

PARIS, 3, BOULEVARD VOLTAIRE
Londres, 63, Queen Street, E. C.

THE
DENAYROUZE
DIVING APPARATUS

Patented troughout Europe and America

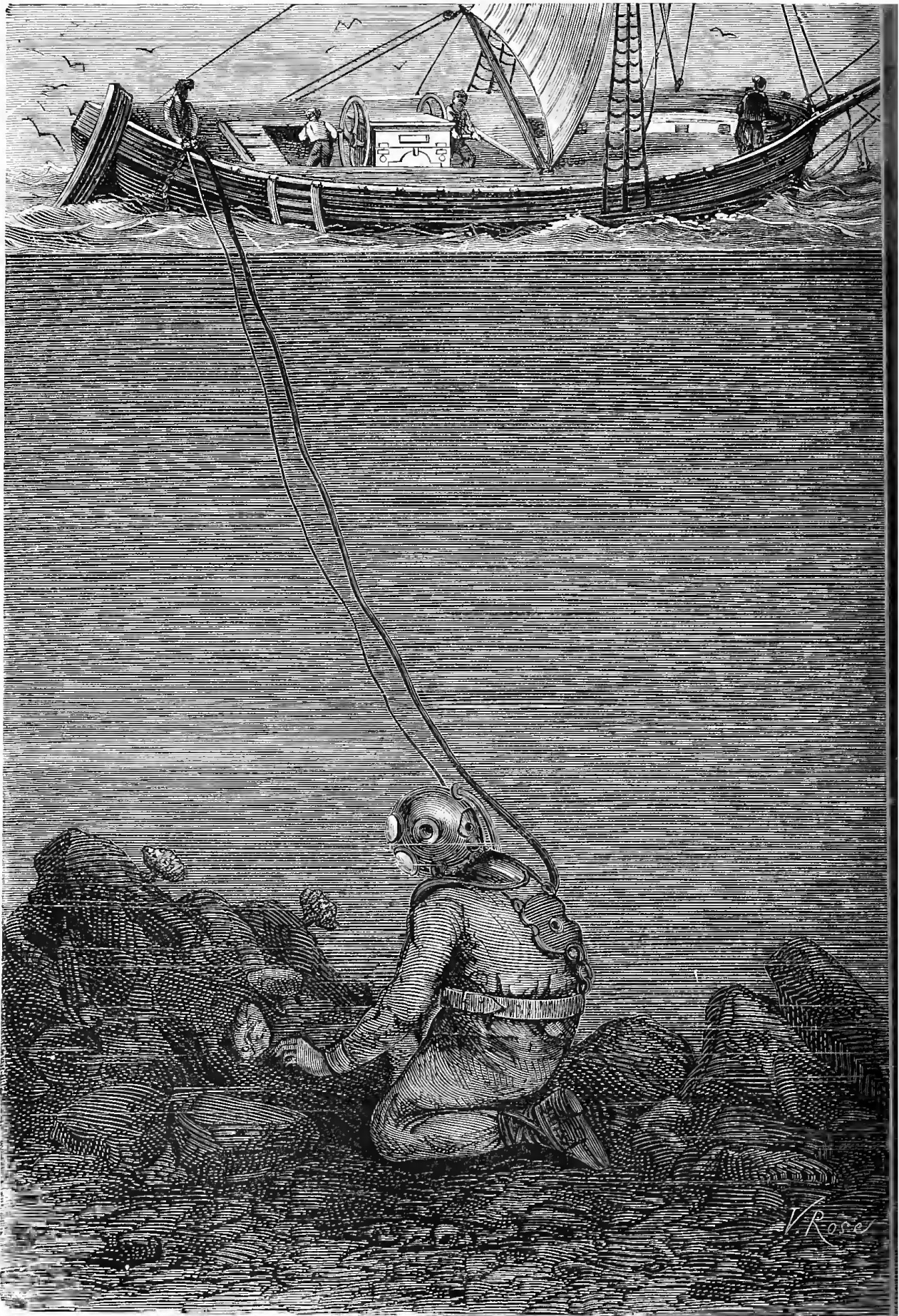
CONTRACTORS
FOR
SUB-MARINE
WORKS



SPECIALITY
FOR
SPUNGE
AMBER, CORAL
AND PEARL
FISHERIES

A DIVER AT WORK IN THE DENAYROUZE DIVING DRESS

PARIS
IMPRIMERIE GAUTHIER-VILLARS
55, QUAI DES GRANDS-AUGUSTINS, 55
1874



SPUNGE FISHERIE

THE

DENAYROUZE DIVING APPARATUS

The superiority of the Denayrouze diving apparatus need no longer be demonstrated in France — it has become an evident and undeniable fact.

At the Universal Exhibition of 1867 this apparatus received the only gold medal awarded to inventions of this character; and the jury who made the award concluded their report in these words:

« This apparatus has already rendered great services in naval and engineering operations : but its use will become more and more general, not only by reason of the facility with which, by its aid, the worst inexperienced and delicate person, can, without danger, descend into the water (as was superabundantly demonstrated by daily experiments during the exhibition), but in consequence of its relative very low price. » (Report of the international jury, vol. VIII, p. 290.)

At the Exhibitions of 1868, at Havre, and of 1872 at Lyons, the Denayrouze apparatus received, in the same manner, the gold medals; and at the Universal Exhibition at Vienna

in 1873, it obtained once more the first prize-medal for progress and merit.

To these marks of approval and satisfaction, numerous and important orders were added, among which it will be sufficient to mention :

1^{ly} The supply of the French navy, beginning by a contract for 45 sets of the apparatus on the 28 of august 1865 ;

The supply of the engineering administration of the « Ponts et Chaussées de France », by two contracts, dated respectively december 10, 1868, and february 24, 1874 ;

The supply of the English Admiralty, by a contract for 39 sets of the apparatus, each for two divers in the first year ;

The supply of the Prussian navy—this is an exclusive contract for furnishing all the diving appliances that may be required, june 1874 ;

The supply of the navies of the United States, Austria, Holland, Sweden, Denmark, Norway, Italy, Spain, Portugal and Japan.

2^{dly} Our various diving systems have rendered most important and universally appreciated services to many hydraulic works, of which we will mention only the following :

Company of the Isthmus of Suez ;

General Transatlantic Company ;

Messageries maritimes Company ;

Fort Napoleon Company, Brest ;

The Salou Dock Company, Brest ;

Mediterranean forges and dockyards Company ;

Company for the construction of basins, Messina ;

Railway Company of Upper Italy ;

Canal Harbour Works, Amsterdam ;

Company of General Excavation Works of the Ports of Italy ;

Continental Union Gas Company, Limited, London ;

Commercial port works at Marseilles, Alexandria. Triest and Livourne Company :

General Salvage Company of Provence, Marseilles ;

Commercial Divers Company, Marseilles ;

The Russian Divers Company at St-Petersburg ;

The Divers Society at Skagen (Denmark) ;

The Divers Society at Hamburg.

3^{dly} In the deep sea fisheries, the use of our Diving Apparatus has effected a wonderful transformation. After the Exhibition of 1867, various fishing contractors in Europe began to use our apparatus in their work of fishing for sponges, amber, coral, mother of pearl, and pearls. In the Grecian Archipelago, especially, more than 300 vessels mounted by the insulars are fitted with Diving machines, and these obtained results which made competition by ordinary diving crews quite impossible. Beyond doubt, the same results would follow in Asia, America, and Oceania, if the use of our apparatus was sufficiently known in those countries, and the first who should use it, would certainly realize considerable advantages.

4^{ly} In Mining Works, our apparatus has been repeatedly used in the most strikingly advantageous manner. Our submarine lamp, which enables the diver to see his work with clearness, and the new arrangement of an acoustic invention which gives engineers the means of directing workmen in these difficult undertakings, constitute a set of valuable advantages. Our apparatus, therefore, has been adopted in

many important mines, among which we will only mention :

St-Etienne coal mining Society ;
The Royal mines of Saarbruck ;
The mining School of Bochum ;
Anzin mining Company ;
Blanzky mining Company ;
Epinal coal mining Society ;
Essen mining Company ;
Zabrze Royal mining Company (Upper Silesia) ;
Grand'Combe mining Company ;
Monteponi mines Direction (Sardinia) ;
Schneider and Co Manufactories at Creuzot, etc., etc.

The use of our apparatus in these and other works has so widely made known its principles that we need not expatiate upon the subject. Complete instructions are always forwarded with our apparatus, and the manipulation of our machines is so simple, that the most inexperienced workman soon understands it.

Let us add, however, that by means of our *Regulator apparatus* — a single air-chamber arranged as shown in the sketch — a Diver may descend without a helmet and without a Diving-dress. This arrangement is of great value in warm climates, and in cases of salvage where time is of much importance.



DIVER WORKING WITHOUT HELMET
WITH THE REGULATOR APPARATUS ONLY

PRICE LIST

Nomenclature of pieces composing Denayrouze's apparatus.

One air pump and two double spanners for ditto.

Two pipes of 1 m. 50 long, with union joints.

An air reservoir.

A pressure gauge.

One helmet with a complete set of spare glasses.

One patent diving dress, of special manufacture, with double knee caps, shoulder pieces, etc., etc., complete.

Two coils of pipes, of 10 metres each.

One gun metal union joint.

Two wollen dresses, comprising :

Two caps.

Two guerneseys.

Two pairs of drawers.

Two pairs of stockings.

A lead breastplate.

A lead back weight.

A pair of shoes, with lead soles.

A cushion.

A leather belt with tube holders.

A dagger-knife.

A dozen india-rubber rings, for wrists.

A spare bolt for helmet.

A kilogram of india-rubber solution.

One metre of prepared canvas.

A sheet of india-rubber.

A divers Manual.

PRICE..... **2,175** francs

To be Paid cash in Paris, on the day of
delivery.

Packing to the charge of the buyer..... **50** »

The same apparatus, with a three barrels
pump and fly wheel..... **3,000** »

Price extra for complete Regulator apparatus
with spare pieces, for diving without helmet
and diving dress..... **500** »

Price of complete submarine lamp with spare
pieces..... **500** »

ADVANTAGES

OF THE DENAYROUZE DIVING APPARATUS

OVER EVERY OTHER KNOWN SYSTEM

The Denayrouze Diving Apparatus surpasses all other systems :—

- 1^y . By the nature of the pumps.
 - 2^y . By the construction of the pipes.
 - 3^y . By the shape and make of the dresses.
 - 4^y . By the nature of the helmets and the system of fastening.
 - 5th. By the addition of a speaking apparatus.
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PUMPS

A pump, with water joints, presents the following advantages over all other known systems—

The organs are extremely simple ; only two keys are used for taking it to pieces completely. It can be examined frequently and without loss of time. Risks of damage scarcely exist—the apparatus does not contain any delicate element whatever.

Neither oil nor grease is used to maintain the leathers.

The plungers require nothing but water. The air sent to the diver is not only without smell, but it is also cooled by its passage through layers of water.

PIPES

The pipes are constructed on a special system, and warranted to resist fifteen atmospheres, or a pressure of air representing what the diver would have to bear, supposing he could descend to a depth of 150 metres.

The most frequent cause of death to divers is hereby thus removed. The pipes are light enough to float on the water, so that they rise vertically above the diver, who need never fear to see them fall to the bottom, get entangled, or embarrass or delay his advance. He has no longer reason to fear being kept against his will at the bottom of the water, if any circumstance whatever should oblige him to ascend rapidly.

DRESSES

The dresses are made of the best material, and have strengthening pieces at all points where long experience has proved that wear is first produced, namely, the feet, knees, between legs, elbows, and arm-pits. This precaution doubles the durability of the dresses.

