No. 789,599. PATENTED MAY 9, 1905.

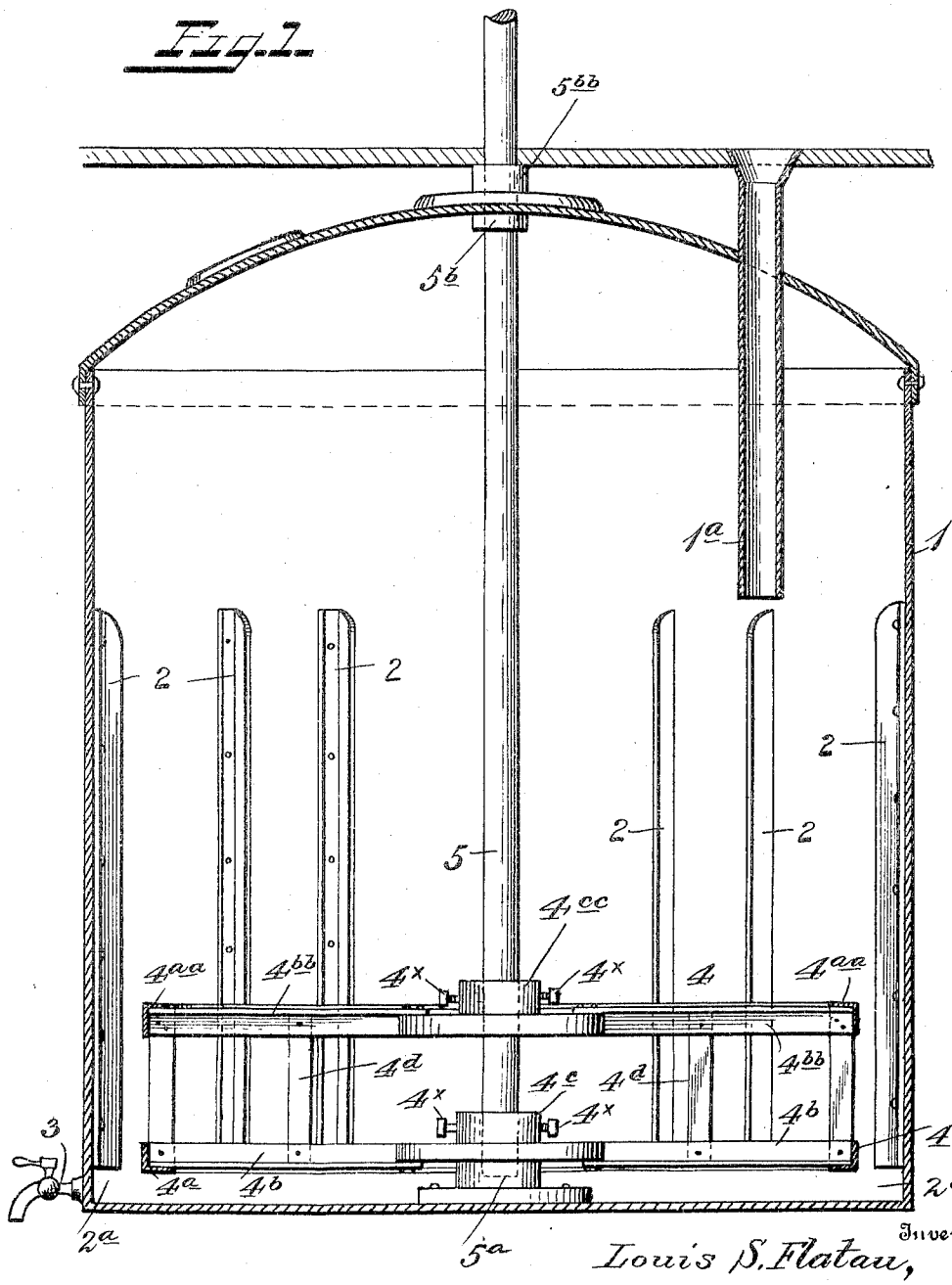
L. S. FLATAU.

PAINT MILL.

APPLICATION FILED DEC. 19, 1904.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses:

W. M. Quaintance

W. N. Durand.

Inventor:

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2 SHEETS—SHEET 2.

Fig. 2.

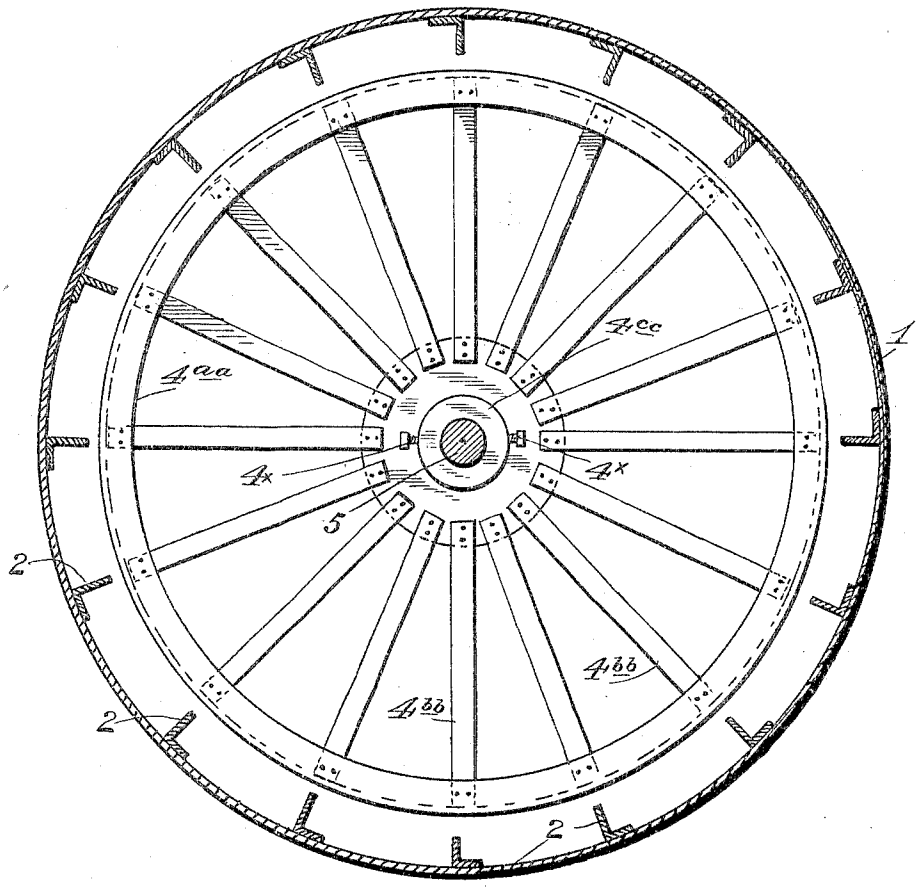
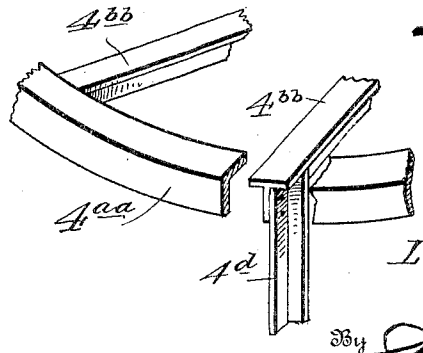


Fig. 3.



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No. 789,599. Patented May 9, 1905.

UNITED STATES PATENT OFFICE.

LOUIS SPENCER FLATAU, OF ST. LOUIS, MISSOURI.

PAINT-MILL.

SPECIFICATION forming part of Letters Patent No. 789,599, dated May 9, 1905.

Application filed December 19, 1904. Serial No. 237,575.

To all whom it may concern:

Be it known that I, LOUIS SPENCER FLATAU, a citizen of the United States, residing at St. Louis, State of Missouri, have invented new and useful Improvements in Paint-Mills, of which the following is a specification.

My invention relates to improvements in what may be termed "paint" or "paint-compound" mills.

Said invention has for its object, among other things, to effect the thorough reduction or comminution of the paint ingredients or pigments, to provide for the intimate or effective amalgamation or mixing of such ingredients or pigments, to intercept the escape of the vaporized or volatilized portions liberated in effecting such reduction or amalgamation of said ingredients or pigments, to return or precipitate said vaporized or volatilized portions to the body or bulk of the material or compound, and to accomplish the aforesaid objects with facility and expedition.

The nature of said invention therefore consists of certain structural features, substantially as hereinafter fully disclosed, and particularly pointed out by the claims.

In the accompanying drawings, Figure 1 is a sectional elevation of the preferred embodiment of my invention. Fig. 2 is a horizontal section thereof. Fig. 3 is a detached broken view disclosing more fully the constituency of the upper circular or circumferential edge portion of the mixing or agitating wheel.

In the carrying out of my invention I employ a closed, preferably steel, casing or tank 1 about eight feet in diameter and five feet deep, with a flat plate bottom and in practice having, as adjunctively thereof, a manhole through its preferably arched top, also a vent-pipe therethrough. (Not shown.) Depending also through said top of said tank is a supply or feed pipe 1^a, with its lower or discharge end suitably delivering into the latter and its upper flared or hopper-like end let into the floor above about flush therewith to permit the ready or convenient feeding of the required material thereinto.

Upon the inner lateral surface of the tank or casing 1 are arranged upstanding or vertical baffle-plates or offsets 2, preferably L-shaped or right-angled in cross-section, with one arm or base of the L serving to aid the convenient securing thereof to the tank, while the stem of the L stands edgewise or radially to the latter, suggestive of their function as above noted. Said offsets or baffle-plates 2, it will be observed, have their lower ends removed, as at 2^a, some distance from the tank-bottom, thus permitting a rapid or uninterrupted current or circulation therebelow of the tank contents, that any portions thereof which may have escaped the effective action of said plates or offsets may not form as sediment at that point, as would otherwise likely result. A faucet 3 is suitably applied to said tank near its bottom to permit the ready drawing off its contents, the tubular outlet thereof passing through the floor, upon which rests said tank, therefore providing for the convenient delivering of said contents therethrough into barrels therebelow, as desired.

Arranged centrally within the tank 1 is what may be called a "wheel" 4 for impelling or striking by its centrifugal action, as when actuated, the tank-contents, so as to throw or deliver the latter radially upon the offsets or plates 3 of the tank for the reduction or amalgamation of the ingredients or constituency of said contents into a homogeneous mass. Said wheel consists of duplicate or corresponding ring or rim members 4^a 4^{aa}, arranged a suitable interval apart and in direct vertical alinement with each other, of corresponding radial or spoke-like members or arms 4^b 4^{bb}, and of hub members 4^c 4^{cc}, to which are connected said ring or rim members by said radial or spoke-like members. Said ring or rim members 4^a 4^{aa} are themselves connected together by upright peripheral bars 4^d. It will be noted that the spoke members or arms 4^b 4^{bb} are T shape in cross-section, while the peripheral bars 4^d are right-angled in cross-section, whereby both the former and latter possess flat or broad and edgewise-presented effective surfaces, the advantages of which are apparent. The annular or ring members 4^a 4^{aa} are also right-angled in cross-section, the horizontal portions of which partially lap the

lower and upper flat surfaces of the T-shaped spoke members 4^b 4^{bb}, respectively, while the vertical portions of said ring or rim members partially lap the peripheral edges of said spoke members and peripheral bars 4^d, thus effectively holding and bracing together all of said parts at said points.

A suitable driving-shaft 5 for the wheel 4 is held thereto by set-screws 4^x, applied to upstanding collar-like formations of the hubs 4^c 4^{cc} and adapted to engage or bear upon said shaft, the lower end of said shaft being stepped or let into a socket or bearing 5^a, secured about centrally to the tank-bottom. Said shaft passes about centrally out through the top of the tank 1, and suitable bearings or collars 5^b 5^{bb} are placed around and hold said shaft out of contact with the tank-top and are secured to said tank-top and held to said shaft, respectively, preferably as shown. Said shaft is suitably continued upward through the floor directly above the mill and driven by the usual means from a suitable motor, as will be readily understood.

A mixture, say, of naphtha, gilsonite, rosin-oil, and linseed-oil or other compound for forming, preferably, a paint compound according to my own formula, is placed in the mill and motion imparted to the wheel. The wheel will be effective by its centrifugal action in conjunction with the cutting action of its peripheral angular bars, as well as that of its spokes, and the baffling or retarding radial offsets or plates of the tank to cause the intimate or thorough reduction or comminution of all solid portions or pigments of said mixture and prevent the backing up in the tank of sediment, &c., as above detailed. This is all effected so as to produce a perfect solution of the tank contents and without any loss in motive power or great stress thereon, since the current thus generated aids the action of the wheel, whereby the latter becomes, as it were, a fly-wheel of great energy with proportionate effectiveness. It will also be noted that the rising dust portion of the gilsonite as it enters the mill, being run thereinto usually from a grinding-mill reducing it in its crude form, will as it fills the tank above the liquid or naphtha line or level have the effect as it becomes moistened by the vaporized or volatilized portion of the liquid contents produced by the action of the wheel thereon to precipitate or return said volatilized or vaporized portion to said liquid or initial contents. This prevents, as is obvious, the waste or loss of such volatilized or vaporized portion of the tank contents, thus effecting a saving over the way heretofore practiced of effecting the mixing of paint compounds or making any varnishes by the action of fire or heat.

Latitude is allowed as to details herein, as they may be changed as circumstances suggest without departing from the spirit of my invention.

I claim—

1. A mill of the character described, comprising a tank having radial baffling-plates or offsets upon its inner lateral surfaces, and a centrifugally-acting wheel having peripheral bars of right-angled cross-section and adapted to throw the tank contents upon said baffling-plates, said plates having their lower ends spaced off from the tank-bottom.

2. A mill of the character described, comprising a tank having radial baffling-plates or offsets upon its inner lateral surfaces, and a centrifugally-acting wheel having peripheral bars adapted to throw the tank contents upon said plates or offsets, said plates or offsets having their lower ends spaced off from the tank-bottom.

3. A mill of the character described, comprising a tank having radial baffling-plates or offsets upon its inner lateral surfaces, and a feed-pipe depending bodily therein and having its upper flared or enlarged end adapted to receive the material fed from an upper floor, and a centrifugally-acting wheel adapted to throw the tank contents upon said baffling-plates or offsets.

4. A mill of the character described, employing a centrifugally-acting wheel comprising duplicate annular or ring members, of right-angled cross-section, hub members, and spoke members connecting together said ring and hub members, and of T form in cross-section and peripheral bars connecting together the duplicate ring or annular members, and means effective in connection with said wheel to reduce the material acted upon.

5. A mill of the character described, comprising a tank having upon its inner lateral surface baffling-plates or offsets, and a centrifugally-acting wheel consisting of duplicate annular or ring members of right-angled cross-section, hub members, spoke members of T-form cross-section, connecting together said ring and hub members, and peripheral bars of right-angled cross-section, connecting together the duplicate ring members and adapted to throw the tank contents against said baffling-plates or offsets.

In testimony whereof I affix my signature in presence of two subscribing witnesses.

LOUIS SPENCER FLATAU.

Witnesses:
J. V. MUSICK,
WM. H. SCOTT.