Nov. 15, 1949 C. W. INGRAM 2,488,015

PIPE CUTTING, CRIMPING, AND BEADING MACHINE

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Fig. 1.

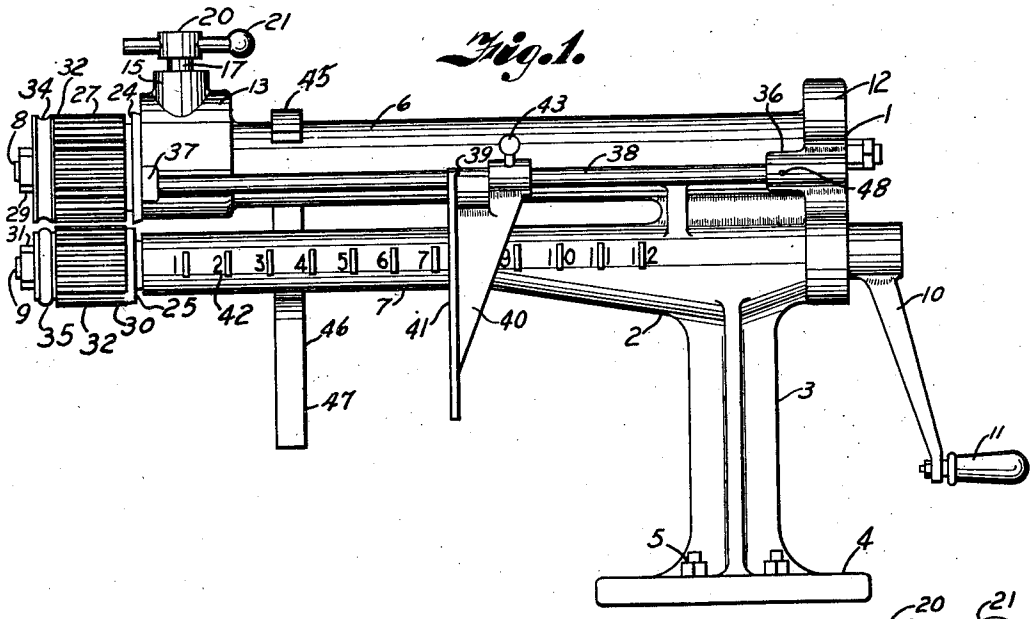



Fig. 3.

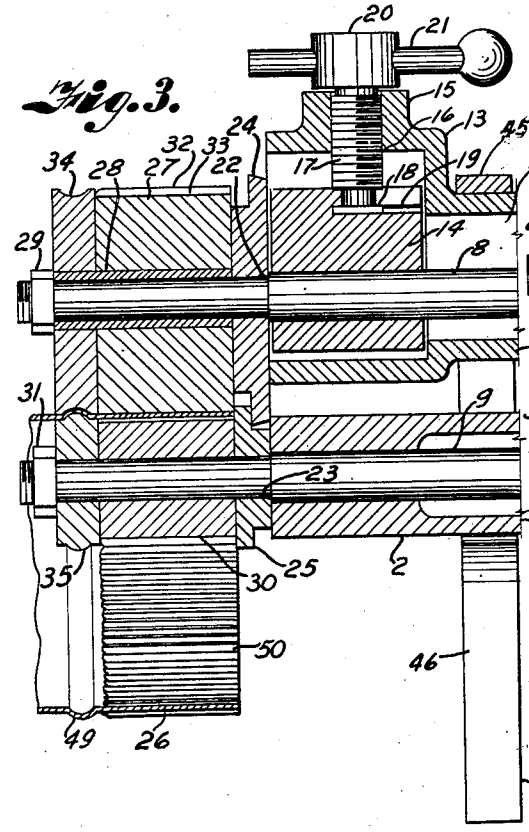
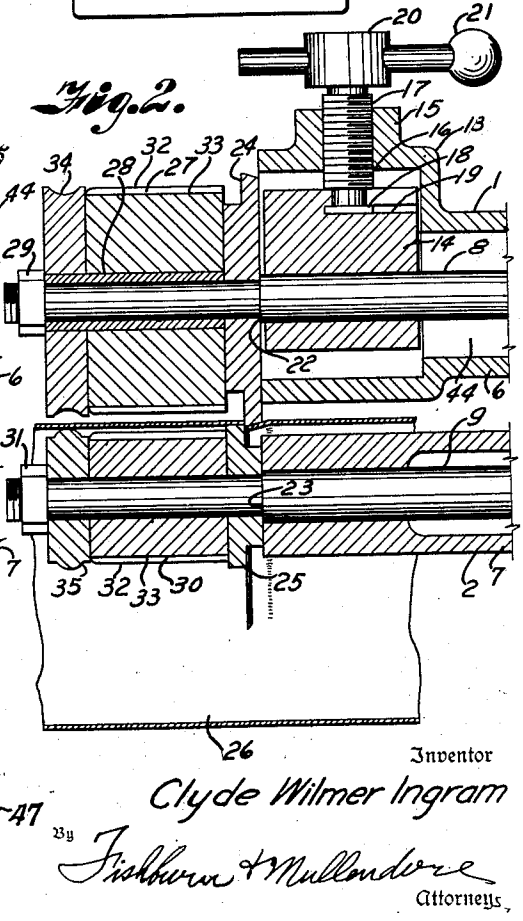



Fig. 2.




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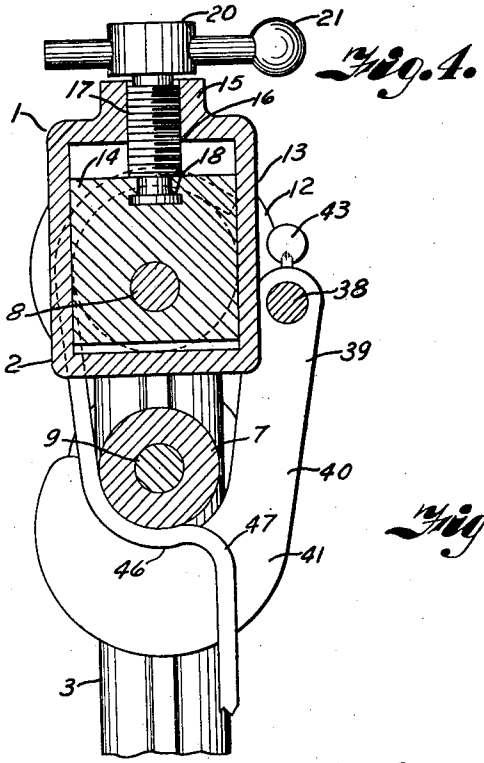



Fig. 4.

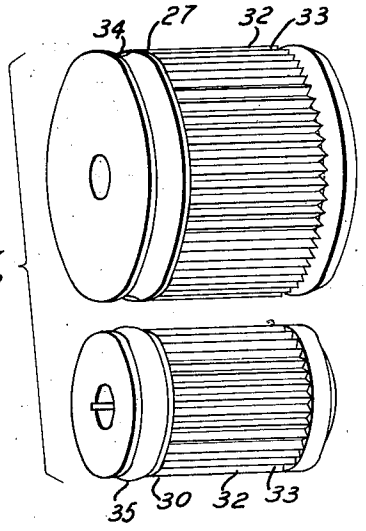
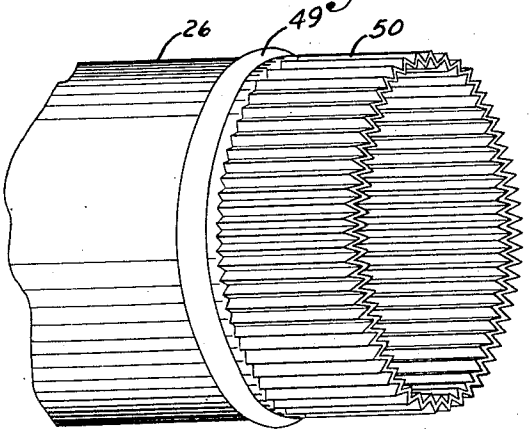



Fig. 5.

Fig. 6.




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# UNITED STATES PATENT OFFICE

2,488,015

## PIPE CUTTING, CRIMPING, AND BEADING MACHINE

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Application June 4, 1948, Serial No. 31,023

2 Claims. (Cl. 153—9)

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This invention relates to a pipe cutting, crimping and beading machine, and more particularly to a machine for cutting, crimping and beading stovepipe.

The principal objects of the present invention are to provide a device for cutting off a stovepipe to the desired length and crimping and beading the pipe on one end; to provide a device for beading and crimping the pipe with one operation after cutting off the pipe without removal of the pipe from the machine; to provide a device of this character having parallel housing arms for shafts carrying the beading and crimping rollers and having means for preventing undue spreading of the arms during the crimping and beading operation; to provide means on the device for holding a pipe for cutting in desired lengths; to provide means for adjusting the cutting and crimping rollers, one with respect to the other; and to provide a device of this character simple, economical to manufacture and efficient in operation.

In accomplishing these and other objects, I have provided improved details of structure the preferred forms of which are illustrated in the accompanying drawings, wherein:

Fig. 1 is a side elevational view of the device.

Fig. 2 is a longitudinal sectional view through the arms and crimping and beading rollers, particularly illustrating a pipe on the lower arm in engagement with the cutting rollers.

Fig. 3 is a longitudinal sectional view through the arms and crimping and beading rollers illustrating the pipe engaged by the crimping and beading rollers.

Fig. 4 is a vertical transverse section through the device, particularly illustrating the adjustable bearings and stop member on the upper arm.

Fig. 5 is a perspective view of the beading and crimping rollers.

Fig. 6 is a perspective view of the end of a stovepipe after it has been crimped and beaded.

Referring more in detail to the drawings:

1 designates a pipe cutting, crimping and beading machine embodying the features of my invention, comprising a frame 2 having a standard 3 and base 4 for mounting upon a support (not shown) by bolts or the like 5. The frame has upper and lower spaced housing arms 6 and 7 in which are rotatably mounted shafts 8 and 9,

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respectively, driven simultaneously by a crank 10 having a handle 11 through gears (not shown) contained in housing 12 on the end of the frame, the crank being fastened to the end of the shaft 9 extending through the housing as is the usual custom.

The upper housing arm 6 is provided on its outer end with a housing 13 for a bearing 14 surrounding the shaft 8 for spreading the shafts 8 and 9 as desired, the upper shaft 8 being mounted in the housing arm to move upwardly and downwardly. The housing 13 is provided with a boss 15 having a central bore opening 16 adapted to receive a threaded pin 17. The pin 17 is provided on its lower end with a flange 18 adapted to engage in a groove 19 of the bearing 14 as best illustrated in Figs. 2 and 3. The upper end of the pin 17 is provided with a stop 20 carrying a handle 21 for operation of the pin for adjusting the upper shaft with respect to the lower shaft.

The shafts 8 and 9 are provided with shoulders 22 and 23 respectively and mounted on the shafts and against said shoulders by keying or other suitable means are cutting wheels 24 and 25 for cutting the stovepipe 26 to a desired length as best illustrated in Fig. 2.

Mounted on the outer end of the shaft 8 is a beading and crimping roller 27 provided with a bearing sleeve 28 so as to rotate freely on the shaft, the roller being held on the shaft by a nut 29. Also mounted on the lower shaft 9 is a beading and crimping roller 30 which is keyed or otherwise rigidly secured to the shaft and held in place thereon by a nut 31. The rollers 27 and 30 are provided with longitudinal ribs 32 with grooves 33 therebetween as is the usual practice for crimping pipes or other objects. The outer end of the roller 27 is provided with an annular groove 34 which is adapted to receive a rib 35 on the roller 30 to form the bead as will later be shown.

The housings 12 and 13 are provided with facing bosses 36 and 37 adapted to receive a rod 38 upon which a stop member 39 is adapted to slide for adjusting the length of the pipe to be cut. The stop 39 is provided with a depending arm 40 having a place face 41 against which the pipe engages and the lower arm 9 carries a scale or indicia as indicated at 42 and the stop is moved

along the rod 38 and held in position by setscrew 43.

It is to be noted that the housing arm 6 is hollow as indicated at 44 to allow the shaft 8 to move away and toward the lower shaft 9 to separate the crimping rollers as shown in Fig. 2. In order to limit spreading of the housing arms 6 and 7, a hook 45 is provided which engages over the top of the upper arm housing 6 and has a depending body 46 extending below the lower arm and turned parallel with the hook 45 forming an arm which engages the under side of the lower arm 7 to limit the spreading of the parallel arms, the body being turned downwardly from arm 46 as indicated at 47. The boss 36 is provided with a lateral opening adapted to receive a setscrew 48 to hold the rod 38 in place. The boss 37 has its outer end open to allow for assembling of the rod 38 in the bosses. The stop 39 is placed on the rod 38 by loosening of the setscrew 43, the stop slid over the rod and the rod placed in the bosses and setscrew 48 tightened to hold the rod in place.

Operation of a device constructed and assembled as described is as follows:

The stop 39 is set at the desired length of the pipe to be cut. With hook 45 removed, the pipe is placed over the lower arm of the machine with its inner end engaging against the face 41 of the stop plate 39, preferably with the stovepipe seam just behind the cutting rollers 24 and 25. The upper shaft 8 is lowered by adjustment of the pin 17 to lower the cutting roller 24 until it pierces the stovepipe. The pipe is then severed completely by turning of the crank 10 which causes the stovepipe to roll against the cutters. The top cutter is then raised so that it passes over the seam on the pipe and in passing it will cause a slight crease. The pipe is then taken out of the machine and bent slightly on the crease to snap the pipe where it is seamed.

To crimp and bead the pipe the stop plate is moved to the left as far as possible and the thumbscrew 43 tightened. The hook 45 is then placed over the two arms to eliminate the spreading of the arms. The pipe 26 is then inserted against the stop plate and the adjusting pin 17 is then turned to bring the top rolls down so that the crimping and beading rollers 27 and 30 will engage the end of the pipe as illustrated in Fig. 3. The crank 10 is turned back and forth as the adjusting pin is tightened so as to effect mesh engagement of the ribs 32 in the grooves 33 of the rollers. The handle is then turned until the crimping rolls have crimped all the way around the pipe except the seam. The annular rib 35 on the lower crimping roll will engage in the annular groove 34 on the upper crimping roll to form the bead 49 on the pipe 26 as the crimping 50 is effected on the end of the pipe. The adjusting pin may then be turned to raise it upwardly to disengage the crimping rollers from the pipe.



It will be obvious from the foregoing that I have provided an improved cutting, crimping and beading device for stovepipe which measures, cuts and crimps and beads the pipe in two operations.

What I claim and desire to show by Letters Patent is:

1. In a stovepipe cutting machine, the combination with a standard, of a pair of laterally extending spaced hollow arms mounted upon said standard, shafts journalled in suitable bearings in said arms, one of said bearings being adjustable vertically, means for rotating said shafts simultaneously, cooperating annular cutting tools secured to said shafts adjacent to one end thereof, cooperating crimping rollers secured to said shafts adjacent to said cutting tools, one of said rollers having an annular groove on its outer end and the other roller having an annular rib for engaging in said grooves to form a bead on said pipe, and a hook engaging the top of the upper arm having an arm engaging the underneath side of the lower arm for limiting spreading movement of said arms.

2. In a stovepipe cutting machine, the combination with a standard, of a pair of laterally extending spaced hollow arms mounted upon said standard, shafts journalled in suitable bearings in said arms, one of said bearings being adjustable vertically, means for rotating said shafts simultaneously, cooperating annular cutting tools secured to said shafts adjacent to one end thereof, cooperating crimping rollers secured to said shafts adjacent to said cutting tools, one of said rollers having an annular groove on its outer end and the other roller having an annular rib for engaging in said groove to form a bead on said pipe, one of said arms bearing suitable indicia, a shaft extending longitudinally of the other of said arms, an adjustable stop carried by the last mentioned shaft adapted to move alongside of the arm provided with said indicia, and a hook engaging the top of the upper arm having an arm engaging the underneath side of the lower arm for limiting spreading movement of said arms, said arm on said hook having an extension forming a handle for applying and releasing said hook and arm from the pair of arms.

CLYDE WILMER INGRAM.

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