

J. LOWMAN.
CORK GRINDING AND POLISHING MACHINE.
APPLICATION FILED JULY 19, 1905.

967,798.

Patented Aug. 16, 1910.

4 SHEETS—SHEET 1.

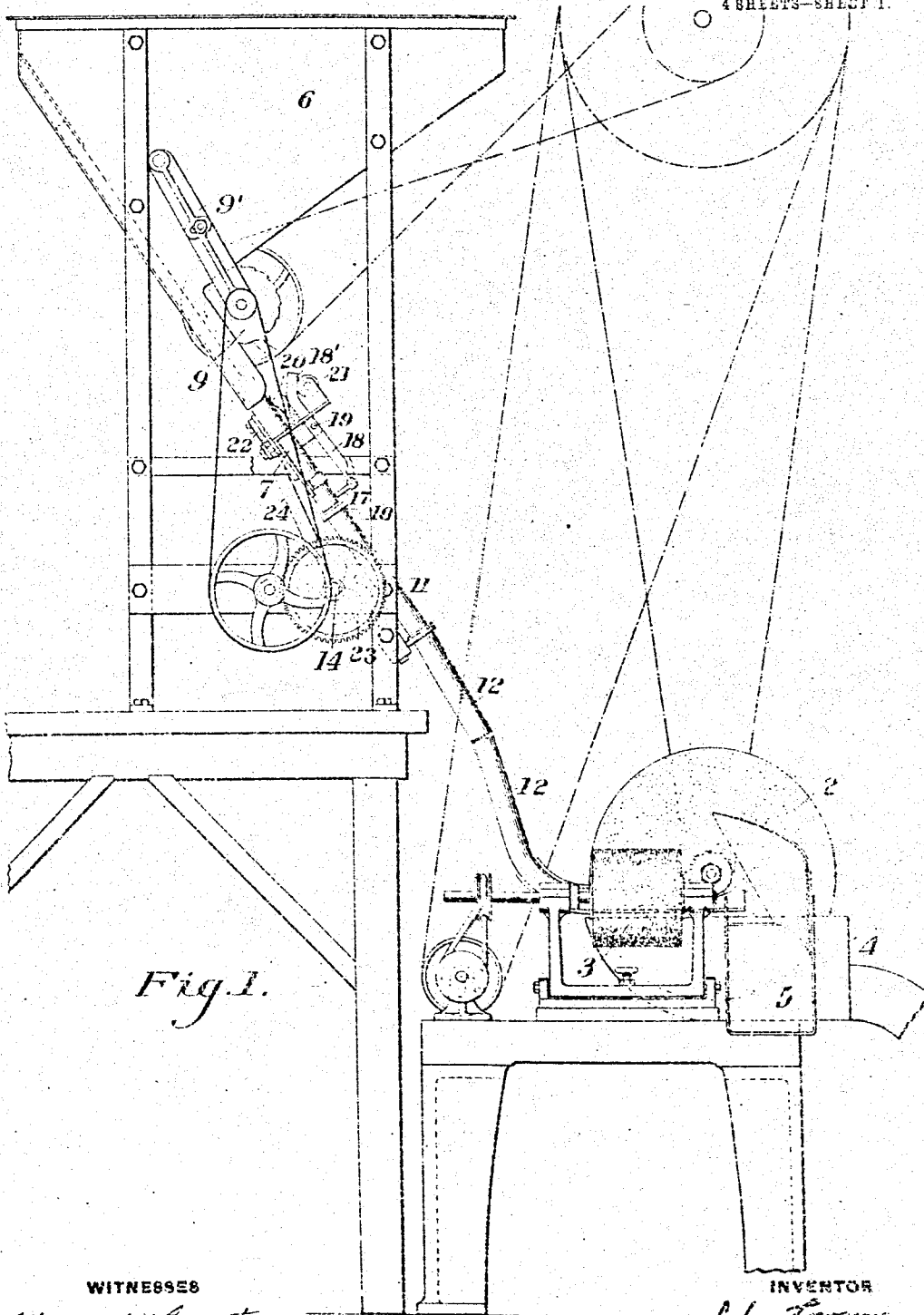


Fig. 1.

WITNESSES

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4 SHEETS-SHEET 2.

Fig. 2.

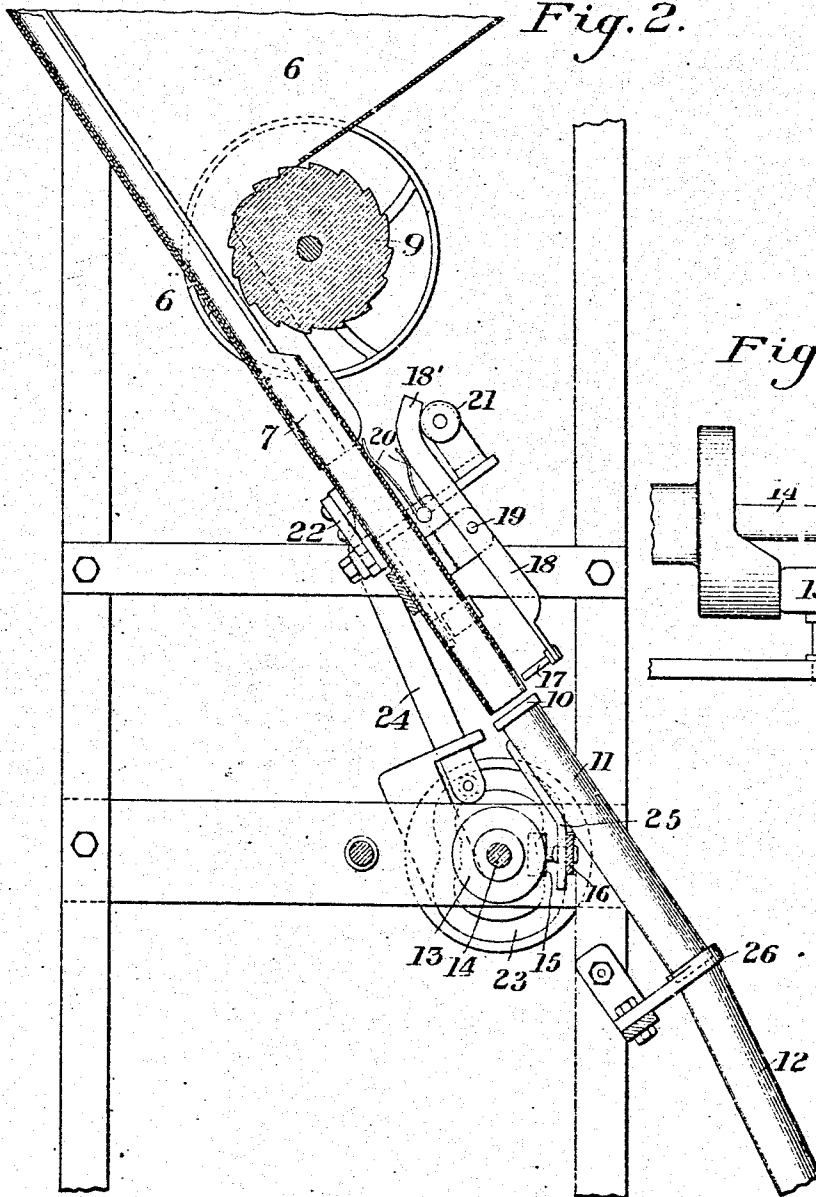
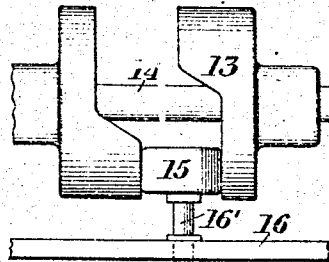


Fig. 4.



WITNESSES

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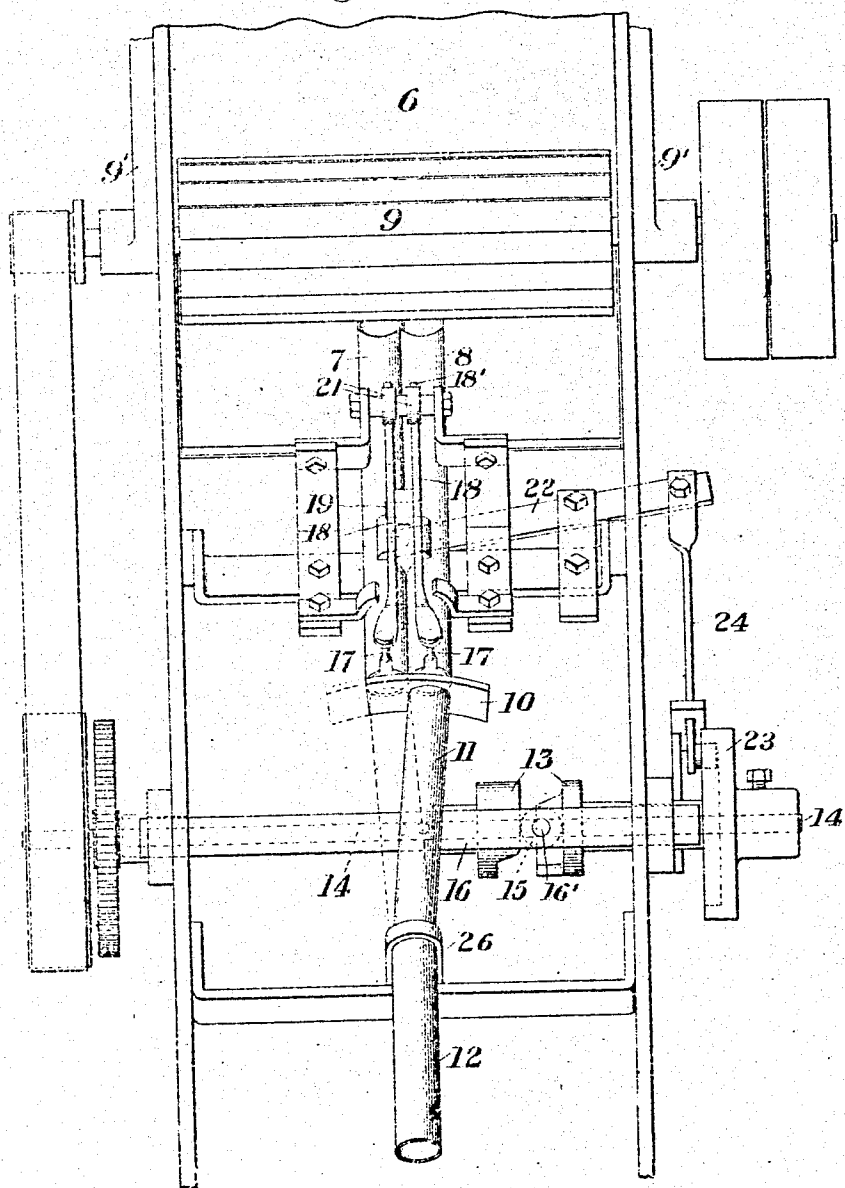
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4 SHEETS—SHEET 3.

Fig. 3.



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Fig. 5.

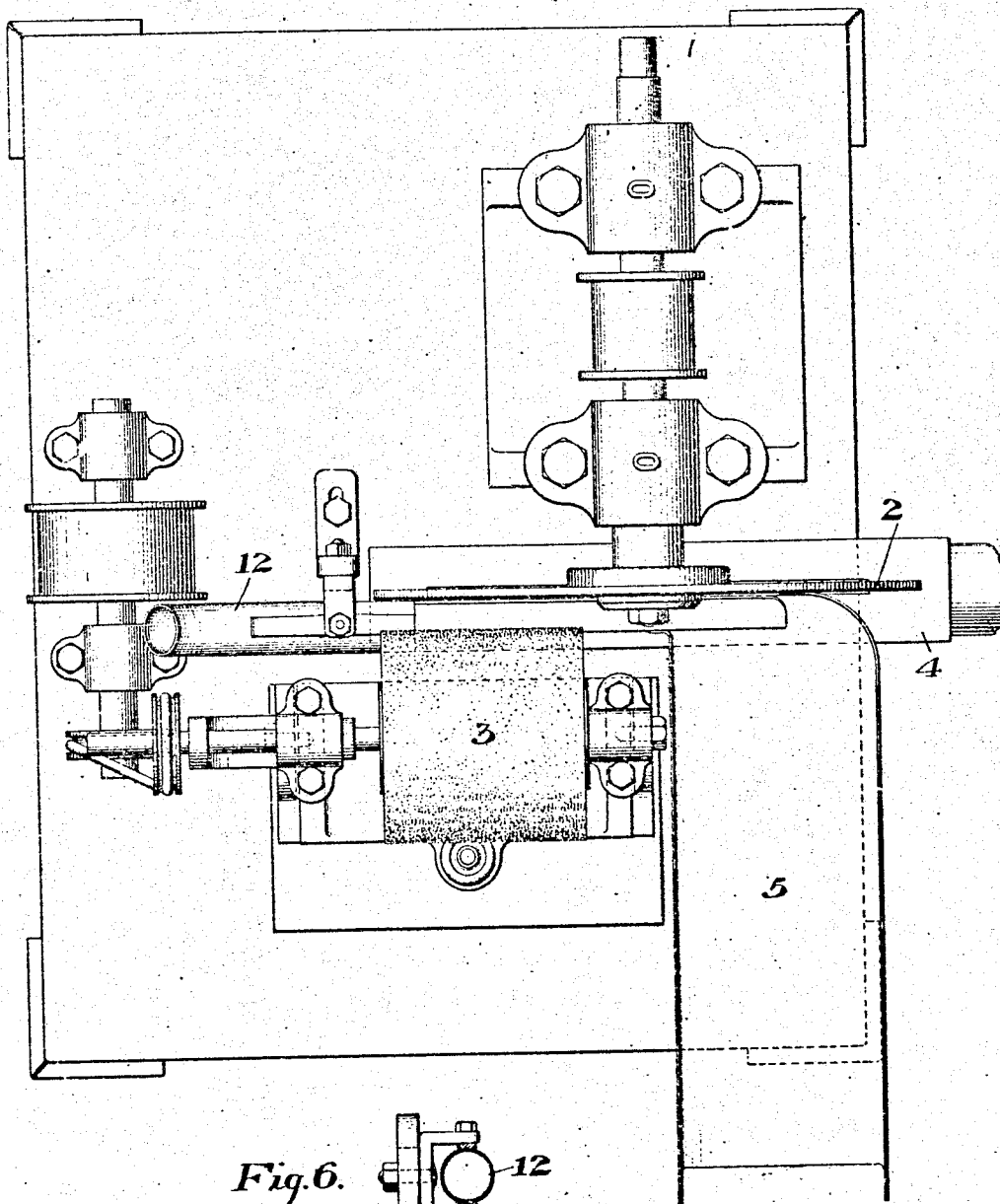
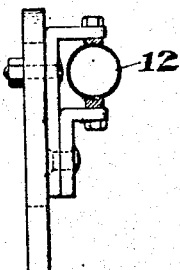


Fig. 6.



WITNESSES

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UNITED STATES PATENT OFFICE.

JOHN LOWMAN, OF NEW CROSS, LONDON, ENGLAND, ASSIGNOR TO ARMSTRONG CORK COMPANY, OF PITTSBURG, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

CORK GRINDING AND POLISHING MACHINE.

967,798.

Specification of Letters Patent. Patented Aug. 16, 1910.

Application filed July 19, 1905. Serial No. 270,398.

To all whom it may concern:

Be it known that I, JOHN LOWMAN, of New Cross, county of London, England, have invented a new and useful Cork Grinding and Polishing Machine, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation partly broken away embodying my improvements; Fig. 2 is a sectional detail view through the delivery troughs and the adjacent parts; Fig. 3 is a front elevation of the same; and Fig. 4 is a detail view of the cam; Fig. 5 is a plan view, and Fig. 6 is a detail sectional view on the line 6—6 of Fig. 5.

This invention relates to abrading machines, and while capable of operating upon many kinds of work, is especially designed for grinding and polishing corks.

The present machine employs an abrading disk having an abrasive face, and it is an important object of the invention to provide for supporting the work in operative relation to the face of the disk, in such a manner as to effectually and automatically accommodate corks of different sizes, thereby to prevent choking of the machine by variations in the size of the work fed to the machine. Furthermore, the work is fed continuously to the machine and discharged automatically therefrom, wherefore it is another object of the invention to provide for loosely supporting the work against the abrading disk in such a manner as to permit of the work traveling across the disk under the action thereof upon the work, and thereby to effectually discharge the work from the abrading disk.

In the drawings 2 represents the grinding wheel of a cork machine, by which corks, held against its surface by a revolving brush 3, are ground and finished, and dust passing off through a dust-box and spout 4 and the finished corks being delivered to a chute 5.

A substantially horizontal cork support *a* is located between the brush 3 and the grinding disk or wheel 2, in such position as to receive the corks as they escape from the lower end of the tube 12, and to support the corks while they are being ground and fed along between the grinding wheel and brush.

My invention relates to the means by which the corks are fed to the grinding wheel.

6 is a feed-hopper mounted on a suitable frame, for receiving the corks to be ground. At its lower end it terminates in two inclined movable delivery troughs 7, 8, through which the corks are urged by a driven toothed delivery roll 9, which is carried in adjustable bearings 9'. These troughs project into the hopper 6, and their lower ends terminate in tubular mouths above a curved plate 10 which oscillates with a tubular guide-section 11 connected pivotally at its lower end to the tube 12 which conducts the corks to the grinding wheel. The guide-section 11 is oscillated so as to connect its upper end alternately to the ends or mouths of the troughs 7, 8. This oscillation is effected conveniently by a double cam 13 on a shaft 14, the roller 15 of the cam having a connection through a stub-shaft 16 with the shifting guide-bar 16. At the same time that the guide-section is moved away from the mouth of one of the troughs 7, 8, that mouth is obstructed by the curved plate 10 on guide-section 11, and when the delivery troughs are projected upward and away from the guide-section, their mouths are obstructed by stops or pins 17. These stops or pins enter slots in the troughs and are carried on levers 18, pivoted at 19 and urged toward the slots by springs 20. The levers 18 are pivotally mounted on the delivery troughs 7, 8 and move therewith, so as to withdraw the pins 17 by rollers or guides 21 which bear on inclined portions 18' of the levers, and are actuated by a lever 22 operated by a cam 23 on the shaft 14 and a connecting-link 24. The consequence is that as the oscillating section 11 is moved into register with one of the troughs 7 or 8, the mouths of the latter are opened by retraction of the pins from the slots and the mouth of the other trough is closed by the curved plate 10, to which the tubular guide-section 11 is attached. The oscillating section 11 is secured by a bracket 25 to the bar 16, the lower end of said oscillating section being loosely secured in a pocketed bracket 26 as shown in Fig. 2.

In the operation of the device the corks pass from the hopper 6 into the feed-troughs

7 and 8, and pass from that one of the troughs which is in register with the oscillating guide section. Meanwhile the feed-troughs are continuously being filled with corks by the delivery-roll 9, and when the oscillation of the guide-section brings it into contact with the filled trough, the corks which have accumulated therein pass out through the guide-section, while the other trough is accumulating a full supply of corks. In this way a continuous feed is secured, and the choking of the corks in the delivery passages and the intermittent delivery thereof is prevented. The result is that I very largely increase the capacity of the machine.

The skilled mechanic will be able to modify the parts of the apparatus in many ways, since—

What I claim is:—

1. An abrading machine for corks or the like having a grinding or polishing disk, and a rotary element having a substantially circular surface portion of yielding material arranged to hold the corks against one face of the disk, substantially as described.

2. An abrading machine for corks or the like having a grinding or polishing disk, a rotary element having a substantially circular surface portion of yielding material arranged to hold the corks against one face of the disk, and connections arranged to drive the rotary element in the opposite direction to that of the disk, substantially as described.

3. A cork grinding and polishing machine having a grinding or polishing disk, and a rotary element having at least the major part of its peripheral portion in curved form, said curved portion having a yielding material arranged to hold the corks against one face of the grinding disk, substantially as described.

4. A cork grinding and polishing machine having a grinding or polishing disk, and a rotary element having its periphery arranged to hold the corks against one face of the disk and provided with a brush surface, substantially as described.

5. A grinding or polishing machine having a rotary grinding disk and a rotatable cylindrical work engaging element having a yieldable periphery in cooperative relation with one face of the disk to hold the work thereagainst, substantially as described.

6. An abrading machine for corks or the like, having a grinding or polishing disk, means for continuously feeding work to the disk, and a rotary element having a substantially circular surface portion of yielding material disposed to loosely hold the work against one face of the disk to permit travel

of the work across the disk, substantially as described.

7. In an abrading machine for corks or similar articles, a grinding or polishing disk, and an endless work-engaging element having a brush portion cooperating with one face of the disk to loosely hold the corks against and permit them to travel across the disk, substantially as described.

8. A machine for grinding or polishing corks having a disk provided with an abrasive face, and a work-engaging roll mounted in substantial parallelism with the disk and spaced therefrom to receive corks between the disk and roll, the space between said members being unobstructed to permit of the unrestricted travel of the corks across the disk, and the periphery of the roll being yieldable throughout the length of the roll to permit of the corks sinking therein and thereby prevent choking of the machine, substantially as described.

9. A machine for grinding or polishing corks having an upright abrasive disk and a substantially horizontal rotary brush mounted in substantial parallelism with the abrasive face of the disk and forming a work-engaging element to hold corks between the periphery of the brush and the abrasive face of the disk, the space between the brush and the disk being unobstructed to permit of the unrestricted travel of the corks across the disk, substantially as described.

10. An abrading machine for corks or the like, having an upright grinding or polishing disk, a substantially horizontal cork support extending across the face of the disk, and a substantially horizontal rotary element having a substantially circular surface portion of yielding material disposed to hold the corks against the face of the disk while traveling along the cork support, substantially as described.

11. An abrading machine for corks and the like, having an upright grinding or polishing disk, a substantially horizontal cork support extending across the face of the disk, and a substantially horizontal rotary brush mounted in substantial parallelism with the abrasive face of the disk and forming a work engaging element to hold the cork between the periphery of the brush and the abrasive face of the disk, and a substantially horizontal cork support extending across the face of the disk, substantially as described.

In testimony whereof, I have hereunto set my hand.

JOHN LOWMAN.

Witnesses:

WALTER I. SKERTEN,
T. J. OSMAN.