

No. 628,922.

Patented July 18, 1899.

D. I. BYERS.

TRAP FOR RECOVERING GOLD WASTE FROM JEWELERS' WASHINGS.

(Application filed Jan. 24, 1898.)

(No Model.)

Fig. 1.

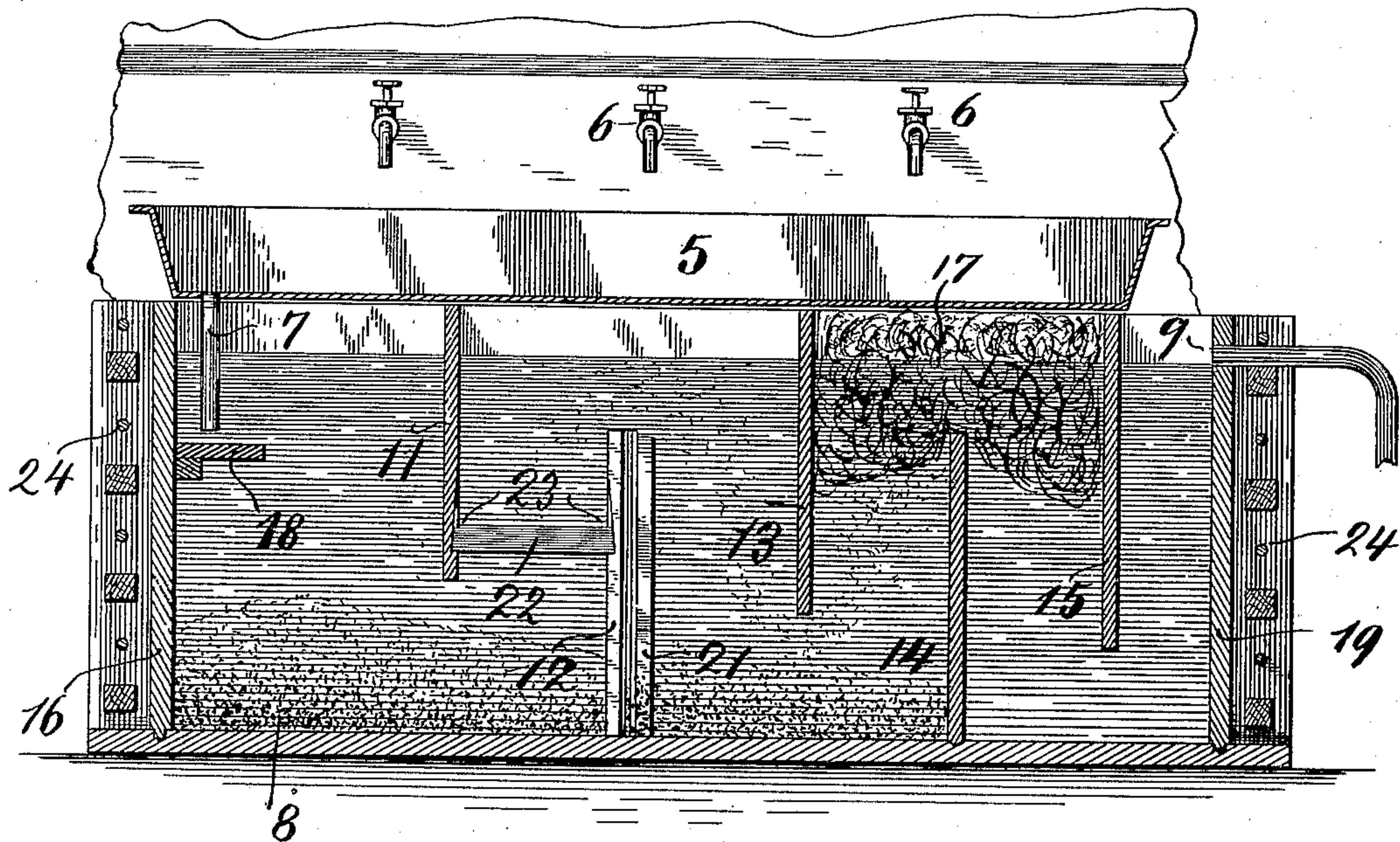
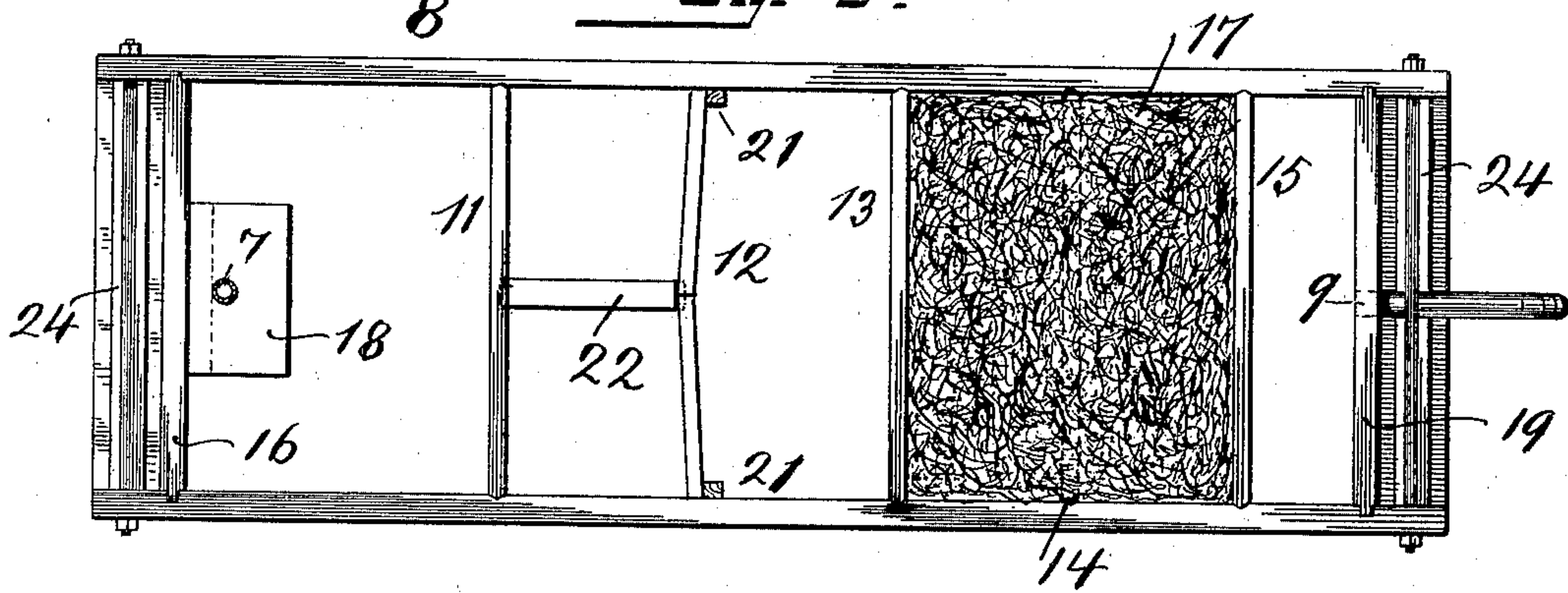


Fig. 2.



Attest

John C. Rogers  
Arthur Skine

Invented

David Ivan Byers  
by C. Spengel Atty.



# UNITED STATES PATENT OFFICE.

DAVID IVAN BYERS, OF HARTWELL, OHIO.

TRAP FOR RECOVERING GOLD-WASTE FROM JEWELERS' WASHINGS.

SPECIFICATION forming part of Letters Patent No. 628,922, dated July 18, 1899.

Application filed January 24, 1898. Serial No. 667,704. (No model.)

*To all whom it may concern:*

Be it known that I, DAVID IVAN BYERS, a citizen of the United States, and a resident of Hartwell, Hamilton county, State of Ohio, have invented a certain new and useful Trap for Recovering Gold-Waste from Jewelers' Washings; and I do hereby declare the following to be a clear, full, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, attention being called to the accompanying drawings, with the reference-numerals marked thereon, which form a part of this specification.

This invention relates to a device to be used in connection with what is commonly known as a "jeweler's hand-wash" and as found in manufacturing-jewelers' establishments. Such hand-wash consists, substantially, of a sink provided with a water-supply above it and is used for washing off or cleaning jewelry whenever necessary while and after passing through the various steps of manufacture, as polishing and otherwise, it serving also as a washbasin for lavatory purposes. It is evident that the used water discharged from such a sink carries with it more or less metallic waste in minute particles coming from the articles cleaned or from the hands of the artisans in washing, which waste, especially in larger establishments, amounts to considerable quantities. When consisting of gold, which is mainly had in view here, this waste is of considerable value and sufficiently so to warrant efforts toward saving it, which fact has caused various attempts to be made for such purpose. The means devised have, however, proven in most cases rather insufficient not only in thorough effectiveness toward obtaining all the waste, but also as to the manner of their operation and convenient use.

The object of my invention is therefore to provide a practically-constructed apparatus which is not only complete for the purpose of retaining substantially all the waste, but which is also convenient in its operation and use.

In the following specification, and particularly pointed out in the claims, is found a full description of the invention, its operation, manner of use, parts, and construction, which

latter is also illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal section of the device complete, and Fig. 2 a top view of the same with the sink removed.

The device in its operation relies, substantially, on arresting the gold-waste carried off with the used water by subsiding and settling as to the heavier particles and by straining as to the lighter and floating ones, care being taken that the continually-adding waste water may readily drain off after leaving its deposit without disturbing the previously-precipitated sediment.

In the drawings, 5 indicates a sink of customary construction, water, preferably running, being supplied from faucets 6. This sink is required for all purposes where water is used in connection with jewelry during its manufacture or for washing purposes by the employees. The water after used, carrying with it whatever waste there may have been, discharges through a pipe 7 into a settling-vat 8, the outlet from which is at 9. To prevent the water from passing at once from pipe 7 to the outlet 9, its direct discharge is impeded to give it time to precipitate the waste carried with it. For such purpose the vat is vertically divided into a number of compartments by partitions 11, 12, 13, 14, and 15, of which 11, 13, and 15 start from the top down and 12 and 14 from the bottom upwardly, neither extending, however, through the entire height of the vat. In this way the water is compelled to alternately descend and rise while passing successively through the various compartments and around the free ends of the partitions throughout the length of the vat, so that before reaching the outlet its presence in the box has been lengthened to such an extent as to provide sufficient time for the metallic waste to separate therefrom. Since most of the particles of waste, particularly the heavier ones, subside at once, most of the deposit will be found in the first two compartments—that is, between the end 16 of the vat and partition 12—for which reason the space between the lower end of partition 11 and the bottom of the vat is left higher. Lighter particles not sinking at once settle at the other side of partition 12.



In order to retain floating waste which would not precipitate, I provide a strainer 17, supported between partitions 13 and 15 and above partition 14, and through which the waste 5 while passing from one side of the latter to the other thereof must pass. In selecting the material for this strainer such should be used which has a large capacity for retaining matter without becoming clogged up and which 10 is also most suitable when the whole is later on submitted to the refining process for the purpose of extracting the gold-waste. It is also necessary to use a material which presents a rough and uneven surface, since any 15 other surface, if straight and regular, even if perforated—like wire-cloth, for instance—will soon be covered and closed by the slime caused by the soap which the water carries with it. In practice I have found the common excel- 20 sior most suitable for all these purposes. It is tightly stuffed from above into the space between partitions 13 and 15, resting on the upper edge of partition 14. It becomes still tighter when the wood fiber, after becoming 25 wet and water-soaked, commences to swell, so that the passage of any floating waste is effectually prevented. At the same time, being readily destroyed by fire, it does not offer any difficulties when being passed through 30 the refining process for the purpose of recovering the gold-waste.

To prevent disturbance of the sediment by the entering waste water, a horizontal shelf 18 is provided below the discharge-opening 35 of pipe 7, which breaks the force of the water and prevents formation of a direct current. The last compartment—that is, the one between partition 15 and the end 19 of the vat—does not serve any particular purpose, except 40 to permit observation to ascertain the condition of the water passing out.

From time to time, as circumstances may require it, perhaps every three months, the sediment, as well as the excelsior forming strainer 45 17, is removed and placed with the other waste and sweepings ready for refining. For such purpose the sink is lifted off, the sediment on the floor of the vat removed, and the excelsior pulled out from above and replaced by a new 50 bundle.

To facilitate removal of the sediment, the first four compartments—that is, those between end 16 and partition 14—are all thrown into one at the bottom of the vat by removal 55 of partition 12. To permit the removal of the latter in a quick and convenient way and also its replacing in a manner to render it watertight, I have this partition in two parts, their combined dimensions across the vat being 60 somewhat in excess of the width of the latter. Their outer edges are placed against strips

21, secured to the sides of the vat, after which a brace 22 of proper length is wedged in between partitions 11 and 12, resting against the latter at a point where it can hold the two 65 parts of it. Notches 23 are provided, within which the brace comes to a seat. Since acid is used in connection with the working of gold, of which more or less finally finds its way with the waste water into the vat, the 70 latter should be constructed in a manner and of a material which dispenses with the use of metal, like iron, at places where it comes in contact with the water. Fig. 2 suggests a suitable plan by the use of tie-rods 24, which 75 connect the long sides of the vat, with the cross-partitions clamped between and passed through the ends of such sides beyond the confines of the vat, so as to be removed from any contact with the water. 80

All parts of the vat are preferably wood. While in the drawings the location of the vat is shown to be underneath the sink, such need not necessarily be the case at all times and may depend altogether on conditions of loca- 85 tion and convenience. It should be between sink 5 and the final outlet of the waste water.

If the excelsior strainer is found to be not sufficiently tight, its efficiency may be increased by dividing it into two layers, with 90 an additional layer of a suitable substance, like slaked lime or sawdust, interposed between.

Having described my invention, I claim as new— 95

1. The combination with the drain-pipe from a jeweler's wash-sink, of a vat 8, vertical partitions 11, 12, 13, 14 and 15 by which it is divided into a number of compartments, the partitions terminating alternately above the 100 bottom and below the top of the vat, thereby permitting passage from one compartment into the other, the final discharge being from near the top of the compartment between partition 15 and the adjacent end of the vat, 105 partition 12 being in two parts, the combined width of which exceeds the width of the vat, strips 21 against which the parts of this partition rest and a brace 22 which on being wedged in between them and partition 11 110 holds them in position.

2. A strainer for recovering gold-waste from a jeweler's hand wash-sink, consisting of a body of excelsior, so placed and supported as to cause the drainage from the sink mentioned 115 to pass through it.

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

DAVID IVAN BYERS.

Witnesses:

C. SPENGEL,  
ARTHUR KLINE.