

Oct. 7, 1930.

O. TUERCK

1,778,003

PIPE TIPPING APPARATUS

Filed June 30, 1928

2 Sheets-Sheet 1

Fig 1

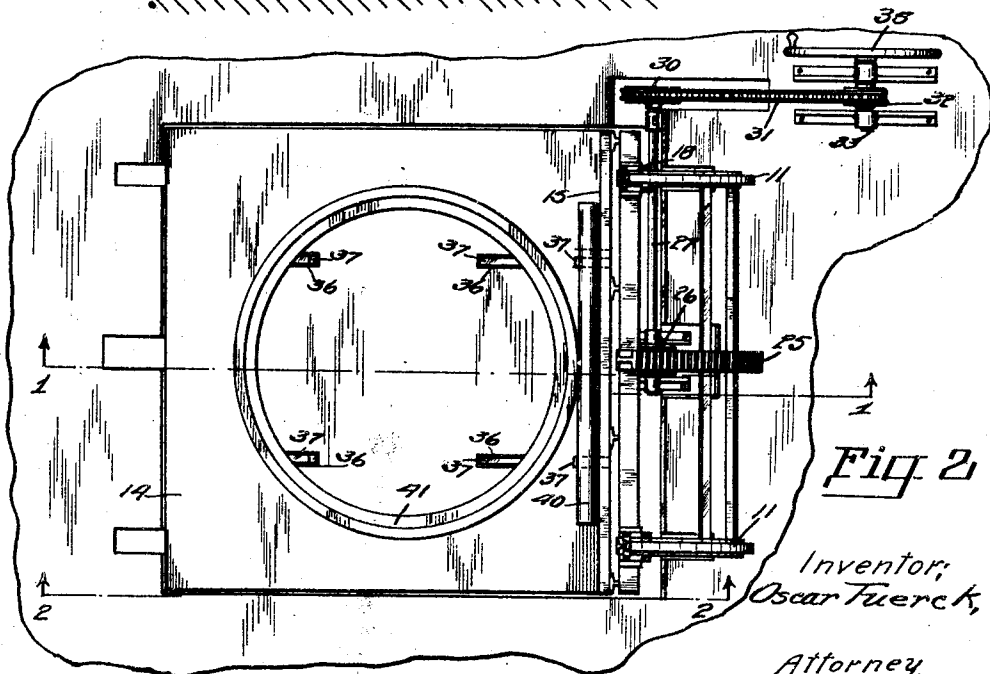
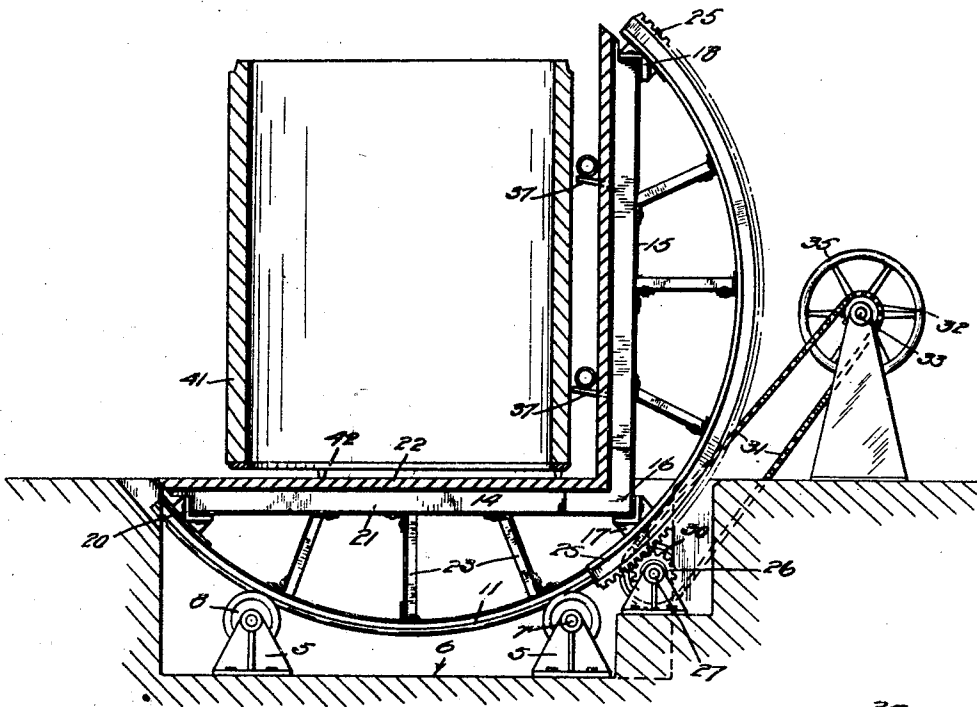


Fig 2

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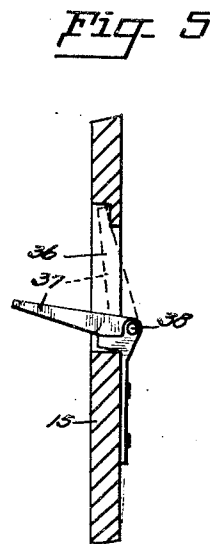
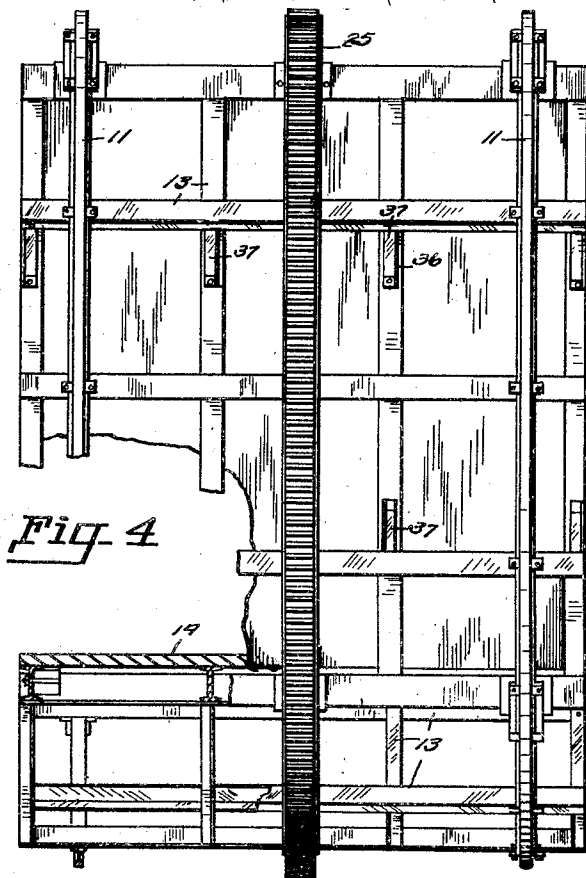
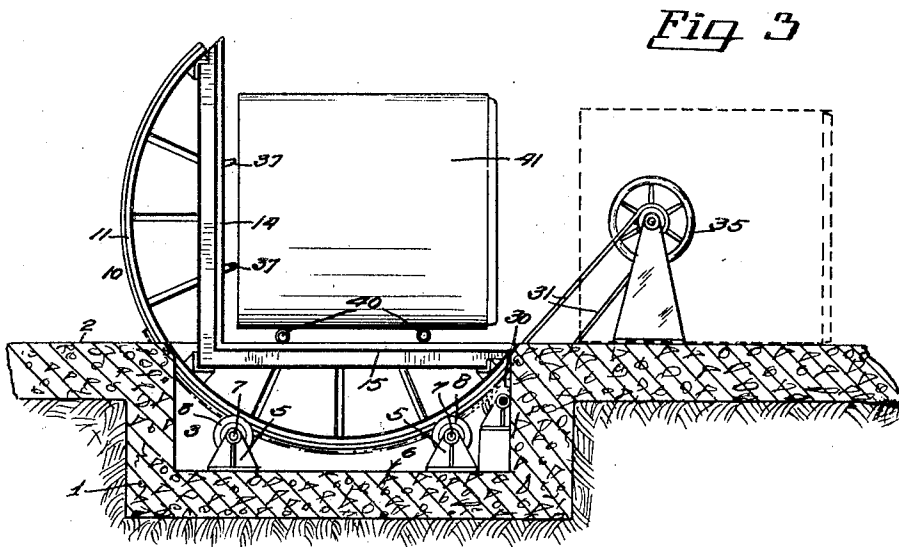
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UNITED STATES PATENT OFFICE

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PIPE-TIPPING APPARATUS

Application filed June 30, 1928. Serial No. 289,564.

This invention relates to improvements in tipping apparatus for turning large pipe sections and the like.

The object of my invention is the provision of a machine of simple, compact, and practical construction whereby large sections of heavy pipe, such as concrete pipe, which is usually cured upon its ends may be laid over upon its side in position to be rolled away and stacked in the storage yards.

A further object of the invention is the provision of an apparatus of the character described having dual platforms in right-angular relation to receive the pipe thereon for turning, the axis of oscillation of said platform being located midway within the angle of said platforms whereby said platforms are swung alternately into horizontal position closing a gap formed in the floor or yard and serving, in turn, as the means to discharge a pipe section just tipped and then to receive a pipe section preparatory to tipping.

Other objects and advantages of my invention, and objects relating to details of construction and arrangement of the parts thereof will be readily apparent in the course of the detailed description to follow.

In the accompanying drawings illustrating by way of example an embodiment of my invention Figure 1 is a view in side elevation of a machine embodying my invention.

Fig. 2 is a top plan view of the same.

Fig. 3 is a view similar to Fig. 1 on a smaller scale with the apparatus shown at its opposite operative position.

Fig. 4 is a view in rear elevation of my invention.

Fig. 5 is a fragmentary view in vertical section illustrating an element of the invention.

Referring to said views the reference numeral 1 indicates a base of concrete or other suitable material having its upper horizontal surface 2 substantially level with the surface of the surrounding floor or ground level of the yard or building in which situated. Said base is formed with a relatively shallow pit 3 of rectangular configuration.

Mounted in supports 5 rigidly fixed to the

floor 6 of the pit are transverse axles 7 upon which grooved wheels 8 are rotatably mounted adjacent the opposite ends of each axle. An oscillated frame 10 is formed with a pair of semi-circular tracks 11 of T-rail configuration arranged in alignment to be supported within the groove wheels 8 and are connected together by transverse and parallel framework 13. Included within said semi-circular tracks and framework in re-entrant rectangular relation are platforms 14 and 15 having their rectangular corners 16 supported in a cast metal block 17 mounted upon said track rails of the frame midway between its ends. The opposite edges of the platforms 14 and 15 are secured in cast metal brackets 18 and 20 adjacent, respectively, the opposite ends of the track rails. Said platforms may be of any suitable construction, as illustrated, wherein the beams 21 are provided with a decking 22 of heavy wood flooring. Strut members 23 are provided rigidly connecting the outer frame with the platforms.

Intermediate the track rails 11 is a semi-circular rack 25 rigidly connected with the frame members 13. A toothed pinion 26 is mounted upon a shaft 27. Said pinion is in mesh with the rack 25 and is operatively rotated with the shaft 27 by means of a sprocket wheel 30 keyed to the shaft 27 and actuated by a sprocket chain 31 extending about a sprocket pinion 32 keyed to a shaft 33 to which a hand wheel 35 is operatively connected.

Two pairs of horizontally aligned slots 36 are formed in each said platform decking in each of which a tiltable metal dog 37 is pivotally connected at 38 and adapted to swing outwardly into and beyond the deck surface into a position slightly inclined upwardly to the horizontal when the respective platform is swung into vertical position in its turn. Thus each horizontal pair of said dogs provides a projecting ledge upon which a roller 40, which may be formed of metal pipe, may be supported. Two such rollers may thus be supported on the vertically disposed platform preparatory to each tipping operation for the purposes hereinafter described.

The matter of utilizing and operating my

invention may be briefly described as follows. The concrete pipe sections, such as 41, are customarily allowed to set and cure for a considerable period after their formation upon a metal ring or palette 42. After the pipe has attained a sufficient age to stand upon its side, it is conveyed to the tipping apparatus, forming the subject matter of this application, whereupon it is laid upon the platform 14 or 15, as the case may be, and tipped over to lie on its side.

With the pipe mounted on the platform 13, as indicated in Fig. 1, and with the rollers 40 mounted upon the supports 37 in the vertical platform 15, the apparatus may be oscillated by the manual rotation of the wheel 35 to actuate the pinion 26 in mesh with the rack 25 to swing the frame and platform in partial rotation with the tracks 11 in the groove bearing wheels 8, whereby the frame is caused to move in circular directions about an assumed axis radial with the tracks and substantially midway between or 45° from said platforms 14 and 15.

Thus the platform 15 will assume the horizontal position formerly occupied by platform 14, as indicated in Fig. 3, and the pipe will lie upon its circular side wall on the rollers 40. In the meantime the dogs 37 in the platform 15 will drop back into their slots 36 leaving the platform 15 unobstructed while the similar dogs 37 in the now vertically positioned platform 13 will in their turn drop outwardly to afford projecting supports for the rollers 40. The pipe section is then rolled longitudinally on the rollers 40 therebeneath off the platform 15 on to the adjoining ground level. The palette 42 can then be readily removed and the pipe section rolled laterally off of the roller and to any place in the yard where it is convenient to store it. The rollers 40 are then deposited upon the projecting lugs 37 in the platform 13 and the apparatus is ready for the deposit thereon of another pipe which is supported on the platform 15 ready to be tilted to one side to lie there horizontally upon the platform 14, but it assumes its horizontal position in its turn. Thus the machine is oscillated in either direction alternately. The platforms 14 and 15 alternately close the gap formed by the pit 3 so that at no time is there any opening left in the floor or ground level of the yard where installed.

Having described my invention, what I claim is:—

1. Pipe-tipping apparatus, consisting in a frame, a pair of parallel semi-circular tracks in said frame, a pair of grooved wheels in which each said tracks is supported, means to oscillate said frame on said tracks through an arc of ninety degrees, a pair of platforms in said frame arranged in rectangular relation, and means collapsible to support rollers

upon one of said platforms when in vertical position.

2. Pipe-tipping apparatus, consisting in a frame, a pair of parallel semi-circular tracks in said frame, a pair of grooved wheels in which each said tracks is supported, means to oscillate said frame on said tracks through an arc of ninety degrees, a pair of platforms in said frame arranged in rectangular relation, and a pair of horizontally aligned dogs tiltable outwardly in one of said platforms as it assumes vertical position.

3. Pipe-tipping apparatus, consisting in a pair of platforms disposed in rectangular relation, means to actuate said platforms into alternately vertical and horizontal positions, and a pair of horizontally aligned dogs tiltable outwardly in one of said platforms as the platform assumes a vertical position.

4. Pipe-tipping apparatus, consisting in a pair of connected platforms disposed in rectangular relation, means to actuate said platforms into alternately vertical and horizontal positions, and collapsible means to support rollers upon one of said platforms when in vertical position.

OSCAR TUERCK.