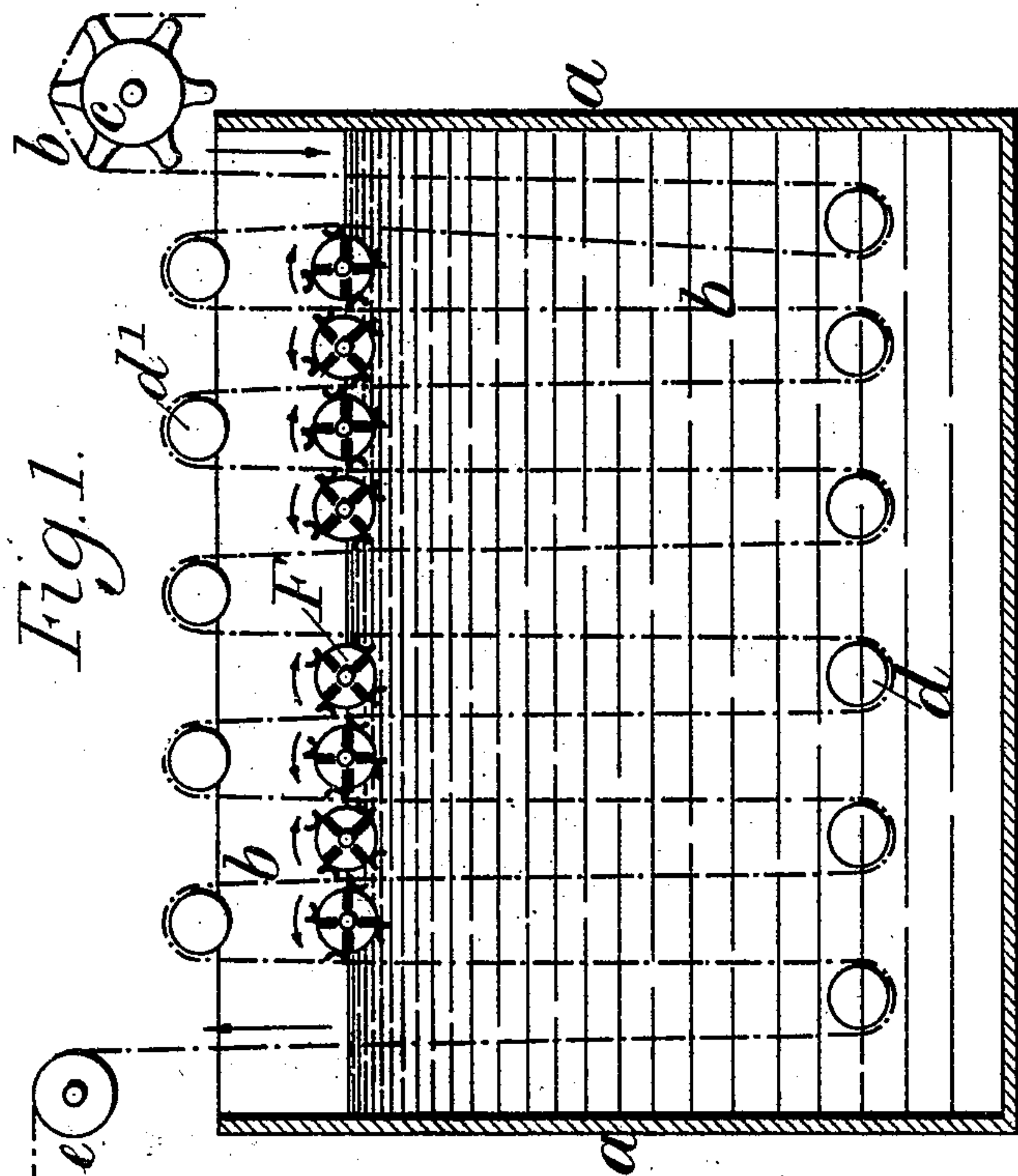
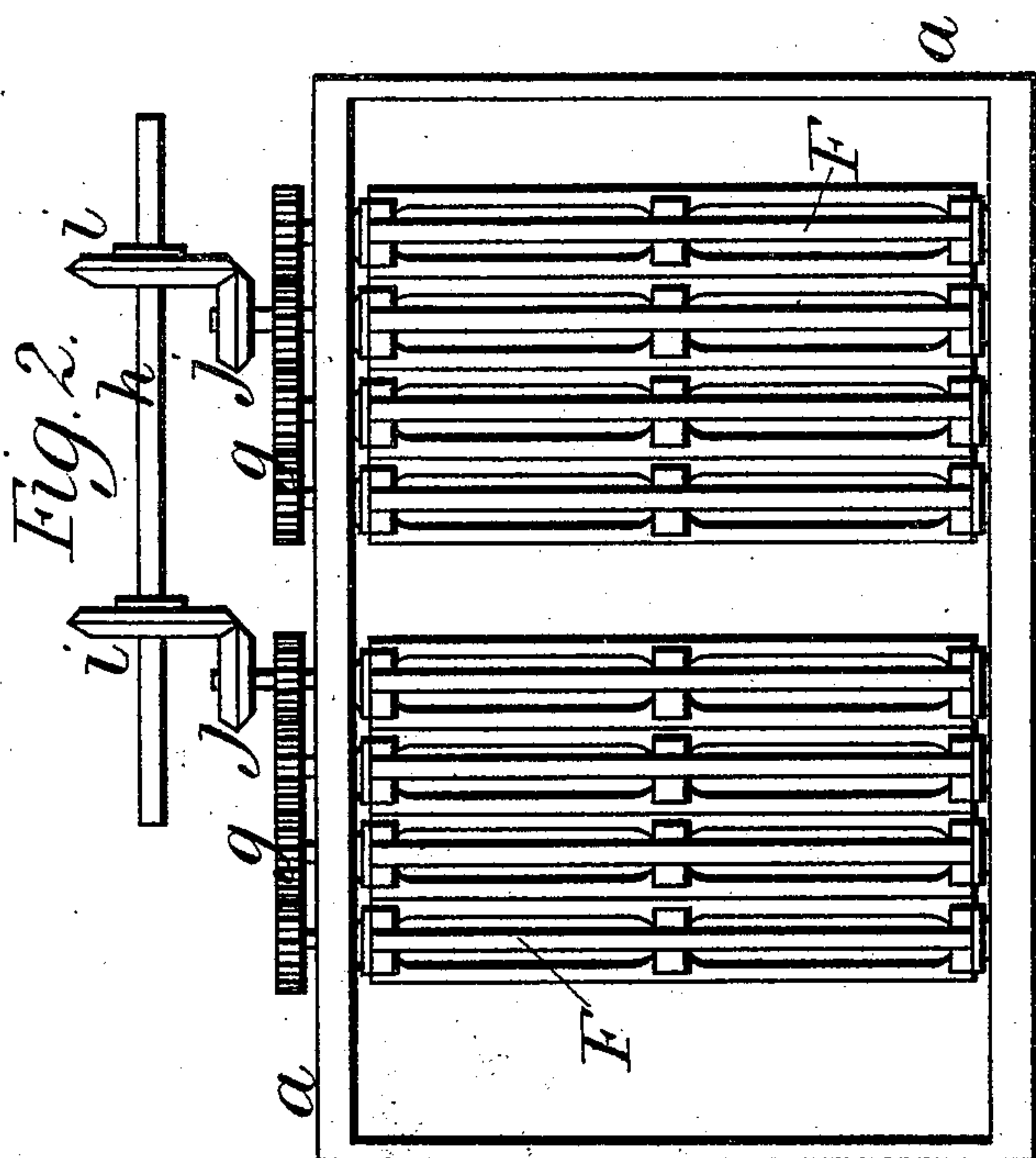


(No Model.)

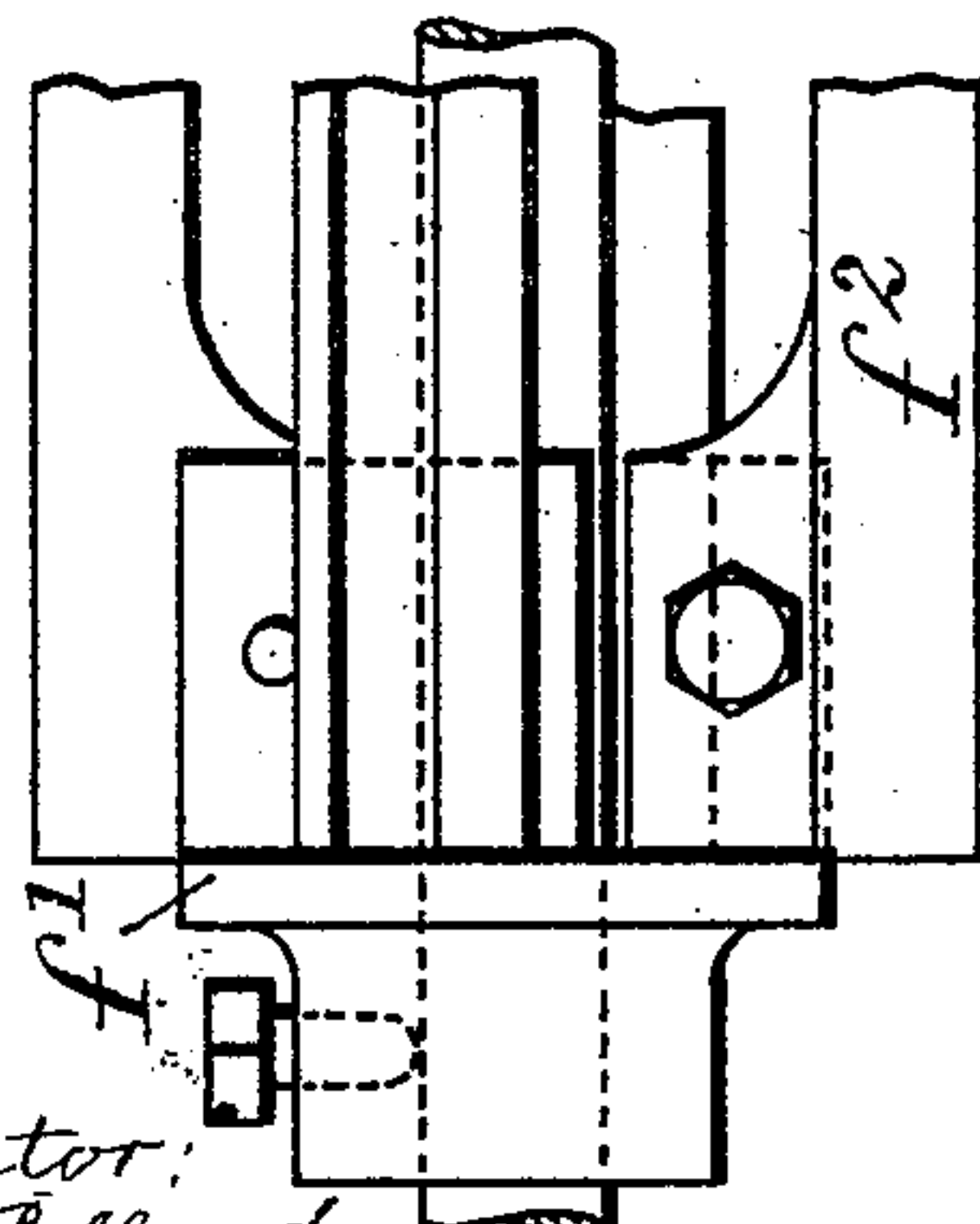
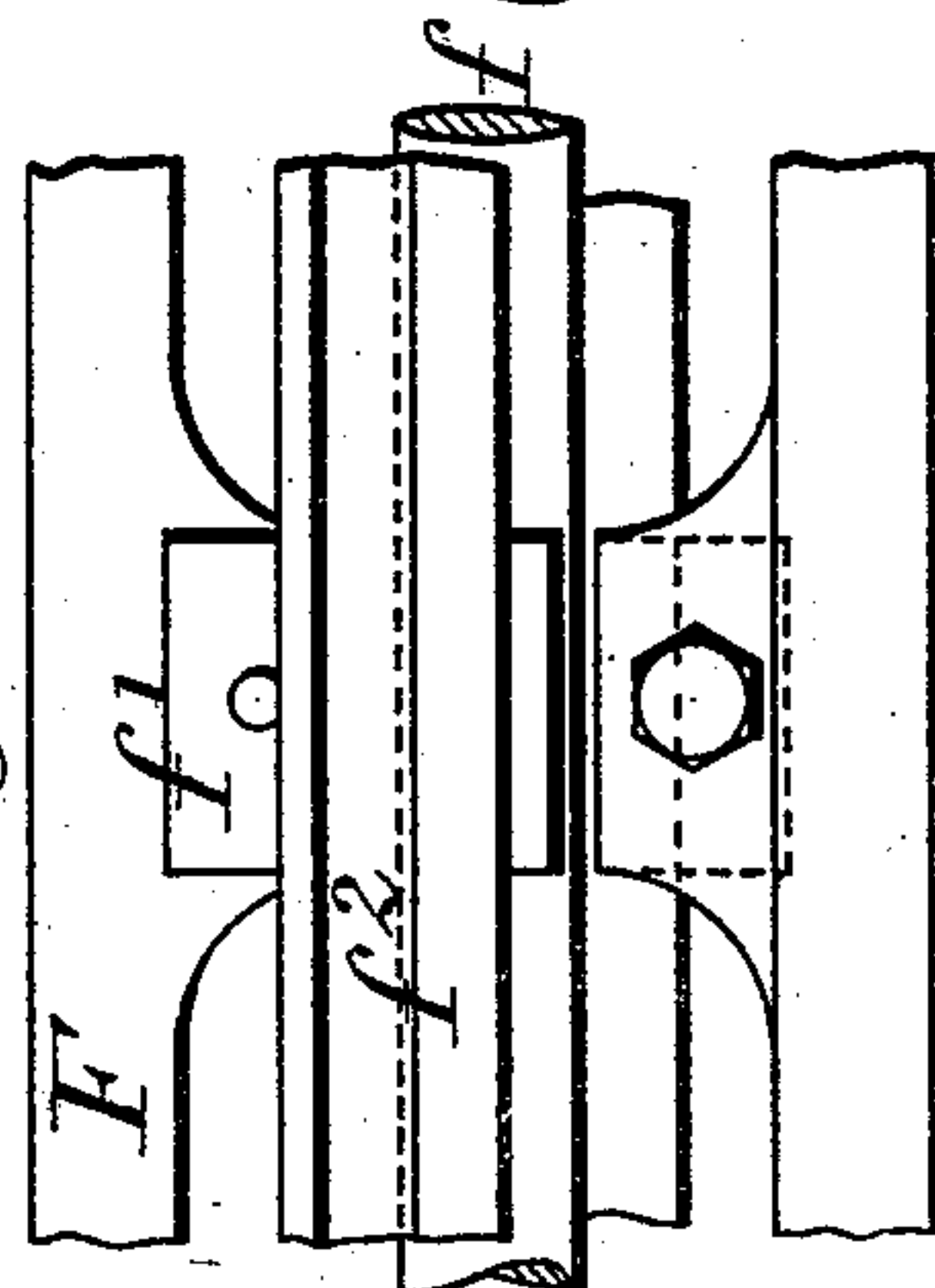
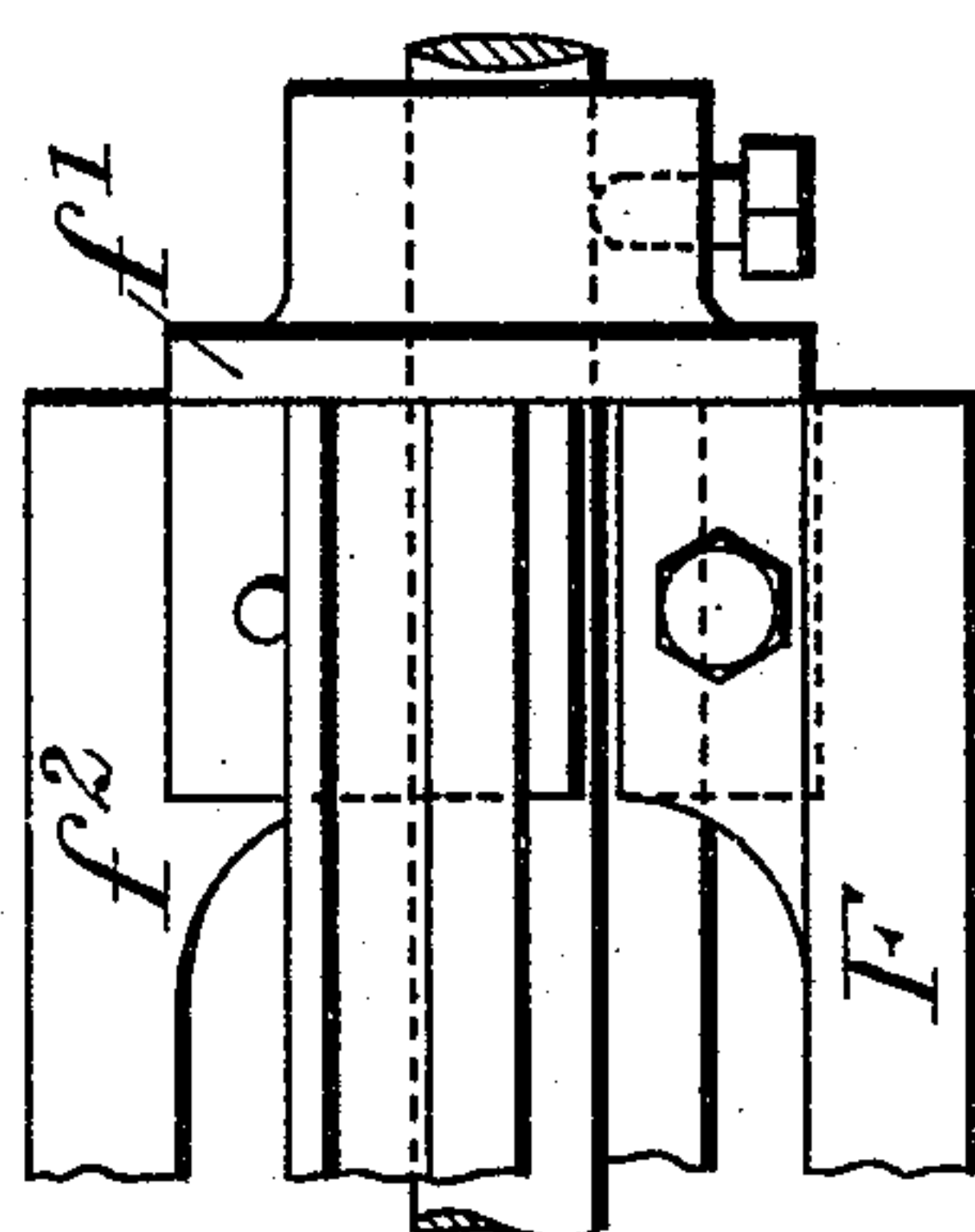
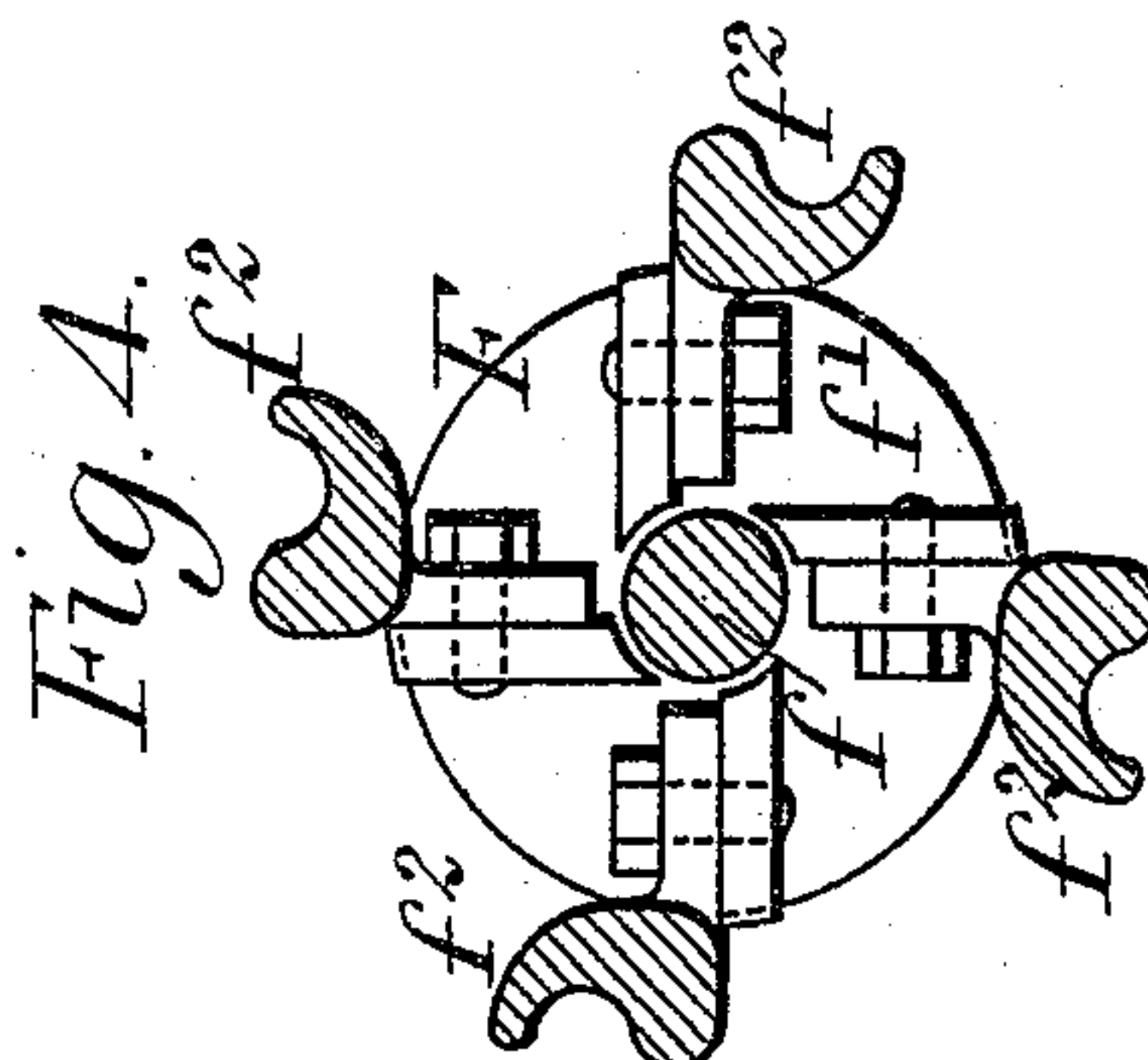
J. POLLARD.
APPARATUS FOR TREATING FABRICS.

No. 513,026.

Patented Jan. 16, 1894.



Witnesses:
G. H. Rea.
Thos. A. Green.



Inventor:
James Pollard,
By James L. Norris,
att'y.

UNITED STATES PATENT OFFICE.

JAMES POLLARD, OF HYDE, ASSIGNOR TO MATHER & PLATT, LIMITED, OF MANCHESTER, ENGLAND.

APPARATUS FOR TREATING FABRICS.

SPECIFICATION forming part of Letters Patent No. 513,026, dated January 16, 1894.

Application filed September 23, 1893. Serial No. 486,291. (No model.) Patented in England December 29, 1888, No. 18,987.

To all whom it may concern:

Be it known that I, JAMES POLLARD, engineer, a subject of the Queen of England, residing at Newton Bank Print Works, Hyde, in the county of Chester, England, have invented certain new and useful Improvements in Apparatus for Washing, Soaping, Scouring, Bleaching, Dyeing, and otherwise Similarly Treating Textile Fabrics, (for which I have received Letters Patent in Great Britain, No. 18,987, dated December 29, 1888,) of which the following is a specification.

My invention relates to improvements in apparatus for washing, soaping, scouring, bleaching, dyeing, and otherwise similarly treating textile fabrics and consists mainly in the construction, use and application of an improved beater as a substitute for the ordinary wince or revolving beater which in one form as now constructed is a solid square wooden roller with projections or beating pieces fixed thereon. Now according to my invention I construct a skeleton roller the periphery of which is made up of say four or other number metal blades with scoops fixed upon disks, spider wheels or equivalents which are secured upon an axle and are driven in any convenient manner. The front edges of these blades act as beaters when they strike against the fabric and the scoops in revolving collect some of the water or other liquid in which they dip and dash such liquid against the fabric.

In order that my invention may be fully understood and readily carried into effect I will describe the accompanying sheet of drawings reference being had to the letters marked thereon.

Figure 1 is a sectional elevation illustrating the application of my improved rollers to a machine for washing, soaping, scouring, bleaching, dyeing, or otherwise similarly treating textile fabrics. Fig. 2 is a plan of Fig. 1 but with the top guide rollers removed in order to show my improved rollers more clearly. Figs. 3 and 4 are detail views showing one of my improved rollers on a larger scale.

In Figs. 1 and 2 *a* designates the tank partially filled with the liquor for washing or otherwise treating the fabric *b*; *c* the roller over which the fabric *b* passes into the tank

d under and over two series of guide rollers *d d'* respectively, the fabric passing finally out of the tank *a* over the guide roller *e*. During its passage through the tank *a* the fabric *b* is subjected to the action of a number of my improved rollers *F*. In the drawings eight of these rollers *F* are shown but it is obvious that any number from one upward may be employed.

Each roller *F* is constructed as best shown by the detail views Figs. 3 and 4 where *f* designates the shaft or axle of the roller upon which are mounted disks or spider wheels *f'* to which are bolted or otherwise rigidly affixed the four blades *f²* shaped as shown best in Fig. 4; the front edges of these blades *f²* act as beaters when they strike against the fabric in revolving while the scoops dash against the fabric the liquid caught up by them as they revolve. The trough-shaped, or scooping faces of the blades *f²* are turned outwardly, with relation to the roll *F*, carrying the same, whereby the fluid in the tank is dashed against the fabric in greater quantities and with greater force than is possible with blades having the trough-shaped, or scooping faces, turned into such position as to face toward prolonged radii of the roll *F*. The drawings show four blades *f²* which is the number I consider most suitable and prefer to employ although any other number might be employed. The position of the guide rollers may be such that the beaters strike either the back or face of the cloth or both the back and face.

I take care that the level of the liquid in the tank *a* shall be maintained at such a height that the blades *f²* will always dip in the liquid as they revolve. I mount the axles *f* of the rollers *F* in suitable bearings supported by the sides of the tank and I propose to gear the said axles together by toothed wheels *g* and drive them from the shaft *h* by means of the two pairs of bevel gears *i i* and *j j* respectively as shown or by other suitable arrangement of gearing so as to drive the rollers alternately in opposite directions. I also propose to set the rollers *F* so that each blade *f²* in revolving will come opposite the space between the adjacent pair of blades *f²* on the next roller as shown in Fig. 1.

Having thus described the nature of my said invention and the best means I know for carrying the same into practical effect, I claim—

1. In apparatus for washing, soaping, scour-
5 ing, bleaching, dyeing and otherwise similarly
treating textile fabrics, a roller made up of a
number of blades carried upon disks fixed on
a shaft mounted in bearings and caused to re-
volve in a tank containing liquid, said blades
10 having scooped or trough-shaped faces which
are turned outward to operate both as beaters
for striking the fabric traveling through the
tank and as scoops for dashing the liquid in
which they revolve against the said fabric,
15 substantially as described.

2. Apparatus for simultaneously beating
and throwing liquid upon fabrics consisting
of the combination with a revolving shaft f , of
disks f' to which are secured blades f^2 hav-
20 ing outwardly turned trough or scoop-shaped
faces, substantially as described.

3. In apparatus for washing, soaping, scour-
ing, bleaching, dyeing and otherwise similarly
treating textile fabrics, the combination with

a tank a partially filled with liquid, of rollers 25
 d, d' over which the fabric b to be treated is
made to travel alternately in an upward and
downward direction, and rollers F with blades
provided with outwardly turned scoop, or
trough-shaped faces arranged so as to simul- 30
taneously beat and throw liquid upon each
side of the traveling fabric, the scoop-like
blades of the roller situated upon the one side
of the fabric being so located as to operate
thereon in the intervals between the actions 35
of two successive blades of the roller situated
on the other side of the fabric, substantially
as described.

In testimony whereof I have signed my
name to this specification, in the presence of 40
two subscribing witnesses, this 9th day of
September, A. D. 1893.

JAMES POLLARD.

Witnesses:

ED. BOUTFLOWER,
Notary Public, Manchester.

JAS. S. BROADFOOT,
His Clerk, 11 Spring Gardens, Manchester.