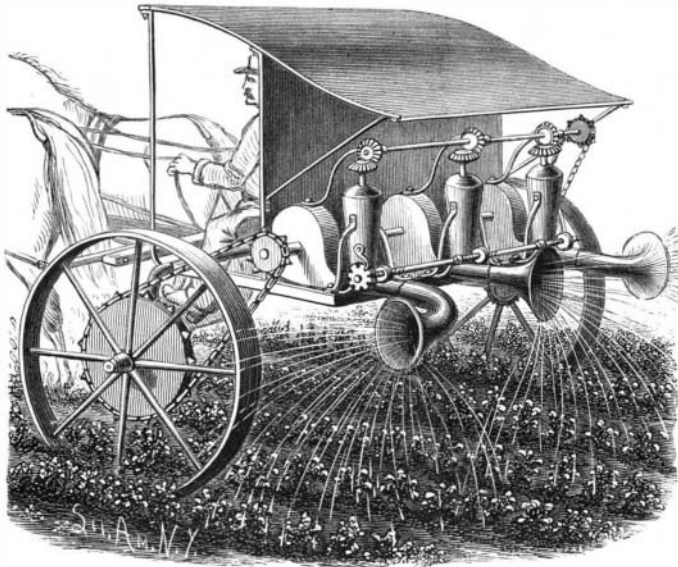


A MACHINE TO DISTRIBUTE POISON ON PLANTS.

A method of dusting poisonous powders on plants, to rid them of destructive insects, is illustrated herewith, and forms the subject of a patent issued to Messrs. George R. and John W. Brown, of Pledger, Texas. The axle of the machine is centrally arched to pass readily over plants, and the main frame has a screen to protect the driver from the poisonous dust. The casings of the air blast fans are fixed to the rear cross bar of the frame, and have outlet pipes com-



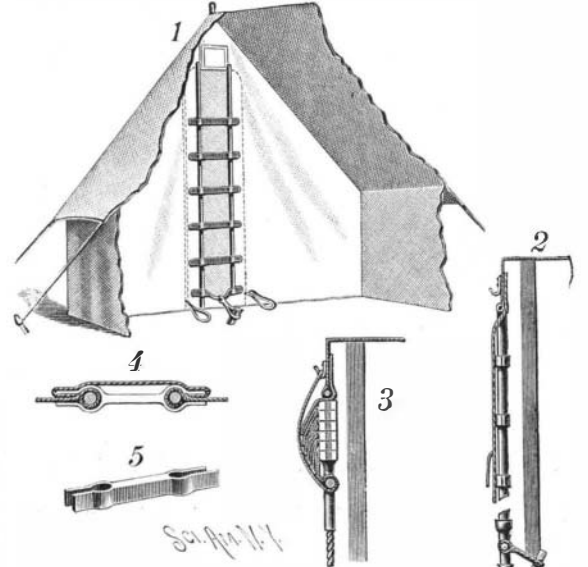
BROWNS' MACHINE TO DISTRIBUTE POISON ON PLANTS.

municating with nozzles having trumpet-shaped ends, the nozzles being so connected as to admit of their being turned in different directions. All three of the fans are operated by a shaft which at one end carries a sprocket wheel, from which a driving chain passes to a larger sprocket wheel on the sulky wheel, causing the rapid rotation of the fans. A hopper to contain the poison is arranged over the outlet pipe of each of the fan casings, and beneath each hopper is pivoted a valve having an opening which may be brought to coincide more or less fully with a hole in the bottom of the hopper, the valves for all the hoppers being simultaneously regulated by a hand wheel and a worm shaft. To prevent the clogging of the poison in the hoppers, a vertical shaft, carrying a winged agitator, is journaled in each, the top of the shaft carrying a bevel gear wheel engaged by a bevel pinion on a transverse shaft, the latter being operated by a driving chain from the sulky axle, and a lever controlling the operation of this shaft being in convenient reach of the driver. This machine may, if desired, be built with but one poison hopper, fan blast apparatus, and discharge nozzle.

IMPROVED DEVICE TO CLOSE A TENT ENTRANCE.

A device for closing the entrance opening in the wall of a tent readily and quickly, without the tying of cords, is illustrated herewith, and has been patented by Mr. Henry Thomas, Fort Omaha, Neb. The device may be applied to old as well as new tents, and the curtain arranged to operate from either the outside or inside. A suitable section of the tent wall is removed, and the edges of the opening turned over to leave an opening sufficient to receive a vertical guide rope on each side. At the top of the opening a flexible portion of a covering curtain is secured, while to the lower portion of the curtain, at intervals, clips are attached by sewing. The clip is shown in Fig. 5, its enlarged circular portions each embracing the guide rope in one of the edges, as shown in cross section in Fig. 4, Fig. 2 being a vertical section when the curtain is closed, as in Fig. 1. The clips slide up and down readily on the guide ropes, carrying with them the curtain, and to retain the curtain in raised position, as shown in Fig. 3, a cord or loop is attached to the lowest clip, and hung upon a hook secured above to the tent wall. To hold the curtain closed, a loop on the lowest clip is drawn over a tent peg.

central pavilion of the French colonies. Further along, there is an Indian temple, then a dwelling like those conceded to the colonists in our New Caledonian possessions, and, above this picturesque decoration, rises, nearly completed, the elegant minaret of the Coubba of Sidi-ben-Avouz, which overlooks the whole of the Tunisian section. This latter, seeing the peculiar interest taken in our new protectorate of Africa, will certainly be one of the principal attractions of the Exposition of the Invalides. The structures of the Tun-



THOMAS' TENT-CLOSING DEVICE.

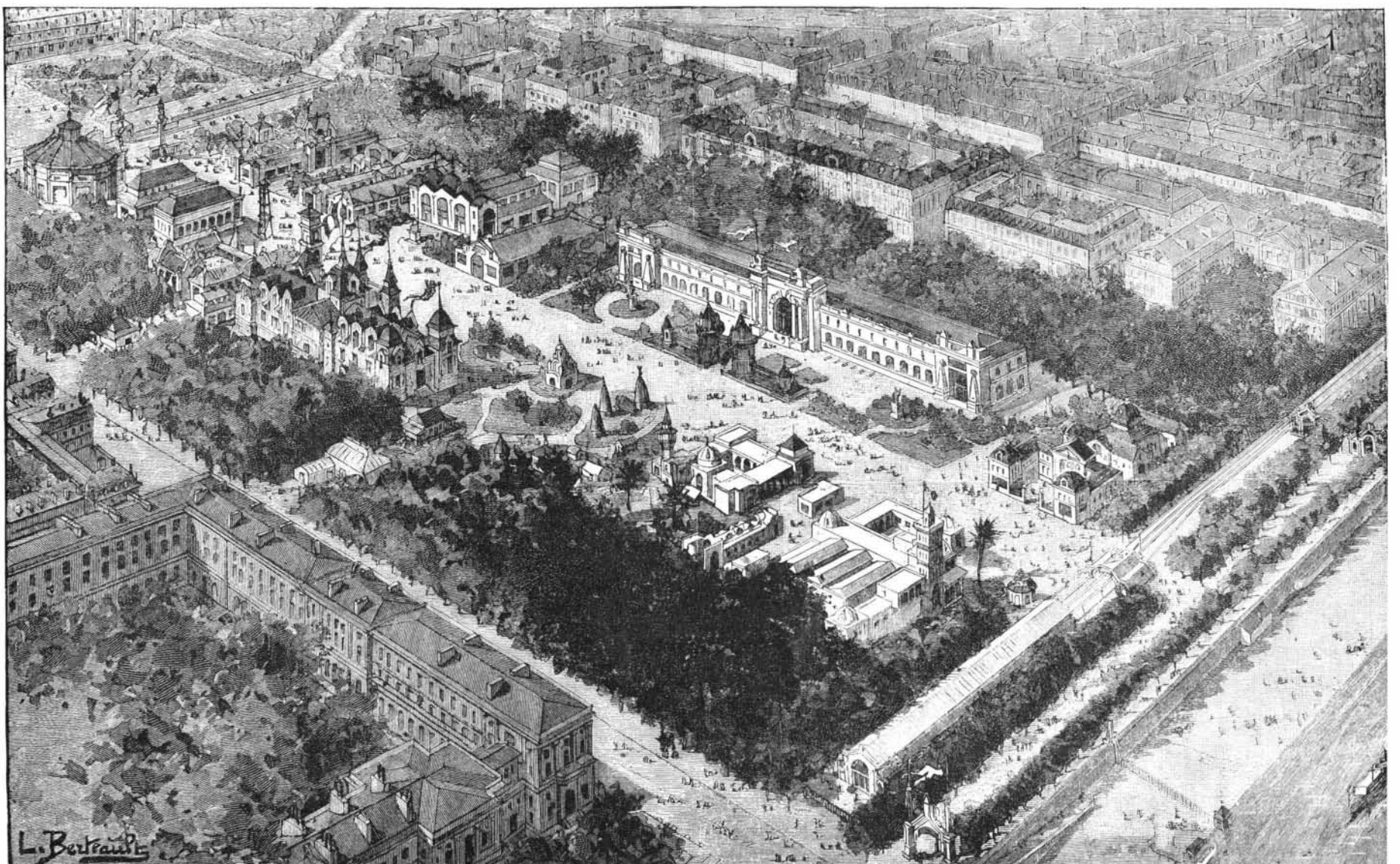
THE FRENCH EXPOSITION OF 1889 AT THE ESPLANADE DES INVALIDES.

One of the great novelties of the future exposition—and this will certainly be obvious to Parisians—will consist in the fact that one of the monumental entrances of the immense bazaar overlooked by the Eiffel tower will be very near the Concord bridge, nearly in the heart of Paris. The colossal palace of iron and steel which is building upon the Champ de Mars will extend its annexes, in fact, as far as to the Esplanade des Invalides, and here will certainly be found one of the most picturesque and entertaining points of the entire exposition. Although most of the structures are as yet unfinished, we wish now to lead our readers thither, and make them share with us the astonishment and admiration that a visit to this city of palaces, which is rising as if by enchantment, has caused us.

There is nothing but minarets, domes, steeples shaped in the Greek style, and white cupolas surmounted by the Oriental crescent; and here is the imposing facade of the exposition of the Minister of War, preceded by a formidable entrance to a feudal castle, an interesting specimen of the military architecture of the middle ages, due to Mr. Walrein, the skillful architect appointed by the Minister of War. Mr. Girault, one of the laureates of our Roman school, designed and is building the pavilion of hygiene, Mr. Ballu that of the Algerian exposition, and Mr. Sauvestre the

sian section, the heavy work upon which is now finished, are the ones that, for the moment, give the best idea of what the picturesque part of the exposition will be. Mr. Henri Saladin is the architect of it. Prepared for this work by a trip that he has given an account of in the *Tour du Monde*, in conjunction with Professor Cognat, of the College of France, he has united in the style of his picturesque pavilion the most delightful specimens of Oriental architecture. The arcades of the front were suggested by those of Bardo, the central dome is an exact reproduction of the Mikrab of the mosque of Kerouan, the loggia is that of a Tunisian house. There will be here some souks or covered bazars, an interior court with a pavement of colored tiles, and a cafe is going up under the shade of a group of trees. And all this will be filled at the proper time with the riches of Tunis—fabrics, carpets, ceramics, works of art, and, finally, with all the surprises that could be expected from the organizing zeal and talent with which Mr. Sauson, Commissary General of the Tunisian government, is endowed.

Let us not leave the Esplanade des Invalides with-



THE FRENCH EXPOSITION OF 1889 AT THE ESPLANADE DES INVALIDES.