Jan. 29, 1924. 1,481,886

R. O. BERG

MACHINE FOR FEEDING TUBING

Filed July 19, 1922 3 Sheets-Sheet 1

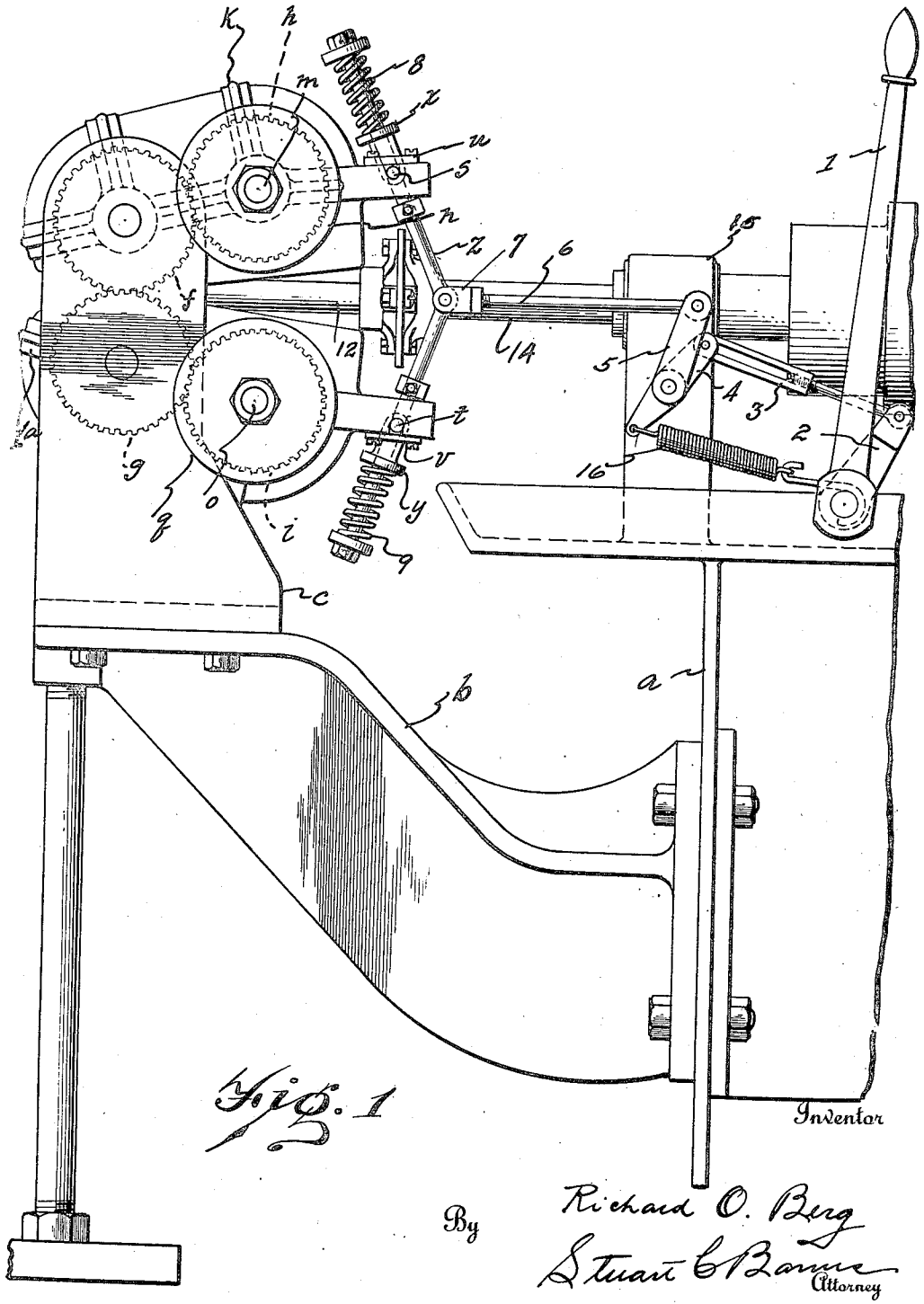


Fig. 1

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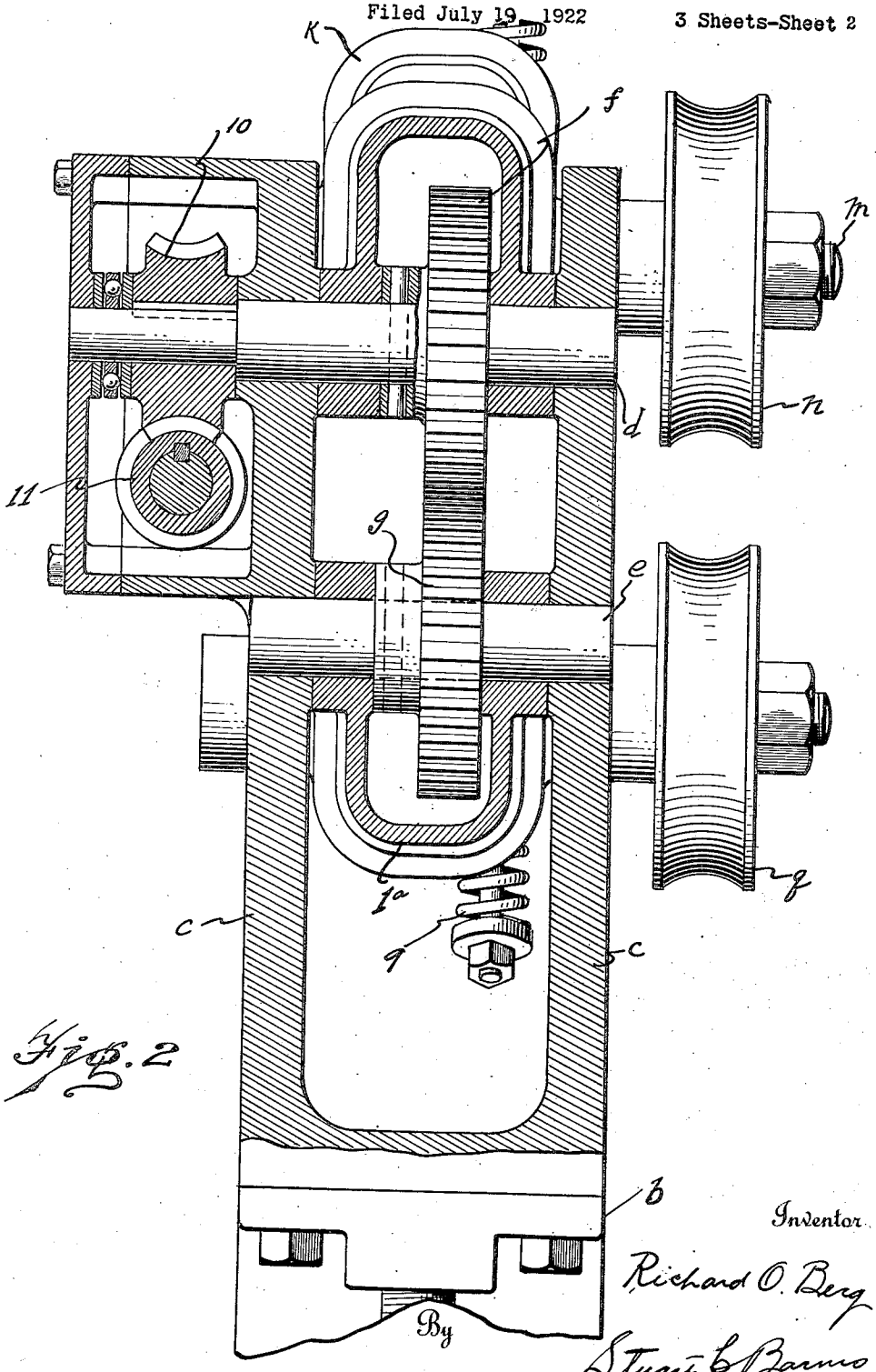


Fig. 2

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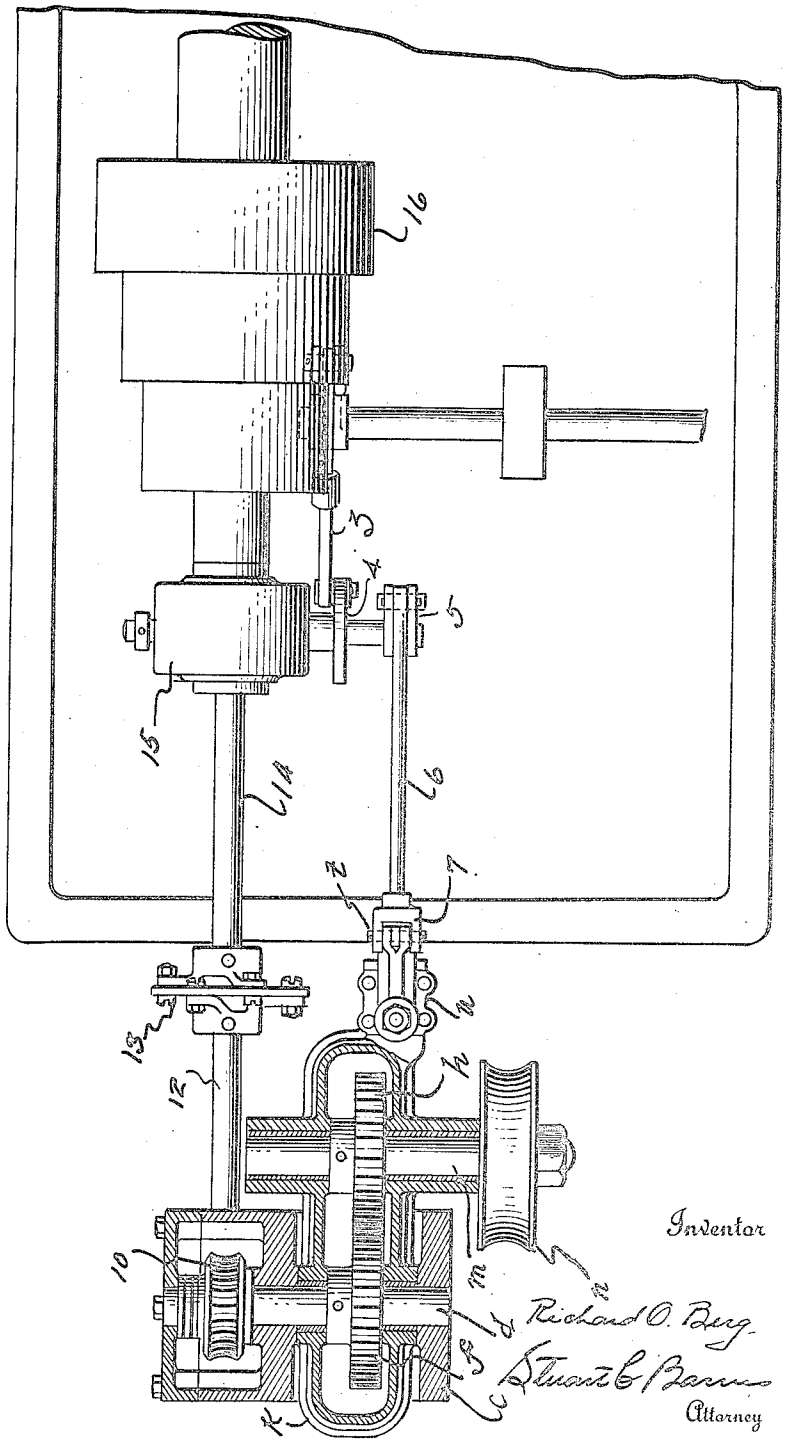


Fig. 3

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Patented Jan. 29, 1924. 1,481,886

UNITED STATES PATENT OFFICE.

RICHARD O. BERG, OF DETROIT, MICHIGAN, ASSIGNOR TO MICHIGAN STEEL TUBE PRODUCTS COMPANY, OF DETROIT, MICHIGAN, A CORPORATION OF MICHIGAN.

MACHINE FOR FEEDING TUBING.

Application filed July 19, 1922. Serial No. 576,031.

To all whom it may concern:

Be it known that I, RICHARD O. BERG, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Machines for Feeding Tubing, of which the following is a specification.

This invention relates to feeding apparatus for feeding tubes and has for its object a manually controllable set of feeding rolls which can be quickly engaged or disengaged from a tube, in feeding the same forward for any of the various mechanical operations performed on the tube. Lengths of tube that are ordinarily hard to pull by hand may in this way be fed to cut-off mechanism or any other machine that performs an operation on the tube.

In the drawings,—

Fig. 1 is a side elevation of the apparatus.

Fig. 2 is a vertical section of the same.

Fig. 3 is a plan view of the same, partly in section.

a designates the stand to which is bolted the arm *b*, carrying the uprights *c*. In these two uprights are journaled the shafts *d* and *e*. The upper shaft *d* carries the gear *f*, the lower shaft carries the gear *g*. The upper gear *f* meshes with the driven gear *i*. These two driven gears *h* and *i* are carried upon cradles *k* and l^a. The upper cradle *k* rocks around the axis of the shaft *d*, the lower cradle l^a rocks around the shaft *e*. On the driven shaft *m* is secured the feed roll *n*, while on the lower driven shaft *o* is secured the feed roll *q*. The forward ends of the two cradles are bolted to the studs *s* and *t* through the plates *u* and *v*. These studs *s* and *t* are on the sliding sleeves *x* and *y* that are secured on the toggle arms *z*.

In the position shown in Fig. 1, the rolls are open and arranged to receive a piece of tube. The tube has to have the forward end pushed by hand between the rolls. Thereupon the operator throws the lever 1 to the right, this pulls the crank arm 2 to the right, pulling connecting rods 3 to the right and also the crank arm 4 and the crank arm 5. The crank arm 5 through the connecting rod 6 pulls the toggle arms *z* outwardly by means of the clevis 7. This forces the cradles *k* and l^a toward each other and consequently the feed rolls *n* and *q* toward each other. However, the toggle arms *z* only connect with the cradle through the compression springs 8 and 9, consequently the pressure on the rolls is a yielding one and these rolls yieldingly engage the tube and feed it forward for any operation it is desired to perform upon it.

The upper shaft *d* is driven by a worm gear 10 and a worm 11. This worm is on a shaft 12 provided with a flexible coupling 13 which connects with the driving shaft 14 which is supported in the bearing 15. The opposite end of the shaft 14 is provided with a stepped pulley 15.

The lower end of the crank arm 4 is secured to a tractile spring 18 which tends at all times to open up the cradles and the rolls by forcing the toggle arms toward their straight line position. This action of the spring is resisted by the operator keeping hold of the lever 1 as long as he desires the feeding action to continue. As soon as he lets go of the lever 1 the tractile spring opens up the rolls and the feeding quits.

What I claim is:—

1. In a machine for feeding tubing, the combination of a support, a pair of driving gears, a pair of members supported on the support and one of which is a cradle, supported to rock on the axis of one of the driving gears, a pair of driven gears meshing with the driving gears and rotatably supported on the ends of the said members, feeding rolls coaxially supported with said driven gears on said members, and means for forcing the members toward each other to grip the tube.

2. In a machine for feeding tubing, the combination of a support, members supported on said support and one of which is a cradle pivoted to rock on the support, driven gears supported on the said members, feed rolls in driving relation to said driven gears and a pair of toggle arms which may be operated to rock the cradle and draw the rolls toward each other to grip the tube.

3. In a machine for feeding tubing, the combination of a rocking cradle, a pair of driven feeding rolls supported to move relatively toward each other, and a pair of tog-

gle arms including interposed spring elements for forcing the rolls toward each other to grip the tube.

4. In a machine for feeding tubing, the combination of a support, a cradle supported to rock on the support, a pair of rotary driven rolls supported one of them on the cradle to move toward or away from the other, a pair of toggle arms engaging with said cradle to cause the rolls to draw toward each other or away from each other and a connecting rod and crank connection on the knee of the toggle for operating the said toggle arms.

In testimony whereof I affix my signature.

RICHARD O. BERG.