

925,037.

V. P. SCHMIDT.
WASTE PAPER CLEANING.
APPLICATION FILED MAR. 6, 1908.

Patented June 15, 1909.

2 SHEETS—SHEET 1.

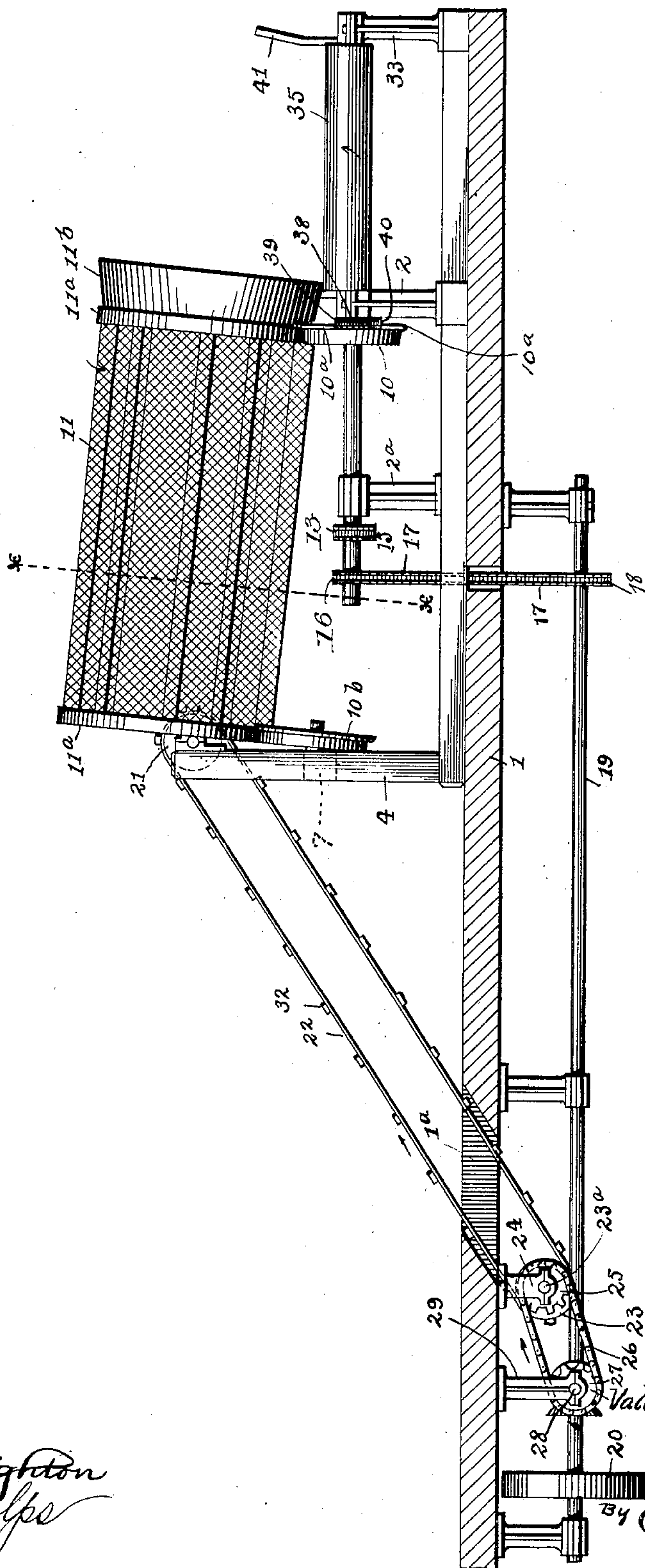


Fig. 1.

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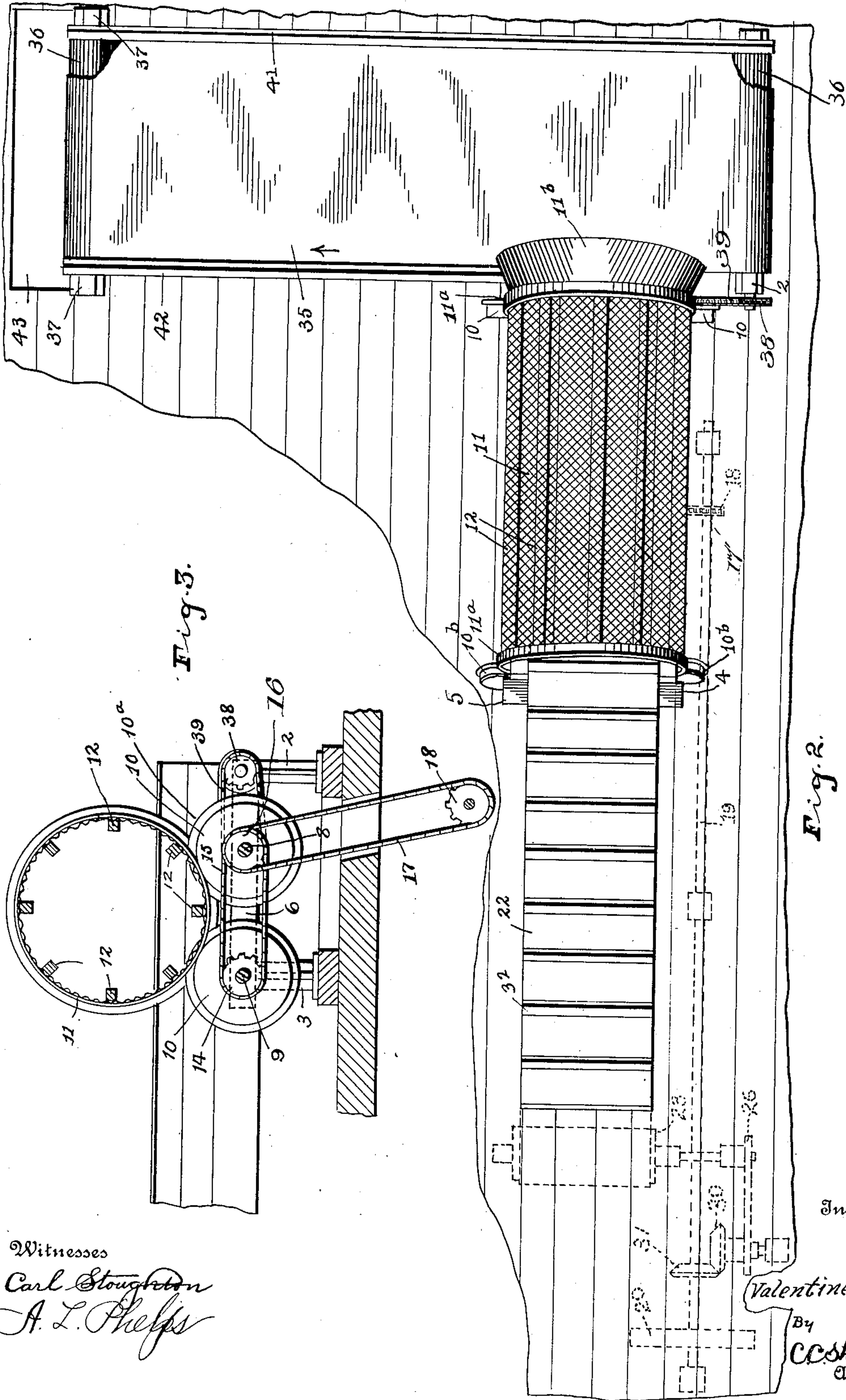
Inventor
Valentine P. Schmidt
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UNITED STATES PATENT OFFICE.

VALENTINE P. SCHMIDT, OF COLUMBUS, OHIO.

WASTE-PAPER CLEANING.

No. 925,037.

Specification of Letters Patent.

Patented June 15, 1909.

Application filed March 6, 1908. Serial No. 419,465.

To all whom it may concern:

Be it known that I, VALENTINE P. SCHMIDT, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Waste-Paper Cleaning, of which the following is a specification.

My invention relates to the improvement of means for cleaning waste paper and the objects of my invention are to provide an improved mechanism and process for cleaning waste paper of that class which is intended to be reconverted into new paper by the paper mills; to so construct the apparatus which I employ for this purpose as to insure the rapid and effective separation of dust and loose dirt from the paper and to produce other improvements the details of which will be more fully pointed out hereinafter. These objects I accomplish in the manner illustrated in the accompanying drawings, in which—

Figure 1 is a side view of my improved mechanism showing the same in position for use and for convenience in illustration showing the supporting floor in section, Fig. 2 is a plan view of the same, and, Fig. 3 is a sectional view on line $x-x$ of Fig. 1.

Similar numerals refer to similar parts throughout the several views.

In carrying out my invention, I employ a suitable framework which is adapted to be supported upon the floor of a building such as is indicated at 1, said framework comprising front standards 2 and 3 and longer rear standards 4 and 5 the front standards being connected by a horizontal frame bar 6 and the rear standards similarly connected by a cross bar 7 which is indicated in dotted lines in Fig. 1 of the drawing.

8 represents a shaft which is journaled in the cross bar 6 and in a standard 2^a.

9 represents a shaft which is parallel with the shaft 8 and which also has its end bearings in the frame cross piece 6 and a standard corresponding with the standard 2^a. Each of the shafts 8 and 9 carries adjacent to the cross bar 6 a wheel 10, these wheels being flanged on their forward sides as indicated at 10^a, after the manner of car wheels.

10^b represent wheels which correspond in form and size with the wheels 10, one of these wheels being pivoted to the cross frame piece 7 at a point opposite and above each of the wheels 10.

11 represents a cylinder, the body of which is formed of screen wire and which at each end has a terminal band or ring 11^a. The forward end of the cylinder is provided with a flaring unperforated extension 11^b. The inner surface of the cylinder is provided at intervals throughout its length, with fixed parallel bars such as are indicated at 12. The cylinder thus formed is, as shown, supported above and upon the peripheries of the wheels 10 and 10^b, the flanges of said wheels engaging the forward sides of the end bands or rings 11^a of the cylinder. Upon the shaft 8 is carried a small sprocket wheel 13 which is connected with a similar sprocket wheel 14 upon the shaft 9 through the medium of an endless chain 15. The shaft 8 also carries a sprocket wheel 16 which through an endless chain 17 is connected with a sprocket wheel 18 carried on a line shaft 19 which may be supported in hangers or by other suitable means from the underside of the floor 1. This shaft 19 carries a belt wheel 20 over which a belt may run from a suitable source of power.

Journaled between and slightly in front of the upper end portions of the rear standards 4, is a roller 21 over which runs an endless conveyer belt or apron 22, the latter running rearward and downward from the rear end of the cylinder 11 through an opening 1^a in the floor and thence to and about a roller 23, the central shaft of which is rotatably mounted in fixed hangers 24. This roller shaft which is indicated at 23^a also carries a sprocket wheel 25 over which runs an endless chain belt 26, said belt also running over and engaging the teeth of a sprocket wheel 27 which is carried on a shaft 28, the latter being journaled in a hanger 29. Upon the shaft 28 on the inner side of the sprocket wheel is carried a beveled gear wheel indicated in dotted lines in Fig. 2 of the drawing at 30, the teeth of this bevel gear wheel meshing with those of a second bevel gear wheel 31 which is carried by the shaft 19.

In the construction of the endless apron or conveyer belt 22, I form the body of the same of a flexible material, the outer surface of which has secured thereto at intervals cross bars 32.

Journaled between the frame standard 2 and a corresponding frame standard 33 which is in front of said standard 2, is a roller 34 over which runs at right angles with the direction of the length of the shaft 19, an end-

less apron or carrier 35, the latter also passing about a roller 36 corresponding with the roller 34 which is suitably journaled in frame standards 37 which rise from the floor 1 at opposite points and at a suitable distance to one side of the forward end of the cylinder 11.

Upon the inner end of the shaft of the roller 36, is carried a sprocket wheel 38 which is connected by means of a sprocket chain 39 (see Fig. 3) with a sprocket wheel 40 partly indicated in Fig. 1 of the drawing, which is carried upon the outer end of the shaft 8. The standard 33 is connected with the corresponding standard 37 by a horizontal side board 41 while a similar side board 42 connects the standards 2 and 3 with the remaining standard 37.

It will be understood that rotary motion being imparted to the shaft 19 through a belt on the wheel 20, such motion will be transmitted to the shaft 8 through the chain 17 and through the chain 15 to the shaft 9. The rotary motion thus imparted to the cylinder supporting wheels 10, results in a rotary motion of the cylinder 11 in the opposite direction. It will be understood that through the gear connections heretofore described, rotary motion will also be transmitted to the roller 23 resulting in a traveling motion of the conveyer belt 22 about the rollers 23 and 21 in the direction of the arrow indicated in Fig. 1.

Through the chain connection described of the sprocket wheels 38 and 40, it is obvious that a rotary motion will be imparted to the roller 34 and a consequent horizontal traveling motion in the direction of the arrow in Fig. 2, of the endless apron 35.

The manner of utilizing my invention is substantially as follows: Motion having been imparted to the parts as hereinbefore described, the waste paper to be cleaned is suitably fed on to the upper side of the conveyer 22 and carried thereby upward over the roller 21 and into the rear end of the cylinder 11. The paper which is thus discharged into the cylinder 11 is by the rotation of the latter and by engagement with the internal bars 12 shaken or agitated sufficiently to cause the loose dust particles clinging to the pieces of paper or particles of dirt which are readily detachable from the paper, to fall therefrom through the openings in the tubular screen

which forms the cylinder, while the paper is gradually fed to and through the forward end of the cylinder through the inclination of the latter on to the traveling apron 35. The traveling motion of this apron is comparatively slow and while the paper is being carried to the discharge end of the apron, certain grades of the paper are removed by hand from the apron 35 and arranged in separate receptacles, while the remaining and less valuable grade of paper or refuse material, is discharged over the outer end of the apron into a suitable floor chute or receptacle 43.

From the operation described, it will be understood that a simple and effective process is provided for separating dirt particles from pieces of waste paper and for facilitating the separation of the paper into various grades after cleaning.

What I claim, is:

In a device of the character described, the combination with spaced pairs of standards, of flanged wheels mounted upon said standards, the flanged wheels of one pair of standards being inclined with relation to said standards, a pair of stub shafts upon which the flanged wheels of the other pair of standards are mounted, a chain and sprocket connection between said shafts, a screen comprising a wire mesh body portion, and annular rings at the opposite ends thereof, said rings resting upon said flanged wheels, the inclined flanged wheels being located above the other of said flanged wheels to thereby support said screen in an inclined position; a line shaft, a support for said standards beneath which said line shaft is located, a conveyer which passes through said support and serves to convey material to the highest end of said screen, connections between said conveyer and the line shaft whereby said conveyer may be driven from the line shaft, a connection between the line shaft and one of the stub shafts, a conveyer adapted to receive material from the discharge end of the screen, and a connection between one of said stub shafts and said conveyer.

In testimony whereof I affix my signature in presence of two witnesses.

VALENTINE P. SCHMIDT.

Witnesses:

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A. L. PHELPS.