

(No Model.)

3 Sheets—Sheet 1.

F. W. ROSSBERG.
PULP AND ORE SAMPLER.

No. 580,803.

Patented Apr. 13, 1897.

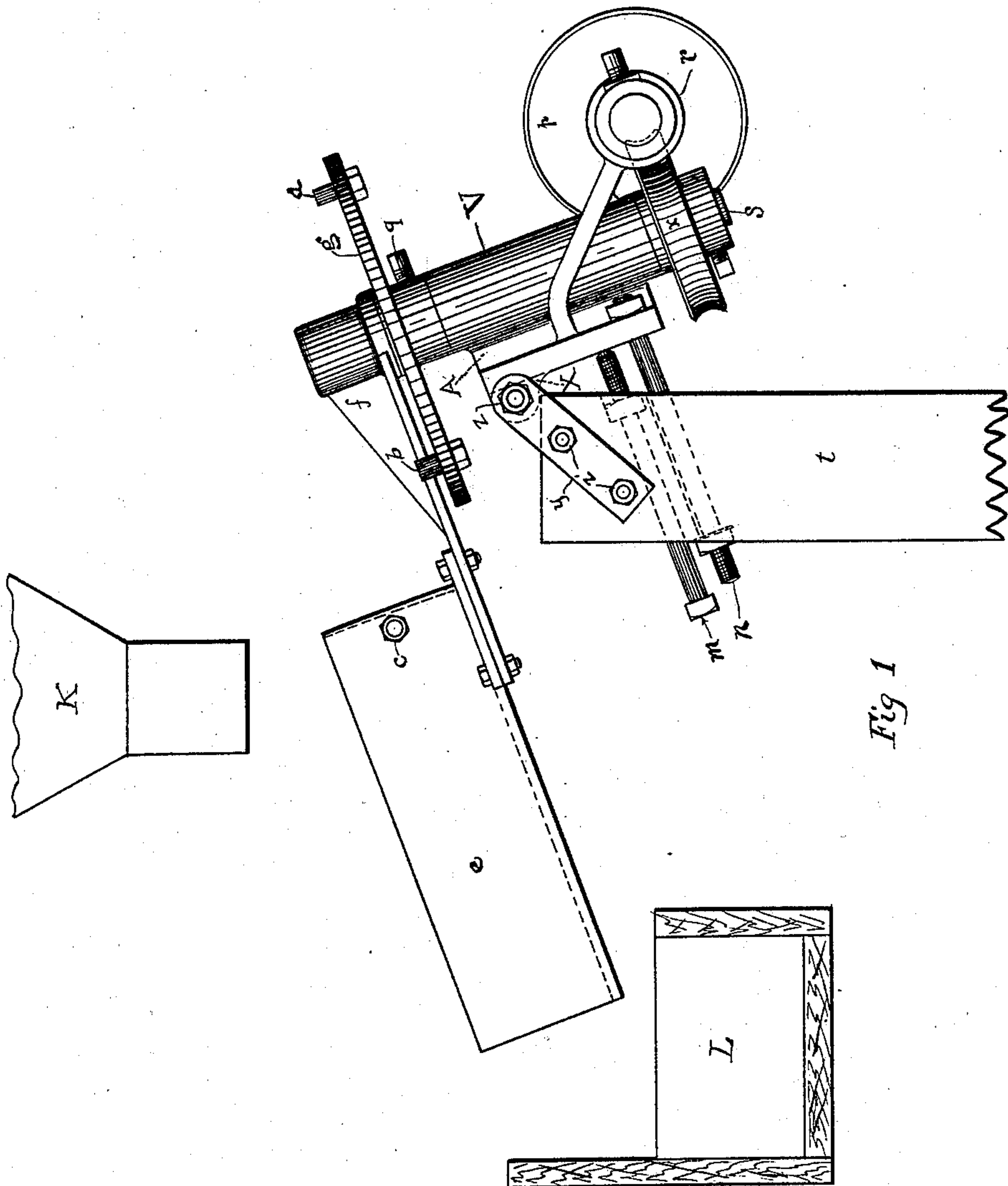


Fig 1

Witnesses

Charles W. Helmick
A. H. Prescott

Frank W. Rossberg

per
Edward J. Russell
attorney

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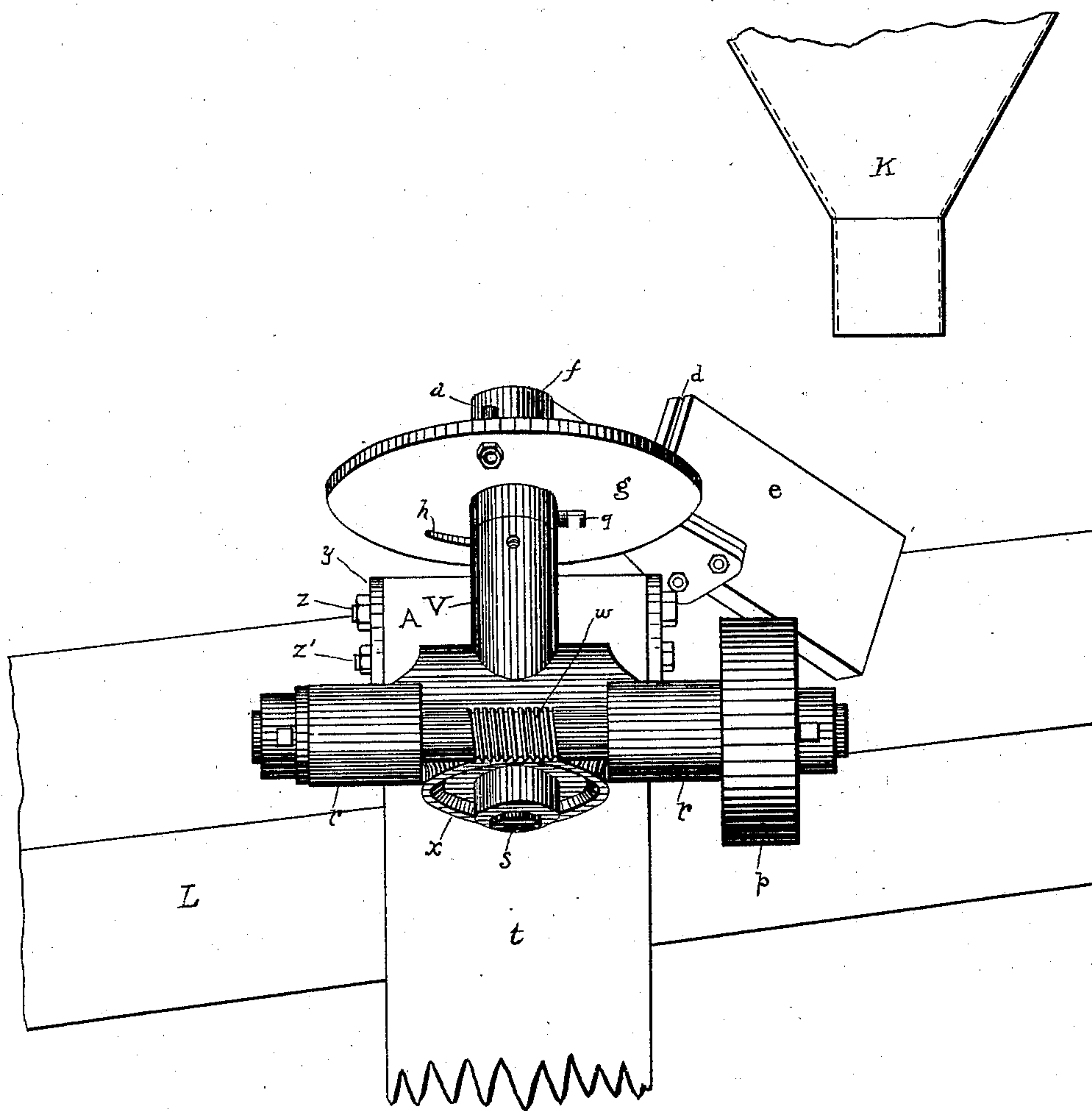


Fig 2

Witnesses
Charles W. Hallock
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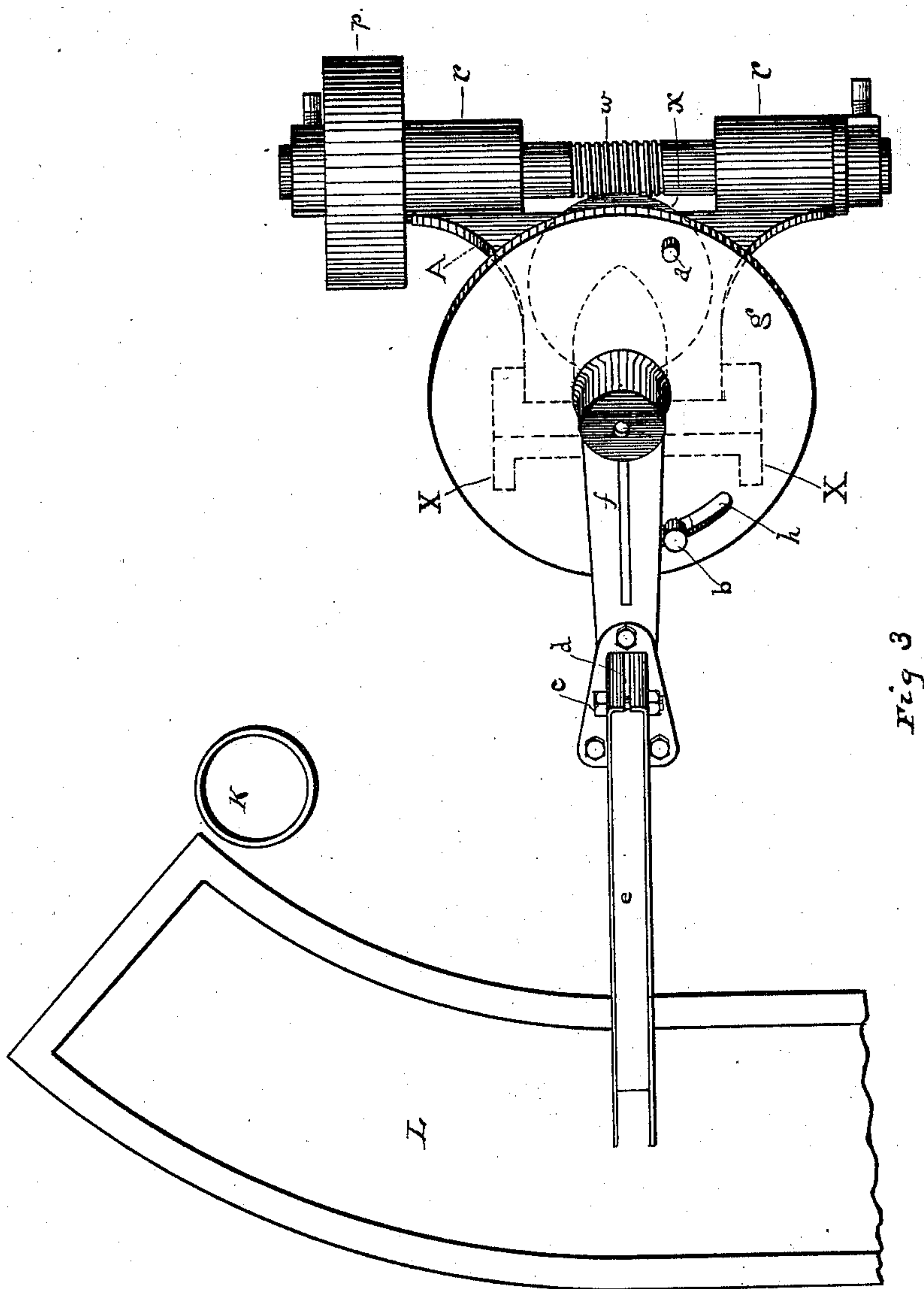
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3 Sheets—Sheet 3.

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Witnesses
Charles W. Halwick
H. Prescott

Frank W. Rossberg.
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UNITED STATES PATENT OFFICE.

FRANK W. ROSSBERG, OF HELENA, MONTANA.

PULP AND ORE SAMPLER.

SPECIFICATION forming part of Letters Patent No. 580,803, dated April 13, 1897.

Application filed June 15, 1896. Serial No. 595,610. (No model.)

To all whom it may concern:

Be it known that I, FRANK W. ROSSBERG, a citizen of the United States, and a resident of the city of Helena, county of Lewis and Clarke, State of Montana, have invented a new and useful Improvement in Pulp and Ore Samplers, of which the following is a specification.

There has long been a need for a simple compact ore and pulp sampler occupying a small amount of room, working automatically, and adjustable as to the size and number of the samples taken.

My invention supplies such a machine; and it consists in a revolving shaft, adjustably tilted at an angle to the perpendicular, carrying a revolving disk provided with pins, and an arm carrying a sample-cup revolved partly by the disk and partly by gravity.

Figure I shows a side elevation of the whole machine. Fig. II shows a front elevation. Fig. III shows a plan view.

Similar letters refer to similar parts in all the drawings.

A is a bracket carrying the journals V and *r r* and provided with the lugs X.

S is a shaft furnished at the lower end with the worm-wheel *x* and at its upper end with the disk *g* and the loosely-revolving arm *f*.

e is the sampling-cup, attached to the arm *f* and provided with the bolt *c* for regulating its width.

t is a perpendicular piece of timber supporting the bracket A by means of the plates *y* and the bolts *z z'*.

m and *n* are also bolts for securing the bracket to the timber *t* and adjusting its angle to the perpendicular.

w is a worm-shaft provided with the pulley *p*.

The disk *g* carries the fixed pin *a* and the movable pin *b*, adjustable in the slot *h*.

K is the ore or pulp spout.

L is the receiving-tank for the samples.

Having thus described my invention, its mode of operation is as follows: The bracket A being properly attached to the timber *t* at the desired angle, (between fifteen and twenty-five degrees,) power is applied to the worm-shaft *w* by means of the pulley *p*. The worm-wheel *x* revolves the shaft S and with it the disk *g*. The arm *f*, with its sample-cup *e*,

will rest by gravity at its lowest point over the tank L. As the disk *g* revolves, the pin *a* will come in contact with the arm *f* and will carry it from its dependent position around and up until it passes the perpendicular, when it will swing quickly by its own weight to its former position, cutting a sample from the ore or pulp stream as it swings through it.

The pin *b* is adjusted according to the angle of the shaft in the slot *h*, so as to check the swing of the arm *f* with as little shock as possible and prevent its oscillation back into the pulp-stream. By the time that the pin *a* again reaches the arm *f* the material in the cup *e* will have slid into the receiving-tank L. The same operation is then repeated.

The frequency of taking the samples may be regulated by varying the speed of the pulley *p* and the thread of the worm-wheel *x*. The size of the samples may be regulated by adjusting the angle of the arm *f* to the horizontal, so that its fall through the pulp-stream will be slower or more rapid, and by regulating the width of the cup *e* with the bolt *c*. The screw *m* regulates the angle or tip of the bracket A.

The machine is compact, cheaply built, and easily set up and may be used for sampling concentrates and tailings from jigs, buddles, and other concentrating-machines or to sample the entire concentrates and tailings of a mill. It may be placed below the rolls to sample the crude ores coming into the mill, also below the pans, settlers, or amalgamating-tables, thus providing a check upon the efficiency of each machine or of the whole mill, as the case may be, enabling one to detect and trace losses.

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

1. In an ore-sampler, the combination of the bracket, and means for adjustably tilting the same, with the shaft, means for revolving the shaft, the disk provided with the pins, fixed to the shaft, and the arm loosely fitted to the shaft carrying a sample-cup, all as shown and described.

2. In an ore-sampler, the combination of the shaft carrying the disk fitted with two pins, and a loosely-revolving arm, carrying a sample-cup, with means for revolving said shaft

and with means for adjustably varying its angle to the perpendicular, substantially as shown and described.

3. In an ore-sampler, the combination with
5 the shaft, means for adjusting the shaft in varying angles to the perpendicular, and means for revolving the shaft, of an arm carrying a sample-cup, and means for revolving
10 said arm, substantially as shown and described.

4. In an ore-sampler, the combination, with a shaft carrying a disk and a loosely-revolving arm, operated by said disk, and means for revolving said shaft, of a bracket, straps for
15 securing the bracket to a fixed support, an adjusting-screw to tilt the bracket at a desired angle, and bolts to secure the bracket in the desired position, substantially as shown and described.

20 5. In an ore-sampler, the combination of a shaft, means for supporting the shaft in vary-

ing angles to the perpendicular, and means for revolving said shaft, with a disk, fixed to the shaft, provided with one fixed pin and one adjustable pin, and an arm carrying a sample-
25 cup, substantially as shown and described.

6. In an ore-sampler, the combination of a shaft, means for supporting said shaft in varying angles to the perpendicular, and means for revolving said shaft, with an arm carry-
30 ing a sample-cup, revolved partly by said shaft and partly by gravity, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in pres-
35 ence of two witnesses, this 10th day of June, 1896.

FRANK W. ROSSBERG.

Witnesses:

C. H. GLASSER,
WM. JOHNSTON.