

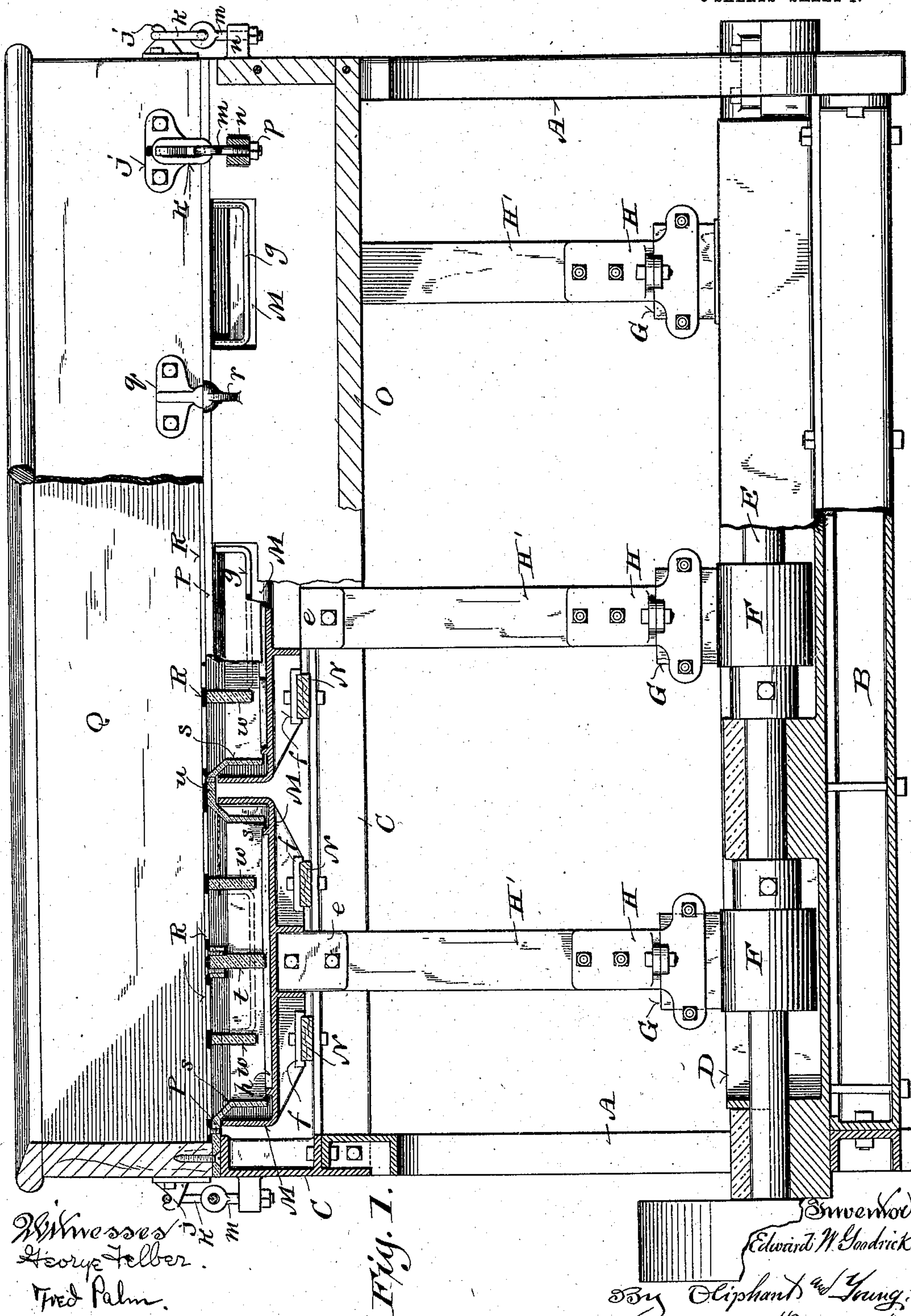
No. 815,421.

PATENTED MAR. 20, 1906.

E. W. GOODRICK.
PULP SCREENING MACHINE.

APPLICATION FILED AUG. 14, 1905.

3 SHEETS—SHEET 1.



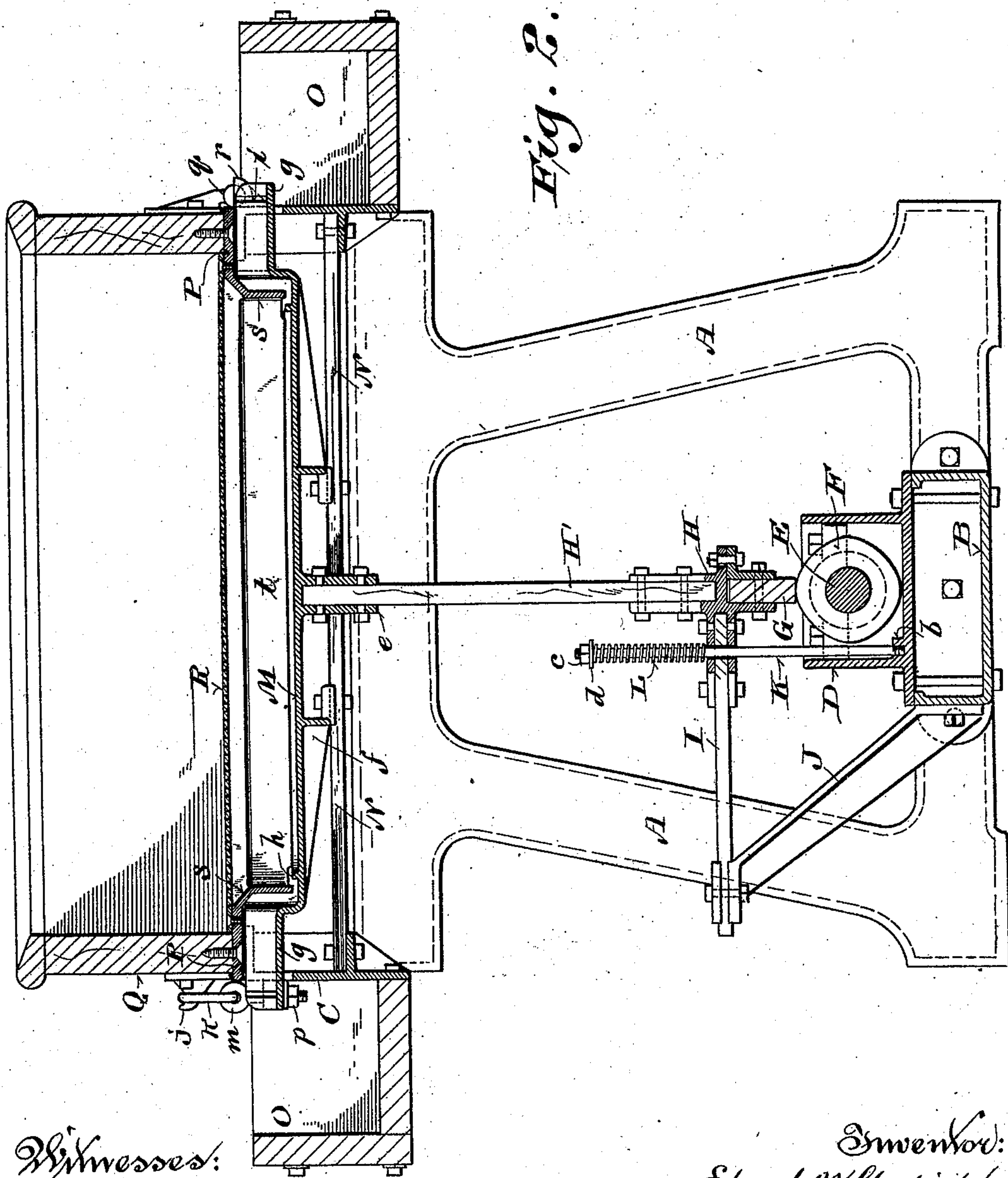
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Witnesses:
George Felber.
Fred Palm.

Inventor:
Edward W. Goodrick.
By: Oliphant & Young,
Attorneys.

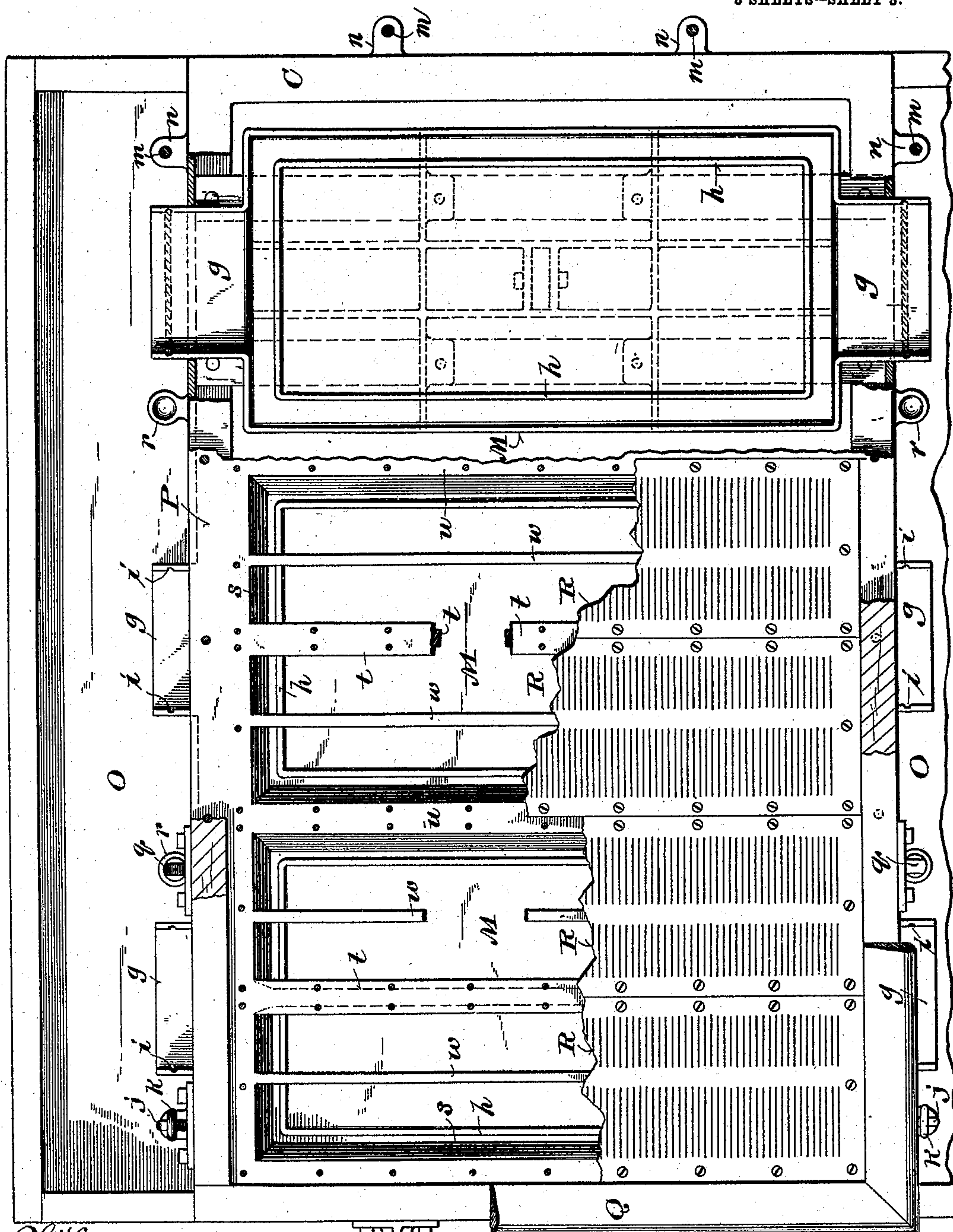
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Fred Palm.

Fig. 3.

Inventor:
Edward W. Goodrick
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Attorneys.

UNITED STATES PATENT OFFICE.

EDWARD W. GOODRICK, OF APPLETON, WISCONSIN, ASSIGNOR OF ONE-HALF TO APPLETON MACHINE COMPANY, OF APPLETON, WISCONSIN.

PULP-SCREENING MACHINE.

No. 815,421.

Specification of Letters Patent.

Patented March 20, 1906.

Application filed August 14 1905. Serial No. 274,066.

To all whom it may concern:

Be it known that I, EDWARD W. GOODRICK, a citizen of the United States, and a resident of Appleton, in the county of Outagamie and State of Wisconsin, have invented certain new and useful Improvements in Pulp-Screening Machines; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention consists in certain peculiarities of construction and combination of parts hereinafter particularly set forth with reference to the accompanying drawings and subsequently claimed, its object being to provide simple, economical, durable, and efficient pulp-screening machines, as well as to do away with packing between screen-frames and their supports in such machines.

Figure 1 of the drawings represents a side elevation of a pulp-screening machine in accordance with my invention, partly in section; Fig. 2, a transverse section view of the machine; and Fig. 3 a plan view of said machine, having parts thereof broken away.

Referring by letter to the drawings, A indicates each of a plurality of standards connected to a box-girth B, and a frame C is bolted or otherwise rigidly secured on the standards. Surmounting the girth is an oil-box D, provided with bearings for a driven shaft E, and fast on the shaft at suitable intervals thereof are cams F, opposing friction-blocks G, that are each in connection with a coupling H, attached to one end of a horizontal spring-bar I, the other end of which is clamped in connection with the upper extremity of an inclined arm J, made fast at its lower extremity to a side of the girth aforesaid. The bottom of the oil-box is provided with sockets, one of which is shown at *b* in Fig. 2, and screw-threaded in each socket is the lower end of a rod K, that extends through a coupling H and spring-bar I therewith. Arranged on the rod against the coupling is a spiral spring L, and the tension of spring is regulated by a nut *c*, run on the screw-threaded upper end of said rod against an interposed washer *d*, the construction and arrangement of parts thus far described and a pitman H', in connection with each coupling, being common in the art to which my improvements pertain. Bolted or otherwise fastened to the upper end of each pitman is

the depending center shank *e* of a pan M, having parallel under ribs *f* bolted or otherwise rigidly secured to spring stay-bars N, that are fastened at their ends to inner ribs of the frame C, these stay-bars, in connection with said frame and a vibratory device, being also common in the art; but the pan is an especial feature of my improvements. Each pan is shown as preferably provided with an angular discharge-spout *g* at each end; but it may be made with but one such spout at the preferred end thereof, each spout being at a suitable elevation above the pan-bottom. However, each pan is necessarily provided with one or more outlets in any suitable arrangement. The bottom of each pan is provided with an endless inner flange *h*, the function of which is hereinafter specified, and each pan-spout discharges into a flow-box O, attached to the frame C aforesaid. The inner sides of each pan-spout are provided with vertical grooves *i*, in which to slide the ends of a weir, such a device being shown by dotted lines in the spouts of a pan in Fig. 3.

Supported on the frame C is the screen-frame P of the machine, and this screen-frame is held by screws or other suitable means in detachable rigid connection with the walls of the pulp-vat Q, said walls of which have outer hook-brackets *j*, engaging links *k*, in connection with eyebolts *m*, that extend through lugs *n* of the frame first aforesaid and engage clamp-nuts *p*, opposed to said lugs. The side walls of the pulp-vat are provided with outer ball-brackets *q*, and these brackets engage socket-lugs *r* of the frame C, whereby said vat and screen-frame therewith are put in readily-removable hinge connection with opposite sides of the other frame, as is customary in the art. Partly-inclined and partly-vertical endless flanges *s* of the screen-frame depend into the underlying pans below the spouts of same, preferably outside of the inner bottom flanges *h* of said pans. Bars *t*, extending the whole depth of the screen-frame, are notched to give clearance for the flanges *h* of the pans, and parallel to these bars the ends and division-plates *u* of said frame are screen-supporting bars *w* of less depth than the bars aforesaid. The screen-plates R are fastened to the ends, sides, division-plates, and main bars of their supporting frame P by screws or other suitable means,

and the center solid portion of each plate rests on one of the auxiliary bars *w* of said frame.

In practice water is run through the screens 5 ahead of pulp to accumulate in the pans to a depth that will form a seal between said pans and the depending flanges *s* of the screen-frame, and vertical vibration is imparted to the aforesaid pans by the rotation of the 10 shaft *E* of the machine. Pulp from the vat is sucked through the screens incidental to downward motion of the pans, and reaction is had on the pulp in said vat incidental to upward motion of said pans to keep said 15 screens from clogging, backflow of pulp from the space between the pan-walls and depending flanges of the screen-frame being retarded by the flanges *h* on the bottoms of the aforesaid pans. The depth of the material 20 in the pans and spouts of same may be increased to a variable degree by the introduction of suitable weirs in said spouts, and the strained pulp from said pans escapes into the flow box or boxes of the machine.

25 The machine may be of one-pan design or comprise an indefinite number of pans, a plural-pan type of machine being herein illustrated.

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

1. In a pulp-screening machine, a vertically-vibratory pan provided with one or more outlets, and a screen-frame having an 35 endless flange depending into the pan.

2. In a pulp-screening machine, a vertically-vibratory pan having an inner endless bottom flange and provided with one or more outlets, and a screen-frame having an 40 endless flange depending into the pan adjacent to the bottom flange of same.

3. In a pulp-screening machine, a vertically-vibratory pan provided with one or more spouts at a suitable elevation above its 45 bottom, and a screen-frame having an endless flange depending into the pan below the spout or spouts of same.

4. In a pulp-screening machine, a verti-

cally-vibratory pan having an inner endless flange on its bottom, and provided with one 50 or more spouts at a suitable elevation above said bottom, and a screen-frame having an endless flange depending into the pan below the spout or spouts of same adjacent to the bottom flange of said pan.

5. In a pulp-screening machine, a vertically-vibratory pan provided with one or more spouts at a suitable elevation above its bottom, each spout having inner side grooves 55 for the engagement of a weir; and a screen-frame having an endless flange depending into the pan below the spout or spouts of same.

6. In a pulp-screening machine, a plurality of vertically-vibratory pans each provided 65 with one or more spouts at a suitable elevation above its bottom, and a screen-frame having a plurality of endless flanges each of which depends into a pan below the spout or spouts of same.

7. In a pulp-screening machine a plurality of vertically-vibratory pans each provided with one or more spouts at a suitable elevation above its bottom and having an inner 75 endless flange on said bottom, and a screen-frame having a plurality of endless flanges each of which depends into a pan below the spout or spouts of same adjacent to the bottom flange thereof.

8. In a pulp-screening machine, a plurality 80 of vertically-vibratory pans each provided with one or more spouts at a suitable elevation above its bottom, each spout having inner side grooves for the engagement of a weir; and a screen-frame having a plurality of end- 85 less flanges each of which depends into a pan below the spout or spouts of same.

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wis- 90 consin, in the presence of two witnesses.

EDWARD W. GOODRICK.

Witnesses:

N. E. OLIPHANT,
GEORGE TELLER.