Jan. 8, 1924. 1,480,044

C. L. BOWERS ET AL

DIEING MACHINE

Filed Sept. 7, 1920 8 Sheets-Sheet 1

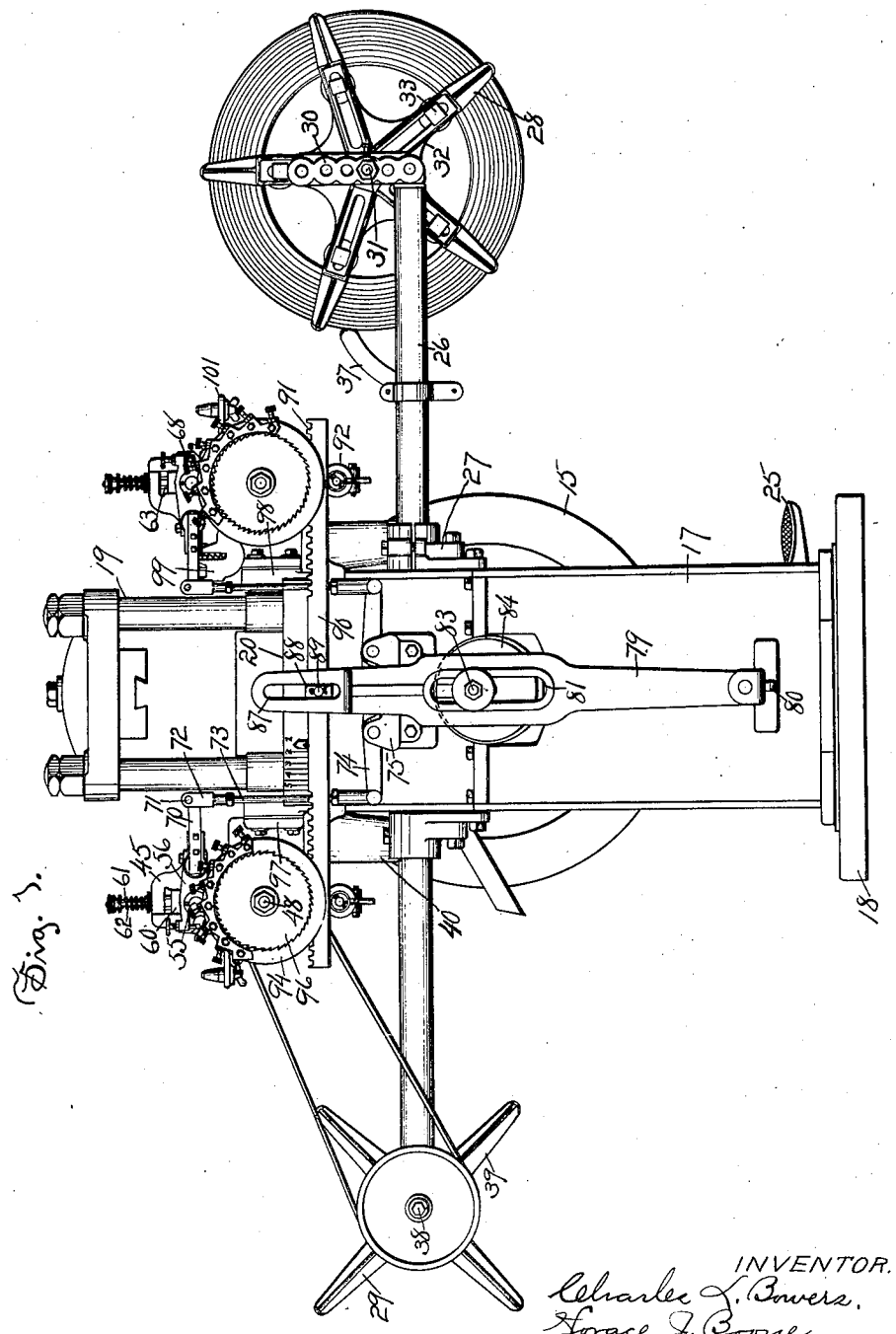


Fig. 1.

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Jan. 8, 1924. 1,480,044

C. L. BOWERS ET AL

DIEING MACHINE

Filed Sept. 7, 1920 8 Sheets-Sheet 2

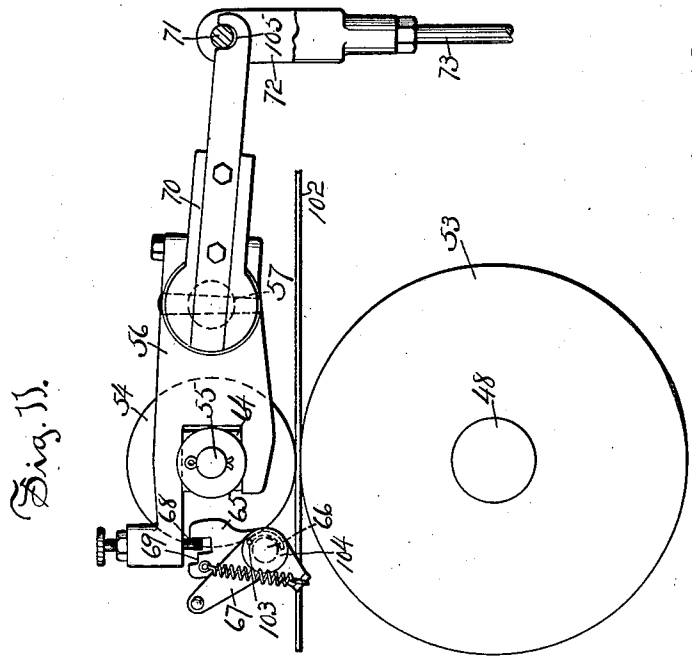


Fig. 11.

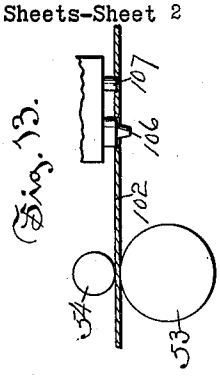


Fig. 13.

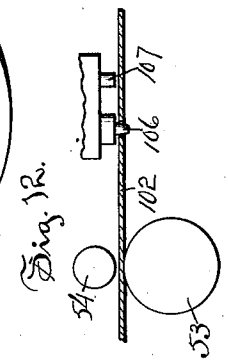


Fig. 12.

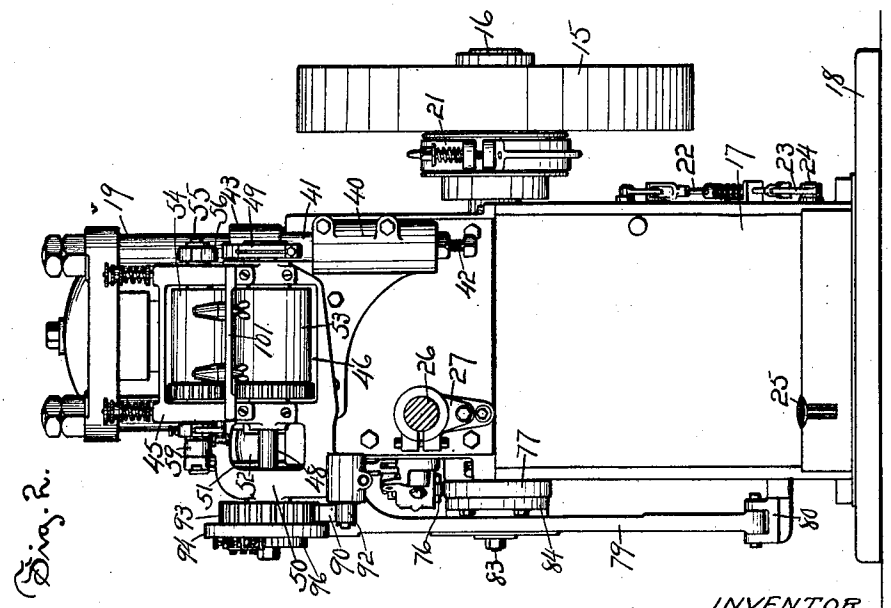


Fig. 2.

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Jan. 8, 1924. 1,480,044

C. L. BOWERS ET AL

DIEING MACHINE

Filed Sept. 7, 1920 8 Sheets-Sheet 3

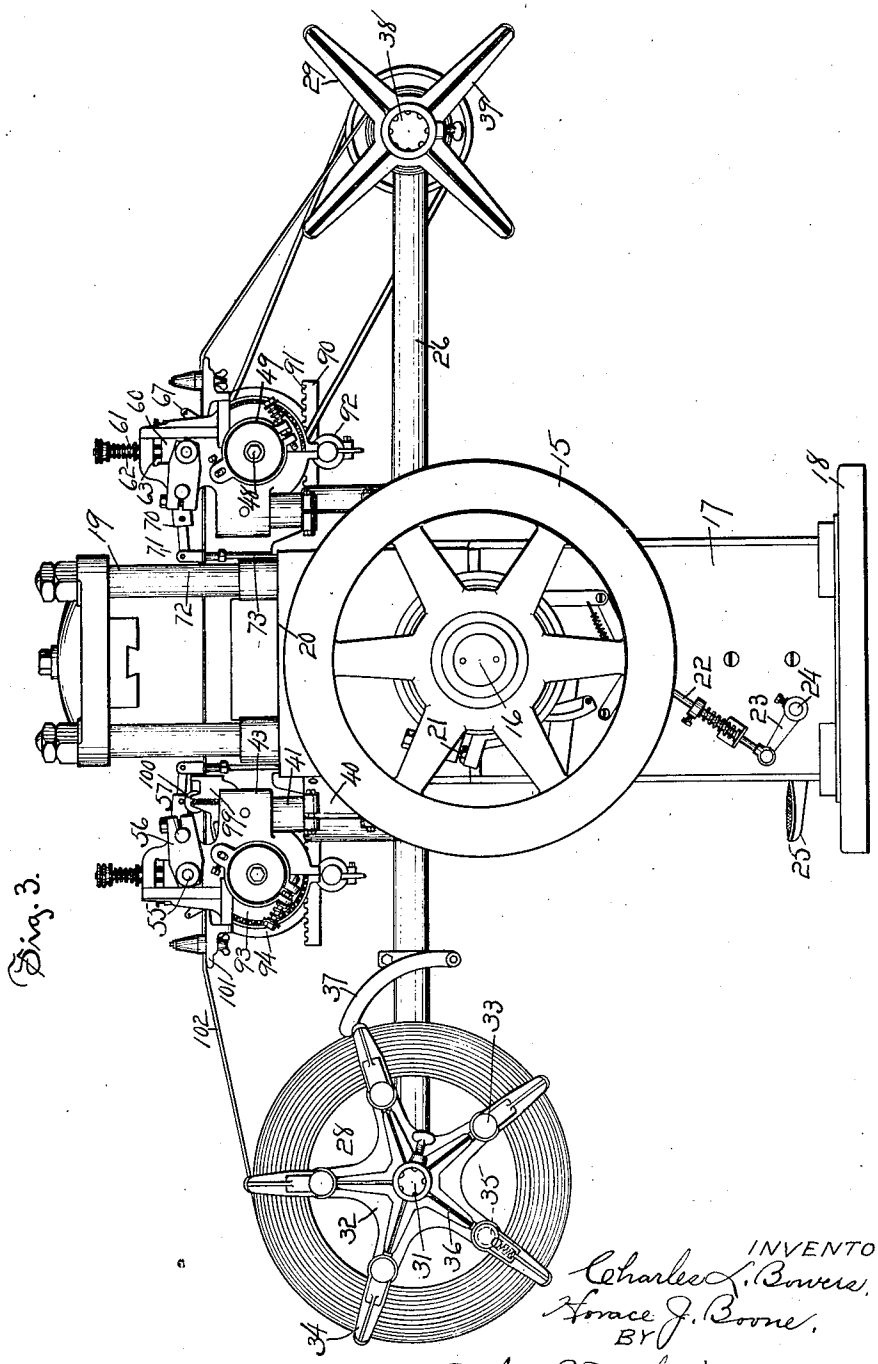


Fig. 3.

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Jan. 8, 1924. 1,480,044

C. L. BOWERS ET AL

DIEING MACHINE

Filed Sept. 7, 1920 8 Sheets-Sheet 4

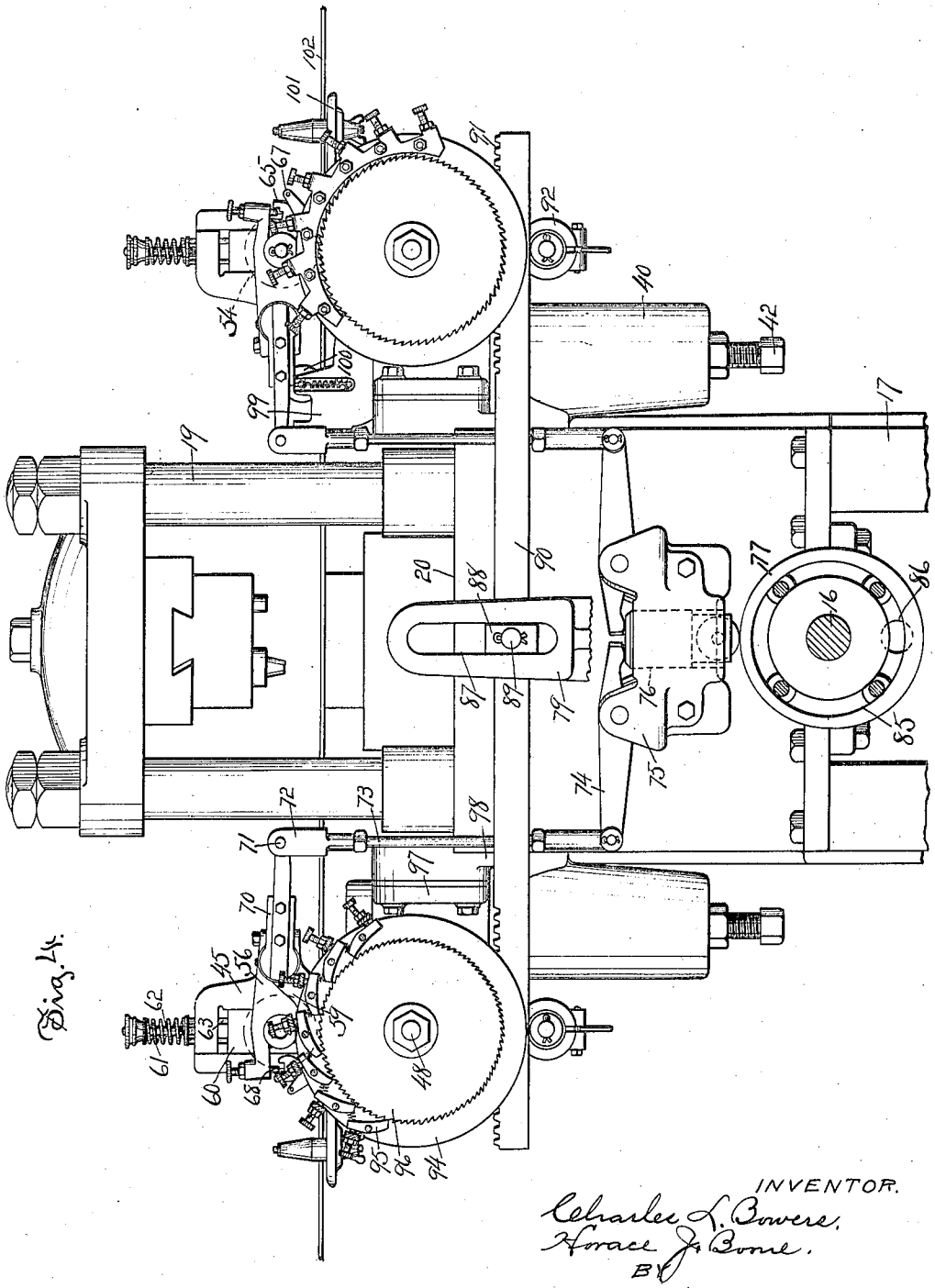


Fig. 4.

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Jan. 8, 1924. 1,480,044

C. L. BOWERS ET AL

DIEING MACHINE

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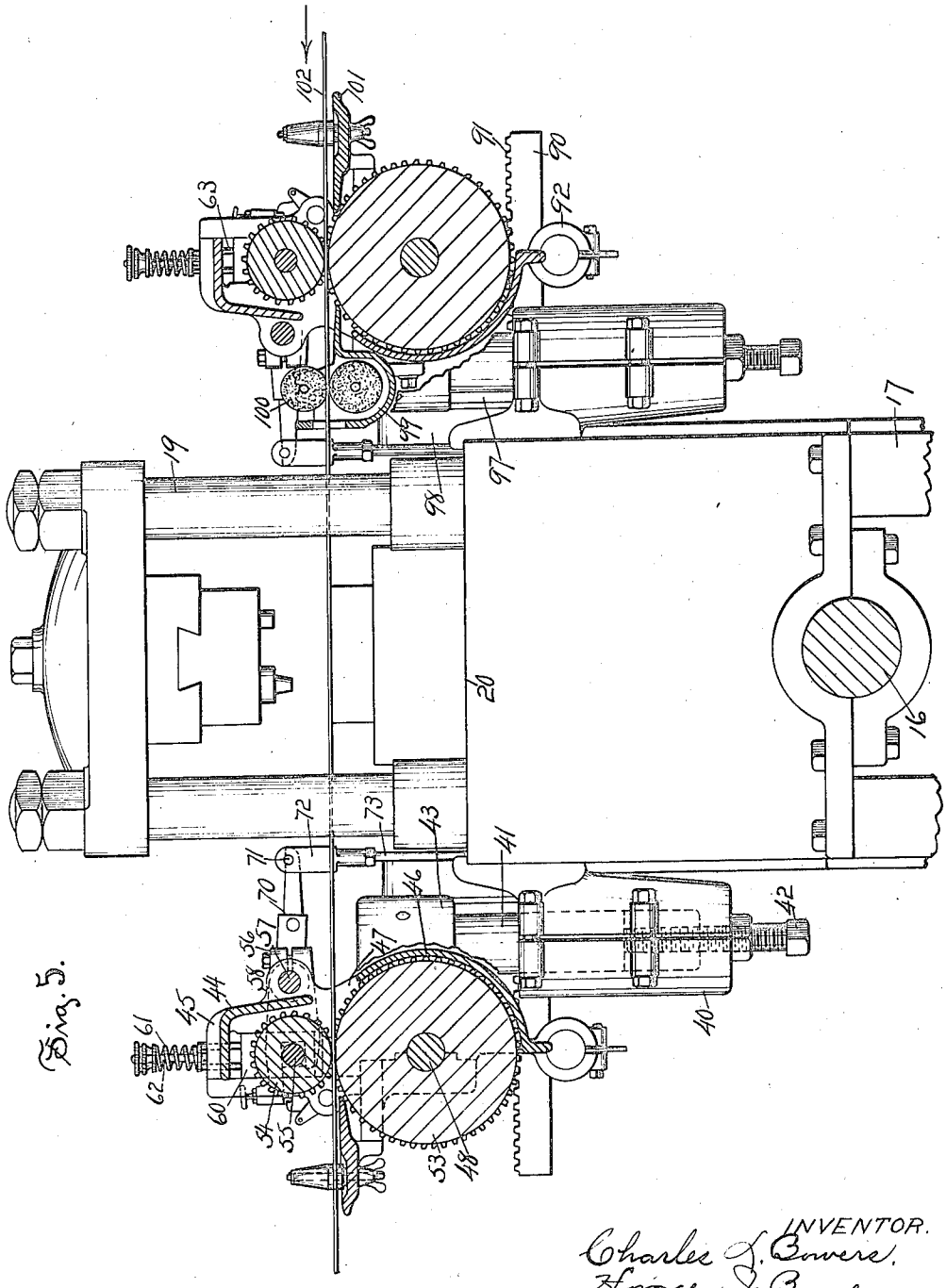


Fig. 5.

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Jan. 8, 1924. 1,480,044

C. L. BOWERS ET AL

DIEING MACHINE

Filed Sept. 7, 1920 8 Sheets-Sheet 6

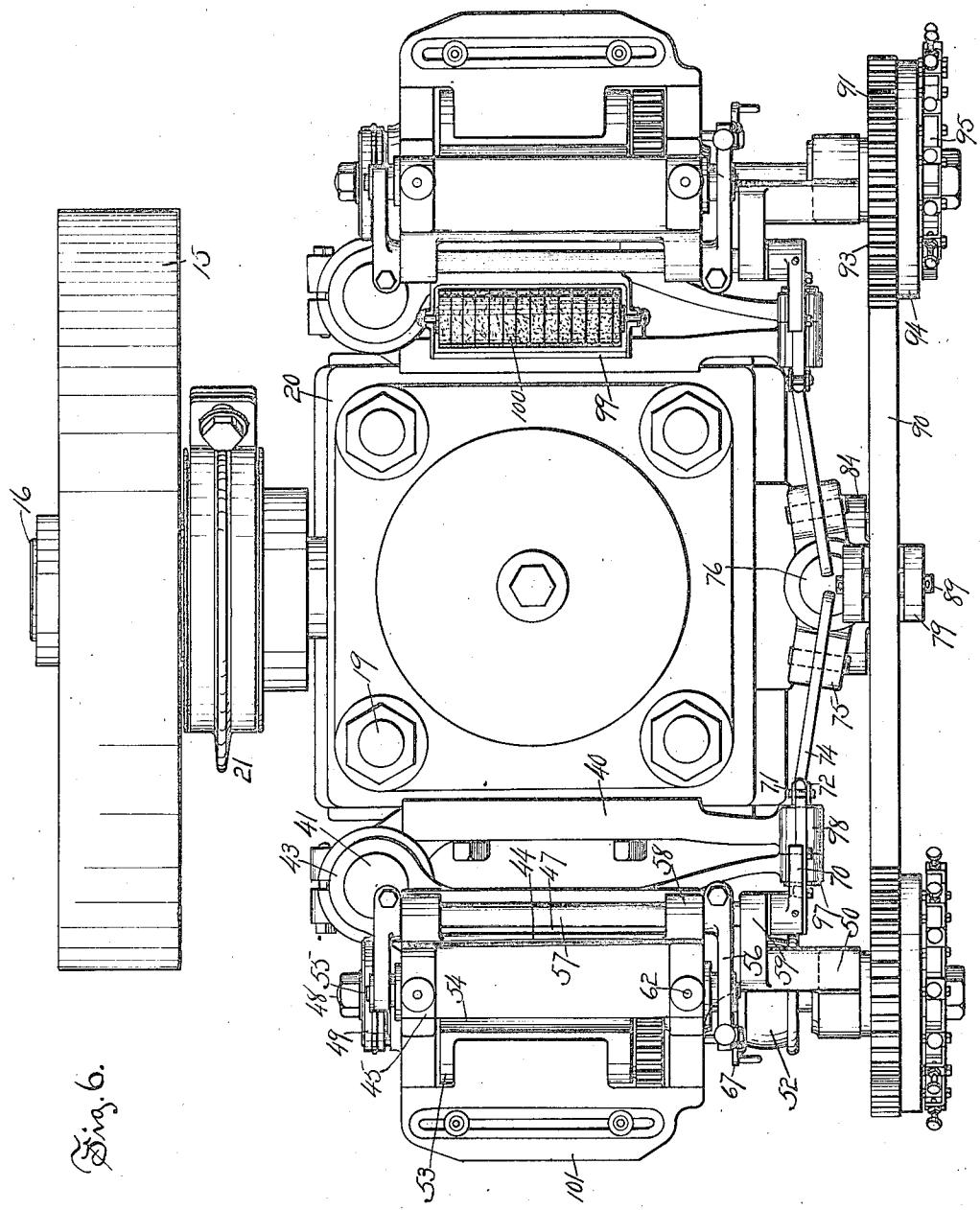


Fig. 6.

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Jan. 8, 1924. 1,480,044

C. L. BOWERS ET AL.

DIEING MACHINE

Filed Sept. 7, 1920 8 Sheets-Sheet 7

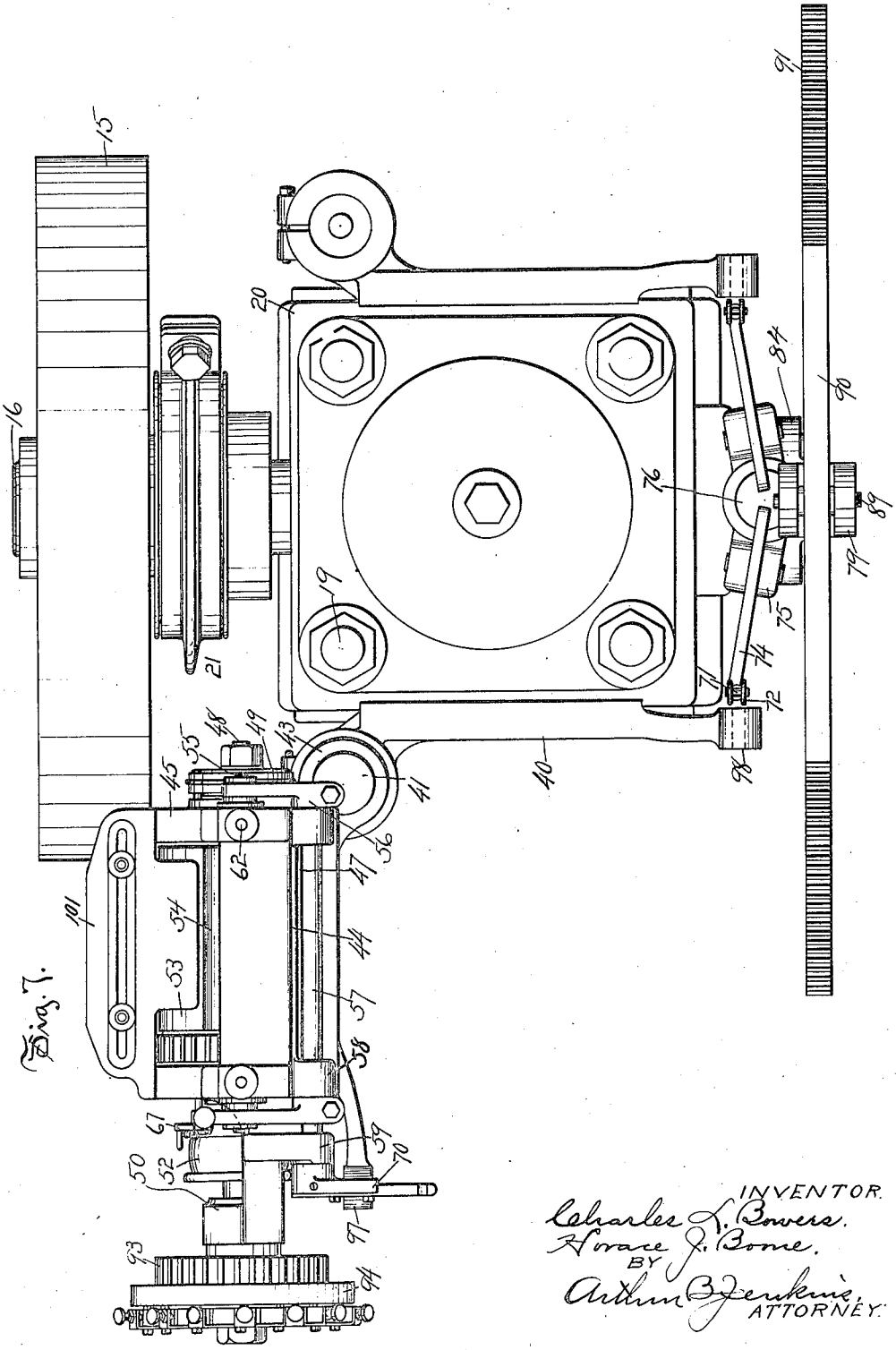


Fig. 7.

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Jan. 8, 1924. 1,480,044

C. L. BOWERS ET AL

DIEING MACHINE

Filed Sept. 7, 1920 8 Sheets-Sheet 8

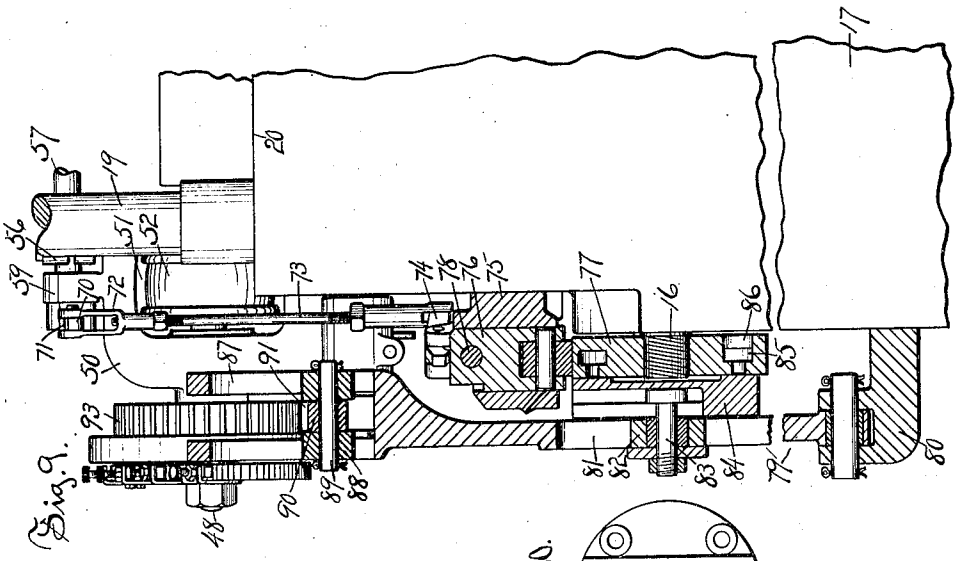


Fig. 9.

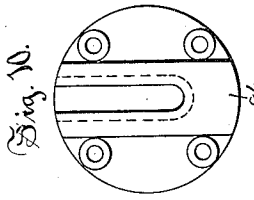


Fig. 10.

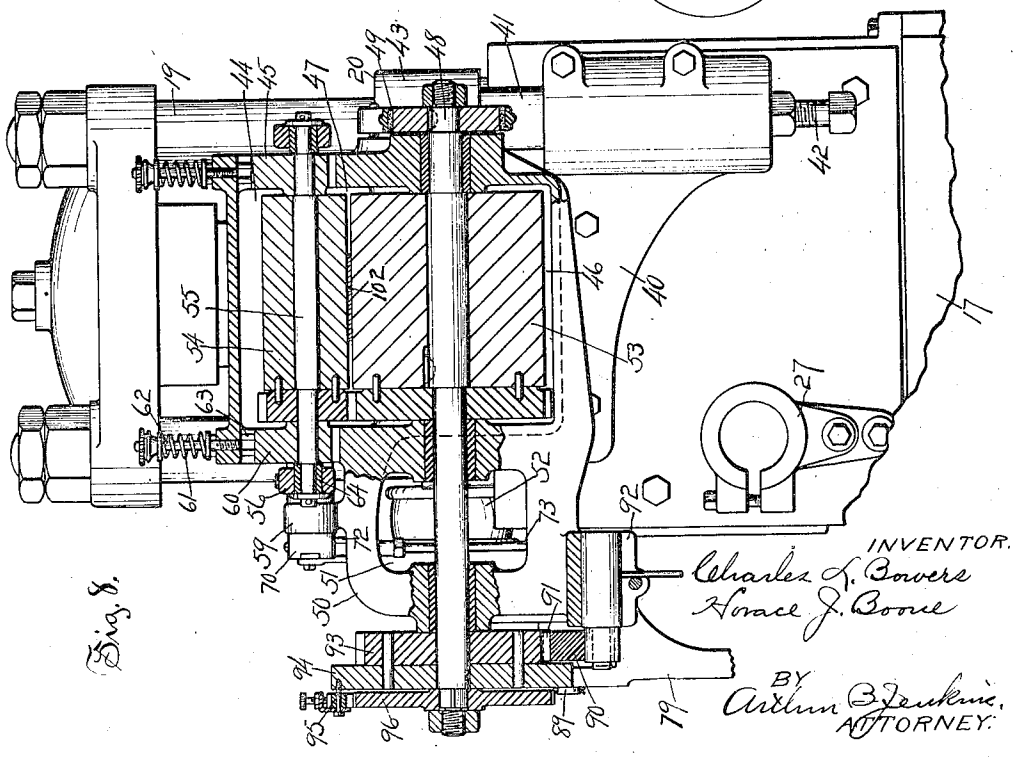


Fig. 8.

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Arthur B. Jenkins.
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Patented Jan. 8, 1924. 1,480,044

UNITED STATES PATENT OFFICE.

CHARLES L. BOWERS AND HORACE J. BOONE, OF HARTFORD, CONNECTICUT, ASSIGNORS, BY MESNE ASSIGNMENTS, TO HENRY & WRIGHT MFG. CO., OF HARTFORD, CONNECTICUT.

DIEING MACHINE.

Application filed September 7, 1920. Serial No. 408,709.

To all whom it may concern:

Be it known that we, CHARLES L. BOWERS and HORACE J. BOONE, each a citizen of the United States, and residents of Hartford, in the county of Hartford and State of Connecticut, have invented a new and Improved Dieing Machine, of which the followng is a specification.

This invention relates more especially to that class of machines used for cutting, stamping, and thereby shaping articles from sheet metal, and an object of the invention, among others, is to provide a machine of this class that shall be particularly rapid and effective in its manner of operation.

One form of machine embodying the invention and in the construction and use of which the objects herein set out, as well as others, may be attained, is illustrated in the accompanying drawings, in which:—

Figure 1 is a view in side elevation of one construction of a machine embodying our invention with the dies removed.

Figure 2 is a front view of the same, with the reel supporting bar cut off, the upper die being shown.

Figure 3 is a view in elevation of that side of the machine opposite to that shown in Figure 1, the stock reel being shown in a lower position than in Figure 1 and the dies being removed.

Figure 4 is a detail side view, scale enlarged, of the upper part of the machine showing the construction thereof, the lower part of the feed lever and the crank or driving shaft being broken off and the reel supporting bar and driving wheel being removed and the dies being shown in place.

Figure 5 is a detail side view, scale enlarged, of the upper part of the machine cut in vertical section through the feed mechanism only, this view showing the opposite side of the machine from that shown in Figure 4 and with the reel supporting bar removed and the crank or driving shaft cut in section.

Figure 6 is a top view of the machine, scale enlarged, with the reel supporting bar removed and parts below being omitted.

Figure 7 is a similar view but showing one of the feed mechanisms swung to one side, the other feed mechanism and the reel supporting bar being removed.

Figure 8 is a detail front view, scale enlarged, of the upper part of the machine and in section through one of the feed mechanisms.

Figure 9 is a view, scale enlarged, looking from the front, of a portion of the machine cut in section to illustrate the operation of the roll releasing mechanism, the feed mechanism at the front being swung to one side.

Figure 10 is a detail view of the feed actuating disc.

Figure 11 (Sheet II) is a detail view, scale enlarged, illustrating the construction and operation of the feed rolls of one of the feed mechanisms.

Figure 12 (Sheet II) is a detail view illustrating the relative conditions of the dies and feed rolls at the time of release of the latter.

Figure 13 (Sheet II) is a similar view illustrating the condition of said parts just before disengagement of the dies from the strip of metal.

This machine, as to its main part, is the same as that shown in United States patent issued to Daniel M. Wright, No. 1,270,913, dated July 2nd, 1918, this invention relating to a mechanism for feeding a strip of metal to such machine, and for this reason the details of the mechanism for operating the dies are not illustrated and described herein, it being sufficient for the purposes of this invention to state that the machine may be belt driven as by means of a pulley 15 secured to a driving shaft 16, rotatably mounted in suitable bearings in a standard 17 supported on and rising from a base 18. The shaft 16 has a crank or cranks located within the standard which are operatively connected to impart a vertical reciprocating movement to columns 19 extending from above through a table 20 to the interior of the standard, the cranks and connections with the columns not being shown, reference being made to the above mentioned patent for a knowledge of such detailed construction, if such shall be desired. The pulley 15 is connected with and disconnected from the shaft 16 by means of a clutch and rod 22, lever 23, rock shaft 24, and pedal 25 in a manner that will be readily understood.

A reel supporting bar 26 extends from the standard, projecting on opposite sides thereof, this bar being supported and tightly held in clamp brackets 27 rigidly secured to the sides of the machine. Each of these

brackets is split, as shown in Figure 2 of the drawings, and a clamp screw or screws, extending across the split portion, are employed to secure the bar member against movement. A stock reel 28 is rotatably mounted at one end of the bar and a waste reel 29 is rotatably mounted at the other end of the bar. A stock reel support 30 projects from the end of the bar and has a number of holes for a stock reel spindle 31 that may be secured in place by a thread or other suitable means. The stock reel is rotatably supported on this spindle and is composed of a spider 32 comprising radially arranged arms having slots to receive stock supporting pins 33 upon which stock retaining fingers 34 are adjustably secured as by means of a spring seated ball 35 engaging recesses extending lengthwise in the pins 33, and as shown in Figure 3 of the drawings. A supplemental retainer 36 is also adjustably secured to the spindle as by means of a thumb screw engaging grooves in the spindle, as shown in Figure 3, this supplemental retainer being employed when the stock is wound directly on the spindle in a roll smaller than that shown in Figure 3. A spring pressed brake 37 is pivotally mounted on a fixture adjustably secured to the bar and rests with its outer end against the roll of stock to prevent too rapid rotation or overrunning thereof.

A waste reel comprises a grooved spindle 38 rotatably mounted in a bearing in the end of the bar 26 opposite the stock reel, two frames 39 comprising radial arms being secured to said spindle 38 and a driving pulley also being secured to said spindle as a means for rotating it, said pulley being adapted to receive a belt from a feed mechanism to be hereinafter described.

Feed mechanisms are arranged on opposite sides of the dies, these mechanisms being in main alike with slight exceptions, to be hereinafter noted, and, therefore, the following description of one may be considered as applying equally to the other.

A feed mechanism bracket 40, secured to the upper part of the side of the standard, has a split socket to receive a hinge shaft 41 that is stepped upon an adjusting screw 42, said shaft being held against rotation by said split socket that forms a clamp therefor. The feed mechanism frame comprises a socket piece 43 rotatably mounted on said shaft and supporting a back piece 44 preferably formed integral therewith, sides 45 projecting from said back piece and an extension 50 beyond one of the side parts. The back is preferably curved to form a roller recess 46 and it has an opening 47 through which the material operated upon by the machine extends.

A feed shaft 48 is mounted in bearings suitably constructed in the sides 45, the end of this shaft, outside of the frame, being supplied with a brake comprising a fiber lined ring 49 with a spring retained clamp screw to yieldingly hold the ends of the ring one with respect to the other, as shown in Figure 3 of the drawings. The extension 50 is located at that end of the frame opposite said brake and this extension has an opening 51 for a waste reel driving pulley 52 secured to the feed roll shaft and connected as by a belt with the waste reel, both of the feed mechanisms being provided with such a pulley so that the reel at either end of the bar 26 may be employed as a waste reel, it being understood that only one of the waste reels will be so belt driven at a time. The brake above described holds the feed roll from overrunning from the momentum that might be gained by reason of the weight of said roll and of the waste reel with which it is connected, and it also holds said roll from backward movement in the backward movement of ratchet and pawl mechanism to be hereinafter described.

A feed roll 53 is secured to the shaft 48 and has a gear in mesh with a pinion secured to a releasing feed roll 54 that is mounted upon a shaft 55 having its ends supported in bearings in the ends of feed roll supporting arms 56 secured at their other ends to a feed roll releasing shaft 57 supported in bearings in ears 58 projecting from the back of the feed mechanism frame, said shaft also being supported in a bearing 59 projecting from the extension 50 of said frame. The feed roll supporting arms 56 are rigidly secured to the releasing shaft 57 as by means of bolts passing through the split ends of the arms, as shown in Figures 3 and 5 of the drawings. The shaft 55 carries bearing blocks 60 that move in slots in the side parts of the feed mechanism bracket, said blocks, and consequently the shaft, being pressed downwardly by means of presser springs 61 thrusting each with one end against an adjusting nut on the upper end of a presser post 62, the opposite end of each spring resting in contact with a disc supported on presser pins 63 and by means of which pressure of the spring is transmitted to the blocks 60.

The ends of the arms 56 are forked to receive bearing blocks 64 preferably rectangular in shape in cross section, which blocks receive and comprise bearing members for the ends of the shafts 55. A retainer to hold the roll 54 in its uppermost position comprises a stop 65 pivotally supported by a stop supporting pin 66 secured to the frame of the machine in any desired manner, a spring actuated stop operating lever 67 being also pivotally supported by said pin. The end of said stop is notched, as shown in Figure 11 of the drawings, that part of the lever on one side of the notch engaging a stop pin 68 adjustably secured

in the longer branch of the lever 56 and acting to prevent undue movement of the stop 65, while that part of the lever on the opposite side of said notch has a stop shoulder 69 to receive the end of the pin 68 and thereby retain the lever 56 in its uppermost position.

A releasing shaft operating arm 70, preferably composed of two parts, the outer member of which is adjustably attached to the inner member, is secured to and projects from the releasing shaft 57 into engagement with a pin 71 secured in the branches of the forked end 72 of a connecting rod 73. The end of the arm 70 is preferably loosely engaged with the pin 71 as by means of a notch in the end of the arm that receives said pin, and as shown in Figure 11 of the drawings. The end 72 is adjustably secured to the rod, and the latter has a similarly constructed end at its lower part to receive the end of a releasing feed roll operating lever 74 pivotally supported in a bracket 75 secured to the frame of the machine, said bracket supporting both of the levers for both of the feed mechanisms hereinbefore referred to. A feed releasing plunger 76 is mounted in a socket in the bracket 75, the upper end of said plunger underlying the levers 74, the lower end of said plunger having a roller resting in contact with a feed releasing cam 77 secured to the driving shaft 16 and that operates through the plunger to actuate the levers 74. The plunger 76 is held against rotation as by a pin 78 located in a slot in the side of the socket in the bracket in which the plunger is located.

A feed lever 79 is pivotally secured at its lower end to a feed lever support 80 projecting from the side of the machine, this lever having a slot 81 intermediate its ends to receive a guide block 82 within which a crank pin 83 is secured. This crank pin is adjustably secured to a feed crank disc 84 secured to the feed releasing cam 77. In the structure shown herein the pin 83 projects into a T-shaped slot radially formed in the disc 84 and has a head located in the wider portion of said slot, the block 82 being loosely secured as by means of a nut fitting the threaded end of the crank pin, and as shown in Figure 9 of the drawings. The disc 84 is secured to the cam 77 as by means of bolts and nuts, in the structure herein shown, the heads of the bolts being located in a circumferentially extending T-shaped slot 85 in said cam, a hole 86 extending from the back of the cam 77 enabling the heads of the bolts to be passed into the slot 85.

The upper end of the lever 79 is forked and has guide slots 87 for guide blocks 88 that receive a feed bar actuating pin 89, said pin passing through a feed bar 90 having at its upper side, near the ends thereof, teeth comprising a feed rack 91. The ends of this bar may be supported as upon rolls mounted upon pins clamped within feed rack supports 92 projecting from the bottom of the feed mechanism frame, as shown in Figures 1 and 5 of the drawings.

The racks 91 are in mesh with feed gears 93 secured to the feed shafts 48, said gears having pawl supporting discs 94 secured thereto, each disc supporting a plurality of feed pawls 95 that are positioned to engage the toothed edge of a feed ratchet 96 that is secured to the feed shaft 48, in the structure herein shown said shaft being squared to receive the ratchet and a nut being employed to hold the latter in place. The gears 93 and discs 94 are loosely mounted on the shafts 48 and the pawls 95 are so positioned with respect to the teeth of each ratchet that one pawl only will engage a tooth at a time, the other pawls being located in different positions on said teeth, as shown in Figure 4 of the drawings. Any desired number of pawls may be employed and it will readily be seen that this construction provides a device in which, no matter how slight the movement of the discs 94, forward movement will be imparted to the ratchet 96 and hence to the shaft 48. The amount of "throw" of the lever 79 is regulated by the location of the crank pin 83 with respect to the center of the crank disc 84, and with the arrangement of pawls hereinabove described, as little "throw" may be given to the lever 79 as may be desired and yet at each reciprocating movement of said lever a forward movement will be imparted to the feed shaft 48. The pawls 95 are backed up at that end opposite the end in engagement with the ratchet by set screws, as shown in Figure 4 of the drawings, whereby the engagement of the pawl with the ratchet may be adjusted, and each pawl may be positioned by its set screw so that it will not, if desired, engage the pawl. This will enable one or more of the pawls that are not actually operating upon the ratchet to be temporarily disengaged and thus permit only the pawl or pawls actually working under certain conditions to engage the ratchet.

The pivotal attachment of the feed mechanism frames to the machine enables said frames to be swung to one side, as shown in Figure 7 of the drawings, for any purpose that may be desired, said frames being held in their closed positions as by means of screw bolts passing through flanges 97 on said frames and into threaded openings in posts 98 rising from the feed mechanism brackets 40. The loose connection between the arm 70 and the pin 71 of a feed roll releasing mechanism enables these parts to be readily disconnected for

the purpose of permitting said feed mechanism frame to be swung to one side.

The mechanism is arranged to cause intermittent disengaging movement of the feed roll at a time when the dies are not working to change the condition of the stock, the parts being so arranged and operated, however, as to maintain control of the stock at all times. With respect to many kinds of work to be performed by the machine it is essential that the strip of stock be accurately positioned or "centered" for the operation of the dies and it is to permit this "centering" that the feed roll 54 is moved away from its companion roll. In effecting this centering operation a pilot 106, usually tapered, projecting from the plunger adjacent to the operating part of the dies, is employed to engage within holes made by the dies in the strip 102. This pilot engages loosely within an opening before release of the roll 54 from said strip, the centering operation being completed before engagement of the die 107 with said strip of stock, and reengagement of the roll with said stock takes place before disengagement of the die 107 from the stock, with a result that either the rolls, or the pilot, or the die, is always engaged with the stock that is thereby always held in proper position.

As an aid in avoiding undue wear upon the dies an oiling device is provided for applying oil to the strip of metal before is encounteres the dies, such oiling device being shown in Figures 1, 5 and 6 and comprising a tank 99 having a pair 100 of rollers rotatably mounted in any suitable manner in the side walls of the tank, the line of separation between said rollers being substantially in the plane of movement of the strip of work from the feed rolls to the dies, and as shown in Figure 5 of the drawings. Said rolls will be composed of any suitable material for taking up oil from the tank, in which oil the lower roll will be submerged to some extent at least, and will spread the oil over the strip of material before it passes between the dies. These oil rollers may be held in yielding contact one with the other as by a spring attached to the shaft of the upper roll and pressing it downwardly into contact with the lower roll. Tables 101 with guides thereon for the strip of material passing to and from the dies are attached to the feed mechanism frames in any suitable manner.

When it is desired to release the roll 54 and to maintain it in this released position the handle on the operating lever 67 (see Figure 11) is pulled downwardly, and when the spring passes the center of the supporting pin 66 the tension of such spring will be such as to move the stop 65 in a direction to cause the stop shoulder 69 to underlie the pin 68, it being understood that the roll 54 will at this time, be in its raised position, to which position it may be moved either manually or by operation of the machine. A stop pin 103 projecting from the back of a head 104 on the pin 66 into a slot in the lever may be employed to limit the downward movement of the lever 67.

A feature of this invention resides in the vertically adjustable feed mechanism frame and the combined adjusting means and step bearing afforded by the adjusting screw 42. It is essential that the strip 102 of stock shall always lie flat upon the dies, that is, that the opening between the rolls 53 and 54 shall be substantially in the plane of the working faces of the dies. As such dies become worn in use the height of this working face of the dies above the table 20 changes, and the adjusting screw 42 enables the position of the feed mechanism frame to be changed to suit the changed condition of said dies, and the connecting rod 73 is made adjustable, as to its length, and the guide blocks 88 for the feed bar 90 are located in the slots 87 to permit this change in position of the dies, and this same element of change of the vertical position of the working face of the dies will take place to a more pronounced extent when dies for producing different kinds of work are secured in place in the machine.

The mechanism for releasing the rolls 54 is so arranged that a space 105 (see Figure 11) is provided between the pin 71 and the lever 70 when the feed releasing mechanism is quiescent, that is, when it is not operating to lift a roll 54, with a result that the full weight of the roll and other members is placed upon the strip of stock 102.

We claim:—

1. A dieing machine including a frame with means to operatively support dies thereon, a reel supporting bar projecting from a side of the frame, a reel supported by said bar, and means for locating said reel in different positions along said bar.

2. A dieing machine including a frame with means to operatively support dies thereon, a reel supporting bar projecting horizontally from a side of the frame, and a reel support extending vertically from said bar and having means to support a reel in different vertical positions thereon.

3. A dieing machine including a frame, clamp brackets secured to said frame, a reel supporting bar extending through said brackets, means for clamping said bar in said bracket, means for rotatably supporting reels at opposite ends of said bar, means for feeding a strip of metal to said dies, and means connected with said feeding means for rotating a reel mounted on said bar.

4. A dieing machine including a frame with means to operatively support dies thereon, means for operating a die support to close the dies together and to open them, means for feeding a strip of material to the dies, and means for releasing said feeding means to permit said strip to be free to move at the time of operation of the dies thereon.

5. A dieing machine including a frame with means to operatively support dies thereon, means for operating a die support to close the dies together and to separate them, a pair of feed rolls for feeding a strip of material to the dies, and means for separating said rolls to release their hold upon said strip and permit said strip to freely move when the dies are centering it.

6. A dieing machine including a frame with means to operatively support dies thereon, means for operating a die support to close the dies together and to separate them, a swinging feed roll support, a pair of feed rolls one of which is mounted at its opposite ends in said support, and means for operating said support to bodily lift the roll supported thereby to separate said rolls and release their hold upon said strip when the dies are centering it.

7. A dieing machine including a frame with means to operatively support dies thereon, machanism for operating said dies, a feed frame pivotally secured to the machine frame, feed mechanism operatively supported on said feed frame and including means for releasing the feeding hold on a strip of material, and an operative connection between said die operating mechanism and feed mechanism and including a disconnecting member to permit swinging movement of the feed frame.

8. A dieing machine including a frame with means to operatively support dies thereon, a feed mechanism frame pivotally supported by said machine frame, feed mechanism operatively supported on said feed mechanism frame, a rack movably mounted on the machine frame and adapted to operate the feed mechanism, and a rest on said feed mechanism frame for the end of said rack.

9. A dieing machine including a frame with means to operatively support dies thereon, a feed mechanism frame pivotally supported by said machine frame, feed mechanism operatively supported on the feed mechanism frame and including a gear, a rack movably mounted on the machine frame and adapted to engage said gear whereby said gear may be freely disengaged from said rack when the feed mechanism frame is swung on its pivot, and means for operating said rack.

10. A dieing machine including a frame with means to operatively support dies thereon, mechanism for operating said support and including a shaft with a crank thereon, a lever pivotally secured to the machine frame and operatively connected with said crank, a rack in operative engagement with said lever, and feed mechanism operatively connected with said rack for feed of material to said dies.

11. A dieing machine including a frame with means to operatively support dies thereon, mechanism for operating said support, and including a shaft with a crank at its end, a lever pivotally secured to the machine frame and operatively connected with said crank, a rack carried by said lever, and feed mechanism operatively connected with said rack.

12. A dieing machine including a frame with means to operatively support dies thereon, mechanism for operating said support and including a shaft with a crank at its end and a cam adjacent to said crank, a lever pivotally secured to the machine frame and operatively connected with said crank, feed mechanism operatively connected with said lever and including means for releasing the feeding hold of said feed mechanism on a strip of material, and an operative connection between said cam and said releasing means for operation of the latter.

13. A dieing machine including a frame with means to operatively support dies thereon, a feed mechanism supported in cooperative relation with respect to said dies, a lever having a forked end and pivotally attached to said frame, and a rack carried in the forked end of said lever and operatively connected with said feed mechanism to operate it.

14. A dieing machine including a frame with means to operatively support dies thereon, mechanism for operating said support and including a shaft, a cam supported by said shaft, means operatively connected with said cam to be operated thereby, a crank disc removably secured to said cam, a crank pin carried by said disc, feed mechanism supported by the machine frame, and an operative connection between said feed mechanism and said crank pin.

15. A dieing machine including a frame with means to operatively support dies thereon, means for operating said support and including a shaft, feed mechanism supported by the machine frame, means for intermittently releasing the hold of the feed mechanism upon a piece of stock, a cam secured to said shaft and operatively connected with said feed releasing mechanism, a crank disk secured to said cam and bearing a crank, and an operative connection between said crank and said feed mechanism for operation of the latter.

16. A dieing machine including a frame with means to operatively support dies

thereon, mechanism for operating said support and including a shaft, a feed mechanism frame pivotally supported on the machine frame, a cam secured to said shaft, a rocking lever supported by the machine frame and operatively connected with said cam, an operative connection between said lever and said pivotally supported frame, and means for operating the feed mechanism to feed a piece of stock with respect to said dies.

17. A dieing machine including a frame with means to operatively support dies thereon, mechanism for operating said support and including a shaft, a feed mechanism supported by said machine frame and including means for intermittently releasing the hold of the feed mechanism upon a piece of stock, a lever comprising a portion of said releasing mechanism, means for operating said releasing mechanism and including a rod, a connection between said rod and lever including a pin upon one part removably held in a notch in the other part, and means for operating the feed mechanism to feed a piece of stock.

18. A pair of feed rolls for feeding a piece of material with respect to the dies of a dieing machine, means for separating said rolls, a stop pivotally supported to hold said rolls in said separated position, a stop operating lever, and a resilient connection between said stop and lever.

19. A pair of feed rolls for feeding a piece of material with respect to the dies of a dieing machine, means for separating said rolls, a stop operating lever pivotally mounted on a supporting pin, and a spring connecting said stop and said lever and operating to move the stop in a direction opposite to the direction of movement of the lever when the latter has been moved to a certain position.

20. A dieing machine including a frame with means to operatively support dies thereon, a feed mechanism frame including a hinged shaft, a socket to receive said shaft, a screw to adjust the vertical position of said shaft and also serving as a bearing therefor in the rotation of the shaft, and feed rolls supported by said frame in cooperative relation with respect to said dies.

21. A dieing machine including a frame with means to operatively support dies thereon, a feed mechanism frame, feed rolls supported in said frame in cooperative relation with said dies, means for adjustably changing the position of said rolls with respect to said dies, and means for separating said rolls and including an operating member adjustable to permit said adjustable change of said rolls.

22. A dieing machine including a frame with means to operatively support dies thereon, a feed mechanism frame, feed rolls supported in said frame in cooperative relation with respect to said dies, means for adjustably changing the position of said rolls with respect to said dies, and means for rotating said rolls and including an operating member adjustably mounted to permit said adjustable change of said rolls.

23. A dieing machine including a frame with means to operatively support dies thereon, a plurality of gear operated feed mechanisms for feeding material to said dies, a rack bar to engage all of said feed mechanisms, and means for actuating said rack.

24. A dieing machine including a frame with means to operatively support dies thereon, gear operated feed mechanism located upon opposite sides of said dies for feeding material to said dies, a rack bar to engage a gear of each of said feed mechanisms, and means for actuating said rack.

25. A dieing machine including a frame with means to operatively support dies thereon, feed mechanism for feeding material to said dies, ratchet and pawl mechanism included as a part of said feed mechanism and comprising a plurality of pawls adapted to engage said ratchet, and means for retaining said pawls disengaged from said ratchet.

26. A dieing machine including a frame with means to operatively support dies thereon, feed mechanism for feeding material to said dies, ratchet and pawl mechanism included as a part of said feed mechanism and comprising a plurality of pawls each of which is adapted to engage the teeth of the pawl in a different position from that of the other pawls, and means for holding each of the pawls temporarily disengaged from the teeth of the ratchet.

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