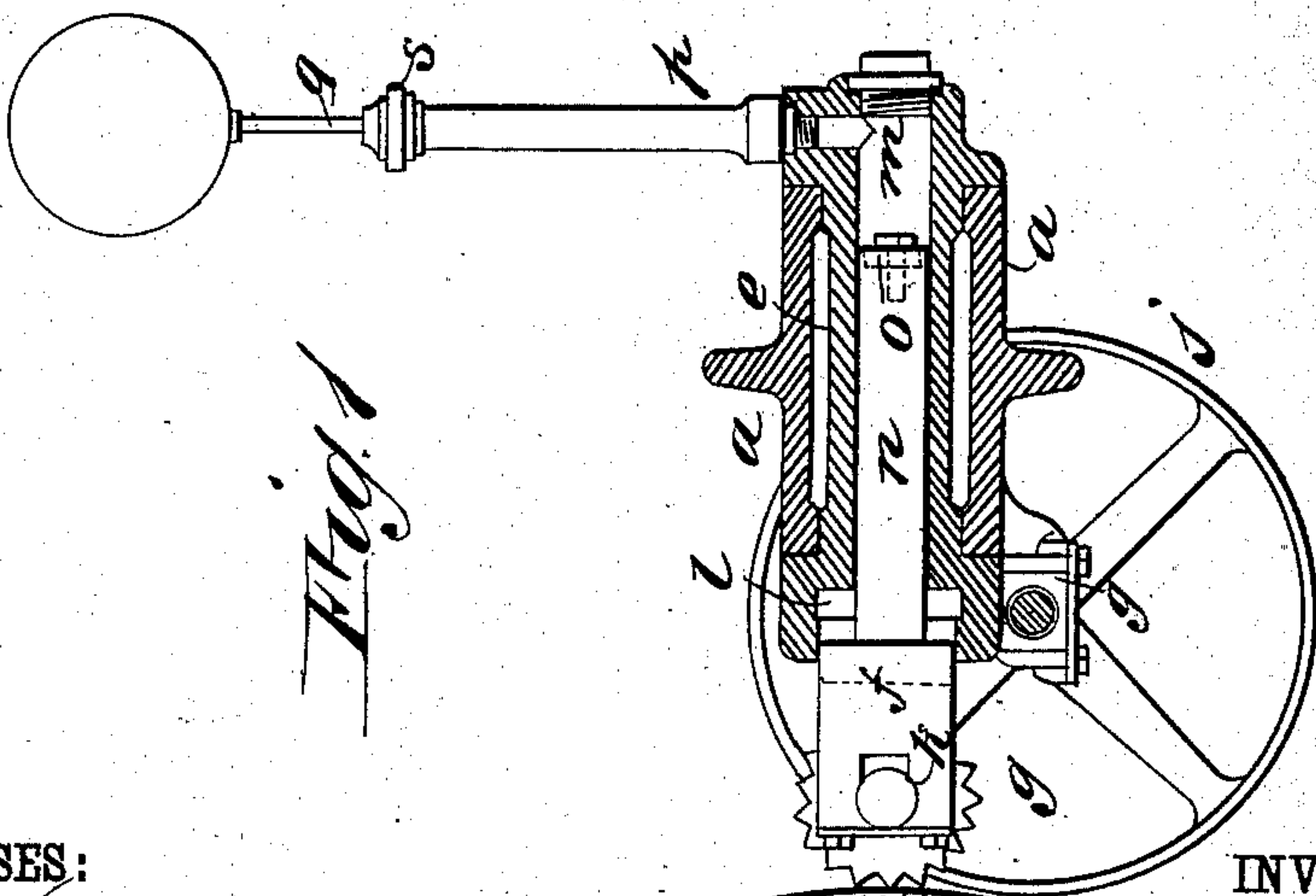
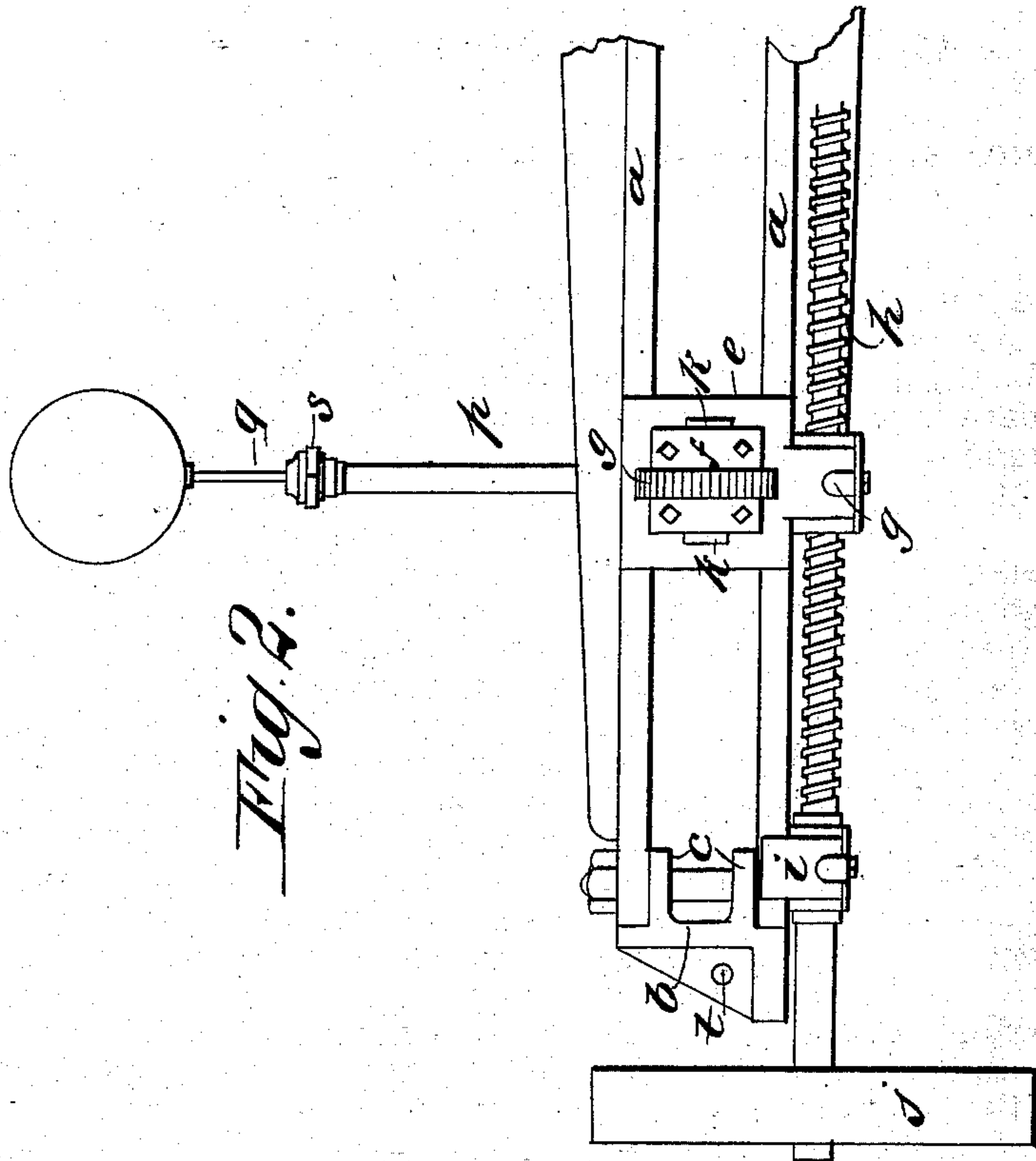


(No Model.)

A. MITCHELL.  
ROLLER ROUGHING MACHINE.

No. 317,167.

Patented May 5, 1885.



WITNESSES:

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INVENTOR:

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# UNITED STATES PATENT OFFICE.

ARCHIBALD MITCHELL, OF NEW ORLEANS, LOUISIANA.

## ROLLER-ROUGHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 317,167, dated May 5, 1885.

Application filed May 1, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, ARCHIBALD MITCHELL, of New Orleans, in the parish of Orleans and State of Louisiana, have invented a new and  
5 Improved Roller-Roughing Machine, of which the following is a full, clear, and exact description.

My invention consists of a simple contrivance of mechanism for roughing the surfaces of cane-mill rollers to enable them to "bite" and hold  
10 the cane to draw it in between the rollers more effectually than the smooth surfaces produced by wear of the cane will, the said improved contrivance being, essentially, a hardened steel  
15 milling-tool in an arrangement of mechanism for pressing it against the surface of the roller while being revolved, and for causing the tool to traverse slowly along the roller from end to end, together with means for mounting the  
20 apparatus on the housings of the cane-mill, so that the roughing attachment may perform its work at the same time that the mill is employed for grinding the cane to avoid loss of time for roughing the rollers, all as hereinafter fully described.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

30 Figure 1 is a sectional elevation of my improved cane-roller-roughing apparatus as applied to a roller, which is partly shown in transverse section; and Fig. 2 is a front elevation of the principal portion of the roughing-machine.  
35

I make a frame consisting of two broad parallel plates, *a*, and two end pieces, *b*, bolting the plates to said end pieces at *c*, and making the end pieces suitably for bolting through a  
40 hole, *t*, to the housings of a sugar-cane mill, so that the plates *a*, which are of suitable length to extend from one side to the other of said frame, will be supported in front of the roller *d*, and form a slideway in which the  
45 slide *e*, for the support of the stock *f* of a milling-tool, *g*, may be so mounted that it may be made to traverse along the slideway from end to end of the roller *d*, while being pressed against the surface of the roller to indent and  
50 roughen the same.

For causing the traverse of the slide it has a nut, *g*, through which a feed-screw, *h*,

works, said screw being mounted in bearings *i*, attached to the slide-frame near each end, and having a driving-pulley, *j*, on which a belt  
55 may be run to work the screw.

Any approved means of reversing the motion of the driving-belt may be used for changing the direction of the motion of the slide.

The milling-tool is mounted by its journals *k* in suitable bearings in the head of the stock *f*, and is fitted to slide to and from the roller *d* in the square socket *l* at the inner end of slide *e*, and also in the cylindrical bore *m* through the side, the stock being fitted in or  
60 forming a part of the cylindrical extension *n* to said bore.  
65

Any suitable means of pressing the milling-tool stock forward to cause the pressure of the milling-tool on the roller *d* may be employed, 70 as a spring, lever, cord, weight, and pulley or other contrivance; but I prefer to employ hydraulic pressure by fitting the end of cylinder *n* with hydraulic packing *o*, connecting a stand-pipe, *p*, with the bore *m*, filling the same 75 with oil or other liquid, and fitting a vertical weighted plunger, *q*, in the stand-pipe, with a cap, *s*, containing suitable packing, screwed on the top of the stand-pipe to confine the liquid. This makes a very simple device, which  
80 is uniform in its action and not liable to get out of order.

When it is desired to suspend action of the milling-tool, the weighted plunger may be lifted up a little by a lever or other means. 85 The effect of the weighted plunger on the milling-tool will be as much greater than the weight of the plunger as the area of the cylinder *n* is greater than that of the plunger.

Having thus fully described my invention, I 90 claim as new and desire to secure by Letters Patent—

1. The improved cane-roller-roughing machine consisting of a milling-tool, *g*, combined with stock *f*, slide *e*, slideway *a b*, and means, 95 substantially as described, for pressing the tool against the surface of said roller, said slideway being arranged and supported parallel with the roller *d*, substantially as herein specified.  
100

2. The improved cane-roller-roughing machine consisting of a milling-tool, *g*, combined with stock *f*, slide *e*, slideway *a b*, and means, substantially as described, for pressing the

tool against the surface of the roller, said  
slideway being adapted to be attached to the  
housing-frame of the cane-mill for supporting  
the slide and milling-tool relatively thereto,  
5 substantially as herein specified.

3. The improved cane-roller-roughing ma-  
chine consisting of the milling-tool *g*, mount-  
ed in a stock, *f*, having a cylindrical exten-  
sion, *n*, fitted in the bore *m* of the slide *e*, for

hydraulic pressure, and said slide having a 10  
stand-pipe, *p*, and weighted plunger *q*, and  
being arranged in the slideway *a b*, adapted  
for application to rollers *d* of a cane-mill,  
substantially as described.

ARCHIBALD MITCHELL.

Witnesses:

CHAS. J. LEEDS,  
H. REMINGTON.