

(No Model.)

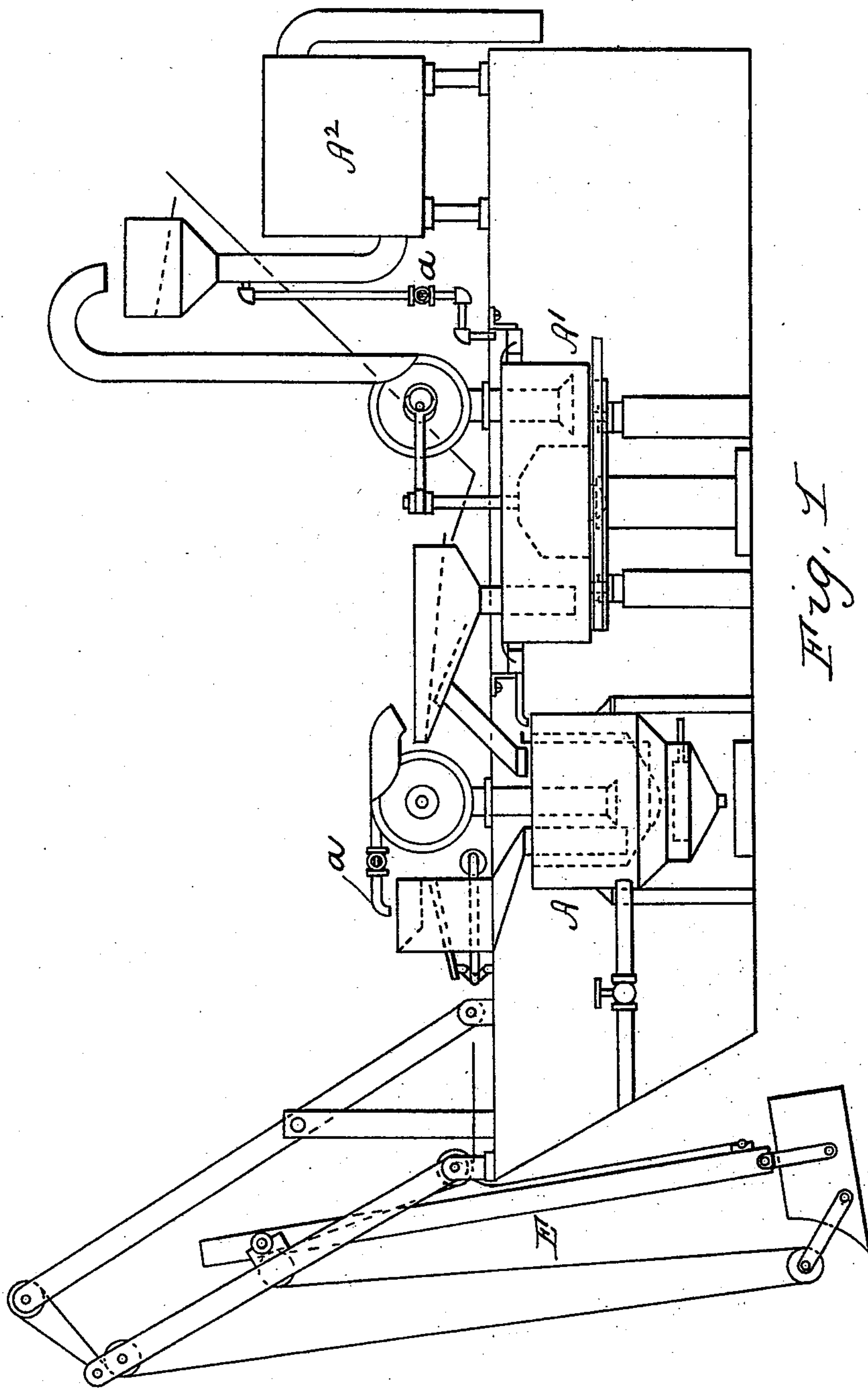
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C. F. PIKE.

SYSTEM OF WASHING, CONCENTRATING, AND AMALGAMATING ORES.

No. 528,973.

Patented Nov. 13, 1894.



WITNESSES:

H. Van Stavoren.
L. Van Stavoren.

INVENTOR

Charles F. Pike
By S. J. Van Stavoren
attorney

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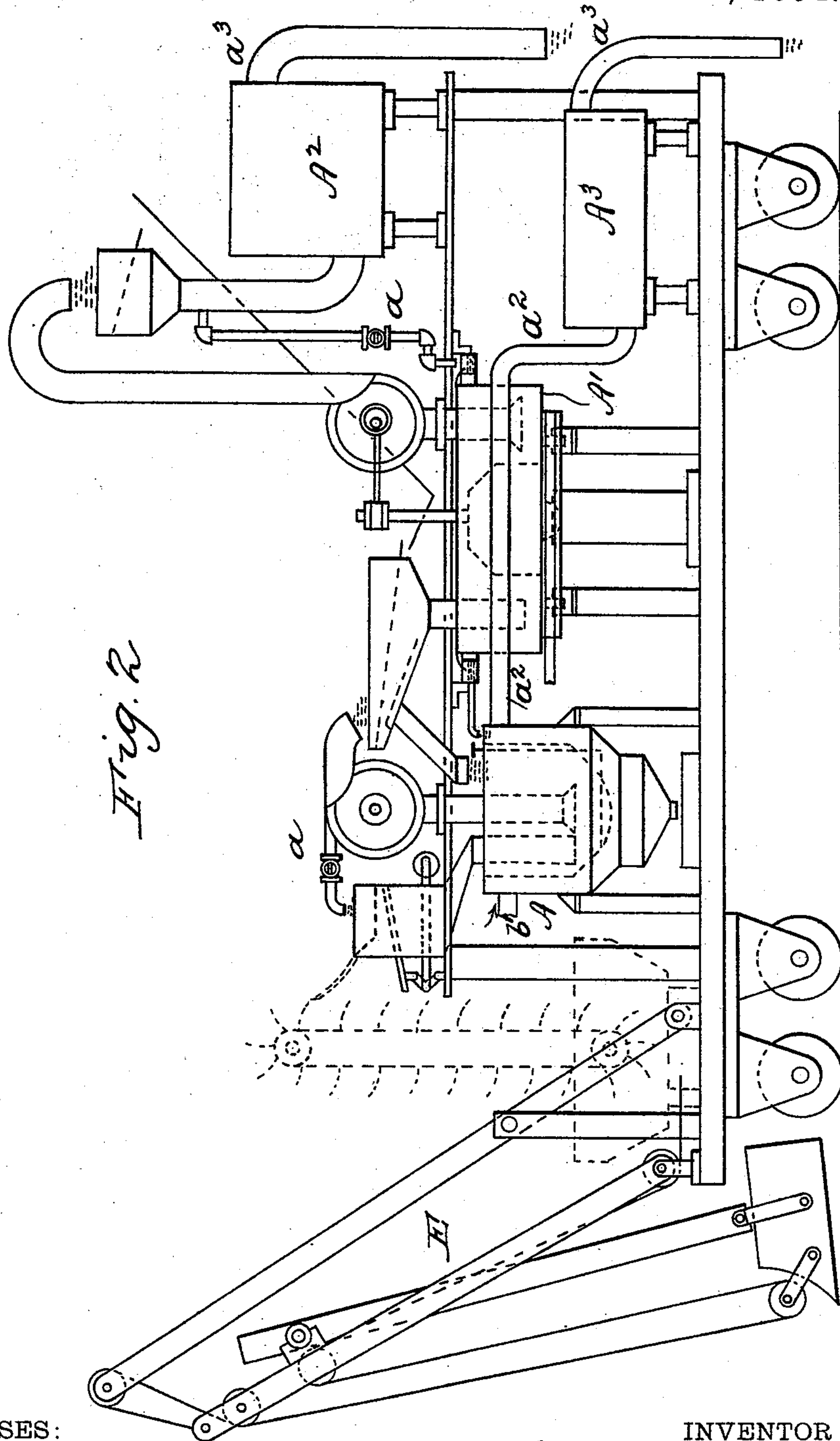
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INVENTOR

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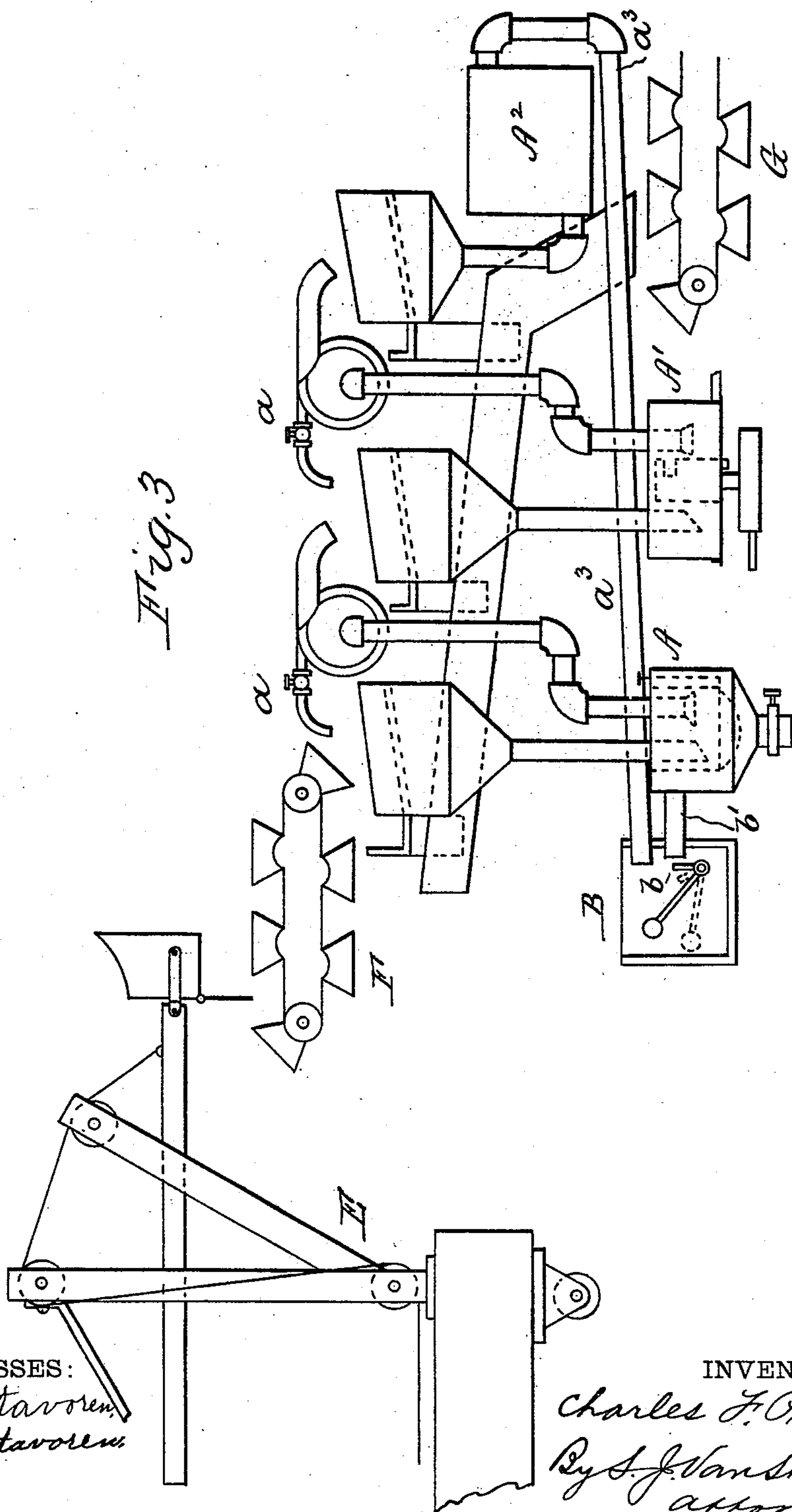
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UNITED STATES PATENT OFFICE.

CHARLES F. PIKE, OF PHILADELPHIA, PENNSYLVANIA.

SYSTEM OF WASHING, CONCENTRATING, AND AMALGAMATING ORES.

SPECIFICATION forming part of Letters Patent No. 528,973, dated November 13, 1894.

Application filed June 10, 1893. Renewed April 17, 1894. Serial No. 507,938. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. PIKE, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Systems of Washing, Concentrating, and Amalgamating Ores; and I do hereby declare the following to be a full, clear, 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.

My invention has relation to systems of washing or concentrating ore or gangue of the form composed of succeeding washers, concentrators or amalgamators each having at one end or side a feed and at the other a suction pump discharge appliance; and it has for its object a system of concentrating and recovering all the metal in the ore or gangue and of separating the impure from the free pure metal so as to avoid passing the impure metal to the amalgamator; and further to provide for utilizing over and over again the flow water of the system so as to adapt the same to location where there is a scarcity of water.

My invention accordingly consists of the systems and the combinations, constructions and arrangements of parts as more fully described in the specification and pointed out in the claims.

Reference is had to the accompanying drawings, wherein—

Figure 1 represents an elevation showing my improvements arranged upon a scow or other vessel for working river-bottom or other material under water containing ore. Fig. 2 is a like view showing the same arranged upon a portable device or car for land operations, and Fig. 3 is a similar view for a stationary plant with devices for conveying the ore to and conveying the gangue from said plant.

A A' A² represent different washer, concentrator or amalgamator devices which may be constructed and arranged for operation as desired or as shown, described and claimed in other pending applications filed of an even date herewith, Serial Nos. 477,164, 477,165, 477,166, 477,169, 477,170, 477,171, 477,172, 477,173, 477,174, and 477,175. Each said ves-

sel has its respective feed pipe and discharge appliance. From each of the latter except the last a return water tube *a* is provided to the preceding vessel so that a part of the discharging water returns to the vessel from which it was discharged. This admits of economizing in discharging power as less engine or motive power is required for moving the water.

The vessels A A' in Fig. 2 are provided with overflow pipes *a*² *a*² which may lead to a second separate amalgamator A³ or to a return pipe *a*³ from the last vessel A² in the series see more plainly Fig. 3 which pipe *a*³ returns to a reservoir B having a float valve *b* for the end of a supply pipe *b*' leading to the first vessel of the system. The water therefore of the latter is repeatedly and continuously used to economize in the same. When the appliances are used for water bottom material the return of water devices from the last to the first vessel of the series may be dispensed with.

In Fig. 3 E represents a distantly located digger; F, the conveyer from the digger to the plant, and G the conveyer for carrying the gangue away from the plant.

As it is obvious that the devices and systems herein shown and described may be greatly changed without departing from the spirit of the invention I do not confine myself to the same as illustrated and set forth.

What I claim is—

1. In combination with a series of succeeding separate ore washers or concentrators, each having a feed device, a suction discharge device, screens for the feed devices of the washers, the discharge from a leading washer falling upon the feed screen of the following washer, an ore conveyer appliance leading to the screen of the first washer and a waste conveyer leading from the discharge of the last washer, substantially as set forth.

2. In combination with a series of succeeding separate ore washers or concentrators, each having a feed device and a suction discharge device, the discharge of a leading washer falling into the feed device of a following washer, and an overflow pipe for the last concentrator communicating with the ore receiving chamber of the first washer, substantially as set forth.

3. In combination with a series of succeeding separate ore washers or concentrators, each having a feed device, and a suction discharge, the discharge of a leading washer
5 falling into the feed device of a following washer, each washer having an overflow pipe and another concentrator apart from said series having a pipe connection with all of said overflow pipes to make such overflow a feed

supply for said last-named concentrator, substantially as set forth.

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

CHARLES F. PIKE.

Witnesses:

THOS. S. RODGERS,
JAMES T. DAILY.