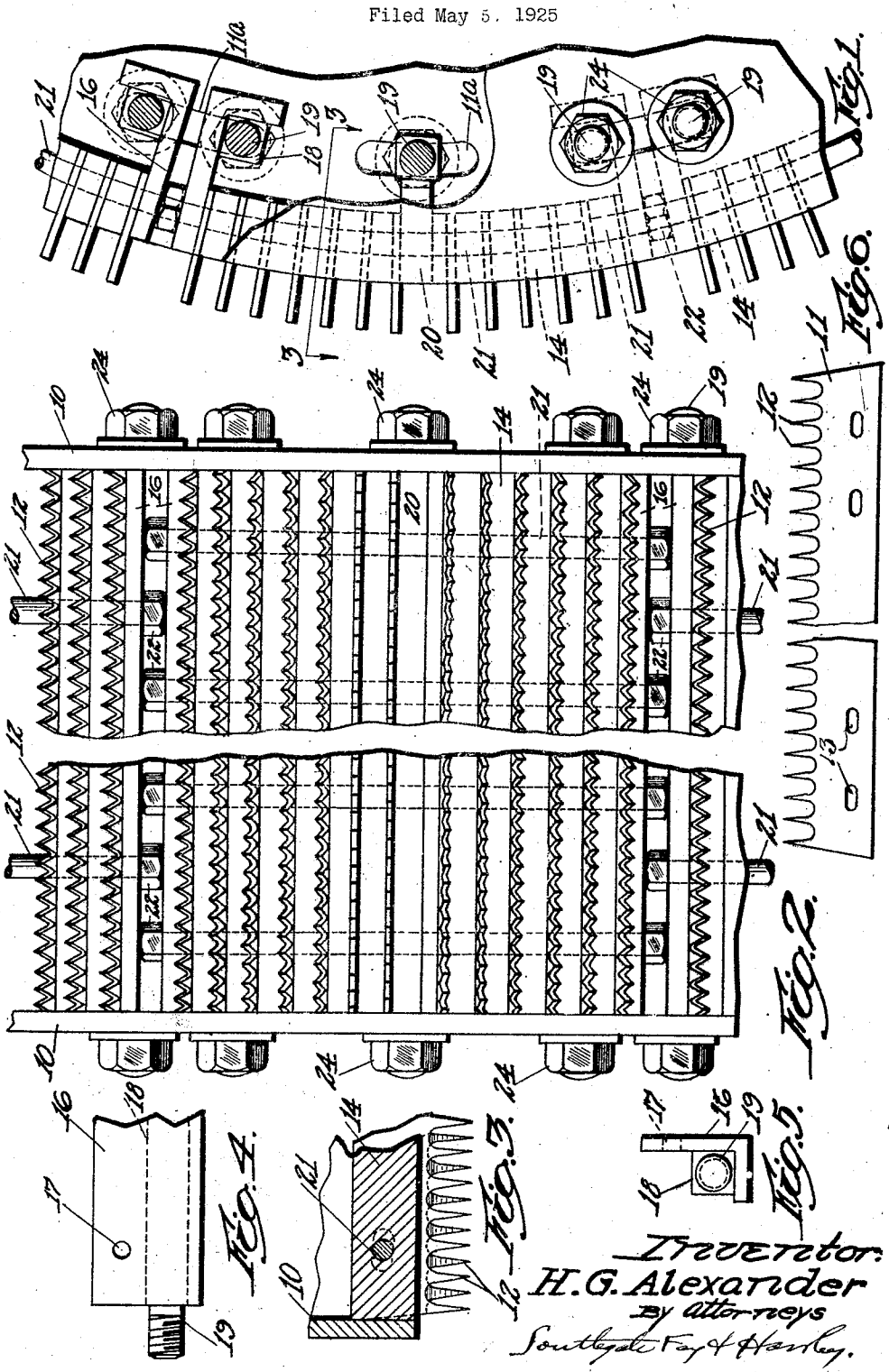
May 11, 1926. 1,583,823

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PICKER CYLINDER

Filed May 5, 1925



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Patented May 11, 1926. 1,583,823

UNITED STATES PATENT OFFICE.

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PICKER CYLINDER.

Application filed May 5, 1925. Serial No. 28,209.

This invention relates to an improvement over the picker cylinder shown in my Patent No. 1,529,826, issued March 17, 1925. It has the same general purposes but involves improvements in construction in several particulars for the purpose of mounting a maximum number of points on the cylinder and adding to its durability as well as reducing expense. The cylinder is formed by a pair of circular end plates of boiler plate or the like connected together all around the circumference by a series of lags each one having a series of knives provided with teeth, thus avoiding the necessity of providing a complete cast iron cylinder around the device and the boring of holes for the attachment of the holding bolts and the finishing of grooves for the reception of the knives which have the integral teeth thereon, thus materially economizing in the building of the cylinder. It also involves the construction of these individual lags in such form that they can be assembled separately, the knives with the teeth thereon clamped permanently in them and then their application to each other and to the ends to form the cylinder, and the simplification of the knives themselves, so that they can be formed of flat plates without any bending of their inner ends to enable them to be secured in position, and other features of construction as will appear.

Reference is to be had to the accompanying drawings, in which

Fig. 1 is a fragmentary end view of the cylinder;

Fig. 2 is a side view showing one of the lags and the manner of assembling it with the ends, one on each side also indicated;

Fig. 3 is a radial sectional view on the line 3—3 of Fig. 1 on the same scale;

Fig. 4 is a fragmentary side view of one of the retainers;

Fig. 5 is an end view of the same; and

Fig. 6 is a perspective view of one of the knives of coarser pitch.

With this invention I provide a cylinder similar to the one shown in said patent but capable of providing a much larger number of teeth or points, for example an 18½ inch cylinder can be formed with from 24,000 to 26,000 points. This is an important feature because it can be used on fine goods and it involves even more economy in that case than the cylinder shown in my said patent having a smaller number of teeth. These fine toothed cylinders have to be provided with a large number of pins for the purpose for which they are intended and the number of pins is limited on account of the drilling that has to be done in the wooden cylinders. By having such a larger number of holes in a wooden cylinder so close together, the walls of the wood are weakened and the pins keep coming out and after they do come out it is very difficult to repair them and also very expensive.

With my construction, a larger number of points can be provided if desired and yet the cylinder is of maximum strength and the repairs are much less frequent as individual pins cannot come out. One of the lags can be removed in case of any trouble and replaced without interfering with the others.

By this construction a pair of circular discs 10 of boiler plate constitute the main frame of the cylinder. They are provided with circumferential slots 11ª punched out at intervals all the way around near the circumference. They are equally spaced apart all the way around. These plates are each provided with a central perforation for the shaft not shown.

The space between the end plates 10 is filled by a series of lags each made up of a plurality of knives 11 having points or teeth 12 integrally mounted thereon and each provided with perforation 13 for fastening them in position. The plates are separated from each other by filling pieces 14 each perforated like the knives and alternating with them. Each lag is completed at its two ends by an L-shaped retainer 16 having perforations 17 registering with the perforations in the knives and fillers and each having secured thereto a square bar 18 welded or soldered or otherwise fixed to it in the angle of the L. These bars are provided with integral studs 19 projecting at their opposite ends and screw-threaded. I also provide, if desired, another form of retainer 20 of flat form but having the square bar 18 at its end secured to it and provided with the studs 19. In the preferred form I provide an L-shaped retainer 16 at each end of a series of knives and spaces the two L's being turned in toward each other and a retainer 20 at the center

of the lag. The tops of the L's can be the same height as the tops of the fillers and they not only act as retainers but also as fillers.

The series of these knives, spacers, and preferably three retainers, are assembled by passing through the perforations therein a series of curved bolts or rods 21. Where these rods 21 pass through the end retainers 16 they are threaded and provided with nuts 22 or preferably they have a head on one end and a nut on the other. The nuts are screwed up so that the whole lag comes to the right shape, that is an arcuate form having the radius of the cylinder. The lags are all assembled and the proper number of them arranged around a circle and the ends of the studs 19 passed through the corresponding slots 17 in one of the end pieces and nuts 24 applied to them to fix them thereto. This fixes the lags in the proper position around the circle and then the other end piece 10 is brought up and the studs passed through the slots 17 in it and similar nuts 24 applied on the other end. This constitutes a complete assembly of the cylinder.

It will be understood that the bolt heads and nuts are staggered in alternate lags so that both heads can be received between two retainers at the ends of the lags and not provide a very wide space. The knives also are assembled in staggered relationship so that the points will perform their functions in the usual manner.

By this construction a very large number of points can be provided as the knives can be made of the desired pitch. The finest cylinder now on the market can be duplicated in this way and at comparatively small expense and will be very much more durable than any cylinder now on the market having a wooden base. There is no likelihood of the knives becoming loose the way the pins do in the previous constructions and if any of the pins do get broken, bent or otherwise damaged, the lag in which they are located can be removed by itself and repaired or replaced very easily and quickly. The cylinder is very much more durable and less expensive than those previously on the market. Furthermore, if desired, I can reduce the pitch of the guides and increase the number of points beyond the limits which the previous constructions have set.

Although I have illustrated and described only a single form of the invention I am aware of the fact that modifications can be made therein by any person skilled in the art without departing from the scope of the invention as expressed in the claims. Therefore I do not wish to be limited to all the details of construction herein shown and described, but what I do claim is:—

1. As an article of manufacture, a picker cylinder for the purpose described, comprising a pair of circular flat end plates having perforations therethrough near their circumferences, a series of sets of knives having points integrally mounted thereon, the knives of each set or lag being individually connected together to form a unit and placed between the end plates and secured thereto.

2. As an article of manufacture, a picker cylinder comprising a pair of flat end plates having slots therethrough near their circumferences, a series of flat knives having integral points thereon, spacing pieces between the adjacent knives, curved bolts or rods passing through a series of these knives and spacing pieces and securing them to each other in fixed position to form a lag of points, and means for securing said lags to the end pieces through their slots in adjusted positions.

3. In a picker cylinder, the combination with a pair of flat end pieces having perforations therethrough near their circumferences, a series of flat knives having integral points thereon, spacers between the knives to space them apart, the knives and spacers being perforated, a series of curved bolts concentric with the circumference of the end pieces passing through a series of these knives and spacers and tightened up to hold them together in the form of a series of entirely independent lags, each lag having at the ends thereof a retainer also perforated to receive the bolts, said retainer being provided with projecting studs at opposite ends and passing through the perforations in the end pieces and secured thereto.

4. As an article of manufacture, a unit for forming a part of a picker cylinder, comprising a series of knives having integral points, said knives being arranged with their points staggered, spacers between the knives, and retainers at the ends of a series of spacers and knives, each retainer being of L-shape form having a rectangular bar extending throughout its length in the angle of the L, and means on the ends of said bars for securing them in position on the cylinder.

5. As an article of manufacture, a lag for forming a part of a picker cylinder comprising a series of knives having integral points, said knives being arranged in the lags with their points staggered, spacers between the knives, and retainers at the edges of each lag, each retainer being of L-shape form having a bar extending throughout its length in the angle of the L, and an additional retainer near the center of said lag extending across the same and projecting inwardly and having a bar on it.

6. As an article of manufacture, a retainer for a toothed lag for a picker cylinder consisting of a piece of metal extending the length of the cylinder and L-shaped in cross

section, and a bar of square form located in the angle of the L and fixed thereto, said bar having a pair of studs on its ends.

7. As an article of manufacture, a lag forming part of a picker cylinder, comprising a series of flat knives, each having a series of points thereon arranged longitudinally of the cylinder, said lag constituting a part of the surface of the cylinder, and removable individually without dismounting the individual knives thereof.

8. In a picker cylinder, the combination with a supporting means, of radial points therefor arranged in a plurality of longitudinal series and assembled in lags, each lag being applicable to, and removable from, the cylinder as a unit and constituting a part of the surface of the cylinder.

In testimony whereof I have hereunto affixed my signature.

HORACE G. ALEXANDER.