

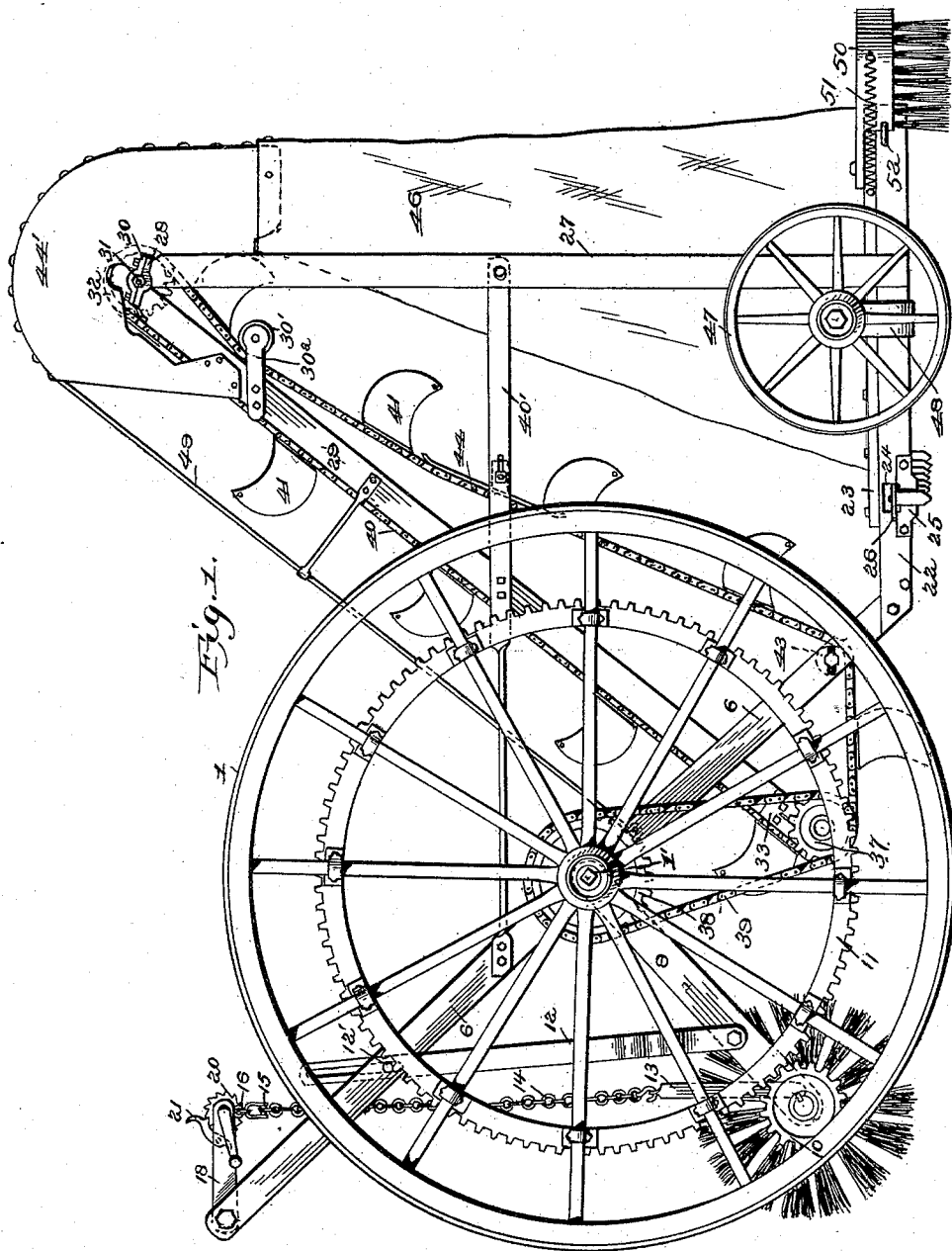
(No Model.)

3 Sheets—Sheet 1.

G. B. SICCARDI.  
STREET SWEEPER.

No. 585,600.

Patented June 29, 1897.



Attest  
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C. S. Middleton

Inventor  
G. B. Siccardi  
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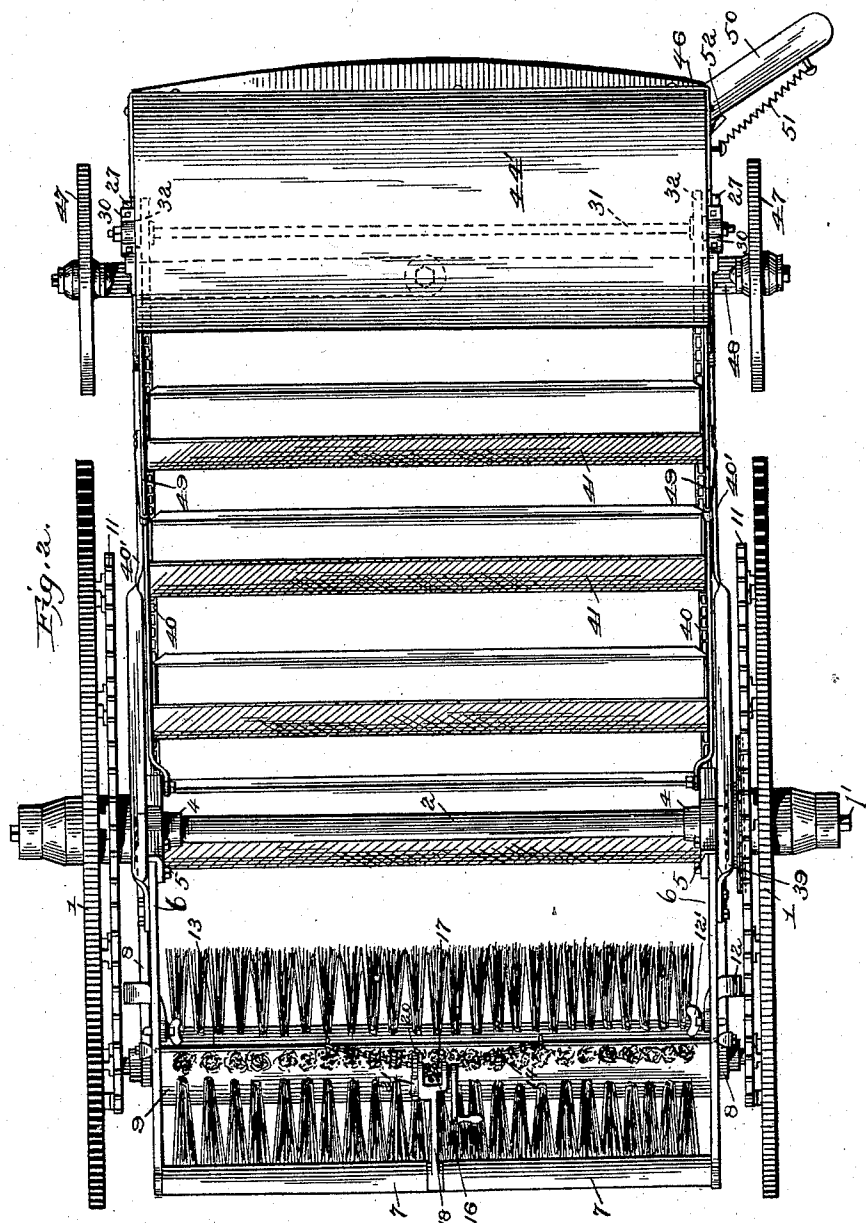
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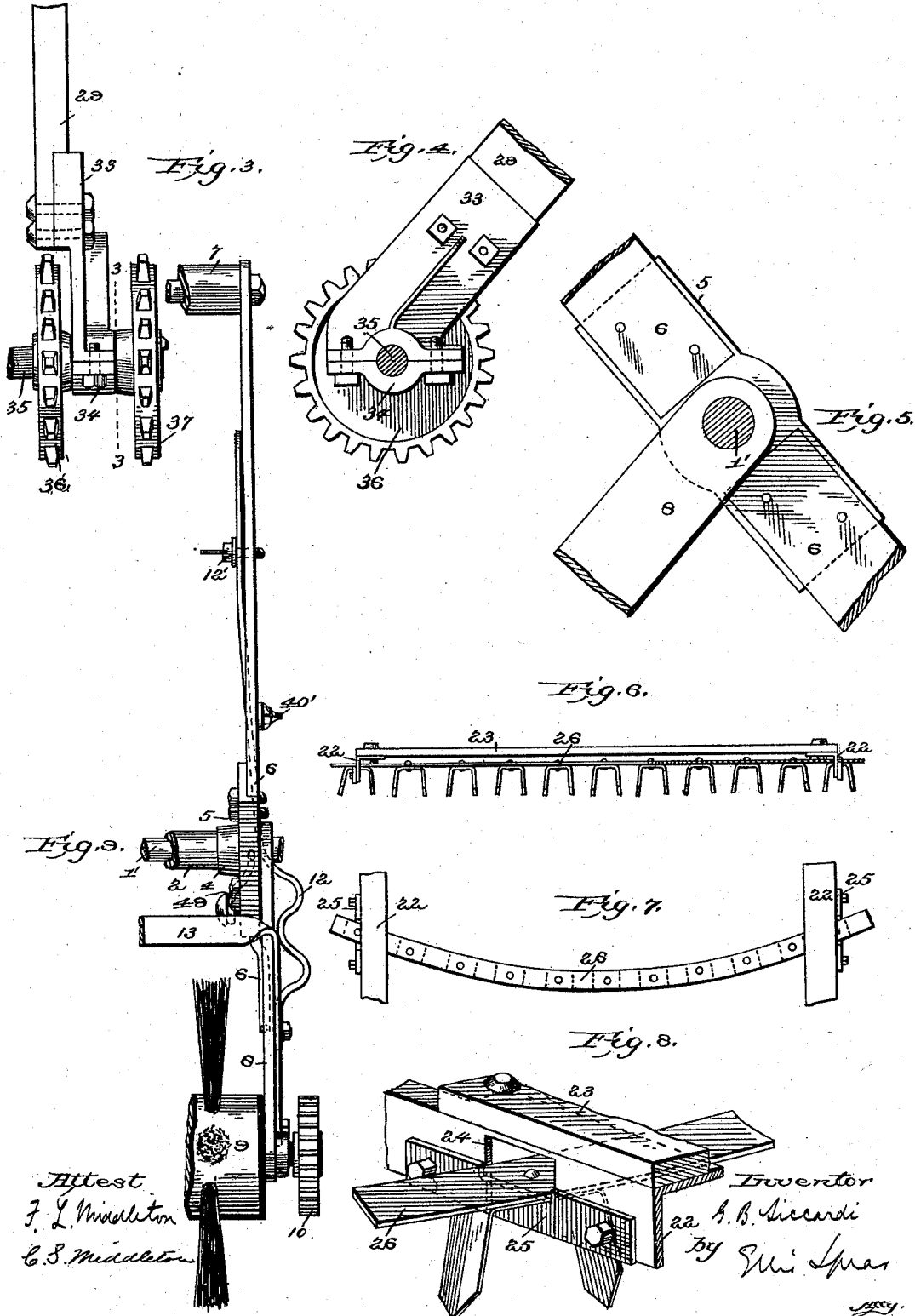
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# UNITED STATES PATENT OFFICE.

GIOVANNI B. SICCARDI, OF WASHINGTON, DISTRICT OF COLUMBIA.

## STREET-SWEEPER.

SPECIFICATION forming part of Letters Patent No. 585,600, dated June 29, 1897.

Application filed January 15, 1897. Serial No. 619,294. (No model.)

*To all whom it may concern:*

Be it known that I, GIOVANNI B. SICCARDI, a citizen of the United States, residing at Washington, District of Columbia, have invented certain new and useful Improvements in Street-Sweeping Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to street-sweepers; and it is the object thereof to provide a hand-sweeper which will possess all the advantages of a horse-machine and that will be of such simple construction that the cost of the same and the liability of its getting out of order will be reduced to the minimum.

The invention relates also to the details of construction which are particularly adapted to the machine of this particular description.

The device includes in a hand-machine a suitable skeleton frame supported upon front and rear wheels and a brush and an endless chain of buckets driven from the supporting-wheels.

It also includes the details of construction as hereinafter described, and particularly pointed out in the claims.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the device. Fig. 2 is a plan view of the same. Fig. 3 is a detail view of the edge of the bracket secured to one of the diagonal braces and component parts. Fig. 4 is a sectional view of the same on the line 3 3. Fig. 5 is a detail view of the central casting connection between the two parts of one of the diagonal braces. Figs. 6, 7, and 8 are detail views of the scraper, and Fig. 9 is a detail front elevation of one end of the machine.

The two rear supporting-wheels 1 1 of the machine are journaled on an axle 1', extending between the same, over which is fitted the sleeve 2, having each of its ends secured in the cups 4, projecting from the centers of the casting 5, said casting having sockets to receive the adjacent ends of the upper and lower diagonally-extending braces 6.

The upper ends of the upper braces are connected by a rod over which are fitted the wooden sleeves 7, which form the handles or gripping-surfaces for the operator of the ma-

chine. Arms 8, loosely journaled at their upper ends on the axle 1' outside of, but adjacent to, the castings 5, extend downward substantially at right angles to the braces 6 and have their lower ends fitted to receive the journals of the brush-roll 9, said journals extending entirely through said arm and carrying gears 10, which mesh with larger gears 11, fixed directly to the spokes of the driving-wheels 1, and thus the brush-roll is rotated as the machine is moved. The brush-roll will normally be held against the surface to be swept by its own weight, as the arms 8 are loosely journaled; but to provide means for holding it in a determined position, so that the pressure upon the surface will be uniform, I pivot to each of the arms 8 in proximity to the brush-roll the lower end of an adjustable arm 12, said arm being slotted near its upper end to permit of the passage of the shank of the butterfly-nut 12' into a threaded opening in the upper brace 6.

To raise the brush to clear the surface so that the machine may progress without the roll sweeping, a bail 13 is pivoted to the arms 8 near the journals of the said roll, and a chain 14 is connected at each of its ends to the intermediate portion of this bail. The chain 14 passes over a roller 15, connected by a short chain 16 to a winding-drum 17, journaled in the bifurcated end of an arm 18, extending laterally from the handle. This drum carries a suitable crank and handle for winding the same to lift the brush-roll and a suitable ratchet-wheel 20, with which engages a pawl 21, freely pivoted to the side of said arm 18 to prevent the rearward rotation of said drum. To raise the brush-roll, the nuts 12' are loosened and the drum wound up, which will wind up the chain 16 and lift said brush through the chain 14 and the bail. The pawl will now hold the drum against rearward rotation and the brush-roll in raised position until it is manually thrown out of engagement with the ratchet-wheel, when the brush will fall.

The lower ends of the lower braces 6 are securely bolted to the rear ends of the side frames 22, to which the platform 23 is bolted. Near the rear ends of each of these frames an opening 24 is cut, and to the outer faces

of the frames the plates 25 are bolted, these plates crossing the opening and having shallow recesses in their upper edges coinciding with said opening. A flat curved bar 26, extending beneath the platform, has its ends projected through said opening and freely supported on said plates 25 within their recessed portions. To this bar a series of scrapers are bolted, these scrapers being of inverted U shape with beveled ends. As the machine progresses these ends come into contact with the hardened manure and the like on the street-surface and serve to loosen the same, so that it may be removed by the brush.

Centrally from each side of the platform a vertical standard 27 extends, on the upper ends of which a half of a clip 28 is seated, the other half of the clip having an extended flat portion which is bolted to the upper end of the diagonal brace 29 adjacent to said standard, said braces extending downwardly substantially at right angles to the braces 6. The clips 28 are surmounted by caps 30, that in conjunction with said clips form bearings for the shaft 31, upon which is mounted near each of its ends a sprocket-wheel 32.

A bracket 33 is bolted to the lower ends of each of the braces 29, and these brackets are likewise provided with caps 34, which in conjunction with said brackets form bearings for the shaft 35, upon which to the inside of the bracket and adjacent thereto the sprocket-wheels 36 are fixed. One end of the shaft 35 is extended through its bearing and carries a sprocket-wheel 37. To the hub of the wheel 1, adjacent to the wheel 37, a sprocket-wheel 38 is fixed, and this sprocket-wheel 38 is adapted to drive the wheel 37 and the shaft 35 and wheels 36 by the chain 39, which connects the wheels 37 38. The wheels 36 and the wheels 32 are likewise connected by a sprocket-chain 40, that carries a series of buckets 41. This chain runs horizontally at its lowest point, which brings the buckets close to the surface being swept directly in front of the brush, so that the dirt, &c., will be swept into said buckets. This horizontal position is obtained by guiding the chain around a roller 43, adjustably secured to the inner face of each of the lower braces 6. As the buckets pass upwardly after receiving the sweepings the chains 40 rest and are guided upon the upper edges of the braces 29. The chains pass downwardly below the braces 29 and over the guide-rollers 30', journaled in the brackets 30', bolted to the said braces, and to adjust the tension thereof plates 44 extend in substantially the direction traveled by the chain and are adapted to be pressed thereagainst, these plates being secured to brackets which are adjustably secured to the horizontal tie-rods 40', bolted to the upper braces 6, the braces 29, and the standards 27.

A hood 44' extends across the top of the machine above the wheels 32, and this hood has its sides bolted to the sides of the braces 29 and the standards 27. The front of this hood

and a portion of the sides are extended down below the plane of the wheel 32 and are provided with outwardly-extending pins or other suitable fasteners, by which the mouth of a bag 46 may be attached thereto. This bag has a narrow mouth that closely fits over the extended part of the hood and a widened flat bottom which rests upon the platform, said bag being adapted to receive the sweepings dumped thereinto as the buckets round the wheels 32, and the platform wholly sustains the weight of this bag and its contents, thus relieving the hood from the strain.

The front of the machine is supported by the wheels 47, which are journaled in the up-turned ends of the cross-bar 48, extending beneath the platform and suitably pivotally connected thereto, as by a fifth-wheel or otherwise. A rod may extend from this bar back in proximity to the operator, so that he may guide the machine during its progress.

Rods 49 extend from the top of the hood down to the casting 5 parallel to the braces 29, and these rods are adapted to support a suitable apron that may be stretched across the machine above the buckets. A similar apron may be stretched across the machine and secured at its side edges to the under edges of the braces 29.

To the gutter side of the platform, near the front thereof, a gutter-sweeping brush 50 is pivoted, which is provided with a rounded edge. This brush is under tension of a spring 51, which tends to hold it against the stop-pin 52, so that it normally extends obliquely from the machine, but it may be pressed inwardly against the tension of said spring should the rounded edge strike the curbing.

I claim—

1. In combination in a hand sweeping-machine, the frame, the rear supporting-wheels, the brush-roll driven thereby, the handle, the lateral arm extending therefrom having a bifurcated end, a drum journaled in said bifurcation having a winding-crank and handle, a ratchet on the journal of said drum, a pawl pivoted to the arm and engaging the ratchet, and the flexible connection between said drum and roll, substantially as described.

2. In combination in a hand-sweeper, the frame, the rear supporting-wheels, the arms journaled on the axle thereof, the brush-roll journaled in said arms, the bail secured to said arms, the handle, the lateral arm, the winding-drum carried thereby, the chain secured to said drum and carrying a roller, and the chain secured to said bail and supported on said pulley, substantially as described.

3. In combination in a hand-sweeper, the frame, the rear supporting-wheels, the arms journaled on the axle thereof, the brush-roll journaled on said arms, means for lifting said roll, and means independent of said lifting means for adjusting and locking said roll, substantially as described.

4. In combination in a hand-sweeper, the rear supporting-wheels, the upper brace 6 car-

rying the handle, the downwardly-extending arms journaled on the axle of said supporting-wheels, the brush-roll journaled on said arms, the means for raising said roll and the  
 5 slotted arm connected to one of said downwardly-extending arms and adjustably connected to one of the upper braces 6, substantially as described.

5. In combination the rear wheels, the casting 5, the obliquely-extending braces 6 fixed therein, the handle carried by the upper brace 6, the brush-roll driven from said wheels, the platform, the platform-frame secured to the lower brace 6, the front supporting-wheels,  
 15 the standards 27, the oblique braces 29 secured to said standards, the sprocket-wheels supported by said standards and braces 29, and driven from the rear wheels, and the endless chain carrying the buckets driven by said  
 20 sprocket-wheels, substantially as described.

6. In combination the rear wheels, the oblique braces 6, the brush-roll, the platform, the standards, the braces 29, the clips connecting said standards and braces 29, the  
 25 shaft journaled in said clips, the sprocket-wheels 32 carried by said shaft, the brackets fixed to the lower end of the braces 29, the shaft journaled therein carrying the sprocket-wheels 36, the chain connecting the sprocket-wheels 32 and 36, the buckets carried by said  
 30 chain, the sprocket-wheel 37 also carried by the shaft carrying the wheel 36, the sprocket-wheel 38 fixed to one of said rear wheels and the chain connecting the same with the  
 35 sprocket-wheel 37, the said oblique braces 6 carrying the bearings of the supporting-wheels and being connected at their lower ends to the platform, substantially as described.

7. In combination in a sweeper, the brush-roll, the platform, the platform side frames having openings therein, the plates secured to said frames and extending across said  
 45 openings, the bar extending transversely beneath the platform having its end extending through said openings and freely supported

on said plates, and the scrapers carried by said bar, substantially as described.

8. In combination in a sweeper, the brush-roll, the platform, the platform side frames 50 having openings therein, the plates secured to said frames and extending across said openings, the bar extending transversely beneath the platform having its end extending through said openings and freely supported 55 on said plates, and the scrapers of flat metal bent into inverted-U shape bolted to said transverse bar, said scraper having beveled ends, substantially as described.

9. In combination in a hand-sweeper, the 60 frame, the brush, the endless chain of buckets, the pivoted gutter-brush having a rounded outer edge, a spring adapted to exert a tension thereon in one direction and a stop adapted to limit the pull of said spring, sub- 65 stantially as described.

10. In combination the supporting-wheels, the axle thereof, the braces 6 extending obliquely above and below said axle and carrying the bearing for said axle, the arms 9 extending downwardly and rearwardly from 70 said axle, the brush-roll journaled in the ends of said arms, the horizontal platform secured at its rear end to the lower ends of the braces 6, the vertical standards extending upwardly 75 from the sides of said platform, the oblique braces extending downwardly from the ends of said standards, the sprocket-wheels journaled in the ends of said braces and at the junction of said standards and braces, the 80 chain of buckets guided over said sprockets, and the means for driving said chain of buckets operating from the axle of said supporting-wheels to the lower end of said chain, substantially as described. 85

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

GIOVANNI B. SICCARDI.

Witnesses:

HENRY E. COOPER,  
 F. L. MIDDLETON.