April 18, 1950 F. W. KING 2,504,205

MACHINE FOR SURFACING BUILDING UNITS

Filed Oct. 21, 1946 2 Sheets-Sheet 1

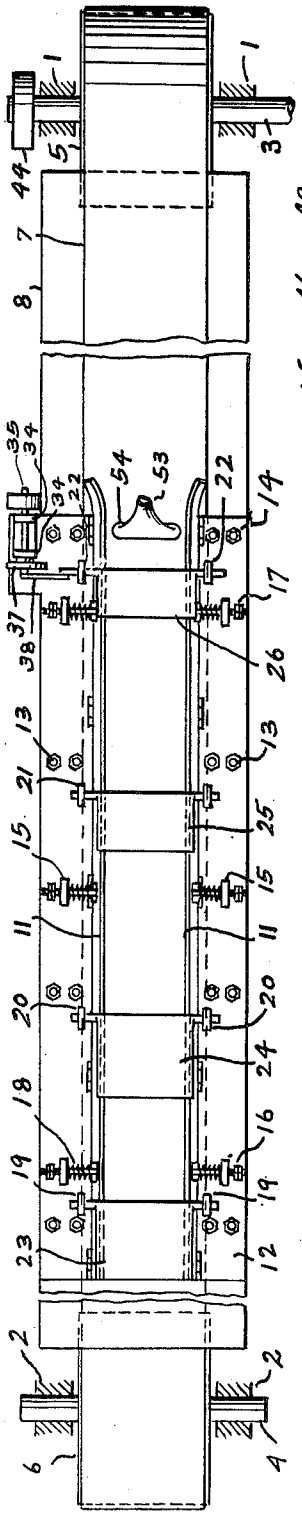


Fig. 2.

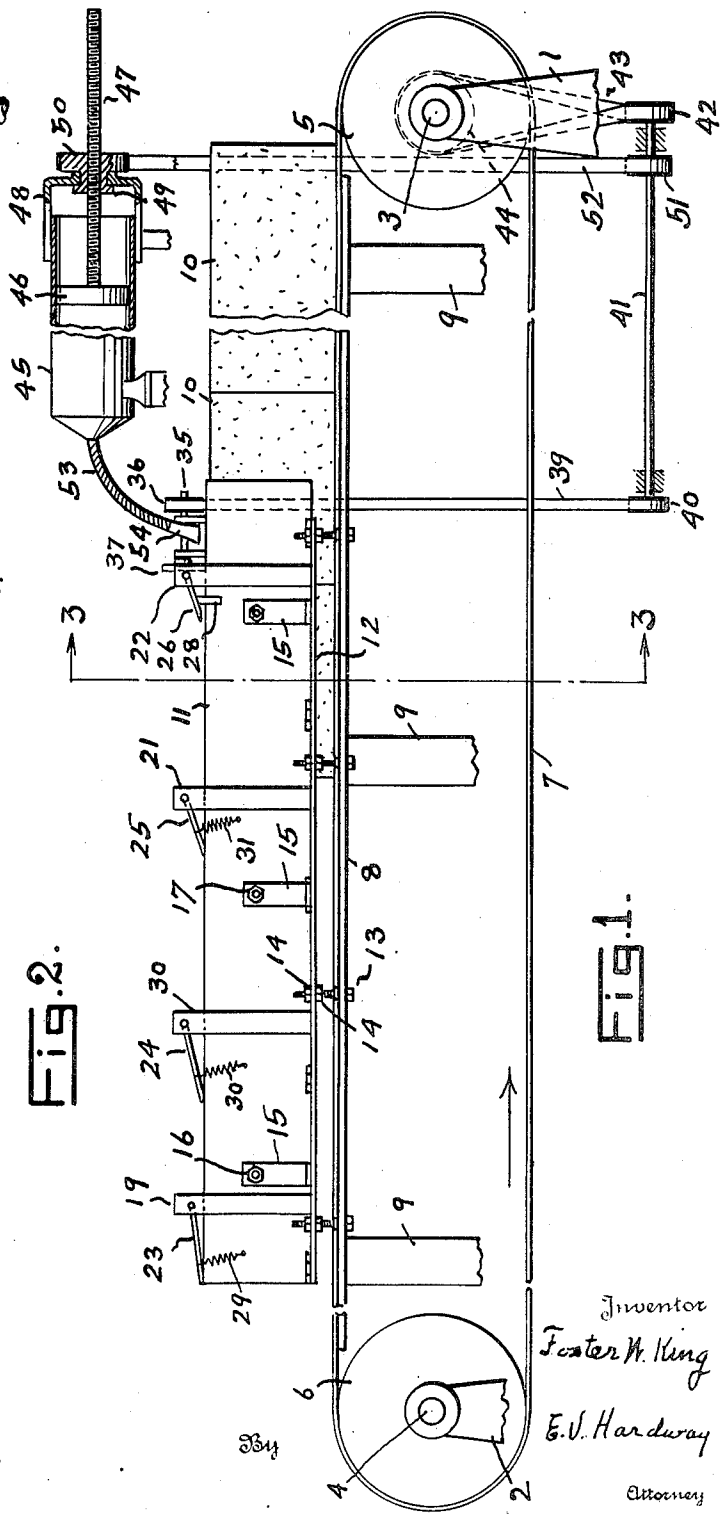


Fig. 1.

Inventor
Foster W. King
By E. V. Hardway
Attorney

April 18, 1950 F. W. KING 2,504,205

MACHINE FOR SURFACING BUILDING UNITS

Filed Oct. 21, 1946 2 Sheets-Sheet 2

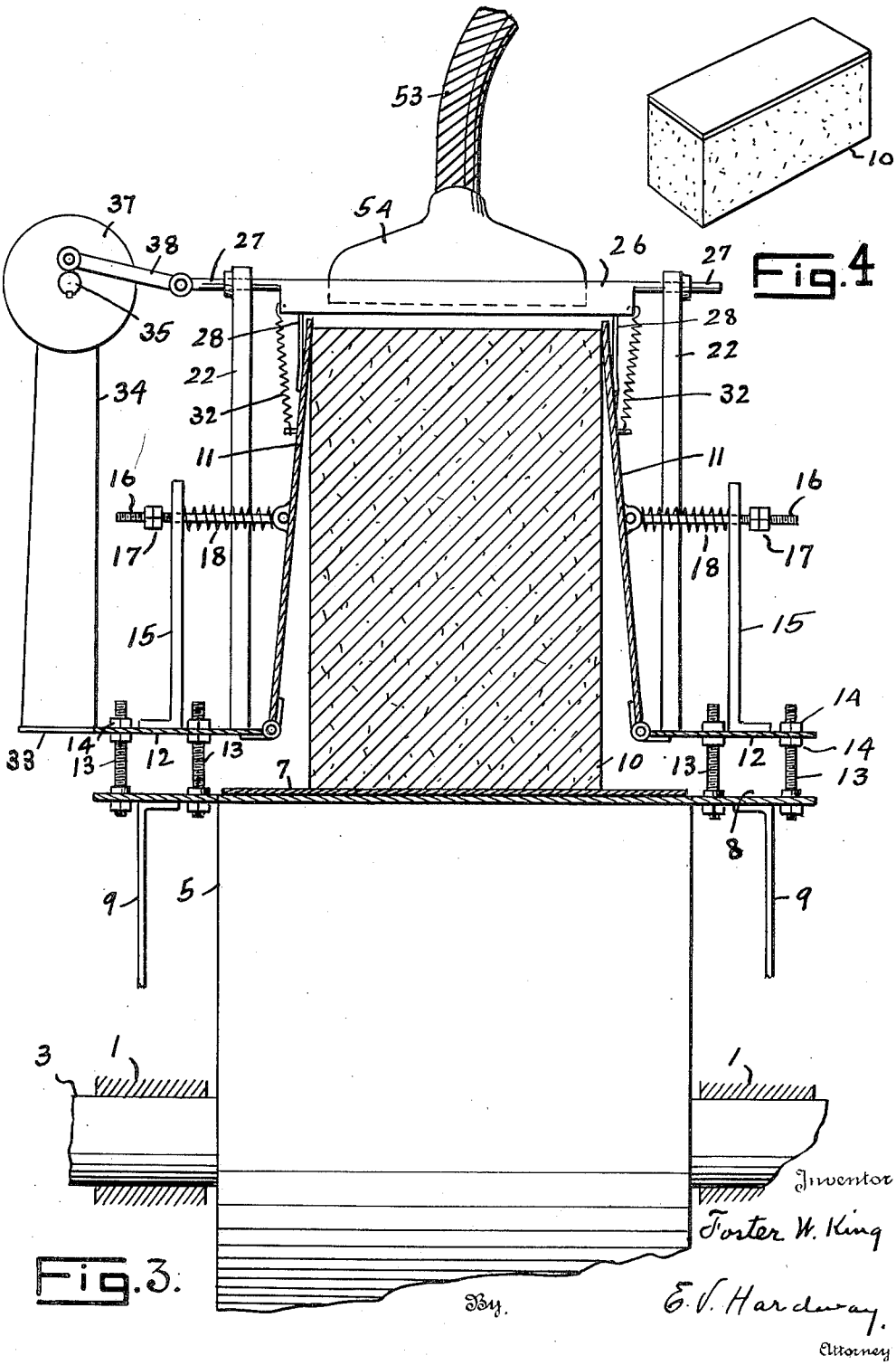


Fig. 4

Fig. 3.

Inventor
Foster W. King

By. E. V. Hardaway.
Attorney

Patented Apr. 18, 1950

2,504,205

UNITED STATES PATENT OFFICE

2,504,205

MACHINE FOR SURFACING BUILDING UNITS

Foster W. King, Houston, Tex., assignor of one-half to Jake E. Wiener, Houston, Tex.

Application October 21, 1946, Serial No. 704,547

2 Claims. (Cl. 25—1)

1

This invention relates to a surfacing machine.

An object of the present invention is to provide a machine of the character described specially designed for applying coating to building units.

It is another object of the present invention to provide a machine of the character described whereby a waterproofing, coating material may be applied to the surface of a building unit such as a concrete block, brick or the like and troweled to a smooth surface as applied.

A further object of the present invention is to provide a machine of the character described which will automatically apply and trowel the coating material automatically.

The invention also comprehends means for beveling the side margins of the coating as the same is applied to provide the desired joint between the building units when they are erected into a wall.

With the above and other objects in view the invention has particular relation to certain novel features of construction, operation and arrangement of parts, an example of which is given in this specification and illustrated in the accompanying drawings, wherein:

Figure 1 is a fragmentary, side elevation of the machine, partly in section.

Figure 2 is a plan view.

Figure 3 is an enlarged, sectional view taken on the line 3—3 of Figure 1 and

Figure 4 is a perspective view of the building unit showing the facing applied thereto.

Referring now more particularly to the drawings wherein like numerals of reference designate the same parts in each of the figures, the numerals 1, 1 designate the front legs and the numerals 2, 2 designate the rear legs of the supporting framework said legs being supported on a suitable base of any selected type.

Mounted in transversely aligned bearings in the front and rear legs are the front and rear transverse shafts 3 and 4, and fixed on these shafts between said legs are the front and rear drums 5 and 6.

Operating over these drums there is an endless belt, or carrier, 7.

The shaft 3 may be driven by any selected power unit so as to rotate the drum 5 to drive the belt 7 in the direction indicated by the arrows in Figure 1.

Between the drums 5 and 6 there is a table 8 which extends approximately from one drum to the other as shown in Figure 1 and which is somewhat wider than the belt, or carrier, 7. This

2

table is supported by the legs 9 spaced apart therealong on each side and these legs may be supported on a common base with the legs 1 and 2.

The upper run of the belt, or carrier, 7 moves along on this table 8, as indicated in Figures 1 and 3 and is thereby maintained in horizontal position against sagging.

The building units 10 to be surfaced are delivered onto the forward, or feed, end of the belt, or carrier, and move along with it to the delivery end, the main load of said unit, however, during the process of surfacing being supported by the table 8.

On opposite sides of the belt, or carrier, 7 and converging upwardly are the guide plates 11, 11. These guide plates accurately guide the units as they move along the table. The lower margins of the guide plates 11 are hinged to move, on longitudinal axes, to the inner margins of the side anchor plates 12, 12. These anchor plates are arranged one on each side of the table and are spaced above, and anchored to, the table by means of the series of upright bolts 13, 13 which are arranged in pairs that are spaced apart from end to end of said anchor plates, as shown more clearly in Figures 2 and 3. These bolts 13 are secured to the table, at their lower ends, and their upper ends extend through the anchor plates and are secured thereto by clamp nuts, as 14, 14, so that the anchor plates may be adjusted as desired.

Upstanding from the anchor plate, and spaced apart therealong on each side, are the standards 15 whose upper ends are provided with bearings to receive the guide rods 16.

The inner ends of the guide rods 16 are pivotally connected to the guide plates 11 and screwed onto their outer ends are the adjustable stops 17.

Surrounding the guide rods 16 and interposed between the corresponding standards 15 and the guide plates 11 are the strong coil springs 18.

The inner margins of the anchor plates 12 are spaced apart a distance somewhat greater than the transverse diameter of the building unit to be surfaced and therefore the guide plates 11 converge upwardly and contact the building unit being surfaced only at the upper corners thereof being held in yielding contact therewith by the springs 18. The upper margins of the guide plates 11 extend slightly above the building unit passing between said plates, as is shown in Figure 3 and for a purpose to be hereinafter explained.

There is another set of standards arranged in

pairs, the standards of the respective pairs being indicated by the numerals 19, 19; 20, 20; 21, 21; and 22, 22. The standards of the respective pairs are arranged one on each side of the machine, as shown in Figures 1 and 2.

The upper ends of these standards are provided with transversely aligned bearings and between the standard of the respective pairs are the trowels 23, 24, 25 and 26. The forward margins of the trowels are provided with laterally extended pintles, such as 27 which are rotatable in the corresponding bearings. The rear margin of the trowel 26 is held spaced slightly above the upper margin of the guide plates 11 by the upstanding stops 28, 28 which are shown more accurately in Figures 1 and 3 but the rear margins of the other trowels rest on the upper margins of said guide plates. They are held in yielding contact with said upper margin of the side plates, and stops 28, by the pull springs 29, 29; 30, 30; 31, 31; and 32, 32. The upper ends of these pull springs are attached to the corresponding ends of the trowels and their lower ends are attached to the outer sides of the guide plates 11, as shown in Figures 1 and 3. The forward end of one of the anchor plates 12 is widened laterally and upstanding from this laterally widened portion 33 there are the legs 34, 34 and mounted to rotate in longitudinally aligned bearings in the upper ends of these legs there is a shaft 35. Fixed on the rear end of this shaft there is a disc 37. A connecting rod 38 is pivotally connected, at one end, to the adjacent pintle of the trowel 26 and is pivotally connected, at its other end, to the disc 37 at an eccentric point so that as the disc 37 rotates it will oscillate the trowel 26 transversely with respect to the building block being treated.

The pulley 36 and shaft 35 are driven from a belt 39 which operates over the pulley 36 and also over a pulley 40 which is fixed on the forward end of a longitudinal shaft 41. This shaft is mounted to rotate in suitable bearings in the framework and fixed on its rear end is a pulley 42 over which a belt 43 operates, said belt being driven from a pulley 44 which is fixed on the main drive shaft 3.

The surfacing material may be applied to the building units 10 in any preferred manner. It is contemplated that a special type of surfacing material will be applied which will not only render the treated surface of the unit water proof but will also impart to the unit a smooth, glazed surface of any selected tint.

It is preferred, however, to deliver the surfacing material automatically and continuously to the units as they pass through the machine. For that purpose a container, such as 45 has been provided which is supported above the forward, or feed, end of the machine. It is preferably cylindrical in shape. Within, and closing, the container there is a piston 46 which is fixed to an externally threaded piston rod 47. Fixed to the open end of the container 45 there is a suitable bracket 48 within which there is to swivel a nut 49 which is threaded onto the piston rod 47. The outer end of this nut is formed into a pulley 50 which is in alignment with a corresponding pulley 51 which is fixed on the shaft 41. A belt 52 operates over the pulleys 50, 51 and transmits rotation to the former from the latter. As the nut 49 is thus rotated the piston 46 will be moved inwardly against the material filling the container 45.

Leading from the other end of the container there is a flexible hose 53 which terminates in a laterally widened discharge nozzle 54 which is mounted slightly above the top surface of the blocks moving along the carrier 7.

The surfacing material will thus be fed onto the top surface of the building units 10 in advance of the trowel 26 and this trowel will distribute the finishing material evenly on the surfacing material and this finishing material will be successively moved and pressed against the units by the finishing trowels 25, 24 and 23 and as the units are discharged the surfacing process will be completed.

The top surfaces of the building units should be moistened before the finishing material is applied thereto and this material is of such composition and nature that it will unite with the material of the building units and will permanently adhere thereto.

It may be here stated that the bracket 48 is detachable from the container 45 so that when it is desired to refill the container the belt 52 may be removed from the pulley 50 and the last mentioned pulley turned in the reverse direction to withdraw the piston 46 to starting position and the brackets 48 may then be removed to permit a refilling of the container and then reattached to continue the process as above explained.

It is to be further understood that if desired the container 45 may be supported in a vertical position rather than horizontal as shown and gravity thus used to feed, or assist in filling the surfacing material to the surfaces of the building units.

The drawings and description are illustrative merely while the broad principle of the invention will be defined by the appended claims.

What I claim is:

1. A surfacing machine for surfacing building units, and the like, comprising, an endless belt forming a carrier, means for driving the carrier, plate-like elements spaced apart one on each side of the carrier, a plurality of trowels above the plates arranged to trowel surfacing material applied to the upper faces of the units and means for oscillating one of said trowels transversely.

2. A surfacing machine for surfacing building units, and the like, comprising, a carrier for supporting said units, means for driving the carrier, guide plates spaced apart one on each side of the carrier and which converge upwardly and whose upper margins extend above the top surfaces of the units on the carrier, a transverse trowel above the plates arranged to trowel surfacing material applied to said upper surface and means for oscillating the trowel.

FOSTER W. KING.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
814,382	Lynn	Mar. 6, 1906
1,782,820	Hardgrove	Nov. 25, 1930
2,329,378	Kuehner	Sept. 14, 1943