A. S. HORLACHER & H. C. BAASE.

CARPET CLEANING MACHINE.

APPLICATION FILED JULY 5, 1910.

970,228. Patented Sept. 13, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

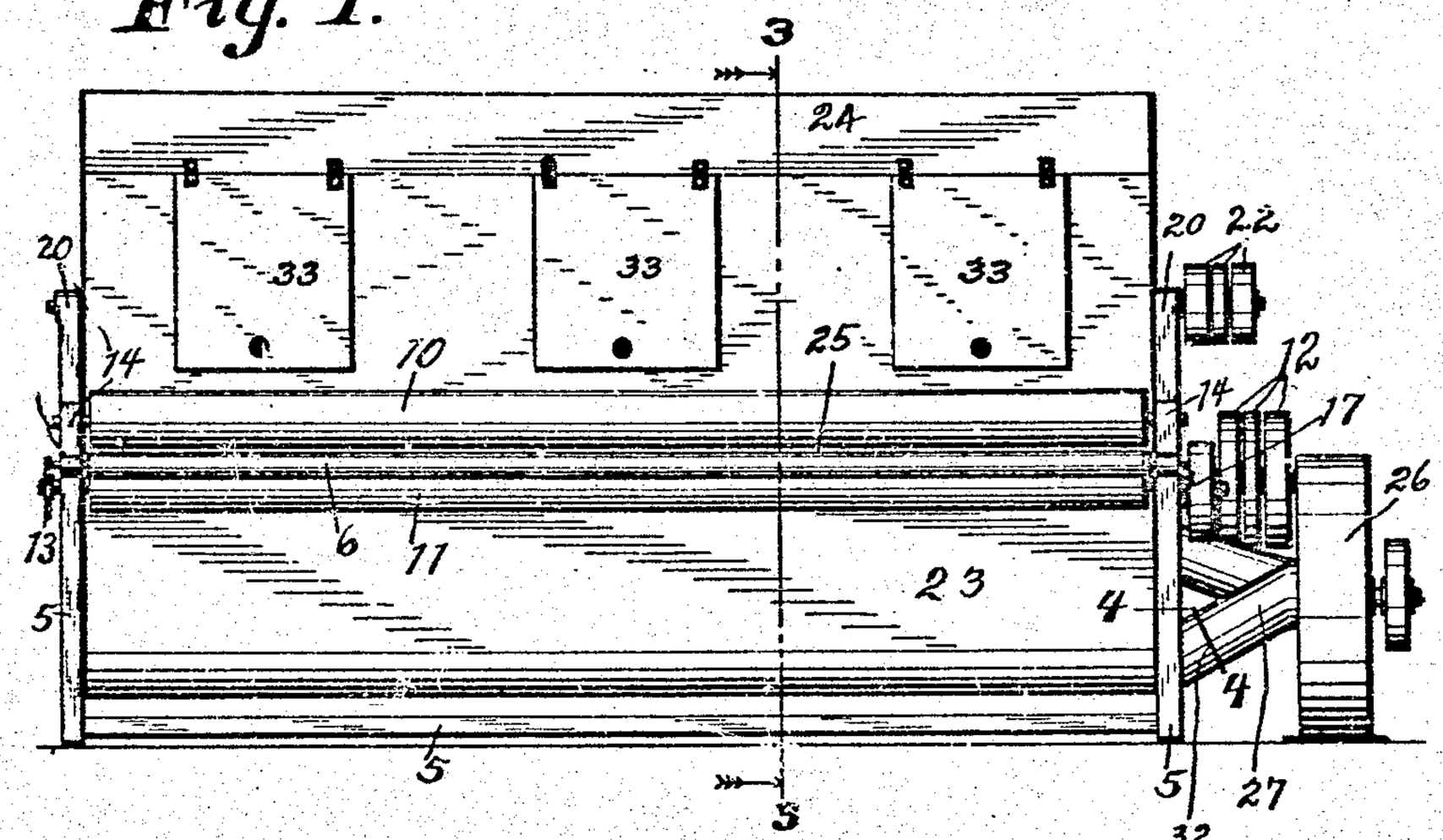
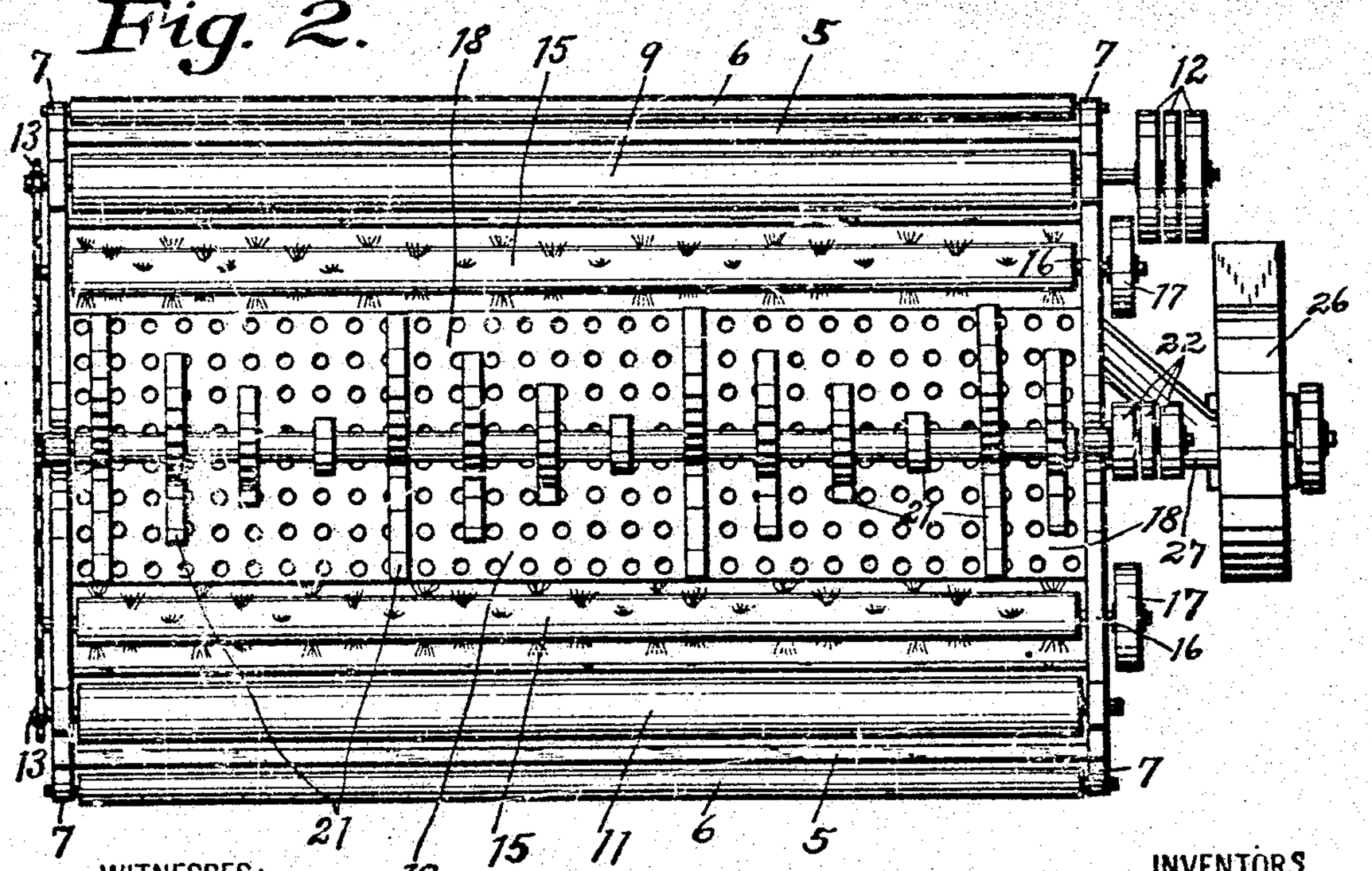


Fig. 2.



WITNESSES:

Myrtle E. Colson

Beulah Stafford

INVENTORS.

Adam S. Horlacher,

Henry C. Baase,

BY

Thomas W. Colson

ATTORNEY

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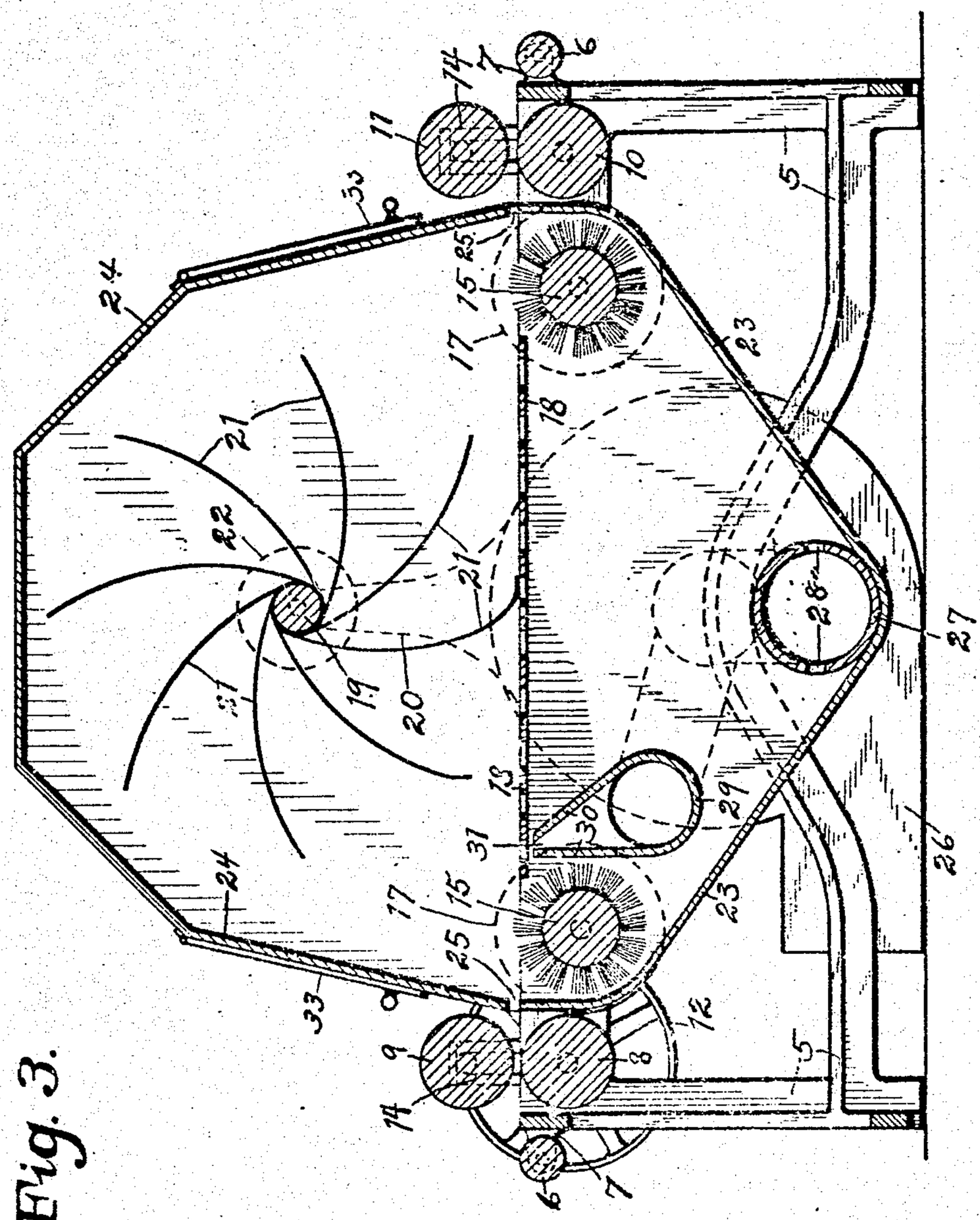

Fig. 3.

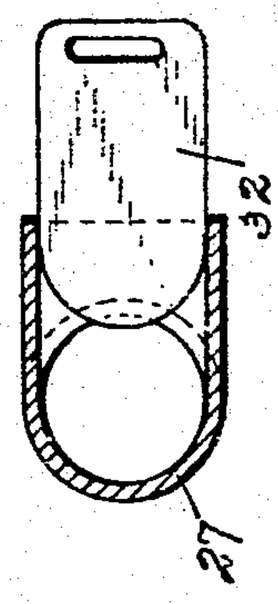

Fig. 4.

WITNESSES:

Myrtle E. Colson.

Beulah Stafford,

INVENTORS

Adam S. Horlacher,

Henry C. Baase.

BY

Thomas W. Colson

ATTORNEY

UNITED STATES PATENT OFFICE.

ADAM S. HORLACHER AND HENRY C. BAASE, OF INDIANAPOLIS, INDIANA ASSIGNORS TO CHIEF MANUFACTURING COMPANY, OF INDIANAPOLIS, INDIANA, A CORPORATION OF INDIANA.

CARPET-CLEANING MACHINE.

970,228 Specification of Letters Patent. Patented Sept. 13, 1910.

Application filed July 5, 1910. Serial No. 570,323.

To all whom it may concern:

Be it known that we, ADAM S. HORLACHER and HENRY C. BAASE, both citizens of the United States, and residents of Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Carpet-Cleaning Machines, of which the following is a specification.

Our invention relates to machines for cleaning carpets and like fabrics, and the object of our improvement is to provide a machine which will remove dust and dirt from carpets and the like by beating, brushing and vacuum cleaning, and to provide a means for collecting and conveying such dust and dirt from the machine by suction. We attain these objects by means of the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the machine: Fig. 2 is a top view of the same with the cover removed; Fig. 3 is an enlarged section taken along the line 3—3 in Fig. 1; and Fig. 4 is an enlarged section of the controlling gate in the suction pipe taken on the line 4—4 in Fig. 1.

Like numerals of reference indicate like parts throughout the several views.

The frame 5 is formed in a convenient size and shape to support the working parts, and the rollers 6 are journaled in suitable housings 7 on the end portions of said frame and provided to prevent any wear on the carpet which would be produced if the carpet was drawn over the corner portion of the frame.

The two pairs of feed rollers, consisting of the rollers 8, 9, 10 and 11, may be caused to rotate in either direction by means of the tight and loose pulleys 12 on the extended end of the journal of the roller 8, so that a carpet may be fed into the machine from either side. The rollers 8 and 10 are geared to turn in unison by means of the sprocket gearing 13 (Figs. 1 and 2) and the rollers 9 and 11 are journaled in adjustable bearings 14 so that the proper tension may be produced between each pair of rollers to feed the different thickness of carpets it may be desired to clean.

Between the pairs of feed rollers and near each of such pairs is a rotary brush 15, journaled in suitable bearings 16 at its ends in the frame 5 and actuated by means of a pulley 17 which is secured on the extended end of one of the journals of such rotary brush. Each rotary brush is adapted to be rotated in either direction by means of a suitable countershaft (not shown) and belting (not shown).

A rigidly secured perforated sheet 18 extends across the distance between the rotary brushes to support the carpet while it is being beaten by the beating apparatus, which consists of a shaft 19 journaled in suitable housings 20 on the end portions of the frame 5 and the radially extending beaters 21, which are made of a flexible material, such as leather straps, and made to rotate in either direction by means of the tight and loose pulleys 22 and suitable belting (not shown).

A suitable inclosing casing, comprising the substantially V-shaped basket 23 and the cover portion 24, and provided with the narrow openings 25 extending longitudinally between such V-shaped basket and such cover to allow a carpet to enter and pass out of said casing, is secured in the frame 5 to inclose the cleaning mechanism, so that the dust and dirt freed from such carpet will be collected and conveyed out of the machine by means of the exhaust fan 26, which is situated in a convenient position outside of the machine and connected therewith by a suitable conveyer pipe 27. Said conveyer pipe is extended through the length of the machine in the lower part of the V-shaped basket and provided with the longitudinally extending openings 28 in that portion of said conveyer pipe situated in said V-shaped basket to connect said exhaust fan with said inclosing casing.

Situated near the central portion and extending longitudinally through the length of the machine immediately beneath the perforated sheet 18, is the vacuum cleaning device, which consists of the tube 29 provided with the nozzle portion 30 having the narrow longitudinally extending opening 31 in its upper edge to draw the dust and dirt from a carpet as it is passed over the perforated sheet 18. The exhaust fan 26 is connected with the vacuum cleaning device by means of the tube 29 being extended out of the V-shaped basket and joined to the conductor pipe 27.

The corresponding amounts of air drawn through the tubes 27 and 29 may be varied by means of the slide gate 32 (Fig. 4) which is situated in a convenient position in said

conductor pipe 27, such as indicated at 4—4, Fig. 1.

The cover portion 24 is provided with the doors 33 covering openings through which the operation of the machine may be observed and any adjustments made.

The operation of our machine is as follows:—The pulleys 12, 17 and 22 are operatively connected with proper countershafts (not shown) by means of suitable belts (not shown) in a manner to allow them to be driven in either direction so that the work may be fed into the machine from either side. The exhaust fan is connected to a proper countershaft to be driven in one direction in the ordinary manner. Suppose a carpet is fed into the feed rollers 8 and 9, after passing such feed rollers it passes through the first opening 25, over the first rotary brush 15 and on the perforated sheet 18 where it is acted upon by the vacuum cleaning device and the beaters 21, then passes over the second rotary brush 15 and out through the second opening 25 and the feed rollers 10 and 11. The machine may be reversed and the carpet passed through as many times as desired. The air ladened with the dust and dirt freed from the carpet by the brushes and beaters is drawn from the inclosing casing through the openings 28 and conductor pipe 27 into the exhaust fan 26 and forced out of the room as desired. The relative amounts of air exhausted through the vacuum cleaning device and the conductor pipe 27 is controlled by throttling the passage of air through the conductor tube 27 by means of the sliding gate 32, the vacuum being increased in the vacuum cleaning device and the suction reduced in the conductor pipe 27 as the sliding gate is closed and the opposite becomes true as said sliding gate is opened.

What we claim as new and desire to secure by Letters Patent, is—

1. A carpet cleaning machine comprising a frame, a plurality of feed rollers mounted in said frame and adapted to feed the work into either side of the machine, a plurality of rotary brushes mounted in said frame in parallel relation with said feed rollers, a longitudinally extending perforated sheet secured in the central portion of said frame, a rotary beater mounted in said frame over said perforated sheet to beat the work as it is passed over said perforated sheet, a vacuum cleaning nozzle secured in said frame to act upon the work as it is passed over said perforated sheet, a casing inclosing said cleaning elements, a means for exhausting the air together with the dust and dirt freed from the work from said casing, a means for operating said vacuum nozzle, and a means for imparting motion to said feed rollers, rotary brushes and rotary beater, substantially as set forth.

2. A carpet cleaning machine comprising a frame, a pair of feed rollers mounted in each side of said frame and adapted to feed the work into either side of the machine, a rotary brush mounted in said frame in parallel relation with and near each pair of feed rollers, a longitudinally extending perforated sheet secured in said frame between said rotary brushes, a shaft mounted in said frame above said perforated sheet having its axis in parallel relation with that of the rotary brushes, a plurality of radiating flexible beaters having one end of each secured to said shaft and their other ends adapted to beat the work as it is passed over said perforated sheet, a vacuum cleaning nozzle secured in said frame under said perforated sheet in a manner to act upon the work as it is being passed over said perforated sheet, a casing inclosing said cleaning elements, a conductor pipe having longitudinally extending openings and situated in the lower portion of said casing and adapted to be connected with a means for exhausting the air together with the dust and dirt freed from the work from said casing, a pipe connecting said vacuum nozzle with said conductor pipe, a throttling means situated in said conductor pipe in a manner to vary the relative amount of vacuum produced in said vacuum nozzle and said conductor pipe, and a means for imparting motion to said feed rollers, rotary brushes and said beaters substantially as described.

In testimony whereof, we, the said ADAM S. HORLACHER and said HENRY C. BAASE, have signed our names in the presence of two witnesses.

ADAM S. HORLACHER.
HENRY C. BAASE.

Witnesses:
FRANCIS M. SPRINGER,
THOMAS W. COLSON.