

No. 616,191.

Patented Dec. 20, 1898.

J. G. JEFFERS.

PAINT MIXER.

(Application filed Jan. 25, 1898.)

(No Model.)

Fig. 1.

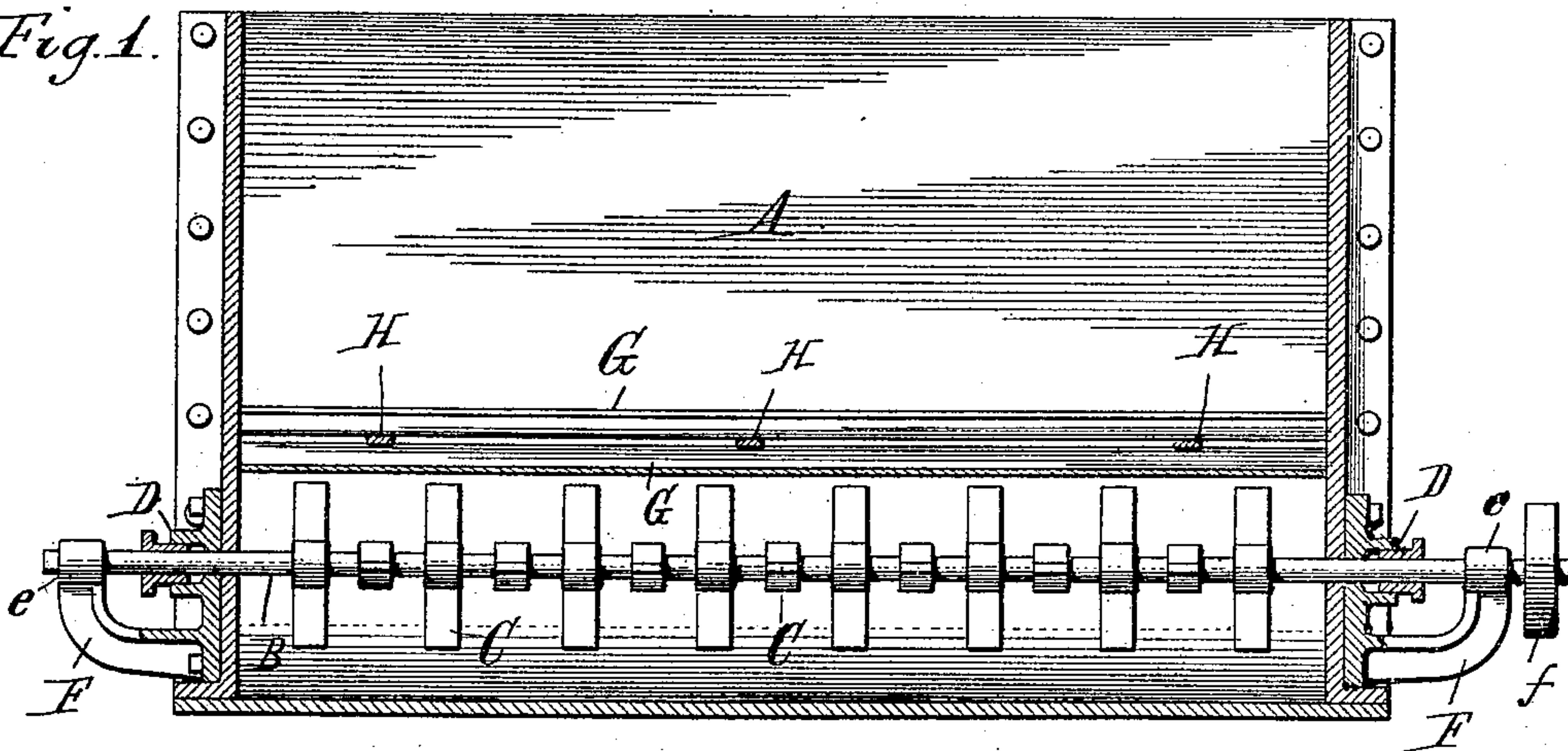


Fig. 2.

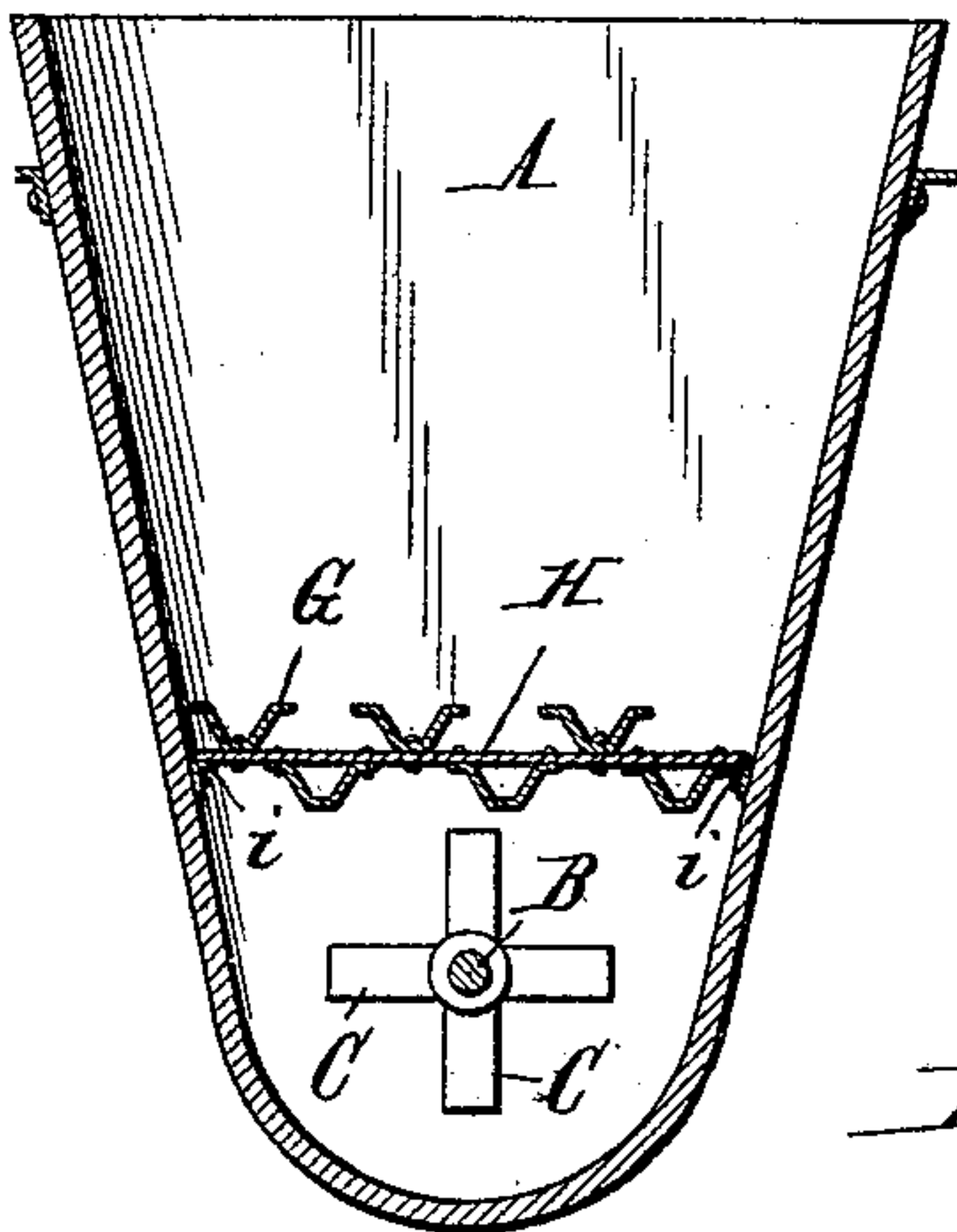


Fig. 4.

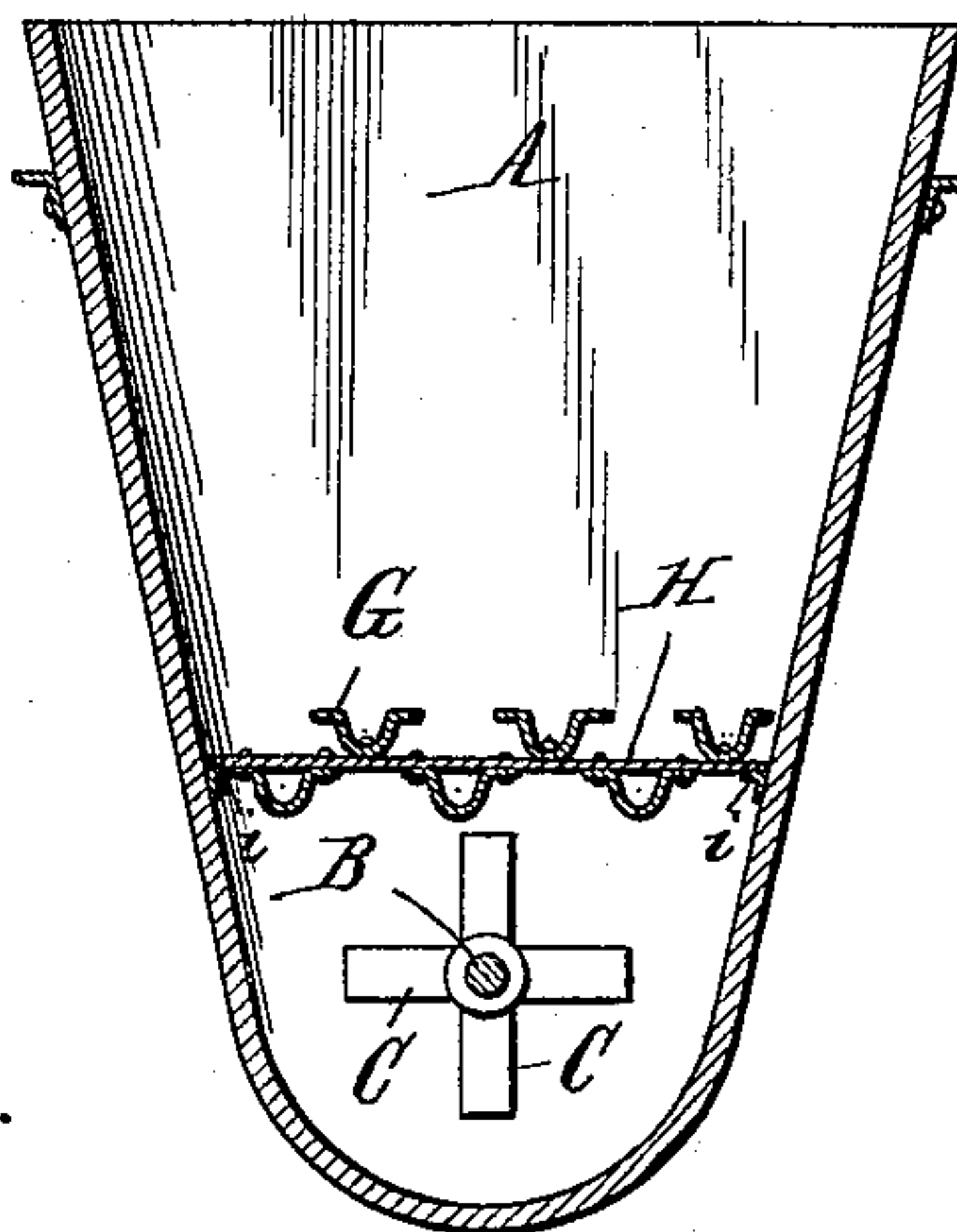
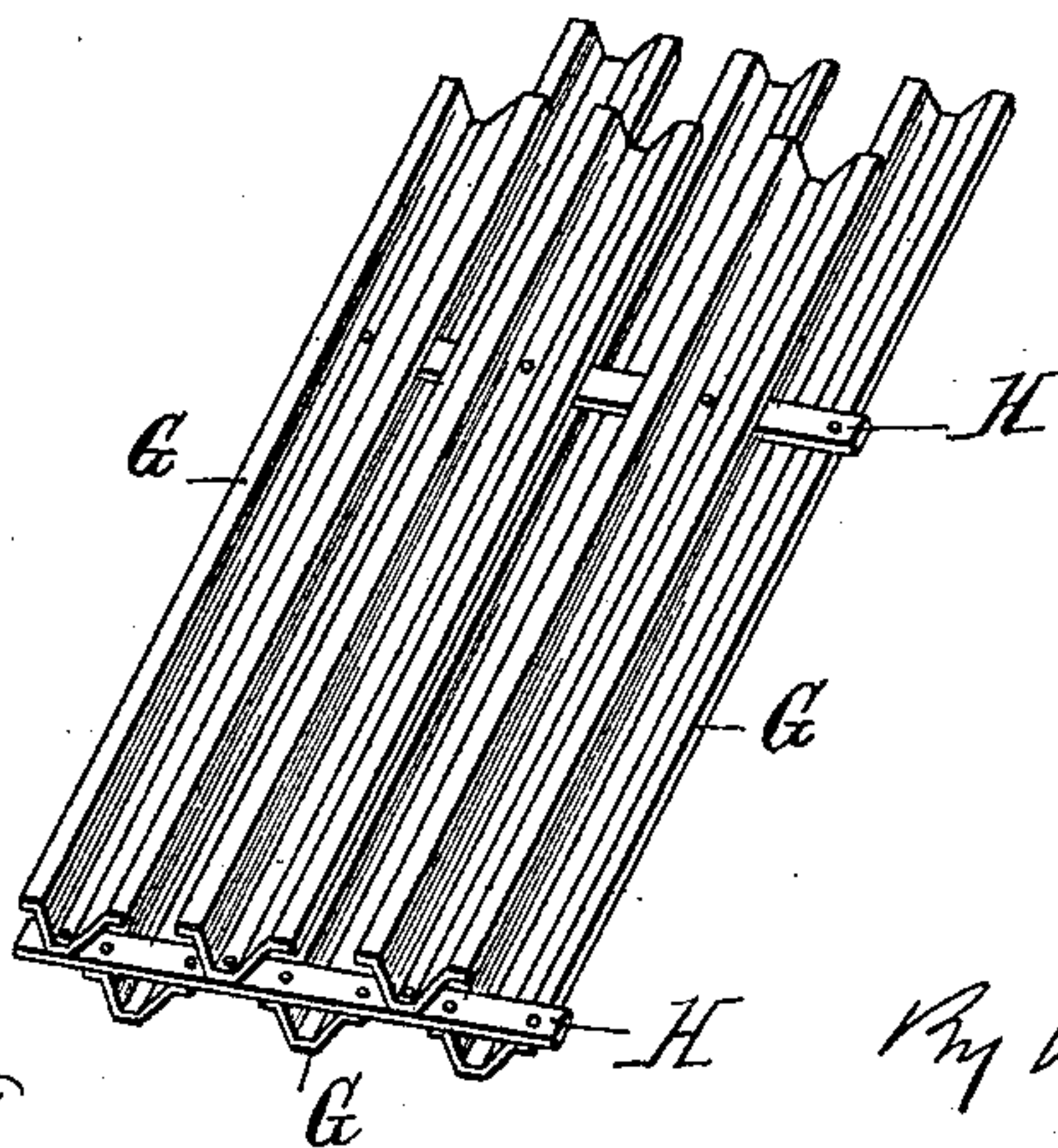


Fig. 3.



Witnesses:

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# UNITED STATES PATENT OFFICE.

JOHN G. JEFFERS, OF BUFFALO, NEW YORK.

## PAINT-MIXER.

SPECIFICATION forming part of Letters Patent No. 616,191, dated December 20, 1898.

Application filed January 25, 1898. Serial No. 667,902. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN G. JEFFERS, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Paint-Mixers, of which the following is a specification.

This invention relates to that class of paint mixers or agitators which are used for coating articles with paint by dipping or immersion and which consist, essentially, of an open tank or trough-shaped receptacle containing the paint and a rotary horizontal shaft arranged in the bottom of the tank and provided with projecting arms or beaters which stir and agitate the paint for thoroughly mixing it.

The object of my invention is the provision of simple means for preventing the heavy ingredients of the paint from settling and thickening in the bottom of the tank when the mixer is not in use for a time, so as to avoid breakage of the arms or beaters upon starting the agitator, and also to prevent the dipped articles from coming in contact with the beaters and breaking the same in case such articles should be accidentally dropped by the attendant.

In the accompanying drawings, Figure 1 is longitudinal sectional elevation of my improved paint-mixer. Fig. 2 is a transverse vertical section thereof. Fig. 3 is a fragmentary perspective view of the guard arranged above the agitator-shaft. Fig. 4 is a cross-section of the mixer, showing a slightly-modified construction of the guard.

Like letters of reference refer to like parts in the several figures.

A is the open tank or receptacle, which is preferably trough-shaped and provided with a curved or semicircular bottom.

B is the horizontal agitator-shaft, arranged lengthwise in the lower portion of the tank and provided at intervals throughout its length with suitable beaters or agitators C, which are arranged in proximity to the bottom and sides of the tank and which by their rotation agitate and thoroughly mix the paint in the tank, so as to prevent its heavier particles from settling. In the drawings radial arms or beaters are shown; but, if desired, any other suitable agitators may be employed,

such as screw-beaters. The beater-shaft passes through stuffing-boxes D, secured to the end walls of the tank, and turns in bearings e, carried by arms or brackets F, which may be secured to the ends of the tank, as shown in Fig. 1. The shaft has the usual driving-pulley f.

Immediately above the series of beaters or agitators C is arranged an open guard or protecting frame which prevents the articles to be dipped from falling into the bottom of the tank among the beaters and at the same time allows the paint to pass upwardly and downwardly through the same as it is agitated by the rotary beaters. This guard consists of a number of horizontal tiers of troughs or trough-like receptacles G, which preferably extend lengthwise from end to end of the tank. Two tiers of such troughs are shown in the drawings, but a greater number may be employed, if desired. These troughs are separated by narrow spaces through which the paint passes in circulating from the upper to the lower portion of the tank, or vice versa, and the troughs of one tier are arranged to alternate with those in the other tier, or, in other words, the troughs of one tier are arranged opposite the spaces between the troughs of the other tier, so that in case any article to be dipped should fall between the troughs of the upper tier it will be intercepted by and drop into a trough of the lower tier, thereby keeping the article out of contact with the beaters and avoiding injury thereto. The troughs are preferably removably supported in the tank by any suitable means. In the construction shown in the drawings they are secured to transverse bars H, which rest loosely upon ledges i, secured to the interior of the tank, as shown in Fig. 1. The upper troughs are secured to these cross-bars preferably by rivets passing through the bars and the flattened bottoms of the troughs, while the lower troughs are secured to the under sides of the same bars by rivets passing through outwardly-projecting flanges formed at the upper edges of the troughs. By the alternating or staggered arrangement of the troughs the passages between the troughs are rendered sinuous or irregular. This causes the course of the agitated paint to be deflected or broken as the paint passes



through the guard, thus agitating the same more vigorously and mixing it more thoroughly than when the paint is allowed to take a direct vertical course through a network or similar guard.

A characteristic advantage gained by the use of the troughs is that when the mixer is at rest—say over night—the heavy ingredients, which settle when the agitation of the paint ceases, are intercepted and caught by the troughs, preventing this heavy material from settling to the bottom of the tank and hardening around the beaters, which interferes with the starting of the beaters and renders them liable to be broken. When such heavy ingredients have settled in the troughs, they are removed therefrom by inverting the group of troughs on their supports and setting the beaters in motion, when the troughs will be washed out by the paint, which is dashed against the same by the beaters. After cleaning the troughs they are again reversed to their normal position.

When it is desired to clean the bottom of the tank, the guard-troughs can be readily removed for this purpose by a pair of hooks or other suitable means.

In the construction shown in Figs. 1, 2, and 3 the troughs are substantially V-shaped in cross-section; but, if desired, they may be semicircular or arc-shaped in cross-section, as shown in Fig. 4, or of any other suitable form.

I claim as my invention—

1. In a paint-mixer, the combination with

a tank and an agitator arranged in the lower portion of the same, of an open-guard diaphragm arranged across said tank above the agitator, said diaphragm being composed of troughs or receptacles adapted to receive and hold the heavy ingredients which settle when the agitator is at rest and separated by spaces or passages through which the liquid paint circulates, substantially as set forth.

2. The combination with a tank and an agitator arranged in the bottom thereof, of an open guard covering said agitator and consisting of an upper tier of troughs separated by intervening spaces and a lower tier of separated troughs arranged underneath the spaces between adjacent troughs of the upper tier, substantially as set forth.

3. The combination with a tank and an agitator arranged in the bottom thereof, of an open guard covering said agitator, and consisting of upper and lower tiers of troughs, the troughs of each tier being separated by intervening spaces and the troughs of one tier being arranged to alternate with those of the other tier, and transverse bars connecting the several troughs and arranged between the two tiers of troughs, substantially as set forth.

Witness my hand this 24th day of January, 1898.

JOHN G. JEFFERS.

Witnesses:

CARL F. GEYER,  
R. B. JEFFERS.