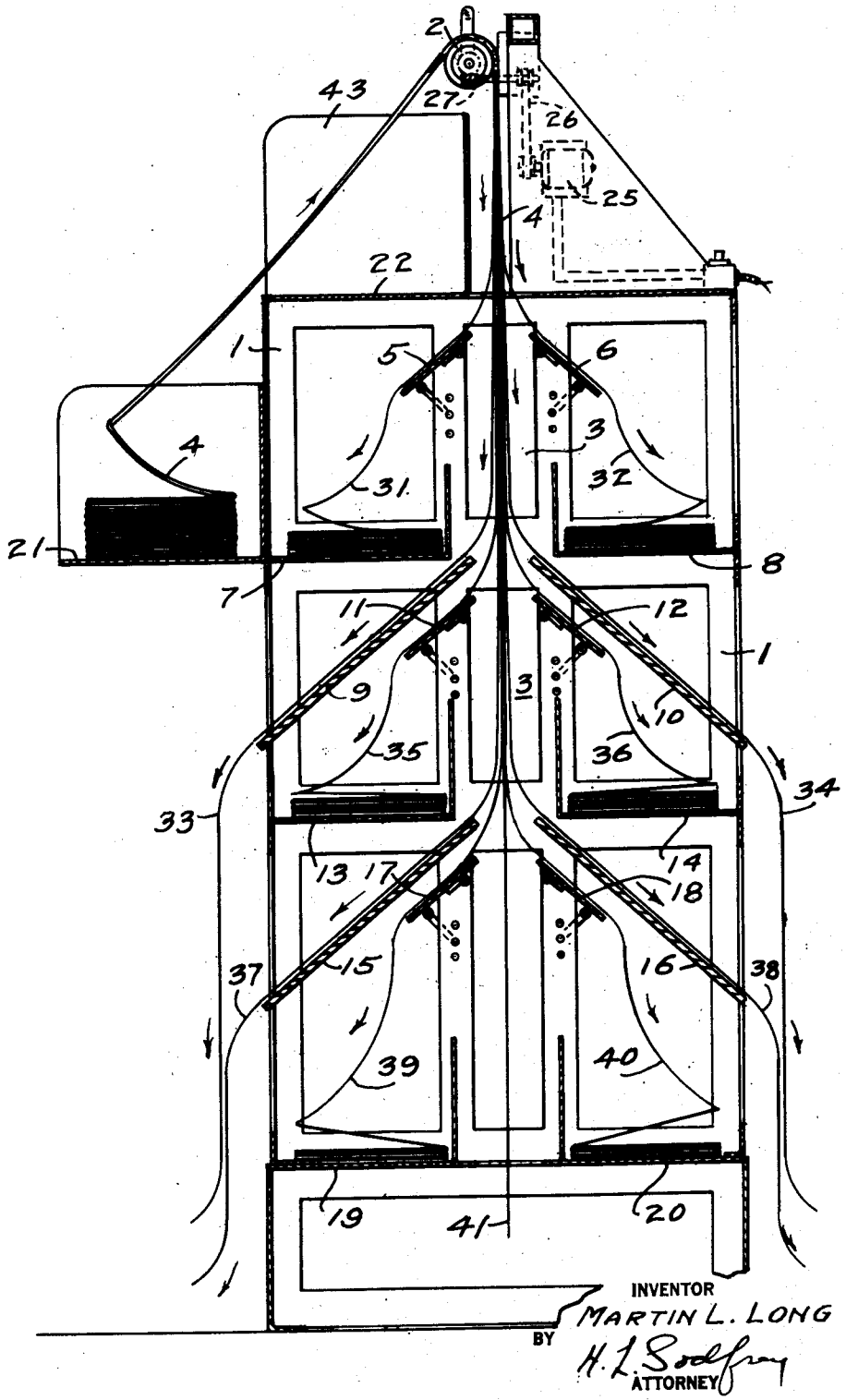
May 19, 1953 M. L. LONG 2,639,145

CARBON PAPER REMOVER

Filed Jan. 10, 1951



INVENTOR
MARTIN L. LONG
BY
H. L. Godfrey
ATTORNEY

Patented May 19, 1953 2,639,145

UNITED STATES PATENT OFFICE

2,639,145

CARBON PAPER REMOVER

Martin L. Long, Washington, D. C., assignor to the United States of America as represented by the Postmaster General

Application January 10, 1951, Serial No. 205,399

1 Claim. (Cl. 271—2.1)

(Granted under Title 35, U. S. Code (1952), sec. 266)

1

The invention described herein may be manufactured and used by or for the Government of the United States for governmental purposes without the payment to me of any royalty thereon in accordance with the provisions of the act of April 30, 1928 (Ch. 460, 45 Stat. L. 467).

This invention relates to improvements in systems for the removal of continuous form carbon paper.

Many businesses use fan-folded forms in continuous sheets of paper ten yards or more in length. When several copies have been made on these forms, the task of removing the continuous sheets of carbon paper becomes very difficult and time consuming.

It is therefore an object of this invention to provide a system whereby continuous forms may be separated from the carbon paper and separately refolded quickly and easily.

It is a further object of this invention to provide an inexpensive system of the character set forth which is simple in construction and in operation.

Other objects will appear more fully from the following description and accompanying drawing wherein the single figure is a vertical section of an embodiment of the invention.

In the preferred embodiment of the invention illustrated in the drawing, a frame 1 provides a support for a rotatable roller 2 which may be hand or power driven, and is somewhat longer than the width of the continuous forms to be separated. It is preferably faced with rubber or some other reasonably high friction surface. A vertical passage 3 is provided through the frame 1 directly under the roller 2 through which unseparated forms 4 are threaded.

On each side of the vertical path 3, and beneath the roller 2, are oppositely inclined copy deflectors 5 and 6 respectively. Rectangular shaped deflectors of plywood or Masonite with the long edges thereof parallel to the path 3 have been found satisfactory. These deflectors are substantially the same length as the roller 2, and are preferably hinged along the edge adjacent the path 3 so that their angle with the horizontal may be adjusted.

Beneath the copy deflectors 5 and 6 there are two copy receiving shelves 7 and 8 which are horizontally displaced from each other and positioned on opposite sides of the path 3. To facilitate the refolding of the separated copies on the shelves 7 and 8 they are extended a substantial distance beyond the free edge of the copy deflectors 5 and 6 respectively.

2

Underneath the shelves 7 and 8 are mounted two carbon paper deflectors 9 and 10 of generally rectangular form. These may be fixed at an angle with the horizontal of the order of 45 degrees or may be hinged adjacent the path 3 and made adjustable. The deflectors 9 and 10 extend at least to the outer edge of the shelves 7 and 8 and preferably a short distance beyond the edge.

Immediately beneath the carbon deflectors 9 and 10 there is a second pair of copy deflectors 11 and 12 identical with copy deflectors 5 and 6. Below the second pair of copy deflectors 11 and 12 is a second pair of copy receiving shelves 13 and 14 and below them a second pair of carbon deflectors 15 and 16, each identical with its counterpart above. The embodiment illustrated in the drawing has a third pair of copy deflectors 17 and 18 and a third pair of copy receiving shelves 19 and 20 located directly beneath the aforementioned parts, but it is apparent that shelves and deflectors may be added or subtracted to accommodate the invention to the separation of a larger or smaller number of copies. The embodiment illustrated in the drawing can separate six copies from five carbons or any smaller number of copies and carbons with equal facility.

Still a further shelf 21 is provided for the unseparated forms on which typed records have been made. It may be located outside one of the shelves as illustrated in the drawing, or may be located on the top portion 22 of the frame 1. The choice of this position depends upon convenience of height and upon the desirability of having a length of the forms 4 suspended on both sides of the roller 2 so that the weight of the suspended length will insure sufficient pressure of the forms on the roller for proper feeding. If the roller 2 is high, satisfactory results can be obtained by placing the unseparated forms on a shelf located on the top portion 22 of the frame 1.

The roller 2 may be driven by a hand crank (not shown) or by a small electric motor 25 geared to the roller 2 with a belt 26 and worm gear 27.

In the operation of this invention, used unseparated fan-fold forms 4 of six copies or less, may be put on the shelf 21 and the end placed over the roller 2. The outside sheets of the unseparated forms 4 are always copies, either original or a carbon duplicate. These two sheets 31 and 32 are peeled off of the unseparated forms 4 by the copy deflectors 5 and 6, and dropped on the shelves 7 and 8 where they will refold themselves on their initial fold lines. The next two sheets are carbons 33 and 34. These carbons are peeled off by

the carbon deflectors 9 and 10 and dropped completely outside the frame 1 onto the floor or into any receptacle which may be provided. This threading process is continued until the copies 35 and 36, carbons 37 and 38 and copies 39 and 40 have all been peeled off leaving only the last carbon 41 to fall straight to the floor of the frame 1. It is apparent that if less than six-copy forms are used, some of the deflectors are not used.

Once the forms are threaded, the electric motor 25 may be turned on and the entire length of continuous forms are completely separated automatically in a few minutes. It has been found that the paper guides itself best if the surface of the roller 2 is such as to permit some slippage. A deflector plate 43 at the side of the roller may also be used as a guide.

This machine greatly facilitates the ease and speed with which multiple-copy continuous forms may be separated. One operator can do the work previously requiring many persons.

It will be understood that the embodiment shown and described is purely illustrative and that modifications may be made therein without departing from the spirit and scope of the invention as set forth in the appended claim.

I claim:

In an apparatus for removing carbon sheets from fan-folded typed copy sheets, the improvement which comprises a supporting frame provided with a central vertical passage, a copy feeding element mounted in said frame, a means for driving said feeding element, a plurality of pairs of oppositely inclined diverging copy deflectors mounted in said frame the deflectors of each pair being on opposite sides of said central passage and communicating therewith, a pair of copy receiving shelves mounted below each of said pairs of deflectors and a pair of inclined diverging carbon sheet deflectors also arranged on opposite sides of said central passage and communicating therewith, whereby fan-folded typed multiple copy sheets are separated into a plurality of sets and the plurality of used carbon sheets are discarded.

MARTIN L. LONG.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
2,273,162	Willard	Feb. 17, 1942
2,275,475	Sherman	Mar. 10, 1942
2,360,965	Mosher	Oct. 24, 1944
2,377,896	Metzner	June 12, 1945
2,425,105	Mabon	Aug. 5, 1947