Sept. 29, 1959 A. F. BECKER 2,906,514

FLOOR COVER REMOVING MACHINE HAVING FLOATING SCRAPER

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Fig. 1

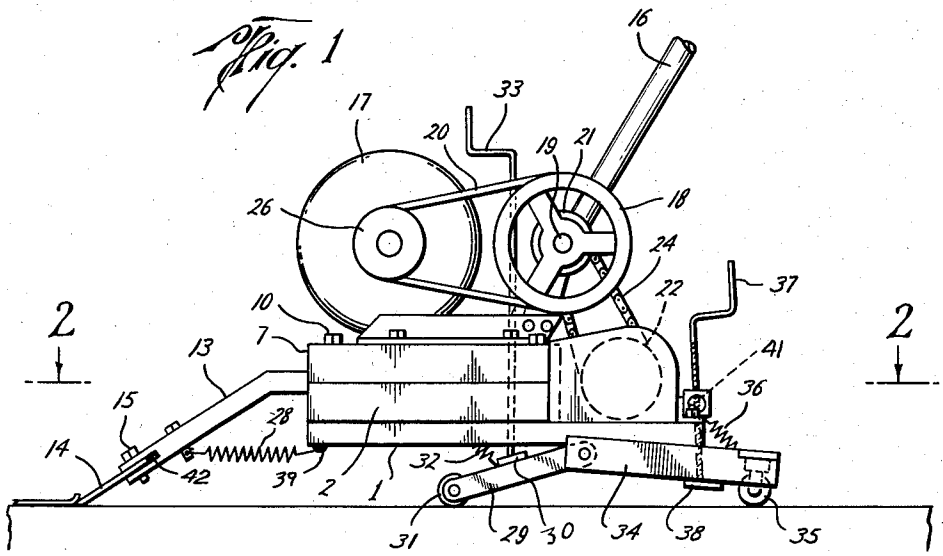
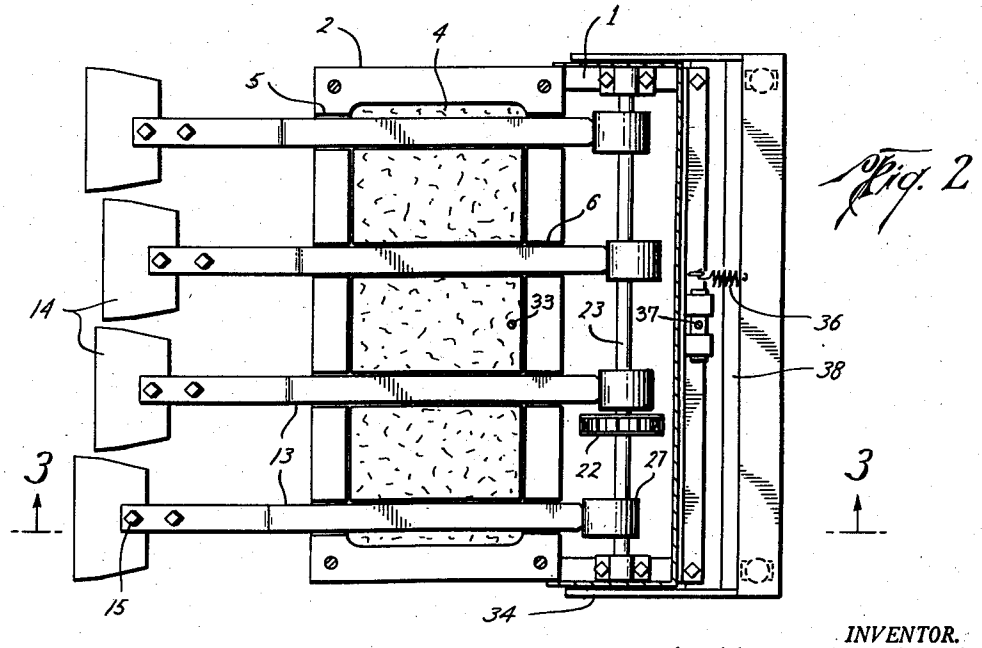


Fig. 2



INVENTOR.
Anthony F. Becker
BY Ranseler O Wyatt
ATTORNEY

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Fig. 3

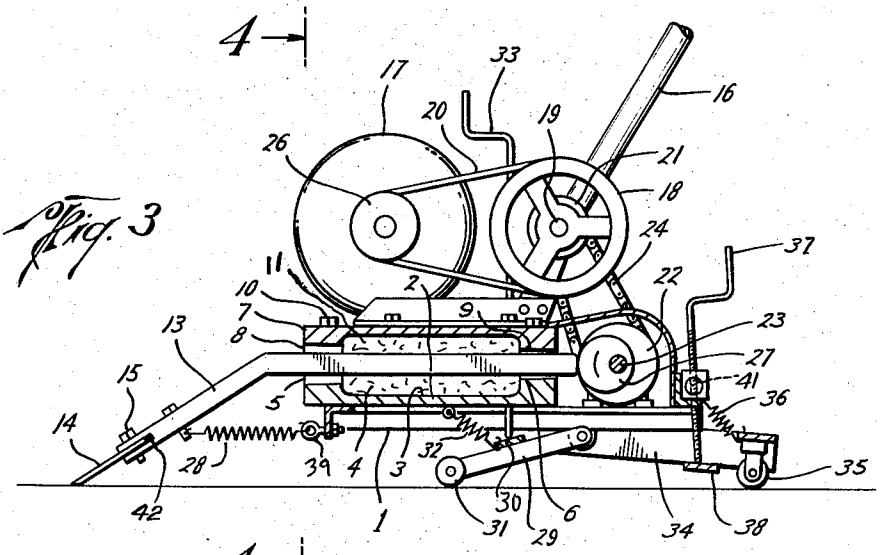


Fig. 6

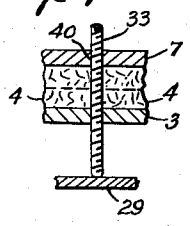


Fig. 4

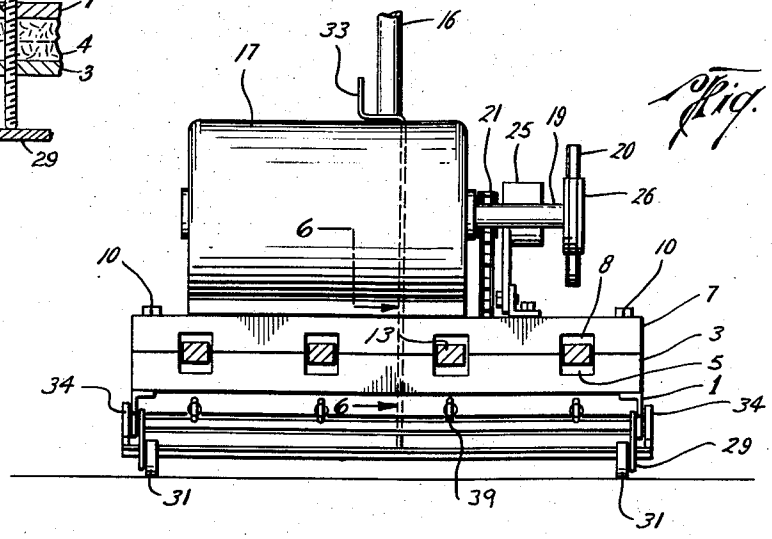
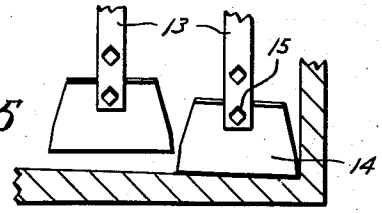


Fig. 5



INVENTOR.
Anthony F. Becker
BY Ranseler O Wyatt
ATTORNEY

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FLOOR COVER REMOVING MACHINE HAVING FLOATING SCRAPER

Anthony F. Becker, Houston, Tex., assignor to American-Lincoln Corporation, a corporation of Ohio

Application October 2, 1956, Serial No. 613,448

3 Claims. (Cl. 262—8)

This invention relates to new and useful improvements in a floor cover removing machine.

It is an object of this invention to provide a floor cover removing machine having novel means for removing floor coverings, such as asphalt tile and the like, employing reciprocating arms and having means for adjusting the level of cut and the depth of cut.

It is another object of this invention to provide a floor cover removing device having novel means for lubricating the reciprocating arms.

It is a still further object of the invention to provide a floor cover removing device having a novel, adjustable carriage.

With the above and other objects in view, the invention has relation to certain novel features of construction, operation and arrangement of parts more particularly described in the following specification and illustrated in the accompanying drawings, wherein:

Figure 1 is a side elevational view.

Figure 2 is a top view, in cross section, taken on the line 2—2 of Figure 1.

Figure 3 is a side elevational view, in cross section, taken on the line 3—3 of Figure 2.

Figure 4 is a front elevational view, in cross section, taken on the line 4—4 of Figure 3.

Figure 5 is a fragmentary view of the cutters employed, illustrating the use of the device on floors at the wall juncture, and

Figure 6 is a cross sectional view taken on the line 6—6 of Figure 4.

Referring now more particularly to the drawings, the numeral 1 designates a carriage framework of rigid material, such as angle iron, on which the lower arm case 2 is mounted, the lower arm case 2 being preferably formed of a cast material, such as cast iron, and having a lubricating chamber 3 in which an absorbent pad 4 containing a lubricant is mounted.

A series of cutter arm openings 5, 6 are formed in the lower arm case 2, the openings 5 being deeper than the openings 6, and both the openings 5 and 6 tapering rearwardly and inwardly. The upper arm case 7 is cast to fit on the lower arm case 5, with similar cutter arm openings 8, 9, and the upper arm case 7 is bolted, or otherwise secured, to the lower arm case 2 as by bolts 10, 10. Suitable lubricant pads 11 are mounted in the upper arm case 7, the chamber 12 being formed therein to receive said pads. Cutter arms 13 are mounted in the openings 5, 6, 8 and 9, and extend transversely through the case sections 2, 7. The forward ends of the arms 13 are bent downwardly at an angle of approximately thirty degrees and have horizontal slots in the downwardly extended end faces in which a cutter blade 14 is mounted, as by means of the bolt 15. The lower end of the blade 14 is ground to present a sharp cutting edge, the plane of the end of the blade 14 forming said cutting edge being on the same plane as the portion of the cutter arms extending through the upper and lower arm case.

Mounted on the upper arm case, in any suitable manner, is a handle 16 for guiding the device, and an electric motor 17. The motor 17 has a driving pulley 26 which is connected to the pulley 18 by means of a suitable belt 20. The pulley 18 is mounted on the drive shaft 19 and a sprocket 21, on the shaft 19, rotates the sprocket 22 on the cam shaft 23 through suitable means as the chain 24. Suitable bearings, as 25, may be adjustably mounted on the upper arm case 7, to support the drive shaft 19.

Eccentric cams 27 are mounted on the shaft 23 and yieldable means, as the spring 28, are anchored at one end to the lower arm case 2 and at the other end to the cutter arm 13, to maintain the rear ends of the cutter arms 13 constantly in contact with the cams 27.

Pivotally mounted on the framework 1 are the elevation bars 29, 29 which are connected by the cross bar 30, which is extended horizontally beneath the framework 1; suitable rollers, or wheels, 31, 31 are mounted on the extended ends of the bars 29, 29. A suitable yieldable means, as the spring 32, maintains a constant upward stress on the bar 30, and suitable adjusting means, as the vertically movable threaded crank 33 mounted in the framework 1, as through a suitable internally threaded orifice in the framework, as 40, is provided to elevate or lower the bars 29, 29, the lower end of which bears against the bar 30 to adjust the position of the elevation bars and the spring 32 prevents the bars 29, 29 from dropping when the device is lifted clear of the floor. A tilting device is mounted on the framework 1 which consists of the elevational bars 34, 34, which are pivotally mounted at the same point as the pivotal mounting of the bars 29, 29, on the framework 1, and which have suitable rollers or wheels 35 on the free ends, which said free ends extend rearwardly. Yieldable means, as the spring 39 constantly urge the bars 34 upwardly, and an adjusting means, as the vertically movable threaded crank arm 37 mounted in the framework 1, through an internally threaded orifice 41, the lower end of which bears against a cross bar 38, connecting the bars 34, 34, permitting the altering of the elevation of the bars 34, 34, and thus altering the degree of tilt of the machine with relation to the bars 29, 29 and the spring 39 preventing the bars 34, 34 from dropping when the device is lifted clear of the floor. By altering the position of the bars 29, 34 the pitch of the cutting blades 14 may be changed. If it is desired to apply a rocking movement to the device as the work progresses the crank 33 is rotated lowering the bar 30 so that when both wheels 31 and 35 are in contact with the floor, the ends of the blades 14 will be raised.

The machine may be readily transported on its own wheels 31, 35 by raising the framework through rotation of the cranks 33, 37, until the cutter blades 14 are elevated the distance desired from the floor. When it is desired to start floor cover removing action, the cranks 33, 37 are rotated to lower the bars 29, 34 to the desired level so that the flat end surface of the cutting blades 14 will ride on the floor substantially parallel to the direction of travel of the cutter arms 13. The cutting edge of the blades 14 will be normally directed to a point parallel to the floor and the rotation of the drive shaft 23 will cause the cams 27 to push forwardly and upwardly on the cutter blade arms, which will result in a downwardly urged forward movement of the cutter blades. The relatively close fit of the rearwardly tapered openings 9 in the case members 2, 7, will keep the arms 13 in alignment with the cams, and the openings 5, 8 in the case members 2, 7, will permit the free vertical movement of the cutter arms as the work progresses. The direction of rotation of the cams 27 is clockwise, which imparts an upward thrust to the ends

of the arms 13, urging the cutter blades at the opposing end of the arms downwardly against the work, and the springs 28 being secured at one end to the framework and at their other end to the cutter arms 13, also urge the cutter blades downwardly and the freedom to move vertically in the openings 5, 8, will permit the cutter blades 14 to follow the contour of the floor. The cutter blades 14 are secured to the arms 13 by insertion of one end into slots as 38 which are cut in the end faces of the cutter arms. A single bolt 15 holds the cutter blades in the slots 42 and the bolt 15 is preferably tightened against the arm 13 sufficient to firmly hold the blade 14 in place but loosely enough to permit the blade to pivot on the bolt 15 to maintain the entire cutting edge against the work and to adjust itself to the contours of the floor as the work progresses. This permits a shuffling action of the cutter blades over the work, the arms yielding to permit the blades to ride over the work on back stroke and yet to dig into the covering upon forward stroke, being constantly in contact with the work.

When removing covering from floors of soft material, such as pine floors, the rollers 31 may be lowered so that the rollers 35 are on a higher plane, and the machine may then be tilted by the operator, directing the blades 14 to a digging relation with the work, and when the blades dig too deeply into the floor, the machine may be rocked rearwardly on the rollers 31, thus removing the blades from the work. Where the cover being removed is relatively thin, the rollers 35 may be adjusted to a quarter of an inch difference from the rollers 31 so that a relatively slight rock will raise the blades out of digging relation and where thicker covering is encountered, relatively greater rocking movement may be utilized by increasing the distance between the planes of the rollers 31, 35.

The blades 14 are preferably four in number, and the outside longitudinal edges of the blades are in close proximity, and the blades on each side of the machine are positioned in alignment with the sides of the bars 34, so that close work along the walls of a room may be accomplished.

The arms 13 are lubricated by means of the pads 4, 12, which are loaded with a suitable lubricant upon assembly of the machine. These pads are of a yieldable material, allowing the arms 13 to become embedded therein without restricting the movement of the arms. The absorbent nature of the pads will permit the storing of ample lubricant for the arms 13 without danger of leakage on to the work during operation of the machine.

The cutter arms and cutter blades being loosely mounted permits the cutting action to be a yielding one, the arms lying loosely in the housing and the blades pivoted on a bolt and the spring 28 being secured to the cutter arms 13 and to an eye 39 in the framework, the eye being swivelly connected to a bolt extended through the angle iron of the framework.

While the foregoing is considered a preferred form of the invention, it is by way of illustration only, the broad principle of the invention being defined by the appended claims.

What I claim is:

1. In a floor cover removing machine having a rigid framework, a cam shaft rotatably mounted on said framework, eccentric cams mounted on said shaft, a cutter arm housing on said framework, rearwardly and downwardly yieldable cutter arms loosely mounted in said housing and extending therethrough, one end of said arms being maintained in yieldable contact with said cams and the other end of said arms being downwardly turned and having cutter blades mounted thereon, lubricant chambers in said housing having absorbent pads in said chambers in yieldable engagement with said arms, cutter arm ports in said housing through which said cutter arms extend, said ports being aligned in pairs, the front ports being larger than the rear ports, and all of said ports tapering rearwardly and inwardly.

2. In a floor cover removing machine, a rigid framework, a reciprocating cutter arm on said framework, a rotatable cam shaft on said framework having an eccentric cam mounted thereon, said cutter arm being maintained in yieldable contact at one end with said cam, the other end of said cutter arm being downwardly turned and having a longitudinal slot in the end face thereof, and a cutter blade having an orifice adjacent the upper end thereof and a bolt through said arm and cutter blade orifice pivotally mounting said blade in said slot to permit said blade to pivot on said bolt.

3. In a floor cover removing machine, a rigid framework, reciprocating cutter arms on said framework, a rotatable cam shaft on said framework having eccentric cams mounted thereon, means for maintaining one end of each of said cutter arms in yieldable contact with said cams, the other end of said cutter arms being downwardly turned and having slots in the end faces thereof, cutter blades having perforations forming bolt receiving orifices, bolts extending through said orifices and mounted in said slots, the free ends of said blades being cut to a plane substantially parallel with the plane of the cutter arms, the blades being free to pivot on said bolts with relation to the cutter arms in said slots and to follow the contour of the work.

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