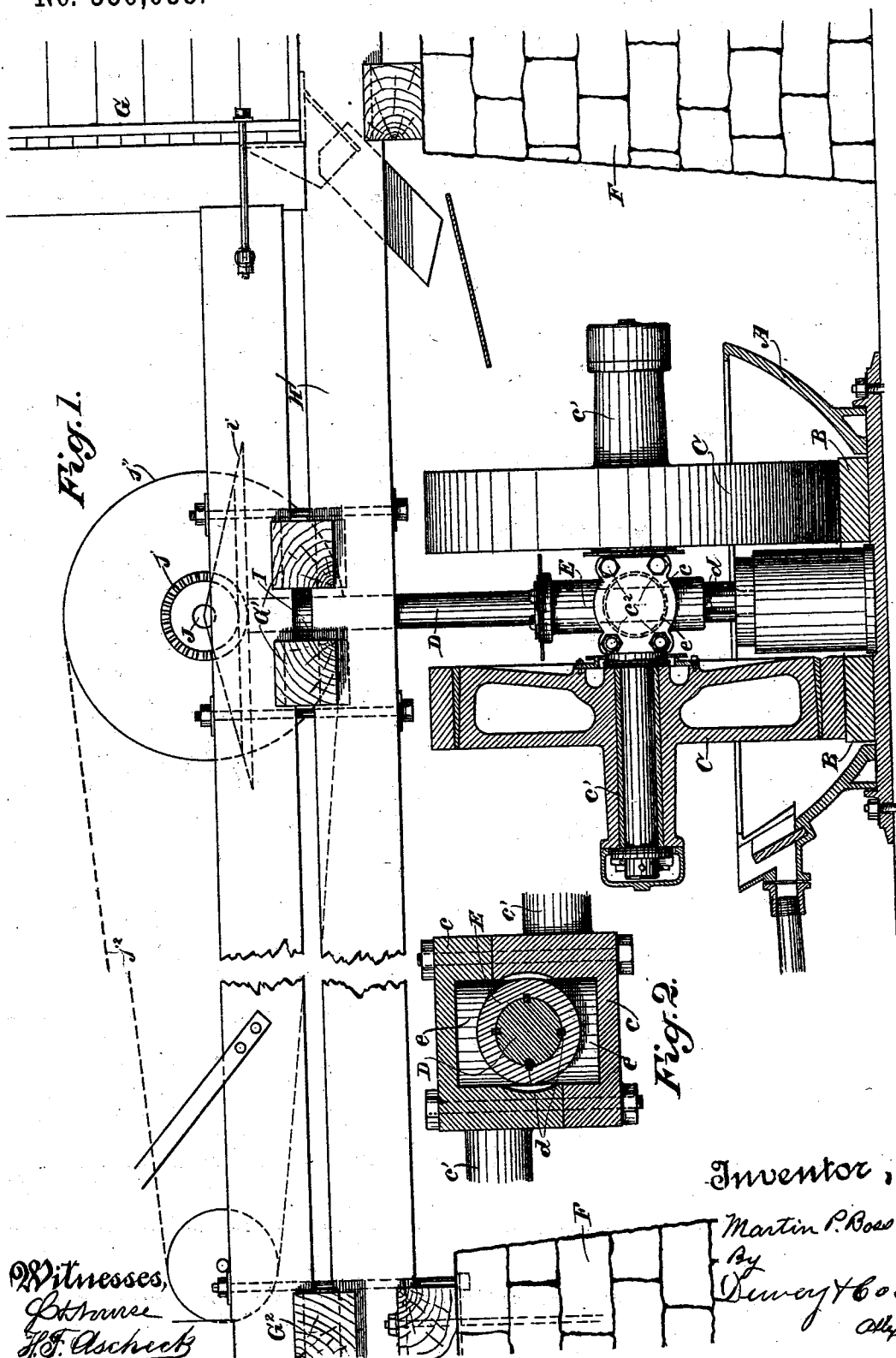


(No Model.)

M. P. BOSS.
CHILIAN MILL.

No. 550,038.

Patented Nov. 19, 1895.



UNITED STATES PATENT OFFICE.

MARTIN P. BOSS, OF SAN FRANCISCO, CALIFORNIA.

CHILIAN MILL.

SPECIFICATION forming part of Letters Patent No. 550,038, dated November 19, 1895.

Application filed April 16, 1895. Serial No. 545,935. (No model.)

To all whom it may concern:

Be it known that I, MARTIN P. BOSS, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented an Improvement in Chilian Mills; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to that class of crushing-mills known as "Chilian" mills.

My invention consists of the constructions and combinations of devices hereinafter described and claimed.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is an elevation of my mill, one of the crushing-wheels being in section. Fig. 2 is a horizontal section through the connection of the wheel-axles with the shaft.

A is the mortar, having within it the die B, which forms the track of the crushing-wheels C of a Chilian mill.

D represents the shaft by which the wheels are caused to travel upon their track. Upon this shaft, and mounted upon suitable feathers *d* thereon, is a sleeve E, which is adapted to move freely vertically. This sleeve is formed with integral gudgeons *e*, one on each side, and upon these gudgeons are journaled the hubs *c*, formed integral with the axles *c'* of the crushing-wheels C. The hub of each axle is but a partial one, and the two fitted together completely form a journal about the said gudgeons of the vertically-movable sleeve, and said hubs are then bolted together by the bolts *c²*. By this connection of the wheels to the shaft said wheels may rise vertically by the vertical movement of the sleeve, and they may have a movement in an arc in a vertical plane by the turning of their hubs about the gudgeons of the sleeve, thus compensating for all inequalities in their path of travel. This connection of the wheels to the shaft is of great convenience in setting up, occasions but little wear, the mill will run for a long time without the necessity of adjustment, and the connection is a very strong one. It is moreover accurate and overcomes the usual difficulty of keeping the wheels in track. The free vertical movement of the connection upon the shaft results also in adding the

entire weight of said connection to the weight of the crushing-wheels.

In mills of this class the wheels are of enormous weight, and the frame required to carry the bearing of the operating-shaft has to be of the greatest strength. This frame usually consists of inclined uprights set firmly into the ground very near to the mill and rising above it and carrying in their tops the bearing for the operating-shaft. This frame is not sufficiently rigid, and, moreover, is in the way, as it prevents free access to the mill.

My improvement contemplates the forming on each side of the mill, and removed therefrom by a distance sufficient to afford plenty of room around it, two walls F. Upon one of these walls is supported the ore-bin G, through the intervention of a heavy stringer H, supported upon one of the walls and bearing upon its end the ore-bin, which acts as an anchor for it, said stringer extending across over the top of the mill and being supported by the opposite wall. Cross-stringers G' and another stringer G² may be used to build up the framework to sufficient strength. In this framework above is carried the bearing I, in which the operating-shaft is mounted. Upon the top of the shaft is the bevel-gear *i*, with which meshes the gear *j* of a drive-shaft J, having a pulley *j'*, driven by a belt *j²* from a pulley on a line shaft on one side.

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

1. The combination, in a Chilian mill, of the crushing wheels, the shaft by which their travel is effected, and the means for connecting the wheels to the shaft, consisting of a vertical sleeve feathered upon the shaft and adapted to move freely vertically, said sleeve being formed with integral gudgeons, one on each side, the axles of the crushing wheels each having an integral partial hub which, when fitted together, form a complete journal box to receive the gudgeons of the sleeve, means for uniting the sections of the hub and means for rotating the shaft.

2. An improved Chilian mill comprising a vertical shaft, a sleeve freely slidable vertically thereon, and having integral gudgeons one on each side, the crushing wheels, the

axles thereof extending upon each side of the shaft, each having a partial integral hub which, when fitted together, form a complete journal box for the gudgeons, whereby the
5 wheels are permitted to rise vertically by the vertical movement of the sleeve, and have a movement in an arc in a vertical plane by the turning of their hubs about the gudgeons of the sleeve, a frame for carrying the overhead
10 bearing of the vertical shaft comprising stringers having the bearing of the shaft, and

supporting side walls, and the ore bin anchoring said stringers upon one of the walls, all combined, and arranged to operate as herein described.

In witness whereof I have hereunto set my hand.

MARTIN P. BOSS.

Witnesses:

S. H. NOURSE,
H. F. ASCHECK.